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Date: April 10, 2025

Our Ref: 30218437.RPTI4
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Subject: 2024 Annual Operation Maintenance and Monitoring Report
Operable Unit 2, Northrop Grumman and Naval Weapons Industrial Reserve
Plant (NWIRP) Sites, Bethpage, New York.

Dear Ms. Johnston,

On behalf of Northrop Grumman, Arcadis is providing the NYSDEC with one electronic PDF copy of the Operable Unit 2 (OU2) 2024 Annual Operation Maintenance and Monitoring Report (attached by link). As we have transitioned to electronic submittals (via PDF) in line with NYDEC's paper reduction program, hard copies of the report can be provided on request.

This report was prepared to document the operation, maintenance, and monitoring (OM&M) activities conducted for the on-site portion of the OU2 groundwater remedy and the results of ongoing volatile organic compound (VOC) and inorganic monitoring of groundwater to meet the applicable remedial objectives set forth in the March 2001 OU2 Record of Decision (ROD).

Please contact us if you have any questions or comments.

Sincerely,
Arcadis of New York, Inc.



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Enclosures

Northrop Grumman

2024 ANNUAL OPERATION, MAINTENANCE AND MONITORING REPORT

Operable Unit 2 - Groundwater

Bethpage, New York

NYSDEC Sites # 1-30-003A and 1-30-003B

April 10, 2025

2024 Annual Operation, Maintenance and Monitoring Report

Operable Unit 2 – Groundwater
Bethpage, New York
NYSDEC Sites # 1-30-003A and 1-30-003B

April 10, 2025

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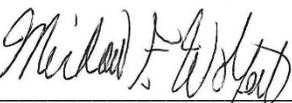
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Acronyms and Abbreviations

AGCs	Annual Guideline Concentrations
AOC	Administrative Order on Consent
AOP	Advanced Oxidation Process
Arcadis	Arcadis of New York, Inc.
AROD	Amended ROD
BPOW	Bethpage Outpost Well
BWD	Bethpage Water District
CLLE	Continuous Liquid-Liquid Extraction
COCs	Constituents of Concern
DAR	Division of Air Resources
DCA	Dichloroethane
DCE	Dichloroethene
DER	Department of Environmental Remediation
DMRs	Discharge Monitoring Reports
DON	Department of Navy
EDD	Electronic Data Deliverable
ES	Executive Summary
ESD	Explanation of Significant Differences
ft bls	Feet below land surface
ft/day	Feet per day
G&M	Geraghty and Miller
Gpm	Gallons per Minute
GWMP	Groundwater Monitoring Plan
GWTP	Groundwater Treatment Plant
HTAC	High Toxicity Air Contaminant
Lbs	Pounds

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MEK	2-Butanone
Methylene Chloride	Dichloromethane
MG	Million Gallons
MW	Monitoring Well
NAVD	North American Vertical Datum
NWIRP	Naval Weapons Industrial Reserve Plant
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
OM&M	Operation, Maintenance and Monitoring
ONCT	On-Site Containment and Treatment
OU2	Operable Unit 2
OU3	Operable Unit 3
OXY	Occidental Chemical Corporation
PCE	Tetrachloroethene
PLT 1	Plant 1
PWSCP	Public Water Supply Contingency Plan
RAOs	Remedial Action Objectives
RE	Resolution
RIs	Remedial Investigations
ROD	Record of Decision
RVPGAC	Regenerable Vapor-Phase Granular Activated Carbon
RW	Remedial Well
SCADA	Supervisory Control and Data Acquisition
SCGs	Standards, Criteria and Guidance
SGC	Short term Guideline Concentrations
SIM	Selective Ion Monitoring

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Site	Northrop Grumman, Bethpage, New York facility and the former Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, New York
SPDES	State Pollutant Discharge Elimination System
TCA	Trichloroethane
TCE	Trichloroethylene
TVOC	Total Volatile Organic Compound
µg/L	Micrograms per Liter
USEPA	United States Environmental Protection Agency
VC	Vinyl Chloride
VHG	Vertical Hydraulic Gradient
VOC	Volatile Organic Compound
VPGAC	Vapor-Phase Granular Activated Carbon
VPB	Vertical Profile Borings
WQ	Water Quality

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Executive Summary (ES) including Table ES-1

Introduction and Overview

Arcadis of New York, Inc. (Arcadis), on behalf of Northrop Grumman, has prepared this Operable Unit 2 (OU2) 2024 Annual Operation, Maintenance and Monitoring (OM&M) Report to document OM&M activities conducted for the on-site portion of the OU2 groundwater remedy (also referred to as the On-Site Containment and Treatment [ONCT] system) for the former Northrop Grumman, Bethpage, New York facility and the former Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, New York (Site).

Groundwater sampling conducted as part of the Remedial Investigations (RIs) for the former Northrop Grumman site (New York State Department of Environmental Conservation (NYSDEC) Site # 1-30-0003A, NWIRP (NYSDEC Site # 1-30-0003B), and Occidental Chemical Corporation (OXY)/Hooker Chemical Corporation/RUCO Polymer Corporation site (referred to throughout this report as the OXY Site) (NYSDEC Site # 1-30-0004) indicates that past chemical usage/storage and/or waste disposal practices at each of these sites has resulted in impacts to groundwater (OU2 plume). Total Volatile Organic Compound (TVOC) concentrations discussed in this report are the sum of the 21 “Site-related” Volatile Organic Compounds (VOCs) identified in **Appendix A**. The overall remedial goals for groundwater, as stated in the OU2 2001 NYSDEC (NYSDEC 2001) Record of Decision (ROD), is to meet Standards, Criteria and Guidance values (SCGs) and be protective of human health and the environment. The 2019 AROD (NYSDEC 2019) incorporates and supplements, but does not replace, previously existing RODs and requires that planned and existing groundwater remedies for OU2 and OU3 be implemented and continue to operate but does not otherwise impose other requirements on existing RODs or remedial systems.

This report describes the performance, compliance, and effectiveness monitoring completed for the ONCT system for the Fourth Quarter 2024 (current period) and the Year 2024 (reporting period). This report uses various lines of evidence to evaluate the effectiveness of the On-Site Containment and Treatment (ONCT) system, an approach that is consistent with the United States Environmental Protection Agency (USEPA 2008) “A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems” report. The ONCT system was designed to create an effective hydraulic barrier to prevent the off-site migration of VOC-impacted groundwater. Throughout this report, the terms “prevent off-site migration”, “containment,” and “capture” are used interchangeably.

The information presented throughout this report confirms the ONCT system is operating as designed, as summarized in **Table ES-1** at the end of this Executive Summary.

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Operation and Maintenance

The operation and maintenance of the ONCT system was conducted in accordance with the NYSDEC-approved OM&M Manual (Arcadis 2014) throughout 2024.

During 2024, the remedial wells (RW) extracted a total of 2,088 million gallons (MG) of groundwater for treatment (**Table 3**), approximately 4% more than the model design annual flow volume needed to maintain on-site containment of VOC-impacted groundwater. The ONCT system had a treatment system efficiency of 99.9%, treatment system uptimes of 94% (Building 96) and 99% (Building 102), and remedial well uptimes of 90% or greater.

Summary of Monitoring Completed

Throughout 2024, ONCT system performance, compliance and environmental effectiveness monitoring was conducted to assess whether Remedial Action Objectives (RAOs) identified in the ROD (NYSDEC 2001) were achieved.

Remedial System Performance and Compliance

During 2024, the ONCT system operated as designed, from a compliance and performance perspective, and complied with applicable NYSDEC SCGs for ONCT system discharges and emissions (i.e., treated water discharges and air emissions). A calculated 2,949 pounds (lbs) of VOCs were removed from the aquifer and treated by the ONCT system in 2024. Since full-time startup of the ONCT system in November 1998, approximately 231,000 lbs of VOCs have been removed from the aquifer and treated by the ONCT system (**Table 3**).

Remedial System Environmental Effectiveness

The groundwater quality trend analysis and hydraulic effectiveness monitoring, along with additional lines of evidence, were reviewed to assess the environmental effectiveness of the ONCT system. The results demonstrate that the ONCT system maintained horizontal and vertical capture of on-site OU2 VOC-impacted groundwater during 2024 via groundwater extraction from the five ONCT remedial wells and discharge/recharge of treated water to the south and west recharge basins. The assessments conducted to develop this conclusion conform with the lines of evidence and evaluation process recommended in USEPA's "A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems" (USEPA 2008) report. (See **Table ES-1** for a summary of the lines of evidence).

Specifically, the capture zone created via operation of the ONCT system during 2024 encompasses the volume of on-site OU2 VOC-impacted groundwater and created an effective hydraulic barrier to its off-site migration.

Groundwater quality data from monitoring wells (MW) near the hydraulic barrier south of the site show a continuing decline in TVOC concentrations over time. With the ongoing operation of the ONCT system, the area affected by TVOC-impacted groundwater has bifurcated, and the clean water area continues to expand both

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downgradient and with depth. This improvement results from the removal of VOC-impacted groundwater through remedial wells, the discharge and recharge of treated water at the southern basins, and natural aquifer recharge from precipitation.

Zones 1, 2, 3 and 4 (See **Figures 16, 17, 18, and 19**) show the clean water area that has developed to date.

Additional Groundwater Quality Data

VOCS – Further Downgradient of the ONCT System

This report also presents analytical results of VOC monitoring in areas further off-site and downgradient of the ONCT system where Department of Navy (DON) is conducting remedial activities (i.e., Phase 1 remediation in vicinity of the Resolution (RE)108 area by pumping Well RW4 and Well RE137, and continuation of GM-38 system OM&M) and in areas of outpost wells south of Hempstead Turnpike.

Cadmium and Chromium (Former Plants 1 and 2)

At former Plant 1 (PLT1), the following was observed related to chromium monitoring conducted during 2024:

- Analytical results for total chromium remain elevated above the SCG for the Fourth Quarter 2024 (current period) and Year 2024 (reporting period), except for Well PLT1MW-04.

At former Plant 2, the following was observed related to cadmium and chromium monitoring conducted during 2024:

- Total chromium and cadmium exceedances did not occur in 2024; and, over the period of record, wells, GM-78S and GM-78I have been below the SCG for both chromium and cadmium. For chromium, Monitoring Well MW-02GF has shown concentrations above the SCG consistently from 2018 through 2023 and sporadically prior to 2018 and in 2023 the highest concentration was detected in this well since sampling at this well began. Well N-10631 has sporadically been above the SCGs for cadmium and chromium although its replacement N-10631R has not been above SCGs for its brief history (October 12, 2023 until present).

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Table ES-1 Lines of Evidence to Determine if On-Site Containment of VOC-impacted Groundwater is Being Achieved

Line of Evidence	Is Line of Evidence Achieved? Yes or No	If not why not?	Remarks
Water Levels- Hydraulic Capture			
Water Table Map -is mounding evident along south recharge basins?	Yes	--	
Vertical hydraulic gradients (VHGs) -are substantial majority of VHGs in the same direction as model predicted VHGs?	Yes	--	
Potentiometric Surface Map (Zone 3 500-700 foot depth) -is capture of VOC-impacted groundwater area indicated?	Yes	--	Mapping of groundwater levels in Zone 3 shows the ONCT capture zone and also the capture zones of the RW21 remedial system. The presence of these two other capture zones did not prevent the ONCT system from maintaining capture of onsite VOC-impacted groundwater in 2024.
Calculations/Modeling – does modeling of the capture zone under 2024 operating conditions show capture of the on-site portion of the plume?	Yes	--	Based on reviewing and applying previous annual capture zone modeling results that considered ONCT remedial well pumping rates/uptimes compared to previous years.

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 Operable Unit 2 – Groundwater

Line of Evidence	Is Line of Evidence Achieved? Yes or No	If not why not?	Remarks
Improvements in Groundwater Quality-Volatile Organic Compounds			
Water Quality (WQ) trends upgradient- are substantial majority of trends downward?	Yes	--	
WQ trends proximate- are substantial majority of trends downward?	Yes	--	
WQ trends near central_downgradient- are substantial majority of trends downward?	Yes	--	
Percent TVOC reduction upgradient- do a substantial majority of wells and average of all wells show reductions of >75%?	Yes	--	
Percent TVOC reduction proximate- do a substantial majority of wells and average of all wells show reductions of >75%?	Yes	--	
Percent TVOC reduction near central downgradient- do a substantial majority of wells and average of all wells show reductions of >75%?	Yes	--	
Zone 1- is a clean water area evident?	Yes	--	-
Zone 2- is a clean water area evident?	Yes	--	-
Zone 3- is a clean water area evident?	Yes	--	-
Zone 4- is a clean water area evident	Yes	--	-
Weight of Above Evidence			
Does it indicate onsite containment of VOC-impacted groundwater ?	Yes	--	-

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1 Introduction

Arcadis, on behalf of Northrop Grumman, has prepared this OU2 2024 Annual OM&M Report to document activities performed and data collected during 2024 for the OM&M of the on-site portion of the OU2 groundwater remedy (also referred to as the OU2 ONCT system) for the former Northrop Grumman, Bethpage, New York facility (Site No. 1-30-003A) and the former NWIRP, Bethpage, New York (Site No. 1-30-003B) (herein referred to collectively as the “Site”). This report was prepared pursuant to the OU2 Administrative Order on Consent (AOC) NYSDEC (2015a) Index # W1-118-14-12, the March 2001 OU2 ROD, the December 2019 Amended ROD (AROD), the OU2 ONCT System OM&M Manual (Arcadis 2014), and the latest Updated Groundwater Monitoring Plan (GWMP) (Arcadis 2016).

This report describes the performance, compliance, and effectiveness monitoring conducted (and the associated analytical data) for the ONCT system for the Fourth Quarter 2024 (current period) and the Year 2024 (reporting period) and provides the basis for the annual engineering certification of the ONCT system required by Section 1.B of the OU2 AOC. In this report, the current period data is compared to data from the previous three 2024 quarterly reports (Arcadis 2024a; 2024b; 2024c) and to longer-term data trends for the period of record (e.g., from system startup in 1998 or variable start date depending on the monitoring well sampling history), as applicable.

Specifically, this report summarizes the monitoring (and analytical results) of on- and off-site groundwater, which is impacted to some extent by Site-related VOCs (referred to as the OU2 Plume, though there are multiple plumes within this single plume), as documented by analytical results from wells sampled for Northrop Grumman and as supplemented by groundwater analytical data reported by the DON from 56 wells located downgradient of the Site and north of Hempstead Turnpike. This report does not describe the activities conducted by DON at the former NWIRP property nor the Navy ROD/Explanation of Significant Differences (ESD)-required off-site components of the groundwater remedial program, as these activities are separately managed, maintained, and reported by DON. The DON’s activities include monitoring of the GM-38 Hotspot and OM&M of the GM-38 groundwater extraction and treatment system. Their activities also include monitoring and remediation of VOC-impacted groundwater identified in the vicinity of DON’s Vertical Profile Borings (VPBs) VBP-139 and VBP-142 (also referred to as the RE108 hot spot and its downgradient extent), by implementing Phase I (Wells RW4 and RE137) which targets the northern part of the OU2 RE108 Area Hotspot and Phase II (six remedial wells) which targets the middle and southern portions of the Hotspot. Phase III (three wells) will intercept the southern portion of the OU2 plume that is not captured by Phases I and II. Their other activities include components of the public water supply contingency plan and addendum (i.e., additional outpost well installation and monitoring).

The effectiveness of the ONCT system at achieving its RAOs is evaluated in this report. Specifically, this report uses various lines of evidence, an approach that is consistent with the USEPA (2008) “A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems” report, to sequentially evaluate hydraulic and water quality data to assess whether the ONCT system has achieved its design goals and RAO of establishing and maintaining effective horizontal and vertical hydraulic containment of on-site OU2 VOC-impacted groundwater that prevents, its off-site migration. Throughout this report the terms “prevent off-site migration,” “on-site containment,” and “capture” are used interchangeably.

Consistent with the RAOs, the ONCT system was designed to:

- Create an effective hydraulic barrier that prevents off-site migration of on-site OU2 VOC-impacted groundwater.
 - An important element of an effective hydraulic barrier is the establishment of a pumpage-induced collective capture zone that encompasses the volume of on-site OU2 VOC-impacted groundwater.
 - Evidence of an effective hydraulic barrier includes documentation of a “collective zone of capture” (area of lowered water levels generated by remedial well pumping) and downward VHGs, particularly near the remedial wells.
- Develop a clean water area (i.e., an area of less than 5 micrograms per liter [$\mu\text{g/L}$] total VOCs in groundwater) downgradient of the ONCT system that is a direct result of the collective capture zone and hydraulic barrier described above.
 - A clean water area would initially develop shallow and near the Site and would expand further downgradient and deeper over time, as on-site VOC-impacted groundwater is removed from the aquifer via the remedial wells, and treated water is discharged/recharged at the south recharge basins.
 - Evidence for the development of a clean water area includes separation (i.e., bifurcation) of the VOC-impacted groundwater plume on Site from off Site and decreasing concentrations in monitoring wells.

Consistent with prior OU2 ONCT annual report findings, the information presented in this report confirms that the ONCT system is operating as designed and is achieving RAOs, to the extent practicable.

2 Site Overview

This section provides a brief description of the Site, relevant history, main features/components of the ONCT system, and associated remedial program, and describes the RAOs specified in the OU2 ROD.

2.1 Description of Site

The Grumman Aerospace Corporation (now Northrop Grumman) (NYSDEC Site # 1-30-003A) formerly occupied approximately 638 acres in east-central Nassau County, in the Hamlet of Bethpage, Town of Oyster Bay, New York and, within this area, the former NWIRP (NYSDEC Site # 1-30-003B) occupied approximately 105 acres. The Site was bounded by Stewart Avenue to the north, South Oyster Bay Road to the west, Route 107 to the southwest, Central Avenue to the south and various residential and commercial areas to the east. **Figure 1** depicts the former property boundaries of the Site.

Additionally, the former OXY Site ((NYSDEC Site # 1-30-0004) is located adjacent to the northwest portion of the Site and is generally hydraulically upgradient of the former Northrop Grumman site.

2.2 Nature and Extent of Impacted Groundwater

Groundwater sampling conducted as part of the RIs for the former Northrop Grumman site (NYSDEC Site # 1-30-0003A, NWIRP (NYSDEC Site # 1-30-0003B), and OXY Site (NYSDEC Site # 1-30-0004) indicates that past chemical usage/storage and/or waste disposal practices at each of these sites has resulted in impacts to groundwater (i.e., the upper glacial and Magothy aquifers) referred to as the OU2 plume.

Table 1 of NYSDEC's AROD (NYSDEC 2019) (provided as **Appendix A** of this Report) identifies the 21 VOC constituents of the OU2 Site plume (excluding total chromium and 1,4-dioxane). The primary groundwater constituents of concern (COCs) within the OU2 plume include trichloroethylene (TCE); tetrachloroethene (PCE); 1,1,1-trichloroethane (1,1,1-TCA); 1,2-dichloroethene (1,2-DCE); 1,1-dichloroethene (1,1-DCE); and 1,1-dichloroethane (1,1-DCA). As used in this report, TVOC concentrations presented are the sum of the 21 "site-related" VOCs identified in **Appendix A**. Groundwater associated with the former OXY site contains these primary COCs as well as vinyl chloride monomer (VC) (GHD 2023). The 1994 RI Report (Geraghty and Miller 1994) for the Northrop Grumman site described the overall extent (on-site and off-site) of groundwater impacts at that time prior to initiation of remedial activities.

Additionally, chromium and cadmium/chromium are COCs in groundwater in the vicinity of the former Northrop Grumman Plants 1 and 2, respectively.

Acetone, 2-Butanone (MEK), and Dichloromethane (Methylene Chloride), which are recognized lab contaminants, are not included on the list of COCs in **Appendix A** and, therefore, are not included in the plume and cross section depictions within this report. Furthermore, although 1,4-dioxane was identified as a COC in the AROD (NYSDEC 2019), it is not a constituent used to evaluate the ONCT system effectiveness. Further, although 1,4-dioxane is co-located with VOCs and is captured by the ONCT system, the captured groundwater is not currently treated for 1,4-dioxane; however, 1,4-dioxane is being monitored monthly in compliance with State Pollutant Discharge Elimination System (SPDES) requirements. The ONCT system upgrades to treat 1,4-dioxane are currently being evaluated.

2.3 Remedial Action Objectives

The overall remedial goals for groundwater, as stated in the OU2 ROD, is to meet SCGs and be protective of human health and the environment. The AROD incorporates and supplements the OU2 ROD but does not impose additional requirements.

Consistent with the overall remedial goals selected for the Site, RAOs identified in the OU2 ROD, either in whole or in part, are to:

- Eliminate, to the extent practicable, site-related constituents from the affected public water supplies and prevent, to the extent practicable, the future impacts to public water supplies.
- Eliminate, to the extent practicable, exposures to impacted groundwater.
- Eliminate, to the extent practicable, off-site migration of impacted groundwater and, where practicable, restore the groundwater to pre-disposal conditions.
- Eliminate, to the extent practicable, the off-site migration of soil impacts entering the groundwater.

- Eliminate, to the extent practicable, exceedances of applicable environmental quality standards related to releases of constituents to the waters of the state.
- Comply with applicable NYSDEC SCGs for ONCT system treated water and air.

The AROD primarily focuses on COCs that exceed SCGs in off-site groundwater and incorporates and supplements the OU2 ROD but does not impose additional requirements and as such, the AROD RAOs do not specifically relate to the operation of the ONCT system.

2.4 Main Features/Components of the Remedy

Based on the OU2 ROD, and as shown on **Figures 2 and 3**, the following are the major elements of the remedial program and current components of the OU2 On-Site Groundwater Remedy:

- Operation, maintenance, and monitoring of the ONCT system, which currently consists of:
 - Five Remedial Wells (Wells 1, 3R, 17, 18, and 19) with design pumping rates (based on current groundwater model) of 800 gallons per minute (gpm), 700 gpm, 1,000 gpm, 800 gpm and 500 gpm, respectively. 2024 operational flow rates are discussed in **Section 3.2**.
 - Two treatment systems (Building 96 and Building 102), each consisting of a packed-tower air stripper to remove VOCs from extracted groundwater, and vapor emission treatment units to remove VOCs from off-gas emissions. Building 102 (previously referred to as Tower 102, or T102) has a regenerable vapor-phase granular activated carbon (RVPGAC) system, with on-site steam regeneration via on-site boilers, to remove VOCs from the off-gas emissions. The RVPGAC system formerly operated at Building 96 (previously referred to as Tower 96, or T96) was reconfigured to bypass the RVPGAC components on 3/15/22. Currently the off-gas emissions are treated through the exterior Vapor Phase Granular Activated Carbon (VPGAC) emission control units.
 - A pressurized discharge main to accept the treated water discharge, which is also available for limited non-potable reuse.
 - Two sets of recharge basins (the south recharge basins and the west recharge basins) accept the treated water from the clear wells, which drain by gravity to the basins. A minimum design groundwater model-based discharge rate of 2,231 gpm to maintain on-site capture was developed for the south recharge basins.
- A groundwater monitoring program to assess the overall ONCT system's environmental effectiveness and a performance and compliance monitoring program to assess the performance of the ONCT system. The groundwater monitoring program also includes monitoring further off-site (plume monitoring wells) and upgradient of public water supply wells (outpost wells).
 - In 2024, Northrop Grumman continued monitoring the outpost wells in accordance with the DON's Final 2021 Monitoring Optimization Report (Tetra Tech 2022) while DON's proposed modifications in their October 2023 Public Water Supply Contingency Plan (PWSCP) Addendum are reviewed and accepted, with a few exceptions where the PWSCP Addendum proposed an increased sampling frequency. The DON's PWSCP Addendum recommends adjusting sampling frequency based on treatment status (reduced frequency recommended where treatment planned

or installed) but also, in some cases, the need for increased monitoring of certain outpost wells (for Freon 113). To ensure data consistency and compliance, select wells (Bethpage Outpost Well (BPOW) - BPOW1-1, BPOW1-3, BPOW3-1, and BPOW3-2) were conservatively sampled more frequently in 2024 to meet the minimum required number of samples per well between the two DON plans (**Figure 1**).

- The monitoring and former outpost wells included in Northrop Grumman's OU2 groundwater monitoring program, for which Northrop Grumman is responsible for reporting, and additional wells in the Site vicinity are shown on **Figure 1**.
- Select DON monitoring wells used to supplement Northrop Grumman data for evaluating remedial system effectiveness and downgradient groundwater quality are also shown on **Figure 1**.

3 Operation and Maintenance

The following subsections summarize routine and non-routine operation and maintenance activities completed during the 2024 reporting period and the operational performance of the ONCT system.

3.1 Summary of Completed O&M Activities

O&M of the ONCT system was conducted in accordance with the OM&M Manual (Arcadis 2014), and included the following:

- Daily routine site visits by Northrop Grumman personnel to visually check the system for proper operation, leaks or potential emergency situations. Additionally, the ONCT system was continuously monitored by the Supervisory Control and Data Acquisition (SCADA) system. Daily site visit logs (paper forms and electronically collected data) are included in **Appendix B**.
- Weekly routine site checks by Northrop Grumman personnel to monitor and record key process parameters to confirm proper system operation, to assess whether a process parameter is changing, and to provide information that may be helpful later in the event of an operational problem. A monthly summary of the weekly monitoring data collected for Building 96 and Building 102 is provided in **Tables 1A and 1B**, respectively.
- Routine equipment maintenance by Northrop Grumman personnel in accordance manufacturers' specifications or otherwise, as needed, and per the routine maintenance schedule and checklist provided in the OM&M Manual (Arcadis 2014). It should be noted that the OM&M Manual is continually updated, as needed, as various components get replaced/repared over time to support effective and efficient operation of the ONCT system.
- Routine off-site disposal of solvent recovered by the RVPGAC system (a hazardous waste). As a part of routine system operation, recovered solvent is drummed, temporarily staged in an on-site hazardous waste storage area, and properly transported and disposed off-site by a Northrop Grumman subcontractor in accordance with applicable regulations. Recovered solvent was not shipped off-site in 2024 because it was managed on-site following established protocols, where recovered solvent gravity

feeds into an accumulation tank as part of the decanting process that separates recovered solvent from water. The accumulation tank did not require emptying during 2024.

- Routine changeout of the carbon for the VPGAC exterior units at Building 96. Monthly routine VOC concentration screenings to monitor the condition of the carbon are conducted to assess the need for carbon changeouts; monitoring results are presented in **Section 5**.
- Non-routine equipment and system component maintenance by Northrop Grumman personnel or their subcontractors in response to alarm conditions, physical damage, or systems parameters operating outside of their normal operating ranges.

A detailed summary of the relatively larger-scale routine and non-routine maintenance activities completed during the 2024 annual period is provided in **Table 2**.

Despite the downtime events identified in **Table 2**, the ONCT system maintained capture of the on-site portions of the OU2 plume. Further analysis of ONCT system capture through 2024 is provided in **Section 6**.

3.2 Summary of System Operational Performance

This subsection provides an evaluation of ONCT system operational performance throughout 2024.

An operational summary of remedial well and system uptimes, system discharges and treatment system efficiencies for 2024 are provided in **Table 3** and are summarized below along with additional operational performance considerations:

- Current model design flow rates are as follows: Well 1 (800 gpm); Well 3R (700 gpm); Well 17 (1,000 gpm); Well 18 (800 gpm); and Well 19 (500 gpm) (**Table 3**).
- The treatment system uptimes for 2024 were 94% (Building 96) and 99% (Building 102) (**Table 3**). The remedial wells operated at “uptimes” between 90% and 99% in 2024 (**Table 3**). Remedial well uptime is generally an indication of system uptime, although there are differences because the system can still be running, for example, while one of the remedial wells are down. Remedial well uptimes are more relevant than treatment system uptimes when considering hydraulic capture.
- Flow rates at Wells 3R and 18 were increased for periods during 2024.
- Based on system operational logs, the remedial wells extracted a total of 2,098 MG of groundwater for treatment in 2024 (**Table 3**), approximately 4% more than model design annual flow volume based on individual remedial well flow rates needed to maintain on-site containment.
- The water treatment components of the ONCT system (air stripper/clear well) performed within acceptable operating ranges for this reporting period, as indicated by the following:
 - The air stripper VOC removal efficiencies were greater than 99.9% (**Table 3**).
 - The air stripper effluent water discharge complied with applicable SCGs; additional details regarding system water monitoring for compliance are discussed in **Section 5**.
- The air treatment components of the ONCT system (RVPGAC/solvent recovery) performed within acceptable operating ranges during this reporting period. The RVPGAC stack discharges complied with applicable short term guideline concentrations (SGCs)/ Annual Guideline Concentrations (AGCs)

(NYSDEC 2016) and discharge limits; additional details regarding system air monitoring for compliance are discussed in **Section 5**.

- Additional maintenance and assessment of the ONCT system's critical alarms, SCADA system functionality, and set points were conducted during the reporting period and continued through March 2025.

4 Summary of Monitoring Completed

In accordance with the above-referenced plans, the following monitoring was completed during 2024:

- Quarterly remedial system performance monitoring:
 - Remedial well water quality monitoring was completed to monitor the performance of the ONCT system and assess VOC mass removal.
 - Water quality monitoring of treatment system effluent (Buildings 96 and 102) was completed to monitor the performance of the groundwater treatment components of the ONCT system.
 - Air quality monitoring of treatment system influent, mid-effluent and effluent (Buildings 96 and 102), as appropriate, was completed to monitor the performance of the air treatment components of the ONCT system.
 - Results are presented and evaluated in **Section 5** along with key findings that support overall conclusions and suggestions related to remedial system performance.
- Remedial system compliance monitoring:
 - Water and air quality monitoring of treatment system influent, mid-train, and effluent, as appropriate, was completed to gauge quarterly TCE mass removal for the Building 96 and 102 treatment systems.
 - Quarterly air monitoring and modeling was completed to determine the compliance status of the vapor-phase effluent discharged from the Building 96 and 102 treatment systems.
 - Monthly SPDES monitoring was completed to verify that water discharged to the south recharge basins (i.e., Outfall 005) and west recharge basins (i.e., Outfall 006) met permit equivalency requirements. Monitoring was performed in accordance with the terms and conditions of Northrop Grumman's SPDES Permit Equivalent No. NY0096792 and discharge limits, per the SPDES permit equivalency, last amended on March 23, 2023. This amendment incorporated treated water discharge from Northrop Grumman's (Operable Unit 3) OU3 off-site RW-21 remedial system (consisting of three remedial wells and an Advanced Oxidation Process (AOP) treatment system at Building 109) to the south recharge basins (Outfall 005). As such, the south recharge basins currently receive treated water discharge from both the Building 102 and the Building 109 treatment systems. SPDES discharge monitoring data are documented monthly by Northrop Grumman in Discharge Monitoring Reports (DMRs) that are transmitted to the NYSDEC under separate cover. Copies of DMRs completed during this reporting period are provided in **Appendix C**.

- Results are presented and evaluated in **Section 5** along with key findings that support overall conclusions and suggestions related to remedial system compliance.
- Remedial system environmental effectiveness monitoring:
 - Groundwater hydraulic (water-level) monitoring was completed to determine, monitor, and document local and regional groundwater flow patterns during operation of the ONCT system, including the vertical and horizontal extent of the cumulative capture zone created by operation of the ONCT system.
 - Groundwater quality monitoring was completed at and immediately downgradient of the Site to assess the effectiveness of the ONCT system with respect to containment and removal of OU2 VOC-impacted groundwater and prevention of its off-site migration. Groundwater quality results from the First, Second, and Third Quarters of 2024 were previously submitted to the NYSDEC in Quarterly Reports and are also included in this report for completeness. Copies of completed Groundwater Sampling Logs and Chain of Custody Records are provided in **Appendix D**.
 - Results are presented and evaluated in **Section 6** along with key findings that support overall conclusions and suggestions related to remedial system environmental effectiveness.
- Additional groundwater quality monitoring:
 - Groundwater quality monitoring was also completed for VOCs in areas further downgradient of the ONCT system and for metals (cadmium and chromium) at former Northrop Grumman Plants 1 and 2.
 - The sampling frequency for outpost wells located in areas further downgradient of the ONCT system changed starting in third quarter 2023 as compared to 2022 and previous years, per recommendations in the DON's Final 2021 Monitoring Optimization Report for OU2 (TetraTech 2022). Exceptions to the DON's recommended sampling frequency (as summarized in Section 2 related to DON's 2023 PWSCP Addendum currently under review by Northrop Grumman) were implemented to be more conservative as detailed below:
 - BPOW1-1 and BPOW1-3 were sampled semi-annually (during the second and fourth quarters) instead of annually. Additionally, samples were also collected during the third quarter.
 - BPOW3-1 and BPOW3-2 were sampled quarterly (starting with the second quarter) instead of semi-annually.
 - Results are presented and evaluated in **Section 7** along with key findings that support overall conclusions and suggestions, as warranted.
 - **Section 7** also presents and evaluates results related to 1,4-dioxane, and VC.

In accordance with the updated GWMP (Arcadis 2016), Arcadis performed validation of treatment system vapor and influent and effluent water data, as well as groundwater quality data, following the contract laboratory program and applying relevant NYSDEC and USEPA protocols. The quality of the data is considered acceptable with the qualifiers indicated in the data summary tables presented in the following sections.

The analytical data associated with the monitoring completed in 2024 and presented in the following sections were and continue to be submitted to the NYSDEC on a quarterly basis in electronic data deliverable (EDD) format, in compliance with requirements outlined in Section 1.15(a) (Electronic Submissions) of NYSDEC's May 2010 Division of Environmental Remediation (DER) - DER-10 guidance document (NYSDEC 2010).

Data from groundwater samples collected from select DON monitoring wells is included in **Section 6** and **Section 7**, as noted, to supplement evaluations related to remedial system effectiveness and groundwater quality with respect to VOCs in areas further downgradient of the ONCT system. Water-level measurement data for select OU3 monitoring wells is included in **Section 6**, as noted, to supplement evaluation of the ONCT capture zone to the east. These additional water-level measurement data were needed as the RW-21 system (Remedial Wells RW-20, RW-21 and RW-22) was put into full-scale operation in August 2023 and the pumping effects of the operation of these remedial wells are noticeable in the Zone 3 water level map (**Figure 9**), which depicts shifts in groundwater flow directions, as further discussed in **Section 6**.

The vertical groundwater zonation approach and nomenclature used in this report to evaluate groundwater quality and flow (i.e., depth intervals below the land surface) is consistent with the approach described in the 2023 Annual OM&M Report (Arcadis 2024d), wherein four hydrological zones, consistent with DON's depth interval structure, are utilized, as follows: Zone 1 (0 to 300 feet [ft] below land surface [bls]); Zone 2 (300 to 500 ft bls); Zone 3 (500 to 700 ft bls); and Zone 4 (more than 700 ft bls).

5 Remedial System Performance and Compliance

Results of remedial system performance and compliance monitoring completed during the reporting period are presented and evaluated in the following subsections.

5.1 Remedial System Performance

The ONCT system remedial well influent concentrations, VOC mass recovered, VOC mass removal rates, and TVOC trends over time are provided in **Tables 3 and 4**, shown on **Figures 4, 5, 6, and 7**, and summarized below:

- Remedial well TVOC influent concentrations ranged from 40.70 µg/L (Well 18 in Q3 2024) to 469 µg/L (Well 1 in Q2 2024) (**Table 4**). TCE and PCE were the VOCs detected at the highest concentrations in the remedial wells, except for Well 19, where TCE and cis-1,2-dichloroethene (cis-1,2-DCE) were detected at the highest concentrations.
- Well 1 had the highest mass removal rate in 2024 (and since 2013) compared to the other remedial wells. Historically, Well 3 had the highest mass removal rate until December 2013 (**Figure 4**).
- TVOC concentrations in remedial wells continue to exhibit an overall decreasing or stable trend since 2016 (**Figure 7**).
- VC was only detected in Well 3R (**Table 4**). OXY operates a biosparge system (per USEPA OU3 ROD September 2000) to reduce VC in groundwater upgradient (northwest) of Remedial Well 3R. Additional information on VC is presented in **Section 7**.
- A calculated 2,949 lbs of TVOCs were removed from the aquifer and treated by the ONCT system in 2024 (**Table 3** and **Figure 5**), with the majority of VOC mass removed by Remedial Well 1 (44% of the

total mass). Since 2006, the overall ONCT system mass removal rate has been generally declining up until approximately 2018 when the mass removal rate began to stabilize. The VOC mass removed in 2024 was less than the mass removed in each of the previous 5 years and suggests a decreasing trend since 2022 (**Figure 5**). Since the remedial wells have been generally operated at the same rate and uptime, this trend is expected as ONCT system operation continues to remove mass from the aquifer, resulting in improvements in on-site groundwater quality.

- Since full-time startup of the ONCT system in November 1998, approximately 231,000 lbs of VOCs have been removed from the aquifer and treated by the ONCT system (**Table 3 and Figure 6**).
- Based on the influent and effluent TCE concentrations, the treatment system achieved TCE removal rates of greater than 99.9% for both Building 96 and 102 air strippers (**Table 3**).

5.2 Remedial System Compliance

5.2.1 Water Discharge

Treated groundwater effluent from the ONCT system met SPDES permit equivalent limits during the reporting period (see **Table 7** and **Appendix C** for detail). The measured concentrations of individual VOCs, iron, manganese, nitrogen and pH levels in the treated effluent were below/within applicable discharge limits, with the exception of elevated iron concentrations in Outfall 005 on August 15, 2024 and December 10, 2024, and an elevated 1,2-DCA concentration on April 16, 2024. These analytical results for Outfall 005 are considered anomalous, based on non-detect results obtained for separate samples collected from the treated discharge from the OU2 ONCT system and the OU3 RW-21 system, which are combined to form the Outfall 005 discharge. This situation will continue to be monitored closely.

5.2.2 Air Discharge

Building 96 and Building 102 air emissions were evaluated for the reporting period to determine compliance with the Division of Air Resources (DAR) - DAR-1 Guidelines for The Evaluation and Control of Ambient Air Contaminants (NYSDEC 2021), under 6 New York Codes, Rules and Regulations NYCRR 212 (Rule 212).

- As shown in **Table 5A** (Building 96 vapor-phase analytical data for 2024), TCE (an A-rated compound) exhibited the highest concentrations of a single VOC compound in influent air by more than an order of magnitude at Building 96.
- As shown in **Table 5B** (Building 102 vapor-phase analytical data), TCE exhibited the highest concentration of a single VOC compound in influent air by close to an order of magnitude at Building 102.

Pursuant to 6 NYCRR Part 212-2.1, for an air contaminant listed in Section 212-2.2 Table 2 – High Toxicity Air Contaminant (HTAC) list, the facility owner or operator shall either limit the actual annual emissions from all process operations at the facility so as to not exceed the mass emission limit listed for the individual HTAC, or demonstrate compliance with the air cleaning requirements for the HTAC, as specified in Subdivision 212-2.3(b), Table 4 – Degree of Air Cleaning Required for Non-Criteria Air Contaminants of this Subpart for the environmental rating assigned to the contaminant by the NYSDEC. For each non-HTAC air contaminant, dispersion modeling will not be required if the actual annual emission rate is less than 100 lbs per year at each individual system.

Actual annual emission rates used for comparison can take control devices into account and must meet the provisions of 212-1.5(g). Emission rates were calculated using the average of 2024 ambient air concentrations of the compounds identified in **Tables 5A and 5B** and are summarized in **Tables 6A and 6B** for Buildings 96 and 102, respectively. All detected compounds were below the compound specific mass emission limit for the reporting period and therefore, no further analysis was required.

6 Remedial System Environmental Effectiveness

This report section evaluates ONCT remedial system environmental effectiveness monitoring results as they relate to the achievement of the ONCT remedial system RAOs of containing on-site OU2 VOC-impacted groundwater and preventing its off-site migration. As mentioned in **Section 1**, this evaluation takes a line-of-evidence approach consistent with USEPA (USEPA 2008) “A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems” report. Hydraulic capture and improvements in groundwater quality are the two main themes embedded in this approach. Hydraulic capture is assessed by multiple lines of evidence, including groundwater flow patterns (i.e., water table configuration and potentiometric surface) and vertical hydraulic gradients. Improvement in groundwater quality is also assessed by multiple lines of evidence, including TVOC concentration trends in different areas near and around the ONCT system and TVOC plume extents and distribution. These hydraulic capture and improvements in groundwater quality lines of evidence are discussed in **Sections 6.1 and 6.2**, respectively.

For the ONCT system to effectively prevent the off-site movement of VOC-impacted groundwater, operation of the ONCT system would have to (1) develop a capture zone that envelopes, in three dimensions, the VOC-impacted groundwater on-site and near-Site downgradient, and (2) develop VHG oriented downward within the established capture zone. Additionally, it would be expected that (1) a clean water area (i.e., an area of less than 5 µg/L total VOCs) would develop as a result of bifurcation of the plume (i.e., splitting of the plume into two parts with one part on-Site and the other off-site with a defined groundwater area of less than 5 µg/L total VOCs between the two parts of the plume), (2) that plume bifurcation would be a direct result of hydraulic capture, and (3) that the clean water area would develop at the water table near the Site and over time would expand further hydraulically downgradient of the Site and deeper in the aquifer. As part of this capture, it would be expected that graphs of TVOCs versus time for monitoring wells to show downward trends in areas proximate to and near central downgradient of the ONCT (see **Figure 1** for definition of these areas). In this Section, the available data is evaluated and a determination is made as to whether the data supports the expectations described above.

When evaluating the effectiveness of the ONCT system, it is important to understand that once remedial wells are pumping continuously at the rates required to establish containment, the propagation of drawdown (as a pressure response to pumping) occurs quickly on Long Island and hydraulic capture can be documented in a relatively short time measured in weeks or months. However, improvement in groundwater quality (in this case VOCs) occurs more slowly as it depends on groundwater movement, which is relatively slow on the order of approximately 1 foot/day (ft/day) on Long Island; therefore, improvements in groundwater quality could take years to reflect the hydraulic capture that is occurring. Due to the different time frames described above, hydraulic capture is considered a leading indicator of remedial effectiveness and improvement in groundwater quality is considered a lagging indicator of remedial effectiveness.

6.1 Hydraulic Capture

ONCT operation, at design pumping and recharge rates, as reflected in previous annual reports, was expected to change hydraulic conditions, as follows:

- 1) “Mounding” of the water table (i.e., a localized increase in groundwater elevation) resulting from the concentrated discharge of treated water to on-site recharge basins is expected to occur and be most evident in Zone 1 where the water table occurs.
- 2) The combination of proximate ONCT system shallow discharge to the on-site recharge basins and deep pumping engenders the expectation that groundwater flow in the vicinity of the ONCT system would have a downward vertical component from the shallow portions of the aquifer to the deep portions of the aquifer.
- 3) ONCT system remedial well pumping will generate “a cumulative zone of capture” (i.e., an area of lowered groundwater levels within which groundwater moves to and is withdrawn by one of the remedial wells), which is expected to occur and be most evident in Zone 3, where the remedial pumping wells are screened.

Groundwater modeling would substantiate the above three hydraulic factors.

As discussed below and documented in previous annual reports, these expectations have been realized. **Tables 8 and 9**, provide the water-level measurement data for the Second and Fourth Quarters of 2024, respectively. The data in **Table 8** was used for the ONCT hydraulic capture evaluation provided below. The ONCT system operated consistently, at or above design pumping rates, during these measurement periods. **Table 10** summarizes calculated VHG for water levels measured at key monitoring well pairs in the vicinity of the ONCT system (using the Second Quarter 2024 water-level measurements) and compares these gradients to groundwater model-predicted gradients (for the ONCT system operating at current design flow rates. **Figures 8 and 9** depict groundwater elevations and flow directions in Zones 1 and 3, respectively, during operation of the ONCT system and the RW-21 system in the Second Quarter 2024 (April 2024).

Furthermore, the potential impact of the RW-21 remedial system, which began full-scale operation in August 2023, was also factored into the hydraulic capture assessment provided herein (similar to what was done for the 2023 annual report). This was done because the combination of treated water from the OU2 ONCT and the RW-21 systems is being discharged to the same on-site recharge basins (South) and remedial well pumping from the RW-21 system would affect local and regional groundwater flow patterns.

6.1.1 Evidence of Mounding Along South Recharge Basins

Figure 8 illustrates water table mounding in Zone 1 beneath the west recharge basins and the south recharge basins where the mounding extends beyond the Site's southern boundary. This mounding establishes a downward hydraulic gradient toward Zone 3, where OU2 ONCT remedial pumping is occurring. The mounding shown on **Figure 8** reflects the combined effect of treated water discharged to the south recharge basins from two separate remedial systems: OU2 ONCT system (specifically Building 102) and the RW-21 remedial system (an additional 1,809 gpm [average of treated water discharged from Building 109 for 2024]).

6.1.2 Vertical Hydraulic Gradients

Data summarized in **Table 10** indicates that VHGs exist and are reflective of water table mounding and deeper remedial well pumping. **Table 10** field-measured data from 15 of the 19 monitoring well clusters are consistent with modeling results, with 14 clusters showing downward gradients and one cluster showing an upward gradient. The four remaining monitoring well clusters did not align with the model's anticipated direction, and it is possible that these four monitoring well clusters are influenced by local conditions (e.g., variable local pumping). In summary, the majority of the hydraulic gradients calculated are consistent with modeled gradients and the expectation of vertical groundwater flow.

6.1.3 Cumulative Capture Zone Based on Potentiometric Surface Map

Figure 9 illustrates that the ONCT system's remedial wells have established a cumulative capture zone in Zone 3 (500-700 ft bls) that not only encompasses the Site but also extends downgradient (see the groundwater divide depicted south of Central Avenue). This capture zone effectively prevents the off-site migration of the on-site VOC-impacted groundwater and actively removes contaminant mass from the aquifer

Additionally, it should be noted that the three remedial wells RW-20, RW-21 and RW-22 in the RW-21 remedial system continued to operate through 2024 at an average combined rate of 1,809 gpm in addition to the substantial average pumpage from the OU2 system of 3,973 gpm for 2024. **Figure 9** integrates groundwater level measurements from select OU3 and Navy monitoring wells, along with OU2 monitoring wells, the three RW-21 system remedial wells, and the five OU2 ONCT remedial wells, to delineate groundwater contours. The data from these monitoring and remedial wells are summarized in **Table 9**.

6.1.4 Calculations/Modeling for Capture of On-Site Portion of the Plume

To support the evaluation of the hydraulic effectiveness of the ONCT system during periods in 2024 when portions of the OU2 ONCT system were shut down for routine and non-routine maintenance (individual remedial wells or multiple remedial wells/treatment system shutdown), Arcadis reviewed current and historical ONCT system operational criteria. Despite the limited ONCT system downtime experienced during portions of 2024, the percent of modeled design flow for the ONCT system in 2024 was greater than the percent of modeled design flow for the ONCT system in 2019. Since modeling completed for 2019 confirmed on-site plume capture, it is logical to conclude that during 2024, when the pumping rates of the remedial wells of the OU2 ONCT system were higher than in 2019, that the capture zone was still maintained and, therefore, did not require model simulations for verification.

6.2 Improvements in Groundwater Quality - Volatile Organic Compounds

This report section evaluates the groundwater quality monitoring data collected during 2024 and in prior years to support the evaluation of groundwater quality trends.

Time-concentration graphs depicting the TVOC concentration trends in key monitoring wells, grouped by proximity to the hydraulic barrier created by ONCT system operation, are shown on **Figures 10, 11 and 12**. The wells selected for graphing are representative of overall conditions within the OU2 plume (both on-site and immediately downgradient of the Site) over time, both horizontally and vertically, and are considered surrogates for other wells that were not graphed. For clarity the key groundwater focus areas relative to the ONCT system performance are described below and discussed in the following subsections of this report:

- **Upgradient of the ONCT System:** Generally, north of the ONCT system and within the capture zone created by it.
- **Proximate to the ONCT System:** Generally, in the vicinity of the ONCT remedial wells and south recharge basins, inclusive of the resulting capture zone and clean water area created by the ONCT system.
- **Near Central Downgradient of the ONCT System:** Generally downgradient of the proximate area and slightly south of the clean water area but showing groundwater quality improvements suggesting the continued propagation of the clean water area to the south.

Discussion of these focus areas is further organized by the hydrogeologic zones described in **Section 6**, where necessary. Well locations are shown on **Figure 1**, with Northrop Grumman program wells depicted in black and supplemental Navy wells depicted in gray. Also included on **Figure 1** are brackets depicting the general locations of the upgradient, proximate, near central downgradient, and far central downgradient areas in relation to the Site.

This report section also provides an updated assessment of the three-dimensional distribution of TVOC concentrations (by hydrogeologic zone) and evaluates the current TVOC plume distribution to assess the development of a clean water area downgradient of the ONCT system. In general, the majority of the OU2 plume mass is located within Zone 3.

6.2.1 Upgradient of the ONCT System

Monitoring wells located in the area upgradient of the ONCT system are screened within Zone 1 and Zone 2, and groundwater quality results for these wells are summarized in **Table 11**. Three of the monitoring wells (GM-13D, HN-24I, and MW-3-1) exhibited exceedances of SCGs for VOCs (**Table 11**); however, these wells continue to exhibit overall decreasing TVOC concentration trends since startup of the OU2 system (**Figure 10** and **Table 16**). Collectively, the upgradient monitoring wells currently exhibit a greater than 99 % decrease in TVOC concentrations from their highest historical values to current values (**Table 16**) and the water quality data is improving as anticipated.

The monitoring wells within this “Upgradient of the ONCT System” focus area are located within the capture zone of the ONCT system; therefore, groundwater in this area is hydraulically contained and, over time, will be extracted and treated via the continued operation of the ONCT system. Although upgradient monitoring wells, due to their location, do not provide direct evidence of the ability of the ONCT system to contain VOC-impacted groundwater on-site, their declining TVOC trends and overall substantial decrease in TVOC concentrations with time reflect removal of VOC mass from the impacted aquifer zones. These decreasing TVOC concentration trends in groundwater and the well locations within the capture zone support the conclusion that the ONCT system is operating as designed and per expectations (as summarized in **Section 1**).

6.2.2 Proximate to the ONCT System

The groundwater quality results for monitoring wells located in the focus area “Proximate to the ONCT System” are screened within Zones 1 through 4 and are summarized in **Table 12**. The trends for a representative subset of monitoring wells in this focus area are shown in **Figure 11**.

Zone 1

VOCs were either not detected or were detected at concentrations below SCGs in these wells, except for Monitoring Wells GM-15SR, GM-39DA, and GM-79D. Monitoring Wells GM-15SR and GM-39DA had an exceedance of the TCE SCG during second quarter only and GM-79D had an exceedance of the TCE SCG in both second and fourth quarters of 2024 (**Table 12**). However, these wells continue to have an overall decreasing TVOC concentration trend since startup of the OU2 system (**Figure 11**), with an overall reduction in TVOC concentrations of greater than ~ 94%, 92% and 88%, respectively, from their highest historical values (**Table 16**).

Zone 2

Monitoring Wells GM-39DB and GM-73D exhibited exceedances of the TCE SCGs (**Table 12**); however, these wells exhibited overall reductions in TVOC concentrations of greater than 87% and 88%, respectively, from their highest historical values (**Table 16**).

Zone 3

Monitoring Well GM-74D2 exhibited exceedances of the PCE SCG (**Table 12**). This well showed an apparent increase to 27.1 µg/L TVOCs from a historic high of 26.80 µg/L (**Table 16**). This will be further assessed through continued sampling of this well in 2025. In addition, Wells GM-15D2, GM-73D2, and GM-74D2 exhibited exceedances of the TCE SCG (**Table 12**). Monitoring wells GM-73D3 and GM-74D2 exhibited an overall increase in TVOC concentrations of 6.1% and 1.1%, respectively, from their highest historical values (**Table 16**).

Additionally, Well GM-15D2 exhibited an overall reduction in TVOC concentrations of approximately 79% from the highest historical value and Well 73D2 showed a 99% reduction in TVOCs from its highest historical value (**Table 16**). In addition, Well GM-21D2, located immediately south of the Site within the proximate area, continues to steadily show decreases in TVOC concentrations (**Figure 11**), with a TCE concentration at 3.3 µg/L in the Fourth Quarter 2024 with a 99% reduction in TVOCs from its historical high. This continued decline in TVOCs is to be expected, as the clean water area (see **Section 6.2.4**) continues to expand within the GM-21 area south of the southern site boundary and beyond.

Zone 4

DON Well RE123D3 is the only well in Zone 4 in the proximate area and is screened from 815 to 835 ft bls. VOCs were not detected in this well, which exhibited an overall reduction in TVOC concentration of 100% from the highest historical value (**Table 16**).

In summary, monitoring wells located in the focus area “Proximate to the ONCT System” continue to show either VOCs less than SCGs or overall decreasing trends in TVOC concentrations since startup of the system (**Figure 11**), except for Wells GM-73D3 and GM-74D2. For all monitored hydrogeologic zones (**Table 16**) the monitoring wells show an average collective decrease in TVOC concentrations of nearly 99% from their highest historical values. Groundwater in this proximate area is hydraulically contained by the ONCT system, both horizontally and vertically, and over time, will be extracted and treated via the continued operation of the ONCT system. These

decreasing TVOC concentration trends in groundwater within the capture zone supports the conclusion that the ONCT system is operating as designed and per expectations (as summarized in **Section 1**).

6.2.3 Near Central Downgradient of the ONCT System

A total of 10 monitoring wells (4 Northrop Grumman and 6 DON) are located in the “Near Central Downgradient of the ONCT System” focus area, which extends from the southern border of the “proximate” area to approximately 1,300 feet south of the Site. The TVOC trends for some of these wells are provided on **Figure 12**, and the analytical results associated with the Northrop Grumman wells are provided on **Table 12**.

Two wells (GM37D [Zone 1] and GM-75D2 [Zone 3]) in this area exhibited slight VOC exceedances of the SCG for TCE (**Table 12**); however, these wells show declining trends in TVOC concentrations over their period of record (see **Figure 12**) and have also exhibited overall reductions in TVOC concentrations of 83% and 99% respectively, from their highest historical concentrations (**Table 16**). In addition, VOC concentrations above SCGs were noted in DON Well Clusters RE109 and RE126, which is to be expected as the majority of VOCs and higher concentrations of TVOCs were identified within wells in Zone 3 in this area.

The RE126 well cluster is located approximately 800 feet downgradient of the “proximate” GM-21 well cluster (maximum TVOC concentration of 4.6 µg/L at Well GM-21D2 in 2024). Well RE126D2 (screened 555 to 575 ft bls) exhibited the highest TVOC concentration in this cluster, and also in the near central downgradient area, at approximately 320 µg/L (**Figure 12**). Well RE109D2 (screened 550 to 570 ft bls), located to the east of the RE126 cluster, exhibited the highest TVOC concentration in the RE109 cluster of approximately 30 µg/L (**Figure 12**). In contrast, GM-75D2 (screened 505 to 525 ft bls), located west of the RE126 cluster, exhibited a maximum TVOC concentration of approximately 9.7 µg/L (**Figure 12** and **Table 12**). It appears that although Zone 3 has the highest TVOC impacts in the near central area, these impacts vary noticeably based on specific screen zone depths and locations.

Although TVOC concentrations within Well RE126D2 are higher than those in adjacent Wells GM-75D2 and RE109D2, Well RE126D2 is exhibiting a declining trend over the period of record, as are Wells RE109D2 and GM-75D2 (see **Figure 12**), while the other two wells in Cluster 126 show low and flat/declining trends as do the other two wells in the RE109 cluster (**Figure 12**). Wells RE126D2, RE109D2, and GM-75D2, for their respective period of record, exhibited overall reductions in TVOC concentrations of 46%, 47% and 99% respectively, consistent with their declining trends.

For comparison purposes, “proximate” area Well GM-21D2 located at the edge of the clean water area and approximately 800 feet north /upgradient of the Well RE126 cluster and screened approximately 50 to 80 feet shallower than the RE126 wells (though still within Zone 3) exhibited a maximum TVOC concentration of 4.6 µg/L, as indicated above. TVOC concentrations in Well GM-21D2 have exhibited an overall decrease of 99% from the highest historical value. Given that Well GM-21D2 is located upgradient of the Well RE109 and RE126 clusters, it is expected that similar decreases will be observed at these well clusters over time, as the clean water area propagates through this vicinity and depth downgradient of the Site.

In summary, monitoring wells located in the “Near Central Downgradient of the ONCT System” focus area downgradient of the ONCT system continue to show either VOCs less than SCGs or overall decreasing trends or low flat trends in TVOC concentrations since startup of the system (**Figure 12**). Additionally, the wells show a collective decrease in TVOC concentrations of 82% from their highest historical values in all monitored

hydrogeologic zones (**Table 16**). These decreasing TVOC concentration trends in groundwater supports the conclusion that the ONCT system is operating as designed and per expectations.

6.2.4 Overall TVOC Distribution/Clean Water Area

This section provides an updated assessment of the three-dimensional distribution of TVOC concentrations (i.e., the sum of 21 identified “Site-related” VOCs) and the clean water area in the OU2 portion of the upper glacial and Magothy aquifers. This assessment was developed by comparing the 2023 TVOC distribution to the most recently available data from monitoring wells, remedial wells, vertical profile borings, and public water supply wells collected in 2024. This evaluation focuses on the distribution of TVOCs on-site and extending downgradient from the Site to slightly south of Hempstead Turnpike. The maps and cross-sections discussed below supplement the discussions in **Sections 6.1** and **6.2.1, 6.2.2, and 6.2.3**.

Figures 13 through 19 provide the 2024 updated three-dimensional interpretation of the plume and clean water area based on analytical data included in this report, which was collected from multiple OU2 on-site and off-site Northrop Grumman monitoring and remedial wells, supplemented with available 2024 analytical data from on and off-site DON monitoring wells and VPB, and Bethpage Water District (BWD) public supply wells. Five plan and two cross-sectional view figures (perpendicular and parallel to the regional ambient groundwater flow direction) were updated. These figures provide a comprehensive three-dimensional interpretation of TVOC concentrations and the clean water area in Zones 1 through 4 at and downgradient of the Site extending to slightly south of Hempstead Turnpike (the furthest south location where data was considered as part of determining ONCT system effectiveness). However, the further downgradient area is beyond the ONCT system capture zone and its resulting area of plume bifurcation and developing clean water area.

The locations of monitoring, remedial, and public supply wells and VPBs used to define the plume contours and clean water area are shown on the maps as data points for context. Key wells within the plume and clean water area are discussed herein and are labelled on the plan view and cross-section figures for convenience of review. Based on a review of the current figures and comparing them to those in the 2023 report (Arcadis, 2024d), current plume conditions have changed somewhat as compared to 2023, and these changes are described below.

Figure 13 depicts a 2024 plan view of the overall TVOC distribution (i.e., the maximum concentrations, regardless of zone, were combined on one figure to show maximum OU2 plume extent) at and downgradient of the Site and the locations of the two cross-sections: A to A', oriented in a west-east direction along the former Northrop Grumman Site southern boundary and perpendicular to regional ambient groundwater flow; and B to B', oriented in a northwest-southeast direction from the southernmost portion of the Site to the BWD Well Field 6, downgradient from the Site, and approximately parallel to regional ambient groundwater flow. **Figures 14 and 15** respectively, provide A to A' and B to B' cross-sectional vertical interpretations of 2024 TVOC concentrations in groundwater and the clean water area from the water table to the top of the Raritan confining unit, which is the bottom of the Magothy aquifer. **Figures 16 through 19** provide plan-view interpretations of the maximum 2024 TVOC concentrations in Zone 1, Zone 2, Zone 3 and Zone 4, respectively.

Key findings based on review of **Figures 13 through 19** are summarized below:

- Plan-view **Figures 13** (all depths compiled onto one map, indicating maximum plume extents) and **16 through 18** (depicting the OU2 plume for specific depth horizons [**Figures 16 (Zone 1), 17 (Zone 2), and 18 (Zone 3)**]) show bifurcation of the plume and a clean water area as evidenced by an area of less

than 5 µg/L TVOCs on-site and immediately south of the Site. As pumping continues, the clean water area will continue to expand downgradient of the ONCT system as on-site VOC-impacted groundwater continues to be removed from the aquifer by pumping the remedial wells and treated water continues to be recharged at the south recharge basins. **Figure 19** (Zone 4) does not show plume bifurcation as there is no Site-related VOC-impacted groundwater on-site in this zone; however, there is an area of clean water that extends from the Site to approximately 2,000 feet south of it.

- As shown on **Figure 13**, the on-site northern and southern extents of the plume have remained unchanged compared to 2023. Offsite, the boundary of the plume is similar to 2023, with the following exceptions:
 - The area of the plume within the 1,000 µg/L contour line has shifted east of remedial well RE137, with an isolated area of 1,000 µg/L depicted around the monitoring well located west of RE137 and at the monitoring well to the northwest of RE137.

There is a widening to the west for the 500 µg/L to 1,000 µg/L contour line of the plume west of Navy Remedial Wells RE137 and RE108-RW-4. The expansion of the plume boundary to the west in 2024 compared to the 2023 map is attributed to the increased well coverage that was not incorporated in the 2023 evaluation. Specifically, the DON data from RE134D3 now allows for better plume definition in this area and does not indicate plume migration in a westerly direction, as regional groundwater flow is to the south. Finally, the clean water area remains essentially the same as it was in 2023. Below, more detailed information is provided regarding plume changes by zone.
 - Based on a comparative analysis of chemical compositions described in the 2021 Annual OM&M Report (Arcadis 2022), it was recognized that there could be more than one VOC source besides the Site impacting groundwater at the RE107 monitoring well cluster and, as such, results associated with the RE107 well cluster are not further discussed in this report; however, as a conservative measure, RE107 is included in the plume update.
 - VOC-impacted groundwater detected at DON RE106 monitoring well cluster appears to be from a source other than OU2 (see 2021 annual report [Arcadis 2022] for a detailed discussion on this) and, accordingly, data from DON well cluster RE106 was not included in mapping the OU2 plume for this report.
- A more detailed (zone by zone) evaluation of the plume depicted in the following figures compared to changes from 2023 are discussed below:
 - **Figure 16** - Zone 1: Compared to 2023, the on-site plume area of the plume spanning between 5 to 50 µg/L contour line has slightly increased towards the south while the area of the plume between 50 µg/L to 500 µg/L contour lines has become narrower in the west to east direction; these changes are the result of the continued pumping on-site and removal of VOC-impacted groundwater. To the north, the plume has remained unchanged since 2023. Off-site, the area of the plume between the 5 µg/L to 50 µg/L contour lines has receded to the west, while the area of the plume between the 50 µg/L to 500 µg/L contour lines has maintained its overall area but has undergone slight shape changes, extending towards Navy Remedial Well RE137. These changes are likely due to pumping of Navy Remedial Well RE137. The clean water area has not changed and still exists south of the Site and south of Navy Remedial Well RW4.

- **Figure 17** - Zone 2: Compared to 2023, the extent of the on-site plume remains essentially the same. Off-Site, the area of the plume with concentrations greater than 500 µg/L appears as an isolated pocket near Remedial Well RE137, likely the result of this well being shut down from August 2024 until February 2025. The northern area of the plume with concentrations between 50 µg/L and 500 µg/L contour lines has decreased noticeably in areal extent and the southern area of the plume between 50 µg/L and 500 µg/L contour lines has remained similar in size, but it appears thinner to the east. The clean water area is larger now and appears to be wrapping around the northern plume section that has concentrations between 5 µg/L and 50 µg/L contour lines and this may be due to pumping of Navy Remedial Well RW4.
- **Figure 18** - Zone 3: Compared to 2023, the extent of the on-site plume remains essentially the same. Off-site, the area of the plume between 5 µg/L to 50 µg/L and 50 µg/L to 500 µg/L contour lines remain similar to 2023 with slight changes of shape. The area of the plume within greater than 1,000 µg/L contour line has receded slightly to the east, likely the result of the pumping of the Navy Remedial Wells RW4 and RE137. However, there appears to be a widening of the area of the plume to the west between the 500 µg/L to 1,000 µg/L contour lines west of Navy Remedial Wells RE137 and RE108-RW-4. The expansion of the plume boundary to the west may be attributed to the increased well coverage that was not incorporated in 2023 as discussed above. The DON data from RE134D3 now allows for better plume definition in this area and does not indicate plume migration, as regional groundwater flow is directed to the south. The clean water area remains unchanged from 2023.
- **Figure 19** - Zone 4: The 2024 and 2023 plumes look similar, except that the area of the plume between 500 µg/L to 1,000 µg/L contour lines and within greater than 1000 µg/L contour line slightly expanded to the west. The TVOC concentration in the southernmost monitoring well of this zone, TT-101D2, increased from 776 µg/L in 2023 to 1243 µg/L in 2024. This has resulted in the formation of an isolated area of plume with concentrations exceeding 1,000 µg/L around this monitoring well, which is consistent with the findings from 2022. The continued southward migration of this plume, along with the overall expansion of the plume boundaries in the 500-1,000 µg/L contour lines and >1,000 µg/L contour line, can likely be attributed to the prolonged shutdown of Remedial Well RE137. This well was offline from August 26, 2024, until February 4, 2025. The clean water area remains unchanged since 2023.
- Monitoring Well GM-33D2, located a short distance off-site and west of Remedial Well 17, has exhibited a decline in TVOCs of nearly 100% since 1994, while Monitoring Well GM-75D2, located off-site approximately 1,300 feet downgradient of the ONCT system, has exhibited a decline in TVOCs of 99.4%. These TVOC reductions would not be possible if TVOCs were still migrating from the Site and is one of the lines of evidence that the OU2 ONCT System is operating as designed and preventing off-site migration of VOC-impacted groundwater.
- Based on the west-east A to A' cross-sectional interpretation shown on **Figure 14**, Remedial Wells 17 through 19 continue to intercept on-site VOC-impacted groundwater at the southern boundary of the Site. **Figure 14** documents the large volume of clean groundwater between the water table and generally minus 300 feet North American Vertical Datum 1988 (NAVD), where TVOCs are essentially less than 5 µg/L due to operation of the ONCT system. Deeper groundwater at minus 540 feet NAVD and below is also less than 5 µg/L and documents that the ONCT system is preventing further vertical migration of

VOC-impacted groundwater. This cross-section is similar in appearance to the one for 2023 except that in 2024 the 5 µg/L to 50 µg/L vertical section has reappeared near RE123D1.

- The northwest-southeast B to B' cross-sectional interpretation shown on **Figure 15** shows TVOCs less than 5 µg/L throughout a vertical section downgradient of Remedial Well 17 and indicates plume bifurcation and a clean water area. The northernmost area of the plume, where concentrations are greater than 5 µg/L (which is intercepted on-site by Remedial Well 17), and the southernmost downgradient area of concentrations greater than 5 µg/L, are separated by the clean water area that is similar to 2023. The deeper portion of the aquifer did not exhibit TVOC concentrations greater than 5 µg/L, including beneath the ONCT system remedial wells. The 2023 and 2024 cross-sections appear similar except that in 2024 the 50 µg/L to 500 µg/L vertical section is thinner in 2024 near the Monitoring Well RE108 cluster.

As the majority of pumping and enhanced recharge (concentrated in the south recharge basins) occurs near the southern Northrop Grumman property boundary, the resulting clean water area, which initially developed in Zone 1 in this area, continues to propagate deeper and downgradient away from the Site in response to the prevailing regional ambient horizontal groundwater flow direction and vertical downward groundwater hydraulic gradient. As expected, the clean water area is largest in Zone 1 (see **Figure 16**) where it first developed. Over time, the clean water area will continue to expand from Zone 1 to the more geologically complex deeper aquifer zones (Zones 2 through 3) while also expanding further (south) from the Site. This expansion is shown in **Figures 17 and 18** where a clean water area is also shown that is less than in Zone 1 but slightly larger in Zone 2 than Zone 3, which is to be expected as the clean water area expands deeper and to the south. In Zone 4, bifurcation of the plume is not shown as VOC impacts in this zone are not present on-site; however, the clean water area in this zone extends approximately 2,000 feet downgradient of the Site.

In summary, the clean water area created and maintained by the ONCT system is evident based on review of the water level maps, VHG, plume maps, cross-sections, monitoring well analytical data and associated trend graphs included herein. These lines of evidence and evaluations are consistent with those in USEPA (USEPA 2008) "A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems" report. The continued expansion of the clean water area and associated reductions in TVOC concentrations could not have been achieved without the ONCT system effectively capturing and preventing the off-site movement of VOC-impacted groundwater.

7 Summary of Additional Groundwater Quality Data

7.1 Volatile Organic Compounds – Further Downgradient of the ONCT System

This section summarizes the VOC analytical results associated with the downgradient portion of Northrop Grumman's monitoring program for 2024 referred to as the "Far Central Downgradient" area, and is followed by a discussion of VOC analytical results associated with the Outpost Monitoring Wells and the GM-38 Area (**Figure 1**). As the below subsections are reviewed, it is important to emphasize that differences in rates of TVOC reductions in groundwater quality are expected as the clean water area will take time to propagate with distance and depth.

7.1.1 Far Central Downgradient Area

The "Far Central Downgradient" area, located south of the Site extending from the southern edge of the "Near Central" area (approximately 1,300 feet south of the Site) southward to approximately Hempstead Turnpike (**Figure 1**). This area is currently too far south to show propagation with distance (and depth) of the clean water area; however, given enough time this area would be expected to show the clean water area -- although such development can be impacted and possibly delayed by pumping of public supply or other remedial wells in the area. In this area the higher concentrations of TVOCs were generally identified within the DON wells in Zone 3. The remedial wells Well 5B and Well 7B installed by the DON continue to intercept the OU2 plume and are making progress in remediating it by removing mass within the high concentration core of the OU2 off-site plume (TVOCs above 1,000 µg/L "hot spot").

A total of 12 monitoring wells (8 Northrop Grumman and 4 DON wells) are located in the far central area. Analytical results for the Northrop Grumman wells in this area are discussed below and provided on **Table 13**; TVOC trends for select DON and Northrop Grumman wells and Well BWD 6-2 in this area, are provided on **Figure 20**.

Wells GM-34D and GM-71D2 in Zone 2, and GM-34D2 and GM-35D2 in Zone 3, in this area exhibited VOC exceedances of the SCGs (**Table 13**); however, these wells have also exhibited an overall reduction in TVOC concentrations of nearly 96%, 69%, 94% and 97% respectively, from their highest historical concentrations (**Table 16**).

The RE122 well cluster is located downgradient of the clean water area, approximately 1,000 feet southeast (downgradient) of near central downgradient well GM-75D2. Well RE122D2 (screened 590 to 610 ft bls), with the highest TVOC concentrations in this cluster, exhibited TVOCs of 3,423 µg/L (**Table 16** and **Figure 20**). In addition, the Well RE108 cluster is located approximately 500 feet east of the RE122 cluster, and Well RE108D2 (screened 630 to 650 ft bls), with the highest TVOC concentration in this cluster, exhibited a TVOC concentration of 1,510 µg/L (**Table 16** and **Figure 20**). Well RE122D3, which exhibited a TVOC concentration of 1.7 µg/L, is screened within Zone 4 (from 715 to 735 feet below grade). The multiple depths of the "RE" well clusters provide a snapshot of the vertical extents of the plume. In this case, Well RE122D3 delineates the lower vertical extent of the plume in this area.

TVOC concentrations in Wells RE122D2 and RE108D2 are still trending downward (**Figure 20**). While these levels remain elevated compared to upgradient Well GM-75D2, where TVOC levels have declined by 99% from a historical peak of 1,566 µg/L to 9.7 µg/L, similar reductions are expected in these wells as cleaner water moves through the area. The variable pumping of BWD 6-2 also influences water quality in this downgradient region, impacting portions of the OU2 plume, which leads to fluctuations in VOC concentrations (**Figure 20**). Given that Wells RE108D2 and RE122D2 are positioned 2,000 feet northwest of BWD 6-2, their water quality may be affected by BWD 6-2's operations. As the ONCT system operates, it is anticipated there will be continual declines in TVOC concentrations downgradient of the Site. With DON actively managing Remedial Wells RW4 and RE137, it is also expected that further improvements will occur in groundwater quality, particularly in addressing the RE108 "hot spot."

7.1.2 GM-38 Area

DON operates an off-site groundwater extraction and treatment system at the GM-38 hotspot area located downgradient and approximately 0.75 miles southeast of the Site. OM&M reports for the GM-38 Area Remedy are submitted to NYSDEC by DON, and these reports (KGS 2024a; KGS 2024b) have been reviewed to supplement evaluation of off-site groundwater conditions. A summary of the GM-38 Area Remedy is provided below, based on the two referenced GM-38 Area Groundwater Remediation Reports.

During the current reporting period, Remedial Wells RW-1 and RW-4 were utilized for groundwater extraction and all extracted groundwater was treated in the GM-38 Area Groundwater Treatment Plant (GWTP). Remedial Well RW-4 is not part of the original GM-38 Area remedial system; however, once Remedial Well RW-4 went online in 2022 the pumping rates of GM-38 Area Remedial Wells RW-1 and RW-3 had to be reduced to accommodate the flow from Well RW-4 so that RW-4 water could be treated at the GM-38 GWTP and discharged at the Arthur Avenue basin. To accomplish this Remedial Well RW-3 was turned off in 2022 (and is still off), while Remedial Well RW-1 continued to operate at a reduced rate. During the current reporting period, RW-1 operated at an average flow rate that ranged from 485 gpm to 501 gpm from January to June 2024. Remedial Well RW-4 operated at an average flow rate that ranged from 449 gpm to 549 gpm from January to June 2024. Remedial Wells RW-1 and RW-4 pumping rates were each set at an approximate value of 500 gpm during first and second quarters of 2024 (January to June), so that the total rate remained at 1,000 gpm so as not to exceed the GWTP capacity or Arthur Avenue recharge basin capacity. The treated combined effluent from Remedial Wells RW-1 and RW-4 is routinely sampled for VOCs and 1,4-dioxane by DON. Since the GWTP has been in operation, there has been a consistent decline in TVOC concentrations observed in both the two remedial wells and their associated monitoring wells, which are sampled at varying frequencies throughout the year by DON. Additionally, this downward trend is apparent in Northrop Grumman owned monitoring wells (GM-38D and GM-38D2), as discussed below.

As summarized in **Table 13**, Monitoring Wells GM-38D and GM-38D2 exhibited SCG groundwater exceedances for TCE, which is consistent with VOC data from previous quarters.

Figure 21 depicts TVOC trends for Zone 1 and 2 monitoring wells in the off-Site GM-38 Area. The TVOC concentrations in Wells GM-38D and GM-38D2 have decreased since 2006 and 2002, respectively, except for a short-term increase in TVOCs observed in GM-38D2 beginning in late 2015 after Navy Remedial Well RW-3 was turned off in July 2015. In June 2018, Remedial Well RW-3 was turned back on and subsequently the TVOCs in GM-38D2 decreased to pre-July 2015 levels. In April 2021, Remedial Well RW-3 was taken offline to allow flow from Remedial Well RW-4 to be treated by the GM-38 Area GWTP. Since then, a minor TVOC trend increase has occurred in GM-38D2. However, these monitoring wells have also exhibited an overall reduction in TVOC concentrations of approximately 93%, from their highest historical concentrations (**Table 16**).

7.1.3 Outpost Wells

Fifteen outpost wells were sampled in 2024 based on the frequency recommended by DON's Final 2021 Monitoring Optimization Report (Tetra Tech 2022) with the exception of Wells BPOW1-1 and BPOW1-3, which were sampled during the second, third, and fourth quarters of 2024 instead of annually, and Wells BPOW3-1 and BPOW3-2, which were sampled during the second, third and fourth quarters of 2024 instead of semi-annually.

As summarized in **Table 13**, only three of the 15 outpost wells (BPOW3-4, BPOW4-1R, and BPOW4-2R) in Zones 3 and 4 exhibited VOC exceedances of the SCGs in 2024. These exceedances at BPOW3-4 were for Freon-113, TCE, and 1,1-DCE, while the exceedances at BPOW4-1R and BPOW4-2R were for Freon-113 only.

Figure 22 highlights the downward or stable trend in TVOC concentrations for the BPOW1 cluster (Wells BPOW1-1 and BPOW1-2, respectively). BPOW1-3 shows an initial declining trend through late 2010 and after that time the well has a flat trend with mostly non-detect values. BPOW1-4 has a flat trend with mostly non-detect values. BPOW1-5 and BPOW1-6 were non-detect for TVOCs for the period of record and were, therefore, not graphed. **Figure 23** shows the increasing trends for Wells BPOW3-4, BPOW4-1R, and BPOW4-2R and the stable trend and mostly non-detects for BPOW3-3. Wells BPOW3-1 and BPOW3-2 were essentially non-detect for TVOCs for their period of record and, therefore, were not graphed. Well Cluster BPOW2 has not exhibited exceedances of the SCGs since 2007 and was not graphed.

7.2 Cadmium and Chromium

Representative monitoring wells located in proximity to former Northrop Grumman Plants 1 and 2 are sampled for laboratory analysis of total and dissolved cadmium (Plant 2 only) and chromium (Plants 1 and 2). Analytical results for the Second and Fourth Quarters of 2024 are provided in **Table 14**. As a conservative approach, only total (unfiltered) metals concentrations are discussed below and depicted on the corresponding figures.

7.2.1 Former Northrop Grumman Plant 1

Exceedances of the SCG for total chromium were detected in three of four monitoring wells (GM-15SR, PLT1 MW-05, PLT1 MW-06) associated with PLT 1 during 2024 as indicated in **Table 14**.

As depicted on **Figure 24**, total chromium in Well PLT1 MW-05 has shown a generally decreasing trend over the period of record; however, significant variations in concentrations continue to occur year to year. Well GM-15SR is exhibiting a downward trend in concentration since late 2010 although significant variations in concentrations continue to occur year to year.

Well PLT1 MW-06 shows an overall steady decline in concentrations for the period of record. However, these three wells have all been above the SCG for the period of record.

There have been no detections of total chromium in Well PLT1 MW-04 for the period of record except for one detection in 2003 and a second detection in the Second Quarter of 2024, after which the concentration decreased to non-detect during Fourth Quarter 2024.

7.2.2 Former Northrop Grumman Plant 2

As shown in **Table 14**, total cadmium exceedances of the SCG were not detected in monitoring Wells GM-78I, GM-78S, MW-01GF, MW-02GF, and N-10631R associated with Plant 2 during 2024. However, former Well N-10631 had periodically been above the SCG over the period of record; no other wells at Plant 2 have been above the SCG for the period of record (**Figure 25**).

As shown in **Table 14**, total chromium exceedances of the SCG were detected in one (MW-02GF) of five wells associated with Plant 2 during 2024.

As depicted on **Figure 26**, for chromium, Monitoring Well MW-02GF has shown concentrations above the SCG sporadically prior to 2018 and consistently from 2018 through 2023; in 2023 the highest concentration was detected since sampling at this well began. In the Fourth Quarter 2024, total Chromium was detected at a concentration of 10.3 ug/L at MW-02GF, which was a significant decrease since 2023 when it was detected at 396 ug/L, the highest concentration since beginning of sampling at this well in 2002.

Well N-10631 (where total chromium was previously detected above the SCG prior to September 1999 and once in 2019) was observed to be filled with sediment and was no longer able to be sampled after May 2020. The replacement Well N-10631R was installed in October 2023 and has been monitored since then. Exceedance of the chromium SCG did not occur in Well N-10631R after its installation in 2023. For the period of record, samples from Wells GM-78S, GM-78I, MW-01GF, and N-10631R have been below the SCG.

7.3 1,4-Dioxane

1,4-dioxane is a constituent analyzed for in the remedial, outpost, and plume monitoring wells sampled under the OU2 groundwater monitoring program. As described in **Section 4.1**, 1,4-dioxane was analyzed using USEPA Method 8270D Selective Ion Monitoring (SIM) Continuous Liquid-Liquid Extraction (CLLE) for monitoring wells and remedial wells, while samples collected from outpost wells continue to be analyzed using USEPA Method 522. The results of 1,4-dioxane analysis of groundwater samples collected during all four quarters in 2024 are provided in **Table 15**, organized by hydrogeologic zone.

Out of a total of 200 samples collected from outpost wells, monitoring wells, and remedial wells in 2024, including replicates, 21 samples were non-detect for 1,4-dioxane. Detected concentrations ranged from 0.0402 µg/L (BPOW1-6; estimated concentration) to 15.4 µg/L (BPOW3-4).

7.4 Vinyl Chloride

VC is routinely detected in Remedial Well 3R and adjacent Monitoring Well MW-3-1, which are both located in the northwestern portion of the former Site. VC was detected in quarterly samples at Remedial Well 3R at concentrations ranging from 1.3 to 1.8 µg/L in 2024 (**Table 4**), while groundwater samples collected from monitoring Well MW-3-1 had VC concentrations ranging from 32.6 to 39.7 µg/L in 2024 (**Table 11**). Groundwater remediation (i.e., biosparge system) to address VC upgradient (northwest) of Remedial Well 3R and Monitoring Well MW-3-1 is ongoing by OXY under USEPA oversight.

8 Findings and Conclusions

The following findings and conclusions are provided regarding the performance of the ONCT system and its ability to achieve the RAOs for the Site for the 2024 reporting period:

- The ONCT system maintained horizontal and vertical containment of on-site VOC-impacted groundwater during 2024. The evaluations conducted to support this conclusion conform with the lines of evidence and evaluation process recommended in the USEPA's "A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems" (USEPA 2008) document, as summarized below:
 - The capture zone created via operation of the ONCT system encompasses the area of on-site VOC-impacted groundwater and creates an effective hydraulic barrier to its off-site migration.

- The groundwater quality data from monitoring wells located immediately downgradient of the hydraulic barrier south of the Site have, as expected, continued to exhibit downward TVOC concentration trends over time due to the continued effectiveness of the ONCT system.
- Groundwater quality data indicates that bifurcation of the VOC plume has occurred and propagation of the clean water area continues to expand south of the hydraulic barrier south of the Site.
- The ONCT system is operating as designed from a compliance and performance perspective:
 - The ONCT system complied with applicable NYSDEC SCGs for ONCT system discharges and emissions (i.e., treated water discharge and air emissions).
- At former Plant 1:
 - Results for total chromium remain elevated above the SCG for the period of record, except for Monitoring Well PLT1 MW-04.
 - Several monitoring wells (notably PLT1 MW-05 and GM-15SR) show generally decreasing chromium trends although significant variations in concentrations continue to occur year to year.
- At former Plant 2:
 - Total cadmium exceedances of the SCG did not occur in 2024.
 - For chromium, Monitoring Well MW-02GF has shown concentrations above the SCG sporadically prior to 2018 and consistently from 2018 through 2023, with the highest concentration detected in 2023 since sampling at this well began.
 - For chromium, Monitoring Well N-10631, which has had sporadic exceedances above the SCG in the past, was replaced by Monitoring Well N-10631R in October 2023. Exceedance of the chromium SCG did not occur in Well N-10631R in 2024. The other three monitoring wells at former Plant 2 have been below the SCG for their period of record.

9 Suggestions

Based on the findings and conclusions presented herein, the following suggestions are provided:

- The ONCT system should continue to be operated as designed to meet remedial objectives and maintain/expand the clean water area created by the system. Northrop Grumman is currently in the planning stages for OU2 ONCT system upgrades to address 1,4-dioxane in the influent water, as required by the SPDES permit equivalency amended on March 23, 2023.
- Groundwater monitoring should continue as previously specified in the 2016 GWMP (Arcadis 2016) with the following exceptions:
 - Northrop Grumman will continue to monitor the outpost wells as recommended in the DON's Final 2021 Monitoring Optimization Report (TetraTech 2022) with the few exceptions noted in this report until the DON's proposed modifications in the October 2023 PWSCP Addendum are reviewed and accepted by Northrop Grumman and NYSDEC.

- An optimization approach for Northrop Grumman's groundwater monitoring program, similar to that enacted by Navy, will be proposed to NYSDEC in a separate submittal.
 - Additionally, Northrop Grumman continues to explore opportunities for remedial system optimization as mass continues to be removed and mass recovery rates continue to decline.
- Groundwater quality and hydraulic monitoring in the vicinity of the ONCT system should continue to be enhanced by incorporating data obtained from DON monitoring well clusters RE123, RE126 and RE109, and by supplementing, as needed, with data obtained from DON monitoring well clusters RE107, RE108 and RE122. Given that these DON well clusters are generally located in critical areas nearby/downgradient of the clean water area and are screened at multiple depth horizons, they provide useful information to supplement Northrop Grumman well data to better monitor contaminant concentrations in these areas. These wells should continue to be evaluated as part of the routine annual system evaluation/certification process. Additionally, water-levels should continue to be measured in select OU3 monitoring wells to enhance data coverage for the area east of the ONCT system.

10 Certification Statement

For each institutional or engineering control identified for the OU2 On-Site Groundwater Remedy, I certify that the following statements are true:

- a. The engineering control employed for the OU2 On-Site Groundwater Remedy is unchanged from the date the control was put in place, or last approved by New York State Department of Environmental Conservation Division of Environmental Remediation (DER).
- b. Nothing has occurred that would impair the ability of such control to protect public health and the environment.
- c. Nothing has occurred that would constitute a violation or failure to comply with any operation, maintenance, and monitoring plan for this control.
- d. Access to the OU2 On-Site Groundwater Remedy will continue to be provided to DER to evaluate the remedy, including access to evaluate the continued maintenance of this control.



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Engineer of Record
New York License # 069748

11 References

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Tables

Table 1A
 Summary of Weekly Monitoring Data for 2024^(1,2)
 Building 96 Treatment System
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Date	WELL 1					WELL 3R					Air Stripper			
	Extracted Groundwater			VFD		Extracted Groundwater			VFD		Influent Water Flow			Ambient Influent Air Temperature (°F)
	Flow Rate (gpm)	Totalizer (x1000) (gal)	Pressure (psig)	Frequency (Hz)	Amperage (Amps)	Flow Rate (gpm)	Totalizer (x1000) (gal)	Pressure (psig)	Frequency (Hz)	Amperage (Amps)	Flow Recorder Rate (gpm)	Flow Meter Rate (gpm)	Totalizer (x100) (gal)	
1/11/2024	812	377,609	46	51	95.6	817	775,208	30	46	85.0	1,671	1,651	14,714,646	41
2/27/2024	811	381,906	76	51	97.0	817	829,977	30	46	84.4	1,668	1,651	15,818,584	50
3/18/2024	813	381,906	46	49	94.7	821	836,877	30	46	86.0	1,722	1,699	15,943,798	39
4/16/2024	814	NR	46	48	94.9	817	861,105	30	45	83.1	1,690	1,623	16,442,680	49
5/7/2024	813	25,903	51	48	90.9	816	885,748	30	45	83.0	1,639	1,598	16,781,544	57
6/12/2024	823	67,236	46	47	88.4	830	927,217	30	46	83.7	1,621	1,605	17,591,480	60
7/18/2024	819	NR ⁽⁴⁾	46	48	88.4	829	968,949	30	46	84.1	1,607	1,582	18,398,214	75
8/15/2024	822	NR ⁽⁴⁾	46	47	87.0	819	NR ⁽⁴⁾	30	44	89.0	1,576	1,582	19,082,010	68
9/5/2024	824	NR ⁽⁴⁾	50	48	88.0	808	NR ⁽⁴⁾	30	45	88.0	1,573	1,567	19,579,230	62
10/9/2024	823	NR ⁽⁴⁾	45	48	88.4	814	NR ⁽⁴⁾	30	46	90.0	1,565	1,567	20,244,936	54
11/12/2024	822	NR ⁽⁴⁾	46	48	88.0	822	NR ⁽⁴⁾	30	45	88.0	1,558	1,558	21,007,690	41
12/10/2024	825	NR ⁽⁴⁾	46	45	88.0	822	NR ⁽⁴⁾	30	44	88.0	1,573	1,573	21,747,302	52

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Table 1A
 Summary of Weekly Monitoring Data for 2024^(1,2)
 Building 96 Treatment System
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Date	SUPPLEMENTAL AIR TREATMENT SYSTEM		WEST RECHARGE BASINS			
	Influent Blower	Total System Effluent	North		South	
	Pressure (iwc)	Pressure (iwc)	Basin Water Height (ft)	Status ⁽³⁾ (On/Off)	Basin Water Height (ft)	Status ⁽³⁾ (On/Off)
1/11/2024	-3.0	5.0	5.0	On	5.9	On
2/27/2024	-4.5	5.0	4.5	On	4.0	On
3/18/2024	-3.0	5.0	3.9	On	5.6	On
4/16/2024	-3.0	6.0	3.9	On	5.0	On
5/7/2024	-3.0	6.0	5.0	On	7.3	On
6/12/2024	-3.0	5.6	4.9	On	5.4	On
7/18/2024	-3.0	5.4	4.0	On	5.0	On
8/15/2024	-3.0	5.0	5.0	On	7.0	On
9/5/2024	-3.0	5.0	4.0	On	5.0	On
10/9/2024	-2.4	5.0	5.0	On	6.0	On
11/12/2024	-4.0	5.0	4.0	On	6.0	On
12/10/2024	-4.0	5.0	4.0	On	6.0	On

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Table 1A
Summary of Weekly Monitoring Data for 2024^(1,2)
Building 96 Treatment System
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

⁽¹⁾ Operational data collected weekly by Northrop Grumman and supplemented by monthly Arcadis measurements, as needed. For clarity, data shown is considered to be representative of monthly conditions collected during a single weekly Northrop Grumman site visit or monthly Arcadis visit.

⁽²⁾ Instantaneous values from field-mounted instruments, except otherwise noted.

⁽³⁾ Status indicates if the basin was accepting water (on) or not accepting water (off).

⁽⁴⁾ The Sparling flow meters at Well 1 and Well 3R were replaced with magnetic flow meters in August 2024. The magnetic flow meters do not have a totalizer reading displayed for manual readings. Therefore, instantaneous totalizer readings from the flow meter are no longer collected at Well 1 and Well 3R. SCADA used for totalizing flow volumes.

°F	degrees Fahrenheit
Amps	amperes
cfm	cubic feet per minute
ft	feet
gal	gallons
gpm	gallons per minute
Hz	hertz
iwc	inches of water column
min	minutes
psig	pounds per square inch, gauge
scfm	standard cubic feet per minute
NA	Not Available
NC	Not Calculated
NR	Not Recorded
SCADA	Supervisory Control and Data Acquisition
SPDES	State Pollutant Discharge Elimination System
VFD	Variable Frequency Drive

Table 1B
Summary of Weekly Monitoring Data for 2024^(1,2)
Building 102 Treatment System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Date	WELL 17			WELL 18				WELL 19				
	Extracted Groundwater		VFD	Extracted Groundwater		VFD	Extracted Groundwater		VFD			
	Flow Meter Rate (gpm)	Totalizer (x1000) (gal)	Pressure (psig)	Frequency (Hz)	Flow Meter Rate (gpm)	Totalizer (x1000) (gal)	Pressure (psig)	Frequency (Hz)	Flow Meter Rate (gpm)	Totalizer (x1000) (gal)	Pressure (psig)	Frequency (Hz)
1/11/2024	1,004	4,552,231	56	51.7	1,010	3,618,583	64	51.9	511	1,644,698	64	43.8
2/27/2024	1,000	4,619,227	56	51.7	1,008	3,684,650	64	51.7	515	1,679,194	50	43.8
3/18/2024	1,001	4,647,126	56	51.4	1,009	3,713,026	63	51.6	510	1,694,067	64	43.5
4/16/2024	1,003	4,688,717	57	51.4	1,008	3,753,753	64	51.5	512	1,715,284	64	43.5
5/7/2024	1,002	4,718,474	57	51.3	1,010	3,782,904	62	51.4	507	1,730,452	64	43.5
6/12/2024	1,003	4,770,458	57	51.3	1,009	3,833,777	62	51.5	511	1,757,017	64	43.5
7/18/2024	1,001	4,821,988	56	51.4	1,009	3,884,283	62	51.6	512	1,793,337	65	43.5
8/15/2024	1,002	4,862,322	57	51.4	1,012	3,923,761	62	51.6	512	1,803,953	64	43.5
9/5/2024	1,001	4,892,763	58	51.4	1,009	3,953,550	64	51.3	508	1,819,501	64	43.5
10/9/2024	1,002	4,941,045	58	51.5	1,009	4,000,961	63	51.4	510	1,844,160	64	43.5
11/12/2024	1,002	4,989,991	57	51.5	1,003	4,046,642	63	51.4	512	1,864,971	64	43.5
12/10/2024	1,002	5,030,408	58	51.6	1,009	4,088,481	64	51.6	509	1,885,622	64	43.5

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Table 1B
Summary of Weekly Monitoring Data for 2024^(1,2)
Building 102 Treatment System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Date	AIR STRIPPER					HEAT EXCHANGER			
	Influent Water Flow				Ambient Influent Air Temperature (°F)	Air Inlet Temperature (°F)	Steam Inlet Pressure (psig)	Air Outlet Temperature (°F)	Calculated Differential Between Inlet Air and Outlet Air Temperatures (°F)
	Flow Meter Rate (gpm)	Totalizer (x1000) (gal)	Influent Water Temperature (°F)	Influent Water Pressure (psig)					
1/11/2024	2,498	117,054,062	59	30	45	60	15	80	20
2/27/2024	2,498	118,751,490	60	30	50	60	45	80	20
3/18/2024	2,493	119,464,846	60	30	53	60	48	80	20
4/16/2024	2,490	120,525,364	60	30	52	60	54	80	20
5/7/2024	2,481	121,262,035	60	30	60	60	48	80	20
6/12/2024	2,485	122,564,479	60	30	67	60	48	80	20
7/18/2024	2,467	123,849,960	60	30	75	60	56	80	20
8/15/2024	2,473	124,853,944	61	30	67	60	25	80	20
9/5/2024	2,474	125,614,144	60	30	69	60	10	80	20
10/9/2024	2,473	126,820,517	60	30	55	60	31	80	20
11/12/2024	2,460	127,997,448	61	30	50	60	31	80	20
12/10/2024	2,462	129,003,577	60	30	47	60	32	80	20

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Table 1B
Summary of Weekly Monitoring Data for 2024^(1,2)
Building 102 Treatment System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Date	PROCESS BLOWER TO RVPGAC TREATMENT UNITS				CONDENSER				AIR COMPRESSOR
	Blower Influent Pressure (iwc)	VIV Position (% open)	Blower Effluent Pressure (iwc)	Calculated Blower Static Pressure (iwc)	Cooling Water			Condensed Steam Water	Delivery Pressure (psig)
					Influent Temperature ⁽³⁾ (°F)	Effluent Temperature (°F)	Calculated Temperature Increase (°F)	Decanter Vent Temperature (°F)	
1/11/2024	8	100	22	14	48	105	57	85	102
2/27/2024	8	100	23	15	60	105	45	90	102
3/18/2024	8	100	23	15	58	110	52	94	100
4/16/2024	8	100	23	15	62	112	50	97	85
5/7/2024	8	100	22	14	66	90	24	75	95
6/12/2024	8	100	23	15	73.5	95	22	80	95
7/18/2024	8	100	22	14	60	100	40	85	95
8/15/2024	9	75	23	14	60	95	35	80	110
9/5/2024	8	70	22	14	60	80	20	80	95
10/9/2024	8	75	23	15	60	73	13	79	90
11/12/2024	8	75	25	17	59	80	21	86	110
12/10/2024	8	75	24	16	57	75	18	75	100

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Table 1B
 Summary of Weekly Monitoring Data for 2024^(1,2)
 Building 102 Treatment System
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Date	T102 VAPOR DISCHARGE		T102 WEIR		FORCE MAIN	REGENERATIVE VAPOR PHASE TREATMENT UNITS					
	Effluent Treated Vapor		Effluent Treated Groundwater			Desorb					
	Flow (cfm)	Temperature (°F)	Flow Meter Rate (gpm)	Totalizer (x1000) (gal)	Distribution System Pressure (psig)	Desorb Bed (A/B)	Time Into Cycle (min)	Influent Steam Pressure (psig)	Influent Steam Temperature (°F)	Desorb Bed Temperature (°F)	Effluent Steam Temperature (°F)
1/11/2024	7,397	90	2,419	22,968	70	B	405	3.5	239	174	200
2/27/2024	7,450	90	2,453	24,599	72	B	320	3.5	242	170	200
3/18/2024	7,370	90	1,157	25,004	69	B	265	3.5	245	167	200
4/16/2024	7,400	90	2,436	25,895	72	B	552	3.5	240	166	200
5/7/2024	8,080	80	2,428	26,607	73	A	409	3.5	245	171	200
6/12/2024	8,050	80	2,412	27,861	71	A	454	3.5	247	170	200
7/18/2024	8,000	88	1,263	29,088	67	A	498	3.5	241	170	200
8/15/2024	7,310	90	2,390	29,976	68	B	532	3.5	246	162	200
9/5/2024	7,830	88	2,634	30,743	69	A	313	3.5	246	160	200
10/9/2024	7,900	82	2,613	31,948	69	A	465	3.5	246	170	200
11/12/2024	8,010	78	2,657	33,201	70	A	1560	3.5	242	165	200
12/10/2024	7,220	90	2,644	34,268	66	B	436	3.5	240	166	200

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Table 1B
Summary of Weekly Monitoring Data for 2024^(1,2)
Building 102 Treatment System
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

⁽¹⁾ Operational data collected weekly by Northrop Grumman and supplemented by monthly Arcadis measurements, as needed. For clarity, data shown is considered to be representative of monthly conditions collected during a single weekly Northrop Grumman site visit or monthly Arcadis visit.

⁽²⁾ Instantaneous values from field-mounted instruments, except otherwise noted.

⁽³⁾ Measurement collected with infrared temperature gun.

⁽⁴⁾ Status indicates if the basin was accepting water (on) or not accepting water (off).

⁽⁵⁾ RW-21 system start-up testing was initiated in May 2023, and continuing with full-scale operation beginning in August 2023. As such, flow volumes to the south recharge basins are representative of volumes from the Building 102 and Building 109 treatment systems since RW-21 system start-up.

°F	degrees Fahrenheit
ft	feet
gal	gallons
gpm	gallons per minute
Hz	hertz
iwc	inches of water column
min	minutes
psig	pounds per square inch, gauge
scfm	standard cubic feet per minute
NA	Not Available
NC	Not Calculated
NR	Not Recorded
RVPGAC	Regenerative Vapor Phase Granular Activated Carbon
SCADA	Supervisory Control and Data Acquisition
SPDES	State Pollutant Discharge Elimination System
T102	Tower 102
VFD	Variable Frequency Drive
VIV	Variable Influent Vane

Table 2
Summary of Maintenance for 2024
Building 96 and Building 102 Treatment Systems
Operable Unit 2
Northrop Grumman
Bethpage, New York



Date Completed	Maintenance Item ⁽¹⁾	Description/Comments
02/13/24	Well 17	VFD failure and replacement.
02/22/24	Building 96	Replaced GAC in the lead and lag exterior units.
3/2/24 - 3/25/24	Tower 96	Wireless radio communication issues between the Remedial Well 1 and 3R wellhouses and the treatment plant (Building 96). Northrop Grumman's contractor replaced the Well 1 and 3R wireless radios and the antenna on Building 96. Troubleshooting and repair efforts were conducted progressively due to the intermittent nature of the communications issues. Remedial well wireless radios were replaced initially, followed by the Building 96 antenna solving the radio communication issue. In each iteration, new replacement parts were ordered and installed safely with proper equipment. In the case of Building 96, the existing antenna assembly was replaced by two new antennas to provide more resilient communications.
03/07/24	Well 17	VFD failure and maintenance, the VFD filters were cleaned.
4/18/24 - 4/30/24	Well 1	Flow meter failure and replacement.
07/17/24	Building 96	Replaced GAC in the lead and lag exterior units.
8/7/24 - 8/17/24	Well 1/3R	The Sparling flow meters at Well 1 and Well 3R were replaced with magnetic flow meters.
8/15/24 - 9/10/24	Building 102	Boilers were repaired.
09/17/24	Building 102	Air compressor maintenance.
10/24/24 - 10/25/24	Well 19	Communication failure and associated repairs.
11/1/24 - 11/6/24	Well 19	PLC and radio communications issues (and associated troubleshooting and repairs) between the Remedial Well 19 wellhouse and the treatment plant (Building 102). The PLC and radio were rebooted which resolved the issue.

Notes and Abbreviations:

⁽¹⁾ Maintenance items were recorded based on Arcadis observations of the treatment systems during routine weekly or quarterly site visits and does not necessarily include all downtime associated with each maintenance item.

RVPGAC	Regenerative Vapor Phase Granular Activated Carbon
SCADA	Supervisory Control and Data Acquisition
VFD	Variable Frequency Drive
ONCT	On-Site Containment System
NG	Northrop Grumman Systems Corporation
RVPGAC	Regenerative Vapor Phase Granular Activated Carbon

Table 3
Operational Summary for the ONCT System
Fourth Quarter and Annual 2024⁽¹⁾ Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York

	Fourth Quarter Flow Rates (gpm)		Fourth Quarter Flow Volumes (MG)			Annual Flow Volumes (MG)		
	Current Model Design ⁽²⁾	Current Operational Flow ^(3,4)	Design ⁽²⁾	Actual ^(3,4)	% of Design	Design ⁽²⁾	Actual ^(3,4)	% of Design
Influent Groundwater⁽⁷⁾								
Well 1	800	821	106	109	103%	422	386	91%
Well 3R	700	825	93	109	117%	369	391	106%
Well 17	1,000	1,010	132	133	101%	527	528	100%
Well 18	800	1,004	106	132	125%	422	523	124%
Well 19	500	506	66	62	94%	264	260	98%
Total ⁽⁸⁾	3,800	4,166	503	545	108%	2,004	2,088	104%
Effluent Groundwater ⁽⁹⁾								
Calpine	100 - 400	26	--	3	--	--	66	--
OXY Biosparge ⁽¹⁰⁾	2 - 42	0	--	0	--	--	0	--
West Recharge Basins	1,112 - 1,455	1,500	--	199	--	--	653	--
South Recharge Basins (Building 102)	2231 - 4631	2,520	296 - 607	328	--	--	1,311	--
South Recharge Basins (Building 109)	1,500	1,794	199	244	--	--	951	--
South Recharge Basins (Combined)	2231 - 4631	4,314	495 - 806	572	--	--	2,262	--
Total	--	5,840	--	774	--	--	2,981	--
Additional Flow to South Recharge Basins								
Storm Water Runoff Contributing to South Recharge Basins Flow Volume ⁽¹¹⁾	--	--	--	18	--	--	95	--
Total Flow Volume to South Recharge Basins ^(10,11,12)	--	--	495 - 806	346	--	--	2,357	--
Treatment System								
Building 96 System:	Treatment System Efficiencies ⁽¹³⁾							
	>99.9%							
Building 102 System:	>99.9%							

See Notes and Abbreviations on last page.

Table 3
Operational Summary for the ONCT System
Fourth Quarter and Annual 2024⁽¹⁾ Reporting Period
Operable Unit 2
Northrop Grumman
Bethpage, New York



	Fourth Quarter VOC Concentrations (µg/L)		VOC Mass Removed (lbs)				Fourth Quarter Remedial Well Uptime (%)	Annual Remedial Well Uptime (%)
	TCE ⁽⁵⁾	TVOC ^(5,6)	Fourth Quarter	Annual	Percent of Annual Mass Removal	Cumulative		
Influent Groundwater⁽⁷⁾								
Well 1	394	417	380	1,299	44%	59,893	100%	90%
Well 3R	144	200	182	729	25%	96,073	100%	91%
Well 17	117	134	149	582	20%	57,408	99%	95%
Well 18	23.7	45.0	50	193	7%	7,909	99%	99%
Well 19	46.7	59.6	31	146	5%	10,014	93%	97%
Total⁽⁸⁾	--	--	792	2,949	100%	231,297	--	--
Effluent Groundwater⁽⁹⁾								
Calpine	--	--	--	--	--	--	--	--
OXY Biosparge ⁽¹⁰⁾	--	--	--	--	--	--	--	--
West Recharge Basins	--	--	--	--	--	--	--	--
South Recharge Basins (Building 102)	--	--	--	--	--	--	--	--
South Recharge Basins (Building 109)	--	--	--	--	--	--	--	--
South Recharge Basins (Combined)	--	--	--	--	--	--	--	--
Total	--	--	--	--	--	--	--	--
Additional Flow to South Recharge Basins								
Storm Water Runoff Contributing to South Recharge Basins Flow Volume ⁽¹¹⁾	--	--	--	--	--	--	--	--
Total Flow Volume to South Recharge Basins^(10,11,12)	--	--	--	--	--	--	--	--
Treatment System							Treatment System Uptimes (%)	
Building 96 System:							99.9%	93.9%
Building 102 System:							99.4%	98.6%

See Notes and Abbreviations on last page.

Notes and Abbreviations:

- (1) Quarterly reporting period: October 1, 2024 through December 31, 2024. Annual reporting period: January 1, 2024 through December 31, 2024.
 - (2) "Current Model Design" flow rates were determined for the five remedial wells and for the South Recharge Basin based on computer modeling (ARCADIS G&M, Inc. 2002, updated in 2021 and 2023). Flow rates for Calpine Power Plant (Calpine), Occidental Chemical (OXY) Biosparge, and West Recharge Basin flow rates are typical flow rates and are provided for reader information. Flow to SRB reflects operation of the B109 treatment system. High-end of range reflects up to a 2,400 gpm contribution from B109 (RW-21 and DEC-EX-06). Model simulations demonstrated ONCT capture zone maintained for SRB discharge rates within range. "Design" flow volumes represent the volume of water that is expected to be pumped/discharged during the reporting period and is calculated by multiplying the design rate by the reporting period duration.
 - (3) Actual flow rates for the remedial wells represent the average actual pumping rates when the pumps are operational and do not take into account the time that a well is not operational. Actual flow volumes are collated from the monthly SPDES reports, which are calculated using the SCADA instantaneous flow rates transmitted from local flow meters.
 - (4) "Actual" flow rates for the system discharges represent the average flow rate during the reporting period and are determined by dividing the total flow recorded during the reporting period by the reporting period duration.
 - (5) The TCE and TVOC concentrations are from the quarterly sampling events performed during this reporting period on November 12, 2024.
 - (6) The TVOC concentrations for the West Recharge Basin (Outfall 006 of the Building 96 System) and the South Recharge Basin (Outfall 005 of the Building 102 System) are their respective average monthly Outfall SPDES concentrations for the current quarter.
 - (8) Total pumpage/recharge rates are accurate to ±15% based on available information and expected or typical precision/accuracy factors for the gauges and meters.
 - (9) There are four possible discharges for the effluent groundwater: South Recharge Basins, West Recharge Basins, Calpine, and the OXY Biosparge system. Treated water is continuously discharged to the south and west recharge basins during routine operation, and is available "on-demand" to both Calpine for use as make-up water, and the OXY Biosparge remediation system. For this quarter, the quarterly flow rates to the south and west recharge basins (SRB and WRB, respectively) were calculated using the remedial well flow rates and available additional information and assumptions provided by Northrop Grumman regarding flow distribution, as follows: the Building 96 system (Remedial Wells 1 and 3R) discharges effluent water to the WRB, less Calpine usage and less 119 gpm of Building 102 steam condenser usage (15.8 MG); the Building 102 System (Remedial Wells 17 through 19), including the Building 102 steam condenser usage (15.8 MG), and the Building 109 System (Remedial Wells 20 through 22) discharge effluent water to the SRB.
 - (10) Oxy has not reported any water usage for the OXY Biosparge system since May 2016.
 - (11) Storm water runoff volume is calculated by multiplying the adjusted tributary area and NOAA precipitation data for the reporting periods. The tributary area is adjusted by the runoff coefficient to exclude the infiltration volume from the total rainfall volume. The tributary area, runoff coefficient, and adjusted tributary area are from Dvirka and Bartilucci Consulting Engineers' Storm Water Permit Evaluation Report (January, 28, 2010). The NOAA precipitation data are calculated as a sum of NOAA daily precipitation data for the reporting period. NOAA precipitation data are retrieved from Station GHCND:USW00054787 - FARMINGDALE REPUBLIC AIRPORT, NY US for October, November, and December 2024.
 - (12) Total flow volume to South Recharge Basins is estimated as a sum of flow volumes contributed by the effluent groundwater to South Recharge Basins (B102 and B109 treatment systems) and from storm water runoff to South Recharge Basins. Fourth Quarter 2024 calculated South Recharge Basin flow volume is within historical operating range.
 - (13) Treatment system efficiencies are calculated by dividing the difference between the remedial well flow weighted influent and effluent TVOC concentrations by the remedial well flow weighted influent concentration.
- Not Applicable
- µg/L micrograms per liter
- gpm gallons per minute
- lbs pounds
- MG million gallons
- NOAA National Oceanic and Atmospheric Administration
- ONCT On-Site Containment and Treatment
- SCADA Supervisory Controls and Data Acquisition
- SPDES State Pollution Discharge Elimination System
- TCE trichloroethene
- TVOC total volatile organic compounds
- VOC volatile organic compounds

Table 4
Summary of Volatile Organic Compounds and
1,4-Dioxane in 2024 Remedial Well Influent and
Treatment System Effluent
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents ⁽¹⁾ (units in µg/L)	Location ID:	WELL 1	WELL 1	WELL 1	WELL 1
	Sample ID:	WELL 1	WELL 1	WELL 1	WELL 1
	Sample Date:	2/27/2024	5/14/2024	8/28/2024	11/12/2024
<u>Volatile Organic Compounds (VOCs)⁽²⁾</u>	NYSDEC SCGs ⁽³⁾				
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	0.70 J	0.86 J	<1.0	0.71 J
1,1-Dichloroethene	5	1.6	0.97 J	0.83 J	2.2
1,2-Dichloroethane	5	<1.0	<1.0	2.2	<1.0
1,2-Dichloropropane	5	2.4	2.4	<1.0	2.1
2-Butanone (MEK)	50	<10	<10	2.7	<10
2-Hexanone (MBK)	50	<5.0	<5.0	<10	<5.0
4-methyl-2-pentanone (MIK)	50	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10
Benzene	1	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	5.9	5.8	6.4	5.7
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	5	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	<2.0	<2.0	<2.0	<2.0
Styrene	5	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	13.4	10.8	10.7	10.3
Toluene	5	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Trichloroethylene	5	349	446	432	394
Trichlorotrifluoroethane (Freon 113)	5	1.1 J	1.7 J	1.6 J	2.3 J
Vinyl Chloride	2	<1.0	<1.0	<1.0	<1.0
Xylene-o	5	<1.0	<1.0	<1.0	<1.0
Xylene-m,p	5	<1.0	<1.0	<1.0	<1.0
Total VOCs⁽⁴⁾		374	469	456	417
1,4-Dioxane⁽²⁾	NS	6.2	6.4	5.2	9.4

Notes and Abbreviations on last page

Table 4
Summary of Volatile Organic Compounds and
1,4-Dioxane in 2024 Remedial Well Influent and
Treatment System Effluent
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents ⁽¹⁾ (units in µg/L)	Location ID: Sample ID: Sample Date:	WELL 3R WELL 3R 2/27/2024	WELL 3R REP-022724-PD-1 2/27/2024	WELL 3R WELL 3R 5/14/2024	WELL 3R REP-051424-PD-1 5/14/2024
<u>Volatile Organic Compounds (VOCs)⁽²⁾</u>	NYSDEC SCGs ⁽³⁾				
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,1,2,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	1.5	1.4	1.4	1.4
1,1-Dichloroethene	5	5.0	4.2	5.1	4.8
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10
2-Hexanone (MBK)	50	<5.0	<5.0	<5.0	<5.0
4-methyl-2-pentanone (MIK)	50	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10
Benzene	1	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	3.3	3.2	3.4	3.5
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	5	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	<2.0	<2.0	<2.0	<2.0
Styrene	5	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	48.6	48.6	44.8	42.5
Toluene	5	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Trichloroethylene	5	158	154	178	175
Trichlorotrifluoroethane (Freon 113)	5	1.9 J	2.1 J	2.4 J	2.0 J
Vinyl Chloride	2	1.8	1.6	1.7	1.5
Xylene-o	5	<1.0	<1.0	<1.0	<1.0
Xylene-m,p	5	<1.0	<1.0	<1.0	<1.0
Total VOCs⁽⁴⁾		220	215	237	231
1,4-Dioxane⁽²⁾	NS	6.5	7.0	7.3	8.2

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Table 4
Summary of Volatile Organic Compounds and
1,4-Dioxane in 2024 Remedial Well Influent and
Treatment System Effluent
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents ⁽¹⁾ (units in µg/L)	Location ID:	WELL 3R	WELL 3R	WELL 3R
	Sample ID:	WELL 3R	WELL 3R	REP-111224-PD-1
	Sample Date:	8/28/2024	11/12/2024	11/12/2024
<u>Volatile Organic Compounds (VOCs)⁽²⁾</u>	NYSDEC SCGs ⁽³⁾			
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	5	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	1.4	1.3
1,1-Dichloroethene	5	1.5	4.1	4.1
1,2-Dichloroethane	5	4.5	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<1.0	<10	<10
2-Hexanone (MBK)	50	<10	<5.0	<5.0
4-methyl-2-pentanone (MIK)	50	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10
Benzene	1	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0
Chloroform	7	0.50 J	0.55 J	<1.0
Chloromethane	5	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	3.8	3.6	3.5
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0
Dibromochloromethane	5	<1.0	<1.0	<1.0
Ethylbenzene	5	<1.0	<1.0	<1.0
Methylene Chloride	5	<2.0	<2.0	<2.0
Styrene	5	<1.0	<1.0	<1.0
Tetrachloroethene	5	47.1	42.8	41.8
Toluene	5	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0
Trichloroethylene	5	173	144	143
Trichlorotrifluoroethane (Freon 113)	5	2.3 J	1.9 J	1.8 J
Vinyl Chloride	2	1.3	1.8	1.6
Xylene-o	5	<1.0	<1.0	<1.0
Xylene-m,p	5	<1.0	<1.0	<1.0
Total VOCs⁽⁴⁾		234	200	197
1,4-Dioxane⁽²⁾	NS	7.0	11.0	12.0

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Table 4
Summary of Volatile Organic Compounds and
1,4-Dioxane in 2024 Remedial Well Influent and
Treatment System Effluent
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents ⁽¹⁾ (units in µg/L)	Location ID:	96 EFFLUENT	96 EFFLUENT	96 EFFLUENT	96 EFFLUENT
	Sample ID:	96 EFFLUENT	96 EFFLUENT	96 EFFLUENT	96 EFFLUENT
	Sample Date:	2/27/2024	5/14/2024	8/28/2024	11/12/2024
<u>Volatile Organic Compounds (VOCs)⁽²⁾</u>	NYSDEC SCGs ⁽³⁾				
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10
2-Hexanone (MBK)	50	<5.0	<5.0	<10	<5.0
4-methyl-2-pentanone (MIK)	50	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10
Benzene	1	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	5	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	<2.0	<2.0	<2.0	<2.0
Styrene	5	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	<1.0	<1.0	<1.0	<1.0
Toluene	5	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Trichloroethylene	5	<1.0	<1.0	<1.0	<1.0
Trichlorotrifluoroethane (Freon 113)	5	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride	2	<1.0	<1.0	<1.0	<1.0
Xylene-o	5	<1.0	<1.0	<1.0	<1.0
Xylene-m,p	5	<1.0	<1.0	<1.0	<1.0
Total VOCs⁽⁴⁾		ND	ND	ND	ND
1,4-Dioxane⁽²⁾	NS	6.6	6.9	5.9	11.0

Notes and Abbreviations on last page

Table 4
Summary of Volatile Organic Compounds and
1,4-Dioxane in 2024 Remedial Well Influent and
Treatment System Effluent
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents ⁽¹⁾ (units in µg/L)	Location ID:	WELL 17	WELL 17	WELL 17	WELL 17
	Sample ID:	WELL 17	WELL 17	WELL 17	WELL 17
	Sample Date:	2/27/2024	5/14/2024	9/10/2024	11/12/2024
<u>Volatile Organic Compounds (VOCs)⁽²⁾</u>	NYSDEC SCGs ⁽³⁾				
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	5	0.91 J	0.74 J	<1.0	0.88 J
1,2-Dichloroethane	5	<1.0	<1.0	0.72 J	<1.0
1,2-Dichloropropane	5	<1.0	1.0	<1.0	0.90 J
2-Butanone (MEK)	50	<10	<10	0.79 J	<10
2-Hexanone (MBK)	50	<5.0	<5.0	<10	<5.0
4-methyl-2-pentanone (MIK)	50	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10
Benzene	1	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	2.0	2.3	1.9	2.3
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	5	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	<2.0	<2.0	<2.0	<2.0
Styrene	5	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	13.3	10.7	10.7	11.3
Toluene	5	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Trichloroethylene	5	115	118	111	117
Trichlorotrifluoroethane (Freon 113)	5	1.2 J	1.4 J	1.2 J	1.2 J
Vinyl Chloride	2	<1.0	<1.0	<1.0	<1.0
Xylene-o	5	<1.0	<1.0	<1.0	<1.0
Xylene-m,p	5	<1.0	<1.0	<1.0	<1.0
Total VOCs⁽⁴⁾		132	134	126	134
1,4-Dioxane⁽²⁾	NS	6.4	7.0	6.4	8.7

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Table 4
Summary of Volatile Organic Compounds and
1,4-Dioxane in 2024 Remedial Well Influent and
Treatment System Effluent
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents ⁽¹⁾ (units in µg/L)	Location ID:	WELL 18	WELL 18	WELL 18	WELL 18
	Sample ID:	WELL 18	WELL 18	WELL 18	WELL 18
	Sample Date:	2/27/2024	5/14/2024	9/10/2024	11/12/2024
<u>Volatile Organic Compounds (VOCs)⁽²⁾</u>	NYSDEC SCGs ⁽³⁾				
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,1,2,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	1.4	1.4	<1.0	1.4
1,1-Dichloroethene	5	2.1	0.69 J	1.2	1.9
1,2-Dichloroethane	5	<1.0	<1.0	1.6	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<1.0	<10
2-Hexanone (MBK)	50	<5.0	<5.0	<10	<5.0
4-methyl-2-pentanone (MIK)	50	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10
Benzene	1	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	2.1	2.4	2.0	2.3
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	5	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	<2.0	<2.0	<2.0	<2.0
Styrene	5	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	16.9	14.3	13.8	14.9
Toluene	5	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Trichloroethylene	5	24.6	22.2	22.1	23.7
Trichlorotrifluoroethane (Freon 113)	5	0.62 J	0.96 J	<5.0	0.68 J
Vinyl Chloride	2	<1.0	<1.0	<1.0	<1.0
Xylene-o	5	<1.0	<1.0	<1.0	<1.0
Xylene-m,p	5	<1.0	<1.0	<1.0	<1.0
Total VOCs⁽⁴⁾		47.7	42.0	40.7	44.9
1,4-Dioxane⁽²⁾	NS	4.2	4.9	4.4	6.6

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Table 4
Summary of Volatile Organic Compounds and
1,4-Dioxane in 2024 Remedial Well Influent and
Treatment System Effluent
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents ⁽¹⁾ (units in µg/L)	Location ID: Sample ID: Sample Date:	WELL 19 WELL 19 2/27/2024	WELL 19 WELL 19 5/14/2024	WELL 19 WELL 19 9/10/2024	WELL 19 REP-091024-1 9/10/2024
<u>Volatile Organic Compounds (VOCs)⁽²⁾</u>	NYSDEC SCGs ⁽³⁾				
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	5	0.79 J	1.1	0.67 J	0.78 J
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10
2-Hexanone (MBK)	50	<5.0	<5.0	<5.0	<5.0
4-methyl-2-pentanone (MIK)	50	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10
Benzene	1	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	8.1	8.0	6.4	6.2
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	5	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	<2.0	<2.0	<2.0	<2.0
Styrene	5	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	5.6	4.8	4.6	4.6
Toluene	5	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Trichloroethylene	5	61.8	58.7	48.6	48.2
Trichlorotrifluoroethane (Freon 113)	5	0.79 J	0.94 J	0.81 J	0.67 J
Vinyl Chloride	2	<1.0	<1.0	<1.0	<1.0
Xylene-o	5	<1.0	<1.0	<1.0	<1.0
Xylene-m,p	5	<1.0	<1.0	<1.0	<1.0
Total VOCs⁽⁴⁾		77.1	73.5	61.1	60.5
1,4-Dioxane⁽²⁾	NS	3.5	3.2	3.2	2.9

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Table 4
Summary of Volatile Organic Compounds and
1,4-Dioxane in 2024 Remedial Well Influent and
Treatment System Effluent
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents ⁽¹⁾ (units in µg/L)	Location ID:	102 EFFLUENT	102 EFFLUENT	102 EFFLUENT	102 EFFLUENT
	Sample ID:	102 EFFLUENT	102 EFFLUENT	102 EFFLUENT	102 EFFLUENT
	Sample Date:	2/27/2024	5/14/2024	9/10/2024	11/12/2024
<u>Volatile Organic Compounds (VOCs)⁽²⁾</u>	NYSDEC SCGs ⁽³⁾				
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10
2-Hexanone (MBK)	50	<5.0	<5.0	<5.0	<5.0
4-methyl-2-pentanone (MIK)	50	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10
Benzene	1	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	5	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	<2.0	<2.0	<2.0	<2.0
Styrene	5	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	<1.0	<1.0	<1.0	<1.0
Toluene	5	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0
Trichloroethylene	5	<1.0	<1.0	<1.0	<1.0
Trichlorotrifluoroethane (Freon 113)	5	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride	2	<1.0	<1.0	<1.0	<1.0
Xylene-o	5	<1.0	<1.0	<1.0	<1.0
Xylene-m,p	5	<1.0	<1.0	<1.0	<1.0
Total VOCs⁽⁴⁾		ND	ND	ND	ND
1,4-Dioxane⁽²⁾	NS	4.7	4.6	5.6	8.0

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Table 4
Summary of Volatile Organic Compounds and
1,4-Dioxane in 2024 Remedial Well Influent and
Treatment System Effluent
Operable Unit 2
Northrop Grumman
Bethpage, New York



Notes and Abbreviations:

- ⁽¹⁾ Results for the program are validated at 20% frequency, per protocols specified in OU2 Groundwater Monitoring Plan (Arcadis 2016c).
- ⁽²⁾ VOC samples analyzed using USEPA Method 8260C. 1,4-Dioxane samples analyzed using USEPA Method 8270D-SIM-CLLE.
- ⁽³⁾ Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller, Inc. 2000) that are based on the NYSDEC TOGs (NYSDEC 1998); most stringent values are listed.
- ⁽⁴⁾ TVOC concentrations are rounded to the number of decimal places of the individual VOC with the least numerical precision (decimal place), including whole numbers with no decimal place.

	Compound detected in exceedance of NYSDEC SCG Criteria
2.4	Bold value indicates a detection
< 0.50	Compound is not detected above its laboratory quantification limit
µg/L	micrograms per liter
CLLE	Continuous Liquid-Liquid Extraction
J	Constituent value is estimated
ND	Not detected
NS	None Specified
NYSDEC	New York State Department of Conservation
OU2	Operable Unit 2
REP	blind replicate sample
TOGs	Technical and Operational Guidance Series
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

Table 5A
Influent, Mid-Effluent, and Effluent Air Concentrations for 2024⁽²⁾
Building 96 Treatment System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents (Units in µg/m ³)	Location ID:	96 INFLUENT	96 MID-EFFLUENT	96 EFFLUENT	96 INFLUENT	96 MID-EFFLUENT	96 EFFLUENT
	Sample ID:	96 INFLUENT 2/27/2024	96 MID-EFFLUENT 2/27/2024	96 EFFLUENT 2/27/2024	96 INFLUENT 5/14/2024	96 MID-EFFLUENT 5/14/2024	96 EFFLUENT 5/14/2024
Volatile Organic Compounds (VOCs)⁽¹⁾							
1,1,1-Trichloroethane		<22	<0.44	<0.44	<22	10	<2.2
1,1,2,2-Tetrachloroethane		<27	<0.55	<0.55	<27	<11	<2.7
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		103	<0.61	<0.61	113	150	<3.1
1,1,2-Trichloroethane		<22	<0.44	<0.44	<22	<8.7	<2.2
1,1-Dichloroethane		48.6	<0.65	0.45 J	40.9	63.5	2.0 J
1,1-Dichloroethene		118	<0.13	2.2	155	228	47.6
1,2-Dichloroethane		<32	<0.65	<0.65	<32	<13	<3.2
1,2-Dichloropropane		56.4	<0.74	<0.74	44	<15	<3.7
Benzene		<26	0.64	<0.51	<26	<10	<2.6
Bromodichloromethane		<27	<0.54	<0.54	<27	<11	<2.7
Bromoform		<17	<0.33	<0.33	<17	<6.6	<1.7
Bromomethane		<31	<0.62	<0.62	<31	<12	<3.1
Carbon Disulfide		<25	<0.50	<0.50	<25	<10	<2.5
Carbon Tetrachloride		<10	<0.20	<0.20	<10	<4.0	<1.0
Chlorobenzene		<37	<0.74	<0.74	<37	<15	<3.7
Chloroethane		<21	1.5	0.21 J	<21	<8.4	2.3
Chloroform		<39	<0.78	<0.78	<39	24	<3.9
Chloromethane		<17	1.1	1	<17	<6.6	1.3 J
cis-1,2-Dichloroethene		181	0.48	1.1	179	220	<0.63
cis-1,3-Dichloropropene		<36	<0.73	<0.73	<36	<15	<3.6
Dibromochloromethane		<34	<0.68	<0.68	<34	<14	<3.4
Ethylbenzene		<35	<0.69	<0.69	<35	<14	<3.5
Methylene Chloride		<28	1.0	<0.56	<28	<11	<2.8
Styrene		<34	<0.68	<0.68	<34	<14	<3.4
Tetrachloroethene		1,280	6.2	<0.22	1,130	<4.3	<1.1
Toluene		<30	1.2	<0.60	<30	<12	<3.0
trans-1,2-Dichloroethene		<32	<0.63	<0.63	<32	<13	<3.2
trans-1,3-Dichloropropene		<36	<0.73	<0.73	<36	<15	<3.6
Trichloroethene		15,400	52	127	17,700	2,210	33
Vinyl chloride		22	21	21	26.6	28.4	24
Xylene-o		<35	<0.69	<0.69	<35	<14	<3.5
Xylenes-m,p		<35	<0.69	<0.69	<35	<14	<3.5
Total VOCs⁽²⁾		17,209	85	153	19,389	2,934	110

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Table 5A
Influent, Mid-Effluent, and Effluent Air Concentrations for 2024⁽²⁾
Building 96 Treatment System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Location ID:	96 INFLUENT	96 MID-EFFLUENT	96 EFFLUENT	96 INFLUENT	96 MID-EFFLUENT	96 EFFLUENT
Sample ID:	96 INFLUENT	96 MID-EFFLUENT	96 EFFLUENT	96 INFLUENT	96 MID-EFFLUENT	96 EFFLUENT
Constituents (Units in µg/m ³)	8/28/2024	8/28/2024	8/28/2024	11/12/2024	11/12/2024	11/12/2024
Volatile Organic Compounds (VOCs)⁽¹⁾						
1,1,1-Trichloroethane	<28	<1.1	<0.44	<28	<29	6.5
1,1,2,2-Tetrachloroethane	<35	<1.4	<0.55	<36	<37	<2.7
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	77.4	16	<0.61	85.1	131	179
1,1,2-Trichloroethane	<28	<1.1	<0.44	<28	<29	<2.2
1,1-Dichloroethane	47.8	24	<0.65	47.0	64.4	138
1,1-Dichloroethene	107	90.8	0.44	128	162	300
1,2-Dichloroethane	<40	<1.6	<0.65	<40	<45	2.4 J
1,2-Dichloropropane	47.6	<1.8	<0.74	42 J	38 J	<3.7
Benzene	<32	<1.3	<0.51	<32	<35	<2.6
Bromodichloromethane	<34	<1.3	<0.54	<35	<36	<2.7
Bromoform	<21	<0.83	<0.33	<22	<23	<1.7
Bromomethane	<39	<1.6	<0.62	<39	<43	<3.1
Carbon Disulfide	<31	<1.2	<0.50	<31	<34	<2.5
Carbon Tetrachloride	<13	<0.50	<0.20	<13	<14	<1.0
Chlorobenzene	<46	<1.8	<0.74	<46	<51	<3.7
Chloroethane	<26	1.8	1.8	<26	<29	2.9
Chloroform	<49	5.4	<0.78	<49	<54	42
Chloromethane	<21	0.83	0.85	<21	<23	1.1 J
cis-1,2-Dichloroethene	189	56.7	<0.13	204	303	416
cis-1,3-Dichloropropene	<45	<1.8	<0.73	<45	<50	<3.6
Dibromochloromethane	<43	<1.7	<0.68	<44	<46	<3.4
Ethylbenzene	<43	<1.7	<0.69	<43	<48	<3.5
Methylene Chloride	<35	<1.4	1.8	<35	<38	4.9
Styrene	<43	<1.7	<0.68	<43	<47	<3.4
Tetrachloroethene	1,150	13	1.0	1,020	<15	<1.1
Toluene	<38	<1.5	0.64	<38	<41	<3.0
trans-1,2-Dichloroethene	<40	<1.6	<0.63	<40	<44	4.4
trans-1,3-Dichloropropene	<45	<1.8	<0.73	<45	<50	<3.6
Trichloroethene	12,800	287	7.5	12,200	14,100	506
Vinyl chloride	19	20	19	22	25	35.3
Xylene-o	<43	<1.7	<0.69	<43	<48	<3.5
Xylenes-m,p	<43	<1.7	<0.69	<43	<48	<3.5
Total VOCs⁽²⁾	14,438	516	33	13,748	14,823	1,639

Notes and Abbreviations on last page

Table 5A
Influent, Mid-Effluent, and Effluent Air Concentrations for 2024^(1,2)
Building 96 Treatment System
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

⁽¹⁾ Vapor samples collected by Arcadis on the dates shown and submitted to a NYSDOH ELAP certified laboratory for VOC analyses per Modified USEPA Method TO-15.

⁽²⁾ TVOC concentrations are rounded to the number of decimal places of the individual VOC with the least numerical precision (decimal place), including whole numbers with no decimal place.

2.2	Bold value indicates a detection
R	The sample result has been rejected
D	Diluted sample analysis
J	Compound detected below its reporting limit; value is estimated
µg/m ³	Micrograms per cubic meter
mmHg	Millimeter of mercury
ELAP	Environmental Laboratory Approval Program
NYSDCE	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

Table 5B
Influent and Effluent Air Concentrations for 2024⁽¹⁾
Building 102 Treatment System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents (Units in µg/m ³)	Location ID:	102 INFLUENT	102 EFFLUENT	102 INFLUENT	102 EFFLUENT
	Sample ID:	102 INFLUENT 2/27/2024	102 EFFLUENT 2/27/2024	102 INFLUENT 5/14/2024	102 EFFLUENT 5/14/2024
<u>Volatile Organic Compounds (VOCs)⁽¹⁾</u>					
1,1,1-Trichloroethane		<4.4	1.5	<8.7	4.1
1,1,2,2-Tetrachloroethane		<5.5	<0.55	<11	<1.4
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		28	35	44	44
1,1,2-Trichloroethane		<4.4	<0.44	<8.7	<1.1
1,1-Dichloroethane		22	27	25	26
1,1-Dichloroethene		29	40	51.1	50.7
1,2-Dichloroethane		<6.5	0.31 J	<13	1.7
1,2-Dichloropropane		11	0.60 J	13 J	1.7 J
Benzene		<5.1	<0.51	<10	<1.3
Bromodichloromethane		<5.4	<0.54	<11	<1.3
Bromoform		<3.3	<0.33	<6.6	<0.83
Bromomethane		<6.2	<0.62	<12	<1.6
Carbon Disulfide		<5.0	<0.50	<10	<1.2
Carbon Tetrachloride		<2.0	0.82	<4.0	2.3
Chlorobenzene		<7.4	<0.74	<15	<1.8
Chloroethane		<4.2	<0.42	<8.4	<1.1
Chloroform		4.9 J	4	<16	6.3
Chloromethane		<3.3	0.93	<6.6	1.2
cis-1,2-Dichloroethene		88.0	36	105	112
cis-1,3-Dichloropropene		<7.3	<0.73	<15	<1.8
Dibromochloromethane		<6.8	<0.68	<14	<1.7
Ethylbenzene		<6.9	<0.69	<14	<1.7
Methylene Chloride		8.7	0.73	<11	1.6
Styrene		<6.8	<0.68	<14	<1.7
Tetrachloroethene		415	18	452	3.1
Toluene		<6.0	0.36 J	<12	<1.5
trans-1,2-Dichloroethene		<6.3	0.63	<13	1.3 J
trans-1,3-Dichloropropene		<7.3	<0.73	<15	<1.8
Trichloroethene		2,130	125	2,840	365
Vinyl chloride		<0.82	<0.082	<1.6	<0.20
Xylene-o		<6.9	<0.69	<14	<1.7
Xylenes-m,p		<6.9	<0.69	<14	<1.7
Total VOCs⁽²⁾		2,737	291	3,530	621

Notes and Abbreviations on last page

Table 5B
Influent and Effluent Air Concentrations for 2024⁽¹⁾
Building 102 Treatment System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents (Units in µg/m ³)	Location ID:	102 INFLUENT	102 EFFLUENT	102 INFLUENT	102 EFFLUENT
	Sample ID:	102 INFLUENT 9/10/2024	102 EFFLUENT 9/10/2024	102 INFLUENT 11/12/2024	102 EFFLUENT 11/12/2024
<u>Volatile Organic Compounds (VOCs)⁽¹⁾</u>					
1,1,1-Trichloroethane		<11	0.6	<11	6.0
1,1,2,2-Tetrachloroethane		<14	<0.55	<14	<2.7
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)		31	38	39	39
1,1,2-Trichloroethane		<11	<0.44	<11	<2.2
1,1-Dichloroethane		32	31	36	40
1,1-Dichloroethene		37	44.4	51.5	50.7
1,2-Dichloroethane		<16	<0.65	<16	2.1 J
1,2-Dichloropropane		18 J	<0.74	17 J	2.6 J
Benzene		<13	<0.51	<13	<2.6
Bromodichloromethane		<13	<0.54	<13	<2.7
Bromoform		<8.3	<0.33	<8.3	<1.7
Bromomethane		<16	<0.62	<16	<3.1
Carbon Disulfide		<12	<0.50	<12	<2.5
Carbon Tetrachloride		<5.0	<0.20	<5.0	3.1
Chlorobenzene		<18	<0.74	<18	<3.7
Chloroethane		<11	<0.42	<11	<2.1
Chloroform		<20	3.0	<20	8.8
Chloromethane		<8.3	0.64	<8.3	1.1 J
cis-1,2-Dichloroethene		138	21	141	161
cis-1,3-Dichloropropene		<18	<0.73	<18	<3.6
Dibromochloromethane		<17	<0.68	<17	<3.4
Ethylbenzene		<17	<0.69	<17	<3.5
Methylene Chloride		<14	1.5	<14	4.5
Styrene		<17	<0.68	<17	<3.4
Tetrachloroethene		773	1.9	594	2.5
Toluene		<15	<0.60	<15	<3.0
trans-1,2-Dichloroethene		<16	0.40 J	<16	1.9 J
trans-1,3-Dichloropropene		<18	<0.73	<18	<3.6
Trichloroethene		3,150	16	3,360	397
Vinyl chloride		<2.0	<0.082	<2.0	<0.41
Xylene-o		<17	<0.69	<17	<3.5
Xylenes-m,p		<17	<0.69	<17	<3.5
Total VOCs ⁽²⁾		4,179	158	4,239	720

Notes and Abbreviations on last page

Table 5B
Influent and Effluent Air Concentrations for 2024⁽¹⁾
Building 102 Treatment System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Notes and Abbreviations:

⁽¹⁾ Vapor samples collected by Arcadis on the dates shown and submitted to a NYSDOH ELAP certified laboratory for VOC analyses per Modified USEPA Method TO-15.

⁽²⁾ TVOC concentrations are rounded to the number of decimal places of the individual VOC with the least numerical precision (decimal place), including whole numbers with no decimal place.

1.5	Bold value indicates a detection
D	Diluted sample analysis
J	Compound detected below its reporting limit; value is estimated
µg/m ³	Micrograms per cubic meter
ELAP	Environmental Laboratory Approval Program
NA	Not Applicable
NYSDOH	New York State Department of Health
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

Table 6A
2024 Rule 212 Applicability and Evaluation
Building 96 Treatment System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Project VOCs	CAS#	HTAC? ¹	2024 Building 96 Treatment System Average Effluent Conc. (ug/m3) ²	2024 Building 96 Emissions (lb/yr) ⁴	Rule 212 Limit (lb/yr) ⁵	Rule 212 Applicability ⁶	Further evaluation Required? ⁶
1,1,1-Trichloroethane	71-55-6	No	6.5	0.929	100	Less than limit, Rule 212 compliant	N
1,1-Dichloroethane	75-34-3	No	138	19.731	100	Less than limit, Rule 212 compliant	N
1,1-Dichloroethene	75-35-4	No	47	6.691	100	Less than limit, Rule 212 compliant	N
1,2-Dichloroethane	107-06-2	Yes	2.4	0.343	100	Less than limit, Rule 212 compliant	N
Chloroethane	75-00-3	No	1.8	0.258	100	Less than limit, Rule 212 compliant	N
Chloroform	67-66-3	Yes	42	6.005	100	Less than limit, Rule 212 compliant	N
Chloromethane	74-87-3	No	1.1	0.152	100	Less than limit, Rule 212 compliant	N
cis-1,2 Dichloroethene	156-59-2	No	209	29.818	100	Less than limit, Rule 212 compliant	N
Methylene Chloride	75-09-2	No	3.4	0.479	100	Less than limit, Rule 212 compliant	N
Tetrachloroethene	127-18-4	Yes	1.0	0.143	1000	Less than limit, Rule 212 compliant	N
Toluene	108-88-3	No	0.64	0.092	100	Less than limit, Rule 212 compliant	N
trans-1,2-Dichloroethene	156-60-5	No	4.4	0.629	100	Less than limit, Rule 212 compliant	N
Trichloroethylene	79-01-6	Yes	168	24.074	500	Less than limit, Rule 212 compliant	N
Trichlorotrifluoroethane (Freon 113)	76-13-1	No	179	25.593	100	Less than limit, Rule 212 compliant	N
Vinyl Chloride	75-01-4	Yes	24.8	3.549	100	Less than limit, Rule 212 compliant	N

Flowrate

Description	Flow (cfm)
Tower 96	4,367

Notes:

- High toxicity air contaminant (HTAC) based on 6 CRR-NY Rule 212-2.2, Table 2 – High Toxicity Air Contaminant List.
- Average effluent concentrations based on sampling performed in 2024. Average concentrations from all sampling events during the reporting period are noted for each compound. Compounds not detected above the laboratory reporting limit are excluded from the air quality impact analysis summary.
- Total for xylenes m, o, and p
- Emission rate calculated based on average effluent concentration and maximum air flow rates measured during the sampling events. Emission rate standardized at 70 °F and 1 atm.

$$\text{Trichloroethylene (lb/yr)} = \text{Trichloroethylene } [\mu\text{g}/\text{m}^3] \times \text{Air Flow Rate } [\text{ft}^3/\text{min}] \times (1 \text{ m}^3/35.3147 \text{ ft}^3) \times (60 \text{ min}/\text{hr}) \times (0.000001 \text{ g}/1 \mu\text{g}) \times (0.0022 \text{ lb}/\text{g}) \times 8,760 \text{ hrs}/\text{yr}$$
- 100 lb/yr for non-HTACs, and mass emission limits based on Rule 212-2.2, Table 2 for HTACs.
- For HTACs, no further demonstration is required if the actual emissions are less than mass emission limit at each individual system. For non-HTACs, no further demonstration is required if the actual emissions are less than 100 lbs/yr at each individual system.

Table 6B
2024 Rule 212 Applicability and Evaluation
Building 102 Treatment System
Operable Unit 2
Northrop Grumman



Project VOCs	CAS#	HTAC? ¹	2024 Building 102 Treatment System Average Effluent Conc. (ug/m3) ²	2024 Building 102 Emissions (lb/yr) ⁴	Rule 212 Limit (lb/yr) ⁵	Rule 212 Applicability ⁶	Further evaluation Required? ⁶
1,1,1-Trichloroethane	71-55-6	No	3.1	0.749	100	Less than limit, Rule 212 compliant	N
1,1-Dichloroethane	75-34-3	No	31	7.615	100	Less than limit, Rule 212 compliant	N
1,1-Dichloroethene	75-35-4	No	46	11.411	100	Less than limit, Rule 212 compliant	N
1,2-Dichloroethane	107-06-2	Yes	0.7	0.182	100	Less than limit, Rule 212 compliant	N
1,2-Dichloropropane	78-87-5	No	1.6	0.401	100	Less than limit, Rule 212 compliant	N
Carbon Tetrachloride	56-23-5	Yes	2.1	0.509	100	Less than limit, Rule 212 compliant	N
Chloroform	67-66-3	Yes	5.5	1.357	100	Less than limit, Rule 212 compliant	N
Chloromethane	74-87-3	No	1.0	0.238	100	Less than limit, Rule 212 compliant	N
cis-1,2 Dichloroethene	156-59-2	No	83	20.267	100	Less than limit, Rule 212 compliant	N
Methylene Chloride	75-09-2	No	2.1	0.512	100	Less than limit, Rule 212 compliant	N
Tetrachloroethene	127-18-4	Yes	6.4	1.566	1000	Less than limit, Rule 212 compliant	N
Toluene	108-88-3	No	0.36	0.088	100	Less than limit, Rule 212 compliant	N
trans-1,2-Dichloroethene	156-60-5	No	1.1	0.260	100	Less than limit, Rule 212 compliant	N
Trichloroethylene	79-01-6	Yes	226	55.457	500	Less than limit, Rule 212 compliant	N
Trichlorotrifluoroethane (Freon 113)	76-13-1	No	39	9.581	100	Less than limit, Rule 212 compliant	N

Flowrate

Description	Flow (cfm)
Tower 102	7,503

Notes:

- High toxicity air contaminant (HTAC) based on 6 CRR-NY Rule 212-2.2, Table 2 – High Toxicity Air Contaminant List.
- Average effluent concentrations based on sampling performed in 2024. Average concentrations from all sampling events during the reporting period are noted for each compound. Compounds not detected above the laboratory reporting limit are excluded from the air quality impact analysis summary.
- Total for xylenes m, o, and p
- Emission rate calculated based on average effluent concentration and maximum air flow rates measured during the sampling events. Emission rate standardized at 70 °F and 1 atm.

$$\text{Trichloroethylene (lb/yr)} = \text{Trichloroethylene } [\mu\text{g}/\text{m}^3] \times \text{Air Flow Rate } [\text{ft}^3/\text{min}] \times (1 \text{ m}^3/35.3147 \text{ ft}^3) \times (60 \text{ min}/\text{hr}) \times (0.000001 \text{ g}/1 \mu\text{g}) \times (0.0022 \text{ lb}/\text{g}) \times 8,760 \text{ hrs}/\text{yr}$$

- 100 lb/yr for non-HTACs, and mass emission limits based on Rule 212-2.2, Table 2 for HTACs.
- For HTACs, no further demonstration is required if the actual emissions are less than mass emission limit at each individual system. For non-HTACs, no further demonstration is required if the actual emissions are less than 100 lbs/yr at each individual system.

Table 7
 Summary of SPDES Equivalency Effluent Water⁽¹⁾ Sample Analytical Results 2024
 ONCT System
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



PARAMETER	Units	Discharge Limit ⁽²⁾	Location ID: Sample ID: Sample Date:	OUTFALL 06 OUTFALL 06 1/11/2024	OUTFALL 06 OUTFALL 06 2/27/2024	OUTFALL 06 OUTFALL 06 3/18/2024	OUTFALL 06 OUTFALL 06 4/16/2024	OUTFALL 06 OUTFALL 06 5/7/2024	OUTFALL 06 OUTFALL 06 6/12/2024	OUTFALL 06 OUTFALL 06 7/18/2024	OUTFALL 06 OUTFALL 06 8/22/2024	OUTFALL 06 OUTFALL 06 9/5/2024	OUTFALL 06 OUTFALL 06 10/9/2024	OUTFALL 06 OUTFALL 06 11/12/2024	OUTFALL 06 OUTFALL 06 12/10/2024
Volatiles Organic Compounds (VOCs)⁽³⁾															
1,1,1-Trichloroethane (TCA)	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichlorotrifluoroethane (Freon 113)	µg/L	5		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethene (1,1-DCE)	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene (PCE)	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene (TCE)	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/L	2		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs⁽⁴⁾															
				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organic Compounds (SVOCs)															
1,4-Dioxane	µg/L	NA / Monitor		6.5	6.4	3.3	7.4	7.3	5.3	6.3	5.9	6.1	7.7	12.0	5.5
Anions⁽⁵⁾															
Iron	µg/L	600		< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
Manganese	µg/L	600		< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15
Nitrogen, (Nitrate+Nitrite)	mg/L	NA		5.0	3.6	5.0	5.0	5.0	5.0	4.9	5.0	5.4	4.7	5.0	4.8
Nitrogen, Total Kjeldahl	mg/L	NA		0.50	< 0.20	< 0.20	0.21	0.15 J	0.15 J	< 0.20	< 0.20	0.27	0.30	< 0.20	< 0.20
Total Nitrogen	mg/L	10		5.5	3.6	5.0	5.2	5.2	5.2	4.9	5.0	5.7	5.0	5.0	4.8
pH - Intake (Building 96)	S.U.	NA		5.9	6.5	5.0	4.9	4.9	5.4	6.0	4.9	5.9	5.7	5.3	6.1
pH - Effluent	S.U.	5.0 - 8.5		7.8	8.0	6.8	7.0	7.0	6.6	7.3	6.6	7.3	6.4	6.1	6.7

Notes and Abbreviations on last page

Table 7
 Summary of SPDES Equivalency Effluent Water⁽¹⁾ Sample Analytical Results 2024
 ONCT System
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



PARAMETER	Units	Discharge Limit ⁽²⁾	Location ID: Sample ID: Sample Date:	OUTFALL 05 OUTFALL 05 1/11/2024	OUTFALL 05 OUTFALL 05 2/27/2024	OUTFALL 05 OUTFALL 05 3/18/2024	OUTFALL 05 OUTFALL 05 4/16/2024	OUTFALL 05 OUTFALL 05 5/7/2024	OUTFALL 05 OUTFALL 05 6/12/2024	OUTFALL 05 OUTFALL 05 7/18/2024	OUTFALL 05 OUTFALL 05 8/15/2024	OUTFALL 05 OUTFALL 05 9/5/2024	OUTFALL 05 OUTFALL 05 10/9/2024	OUTFALL 05 OUTFALL 05 11/12/2024	OUTFALL 05 OUTFALL 05 12/10/2024
Volatiles Organic Compounds (VOCs)⁽³⁾															
1,1,1-Trichloroethane (TCA)	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichlorotrifluoroethane (Freon 113)	µg/L	5		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethene (1,1-DCE)	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	µg/L	5		< 1.0	< 1.0	1.3	0.91 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene (PCE)	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene	µg/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene (TCE)	µg/L	5		0.58	0.55	< 1.0	0.44 J	< 1.0	0.49 J	< 1.0	0.59	0.49	< 1.0	0.48 J	0.51 J
Vinyl Chloride	µg/L	2		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/L	5		< 1.0	1.1	2.2	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/L	0.6		< 1.0	< 1.0	< 1.0	1.1 ⁽⁷⁾	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TVOCs⁽⁴⁾				0.58	0.55	3.5	4.3	ND	0.49	ND	0.59	0.49	ND	0.48	0.51
Semivolatile Organic Compounds (SVOCs)⁽⁶⁾															
1,4-Dioxane	µg/L	NA / Monitor		2.4	2.7	1.2	2.4	3.0	1.1	2.5	2.8	3.0	2.4	4.2	3.0
Anions⁽⁵⁾															
Iron	µg/L	600		< 100	< 100	< 100	< 100	< 100	< 100	146	851 ⁽⁷⁾	< 100	< 100	< 100	807 ⁽⁷⁾
Manganese	µg/L	600		< 15	< 15	< 15	< 15	< 15	< 15	< 15	23.8	15.7	< 15	< 15	79.6
Nitrogen, (Nitrate+Nitrite)	mg/L	NA		3.7	2.8	3.6	3.9	2.5	4.0	3.7	3.9	4.1	3.6	3.2	3.9
Nitrogen, Total Kjeldahl	mg/L	NA		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.27	0.27	< 0.20	< 0.20
Total Nitrogen	mg/L	10		3.7	2.8	3.6	3.9	2.5	4.2	3.7	3.9	4.4	3.9	3.2	3.9
pH - Intake (Building 102)	S.U.	NA		5.8	7.8	5.4	5.2	5.6	6.4	6.1	5.0	7.2	5.8	5.9	6.1
pH - Effluent	S.U.	5.0 - 8.5		7.7	7.4	7.2	7.0	6.3	6.4	6.9	6.1	7.2	6.5	6.6	6.3

Notes and Abbreviations on last page

Notes and Abbreviations:

- ⁽¹⁾ SPDES effluent water samples are collected at a point closest to the respective Outfalls to each of the recharge basins, not directly from the treatment system tower effluent ports unless otherwise noted.
- ⁽²⁾ Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023.
- ⁽³⁾ Samples were analyzed for permit specified VOCs using USEPA Method 624.
- ⁽⁴⁾ TVOC concentrations are rounded to the number of decimal places of the individual VOC with the least precision (decimal places), including whole numbers with no decimal place.
- ⁽⁵⁾ Samples were analyzed for Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN) by USEPA Methods 353.2 and 351.2, respectively. Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and TKN concentrations and is rounded to two significant figures.
- ⁽⁶⁾ Outfall 005 combines discharge from Building 109 and Building 102 treatment systems; however, Building 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal.
- ⁽⁷⁾ This result for Outfall 005 is considered anomalous, based on non-detect results obtained for separate samples collected from the treated discharge from the OU2 ONCT system and the OU3 RW-21 system, which are combined to form the Outfall 005 discharge. This situation will continue to be monitored closely in the future.

--	Not Analyzed
6.5	Bolded value indicates a detection
< 1.0	Compound not detected above its laboratory quantification limit
µg/L	micrograms per liter
mg/L	milligrams per liter
J	Constituent value is estimated
DUP	Field Duplicate Sample
NA	Not Applicable
ND	Not Detected
ONCT	On-Site Containment System
SPDES	State Pollution Discharge Elimination System
S.U.	Standard Units
SVOCs	Semivolatile Organic Compounds
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

Table 8
Water-Level Measurement Results, Second Quarter 2024
Operable Unit 2
Northrop Grumman
Bethpage, New York



Well Identification	Screen Interval (ft bls)	Measuring Point Elevation (ft NAVD 88)	Depth to Water (ft bmp)	Water-Level Elevation (ft NAVD 88)
Zone 1 Wells				
FW-03	49-64	124.30	51.34	72.96
MW-3R ⁽¹⁾	45-55	101.45	NM	NM
N-9921 ⁽¹⁾	58-62	94.23	NM	NM
N-10597	63-67	109.85	37.31	72.54
N-10600	57-61	102.41	36.71	65.70
N-10631R	63-67	105.77	36.31	69.46
N-10633	63-67	103.80	32.78	71.02
N-10634	63-67	101.20	34.34	66.86
N-10821 ⁽¹⁾	63-67	91.58	NM	NM
GM-15SR	70-80	109.35	39.51	69.84
GM-15I	95-105	109.29	39.23	70.06
GM-16SR	60-70	115.86	42.17	73.69
GM-16I	135-145	115.81	42.08	73.73
GM-17I	100-120	115.83	38.87	76.96
GM-17SR	60-70	115.79	38.09	77.70
GM-18S	63-67	107.60	40.02	67.58
GM-18I	95-105	109.03	36.77	72.26
GM-19S	48-53	109.86	36.17	73.69
GM-19I	130-140	109.86	36.91	72.95
GM-20I	95-105	103.88	30.33	73.55
GM-21S	63-67	105.81	25.92	79.89
GM-21I	130-140	105.72	30.07	75.65
GM-74I	94-114	107.42	31.65	75.77
GM-78S	60-70	104.94	35.72	69.22
GM-78I	90-110	105.06	37.41	67.65
GM-79S (N-10628)	63-67	100.88	32.63	68.25
HN-24S	49-59	122.73	47.20	75.53
HN-29I ⁽¹⁾	120-130	116.42	NM	NM
HN-40S ⁽¹⁾	49-59	116.35	43.74	72.61
HN-40I	108-118	115.91	44.14	71.77
HN-42S	50-60	120.32	41.08	79.24
HN-42I	100-110	119.61	46.41	73.20
PZ-ONCT-1	48-58	104.03	27.26	76.77
PZ-ONCT-2	48-58	102.38	26.48	75.90
PZ-ONCT-4	48-58	105.90	27.65	78.25
PZ-ONCT-5 ⁽¹⁾	53-63	106.71	NM	NM
PZ-ONCT-6	48-58	106.43	27.34	79.09
PZ-ONCT-7	48-58	105.67	25.32	80.35
PZ-ONCT-8	48-58	106.76	35.26	71.50
PZ-ONCT-9	48-58	104.63	33.30	71.33
PZ-PLT5-1	57-67	118.29	44.31	73.98
PZ-PLT5-2	52-62	117.29	42.71	74.58
PZ-PLT5-3	50-60	115.96	39.37	76.59
PZ-PLT5-4	50-60	115.11	39.59	75.52
PZ-PLT5-5	53-63	113.22	39.21	74.01
PZ-PLT5-6	51-61	114.81	40.63	74.18

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Table 8
Water-Level Measurement Results, Second Quarter 2024
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Well Identification	Screen Interval (ft bls)	Measuring Point Elevation (ft NAVD 88)	Depth to Water (ft bmp)	Water-Level Elevation (ft NAVD 88)
Zone 1 Wells Continued				
N-10624	190-194	93.61	26.62	66.99
GM-13D	200-210	113.97	41.01	72.96
HN-24I	148-158	125.80	47.72	78.08
HN-29D	210-220	115.11	42.39	72.72
GM-79I	170-180	101.09	34.87	66.22
N-10627	290-295	93.70	27.07	66.63
GM-17D	278-298	115.68	43.98	71.70
GM-18D	290-300	108.88	39.79	69.09
GM-20D	216-226	103.92	32.32	71.60
GM-21D	278-288	105.66	37.30	68.36
GM-36D	204-214	91.63	29.80	61.83
GM-37D	242-262	97.26	34.16	63.10
GM-39D _A	262-282	102.23	33.37	68.86
GM-74D	295-305	107.43	39.71	67.72
BPOW 1-1	196-241	73.65	27.89	45.76
GM-79D	280-290	101.25	36.71	64.54
MW203D ⁽²⁾	275-290	127.15	52.21	74.94
MW178S ⁽²⁾	190-210	114.48	42.90	71.58
MW179D ⁽²⁾	212-232	118.48	44.55	73.93
MW178I ⁽²⁾	290-310	114.75	43.42	71.33
Zone 2 Wells				
GM-15D	332-342	109.84	42.13	67.71
GM-34D	309-319	71.19	14.88	56.31
GM-37D2	370-390	97.17	34.16	63.01
GM-38D	320-340	91.75	33.49	58.26
GM-39D _B	410-420	102.08	36.28	65.80
GM-70D2	310-330	99.58	41.23	58.35
GM-73D	401-411	103.55	40.95	62.60
GM-78D	354-364	103.81	37.68	66.13
BPOW 1-2	310-335	73.54	26.92	46.62
BPOW 1-3	374-419	71.92	27.65	44.27
BPOW 1-4	340-400	56.68	11.24	45.44
BPOW 2-1	360-400	58.64	14.83	43.81
GM-38D2	475-495	91.56	35.77	55.79
GM-71D2	444-464	98.45	40.38	58.07
GM-78D2	459-479	103.82	40.55	63.27
BPOW 2-2	455-495	58.50	17.60	40.90
BPOW 3-1	446-516	61.43	20.94	40.49
RE106D1	440-460	101.19	38.47	62.72
RE106D2	480-490	101.37	38.70	62.67
MW201D ⁽²⁾	335-350	120.92	48.57	72.35
MW201D1 ⁽²⁾	480-500	120.80	48.99	71.81
MW202D ⁽²⁾	335-350	125.95	50.08	75.87
MW202D1 ⁽²⁾	425-440	125.98	51.13	74.85
MW203D1 ⁽²⁾	335-350	127.07	53.81	73.26
MW203D2 ⁽²⁾	435-450	127.02	52.64	74.38
MW178I1 ⁽²⁾	420-440	114.75	44.23	70.52

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Well Identification	Screen Interval (ft bls)	Measuring Point Elevation (ft NAVD 88)	Depth to Water (ft bmp)	Water-Level Elevation (ft NAVD 88)
Zone 2 Wells Continued				
MW179D1 ⁽²⁾	305-325	119.31	44.93	74.38
MW179D2 ⁽²⁾	400-420	119.00	45.22	73.78
RE123D1 ⁽²⁾	480-500	105.49	45.12	60.37
Zone 3 Wells				
GM-15D2	536-556	109.78	44.67	65.11
GM-21D2	516-526	104.62	44.11	60.51
GM-33D2	500-520	106.85	43.81	63.04
GM-34D2	510-520	71.19	16.92	54.27
GM-35D2	510-530	96.28	35.26	61.02
GM-36D2	520-540	91.60	33.53	58.07
GM-73D2	532-552	103.63	38.14	65.49
GM-73D3 ⁽¹⁾	635-650	103.04	40.59	62.45
GM-74D2	542-562	107.36	47.97	59.39
GM-74D3	625-645	106.56	45.19	61.37
GM-75D2	505-525	93.63	30.43	63.20
MW 3-1	556-566	115.28	56.64	58.64
Well 1 ⁽³⁾⁽⁴⁾	519-570	116.78	84.74	32.04
Well 3R ⁽³⁾	421-531	119.80	86.75	33.05
Well 17 ⁽³⁾⁽⁴⁾	480-563	104.10	66.00	38.10
Well 18 ⁽³⁾⁽⁴⁾	466-570	110.00	71.22	38.78
Well 19 ⁽³⁾⁽⁴⁾	465-617	108.70	56.74	51.96
BPOW 1-5	600-650	56.75	13.33	43.42
BPOW 2-3	564-594	57.98	17.33	40.65
BPOW 3-2	612-647	61.82	20.22	41.60
BPOW 3-3	580-620	60.64	18.54	42.10
BPOW 3-4	640-690	62.44	18.99	43.45
BPOW 4-1R ⁽⁵⁾	652-692	67.34	21.49	45.85
RE106D3	510-530	101.34	39.12	62.22
RE107D1	505-525	98.92	37.88	61.04
RE107D2	560-580	98.99	39.02	59.97
RE107D3	645-665	99.96	38.36	61.60
RE109D1 ⁽²⁾	515-535	100.03	39.73	60.30
RE109D2 ⁽²⁾	550-570	100.15	40.06	60.09
RE109D3 ⁽²⁾	580-600	100.40	40.14	60.26
RE123D2 ⁽²⁾	635-655	106.11	45.50	60.61
RE126D1 ⁽²⁾	500-520	101.03	39.01	62.02
RE126D2 ⁽²⁾	555-575	101.39	42.36	59.03
RE126D3 ⁽²⁾	640-660	101.10	42.08	59.02
MW-111-4	448-468	103.38	38.76	64.62
MW-117-5	737-757	94.80	37.49	57.31
RW-21_MW-1	615-625	101.29	41.44	59.85
RW-21_MW-2	600-610	96.28	37.44	58.84
RW-21_MW-3-2	595-605	97.53	47.20	50.33
RW-21_MW-5-2	560-570	96.84	38.84	58.00
RW-21_MW-6	604-624	94.02	37.45	56.57
RW-21_MW-9	630-640	91.60	37.56	54.04
MW-118-5	713-738	85.53	32.04	53.49

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Well Identification	Screen Interval (ft bls)	Measuring Point Elevation (ft NAVD 88)	Depth to Water (ft bmp)	Water-Level Elevation (ft NAVD 88)
Zone 4 Wells				
BPOW 1-6	700-750	57.06	14.11	42.95
BPOW 4-2R ⁽⁵⁾	725-765	67.18	23.63	43.55
RE123D3 ⁽⁴⁾	815-835	105.92	46.03	59.89

Notes and Abbreviations:

Water-level monitoring was performed from April 9 to April 16, 2024.

(1) Well N-9921 was not accessible due to past soil re-grading activities on the road median that covered the well.

Well PZ-ONCT-5, HN-29I, MW-3R and N-10821 were not able to be located.

Well GM-73D3 was inaccessible due to a stripped bolt, therefore water level was taken during the sampling of the monitoring wells.

Well HN-40S was inaccessible due to biological hazards. Water Level was taken during the sampling of the monitoring wells.

(2) Water level data for these wells were collected by Arcadis for Navy as part of synoptic water levels.

(3) Pumping rates for the Remedial Wells collected during Water Level Measurement are as follows: Well 1 is 810 gpm, Well 3R is 810 gpm, Well 17 is 1,010 gpm, Well 18 is 1,010 gpm and Well 19 is 509 gpm as recorded on April 11, 2024.

(4) Surveyed elevation not available, elevation is estimated from topographic map of the area.

(5) The NAVY abandoned original Wells BPOW4-1 and BPOW4-2 and installed replacement Wells BPOW4-1R and BPOW4-2R between August 2014 and October 2014

- ft bmp feet below measuring point
- ft (NAVD 88) Feet relative to North American Vertical Datum 1988.
- gpm gallons per minute
- NM not measured
- OU2 Operable Unit 2

Table 9
Water-Level Measurement Results, Forth Quarter 2024
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Well Identification	Screen Interval (ft bls)	Measuring Point Elevation (ft NAVD 88)	Depth to Water (ft bmp)	Water-Level Elevation (ft NAVD 88)
Zone 1 Wells ⁽¹⁾				
FW-03	49-64	124.30	53.41	70.89
MW-3R ⁽¹⁾	45-55	101.45	NM	NM
N-9921 ⁽¹⁾	58-62	94.23	NM	NM
N-10597	63-67	109.85	38.50	71.35
N-10600	57-61	102.41	36.49	65.92
N-10631R	63-67	105.77	38.16	67.61
N-10633	63-67	103.80	33.11	70.69
N-10634	63-67	101.20	35.63	65.57
N-10821 ⁽¹⁾	63-67	91.58	NM	NM
GM-15SR	70-80	109.35	40.38	68.97
GM-15I	95-105	109.29	39.99	69.30
GM-16SR	60-70	115.86	42.69	73.17
GM-16I	135-145	115.81	43.44	72.37
GM-17I	100-120	115.83	39.25	76.58
GM-17SR	60-70	115.79	38.82	76.97
GM-18S	63-67	107.60	37.30	70.30
GM-18I	95-105	109.03	38.55	70.48
GM-19S	48-53	109.86	34.91	74.95
GM-19I	130-140	109.86	37.65	72.21
GM-20I	95-105	103.88	32.87	71.01
GM-21S	63-67	105.81	28.01	77.80
GM-21I	130-140	105.72	31.77	73.95
GM-74I	94-114	107.42	33.31	74.11
GM-78S	60-70	104.94	37.23	67.71
GM-78I	90-110	105.06	37.51	67.55
GM-79S (N-10628)	63-67	100.88	NM	NM
HN-24S	49-59	122.73	47.63	75.10
HN-29I	120-130	116.42	NM	NM
HN-40S	49-59	116.35	42.51	73.84
HN-40I	108-118	115.91	44.78	71.13
HN-42S	50-60	120.32	42.79	77.53
HN-42I	100-110	119.61	47.30	72.31
PZ-ONCT-1	48-58	104.03	30.62	73.41
PZ-ONCT-2	48-58	102.38	32.00	70.38
PZ-ONCT-4	48-58	105.90	31.03	74.87
PZ-ONCT-5 ⁽¹⁾	53-63	106.71	NM	NM
PZ-ONCT-6	48-58	106.43	30.54	75.89
PZ-ONCT-7	48-58	105.67	29.92	75.75
PZ-ONCT-8	48-58	106.76	38.12	68.64
PZ-ONCT-9	48-58	104.63	36.22	68.41
PZ-PLT5-1	57-67	118.29	45.15	73.14
PZ-PLT5-2	52-62	117.29	44.09	73.20
PZ-PLT5-3	50-60	115.96	42.40	73.56
PZ-PLT5-4	50-60	115.11	43.00	72.11
PZ-PLT5-5	53-63	113.22	40.62	72.60
PZ-PLT5-6	51-61	114.81	41.87	72.94

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Water-Level Measurement Results, Forth Quarter 2024
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Well Identification	Screen Interval (ft bls)	Measuring Point Elevation (ft NAVD 88)	Depth to Water (ft bmp)	Water-Level Elevation (ft NAVD 88)
Zone 1 Wells Continued				
N-10624	190-194	93.61	28.21	65.40
GM-13D	200-210	113.97	42.03	71.94
HN-24I	148-158	125.80	47.98	77.82
HN-29D	210-220	115.11	44.03	71.08
GM-79I ⁽¹⁾	170-180	101.09	36.65	64.44
N-10627	290-295	93.70	38.92	54.78
GM-17D	278-298	115.68	44.32	71.36
GM-18D	290-300	108.88	42.63	66.25
GM-20D	216-226	103.92	34.41	69.51
GM-21D	278-288	105.66	39.01	66.65
GM-36D	204-214	91.63	32.10	59.53
GM-37D	242-262	97.26	36.20	61.06
GM-39D _A	262-282	102.23	35.78	66.45
GM-74D	295-305	107.43	40.84	66.59
BPOW 1-1	196-241	73.65	28.07	45.58
GM-79D ⁽¹⁾	280-290	101.25	38.62	62.63
MW203D ⁽²⁾	275-290	127.15	53.18	73.97
MW178S ⁽²⁾	190-210	114.48	43.18	71.30
MW179D ⁽²⁾	212-232	118.48	45.41	73.07
MW178I ⁽²⁾	290-310	114.75	43.80	70.95
Zone 2 Wells				
GM-15D	332-342	109.84	43.13	66.71
GM-34D	309-319	71.19	12.20	58.99
GM-37D2	370-390	97.17	37.34	59.83
GM-38D	320-340	91.75	35.82	55.93
GM-39D _B	410-420	102.08	38.68	63.40
GM-70D2	310-330	99.58	37.99	61.59
GM-73D	401-411	103.55	41.05	62.50
GM-78D	354-364	103.81	40.06	63.75
BPOW 1-2	310-335	73.54	29.68	43.86
BPOW 1-3	374-419	71.92	30.03	41.89
BPOW 1-4	340-400	56.68	11.73	44.95
BPOW 2-1	360-400	58.64	16.28	42.36
GM-38D2	475-495	91.56	38.81	52.75
GM-71D2	444-464	98.45	39.48	58.97
GM-78D2	459-479	103.82	42.22	61.60
BPOW 2-2	455-495	58.50	18.81	39.69
BPOW 3-1	446-516	61.43	24.96	36.47
RE106D1	440-460	101.19	38.34	62.85
RE106D2	480-490	101.37	38.68	62.69
MW201D ⁽²⁾	335-350	120.92	48.61	72.31
MW201D1 ⁽²⁾	480-500	120.80	49.16	71.64
MW202D ⁽²⁾	335-350	125.95	52.42	73.53
MW202D1 ⁽²⁾	425-440	125.98	52.73	73.25
MW203D1 ⁽²⁾	335-350	127.07	53.41	73.66
MW203D2 ⁽²⁾	435-450	127.02	53.21	73.81
MW178I1 ⁽²⁾	420-440	114.75	44.79	69.96

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Well Identification	Screen Interval (ft bls)	Measuring Point Elevation (ft NAVD 88)	Depth to Water (ft bmp)	Water-Level Elevation (ft NAVD 88)
Zone 2 Wells Continued				
MW179D1 ⁽²⁾	305-325	119.31	46.75	72.56
MW179D2 ⁽²⁾	400-420	119.00	47.68	71.32
RE123D1 ⁽²⁾	480-500	105.49	43.53	61.96
Zone 3 Wells				
GM-15D2	536-556	109.78	44.71	65.07
GM-21D2	516-526	104.62	45.85	58.77
GM-33D2	500-520	106.85	45.54	61.31
GM-34D2	510-520	71.19	49.05	22.14
GM-35D2	510-530	96.28	37.56	58.72
GM-36D2	520-540	91.60	36.32	55.28
GM-73D2	532-552	103.63	39.70	63.93
GM-73D3	635-650	103.04	39.93	63.11
GM-74D2	542-562	107.36	49.05	58.31
GM-74D3	625-645	106.56	45.99	60.57
GM-75D2	505-525	93.63	32.63	61.00
MW 3-1	556-566	115.28	57.11	58.17
Well 1 ⁽³⁾⁽⁴⁾	519-570	116.78	58.73	58.05
Well 3R ⁽³⁾	421-531	119.80	85.41	34.39
Well 17 ⁽³⁾⁽⁴⁾	480-563	104.10	60.59	43.51
Well 18 ⁽³⁾⁽⁴⁾	466-570	110.00	73.10	36.90
Well 19 ⁽³⁾⁽⁴⁾	465-617	108.70	64.62	44.08
BPOW 1-5	600-650	56.75	12.21	44.54
BPOW 2-3	564-594	57.98	18.04	39.94
BPOW 3-2	612-647	61.82	26.49	35.33
BPOW 3-3	580-620	60.64	22.51	38.13
BPOW 3-4	640-690	62.44	22.97	39.47
BPOW 4-1R ⁽⁵⁾	652-692	67.34	24.19	43.15
RE106D3	510-530	101.34	38.81	62.53
RE107D1	505-525	98.92	38.22	60.70
RE107D2	560-580	98.99	38.64	60.35
RE107D3	645-665	99.96	39.74	60.22
RE109D1 ⁽²⁾	515-535	100.03	41.81	58.22
RE109D2 ⁽²⁾	550-570	100.15	42.18	57.97
RE109D3 ⁽²⁾	580-600	100.40	42.22	58.18
RE123D2 ⁽²⁾	635-655	106.11	45.02	61.09
RE126D1 ⁽²⁾	500-520	101.03	40.03	61.00
RE126D2 ⁽²⁾	555-575	101.39	42.82	58.57
RE126D3 ⁽²⁾	640-660	101.10	42.62	58.48

Notes and Abbreviations on last page

Table 9
Water-Level Measurement Results, Forth Quarter 2024
Operable Unit 2
Northrop Grumman
Bethpage, New York



Well Identification	Screen Interval (ft bls)	Measuring Point Elevation (ft NAVD 88)	Depth to Water (ft bmp)	Water-Level Elevation (ft NAVD 88)
Zone 3 Wells Continued				
MW-111-4	448-468	103.38	40.30	63.08
MW-117-5	737-757	94.80	38.62	56.18
RW-21_MW-1	615-625	101.29	42.27	59.02
RW-21_MW-2	600-610	96.28	39.03	57.25
RW-21_MW-3-2	595-605	97.53	49.50	48.03
RW-21_MW-5-2	560-570	96.84	39.90	56.94
RW-21_MW-6	604-624	94.02	37.98	56.04
RW-21_MW-9	630-640	91.60	40.19	51.41
MW-118-5	713-738	85.53	35.00	50.53
Zone 4 Wells				
BPOW 1-6	700-750	57.06	13.69	43.37
BPOW 4-2R ⁽⁵⁾	725-765	67.18	24.78	42.40
RE123D3 ⁽⁴⁾	815-835	105.92	45.28	60.64

Notes and Abbreviations:

Water-level monitoring was performed from October 2024.

⁽¹⁾ Well N-9921 was not accessible due to past soil re-grading activities on the road median that covered the well.

Well PZ-ONCT-5, HN-29I, MW-3R and N-10821 were not able to be located.

Well GM-79I and GM-79D was inaccessible during the synoptic gauging, therefore water level was taken during the sampling of the monitoring wells.

⁽²⁾ Water level data for these wells were collected by Arcadis for Navy as part of synoptic water levels.

⁽³⁾ Pumping rates for the Remedial Wells collected during Water Level Measurement are as follows: Well 1 is 822 gpm, Well 3R is 825 gpm, Well 17 is 1,010 gpm, Well 18 is 1,010 gpm and Well 19 is 509 gpm as recorded on October 8, 2024.

⁽⁴⁾ Surveyed elevation not available, elevation is estimated from topographic map of the area.

⁽⁵⁾ The NAVY abandoned original Wells BPOW4-1 and BPOW4-2 and installed replacement Wells BPOW4-1R and BPOW4-2R between August 2014 and October 2014

ft bmp feet below measuring point
ft (NAVD 88) Feet relative to North American Vertical Datum 1988.
gpm gallons per minute
NM not measured
OU2 Operable Unit 2

Table 10
Comparison of Second Quarter 2024
Field Measured Vertical Hydraulic Gradients to
Model-Predicted Gradients
Operable Unit 2
Northrop Grumman
Bethpage, New York



Well Pair ID	Measuring Point Elevation (ft NAVD 88)	Well Screen Midpoint Elevation (ft NAVD 88)	Water-Level Elevation (ft NAVD 88)	Field-Measured Vertical Gradient ⁽¹⁾ (ft/ft) x 10-3	Model-Predicted, Steady-State Vertical Gradient ⁽²⁾ (ft/ft) x 10-3	Difference Between Field Measured and Model Predicted Gradients ⁽³⁾
In Zone 1						
GM-17SR	115.79	50.79	77.70	16.46	0.56	15.9
GM-17I	115.83	5.83	76.96			
GM-78S	104.94	39.94	69.22	45.01	1.02	43.99
GM-78I	105.06	5.06	67.65			
GM-19S	109.86	59.36	73.69	8.76	4.25	4.51
GM-19I	109.86	-25.14	72.95			
GM-21S	105.81	40.81	79.89	60.49	17.72	42.77
GM-21I	105.72	-29.28	75.65			
GM-17I	115.83	5.83	76.96	29.53	32.08	-2.55
GM-17D	115.68	-172.32	71.70			
GM-18I	109.03	9.03	72.26	16.24	21.14	-4.90
GM-18D	108.88	-186.12	69.09			
GM-20I	103.88	3.88	73.55	16.12	51.72	-35.60
GM-20D	103.92	-117.08	71.60			
GM-21I	105.72	-29.28	75.65	49.24	44.70	4.54
GM-21D	105.66	-177.34	68.36			
Between Zones 1 & 2						
GM-74I	107.42	3.42	75.77	41.07	52.34	-11.27
GM-74D	107.43	-192.57	67.72			
GM-39D _A	102.23	-169.77	68.86	21.38	28.86	-7.48
GM-39D _B	102.08	-312.92	65.80			
Between Zones 2 & 3						
GM-15D	109.66	-227.34	67.71	12.44	12.96	-0.53
GM-15D2	109.59	-436.41	65.11			
GM-73D ⁽⁴⁾	103.55	-302.45	62.60	-21.26	22.01	-43.27
GM-73D2 ⁽⁴⁾⁽⁵⁾	103.63	-438.37	65.49			
RE123D1 ⁽⁵⁾	105.49	-384.51	60.37	-1.55	8.77	-10.32
RE123D2 ⁽⁵⁾	106.11	-538.89	60.61			
Between Zones 1 & 3						
GM-18D	108.88	-186.12	69.09	27.88	36.69	-8.81
GM-33D2	106.85	-403.15	63.04			
GM-21D	105.66	-177.34	68.36	32.84	35.62	-2.78
GM-21D2	104.62	-416.38	60.51			

Notes and Abbreviations on last page

Table 10
Comparison of Second Quarter 2024
Field Measured Vertical Hydraulic Gradients to
Model-Predicted Gradients
Operable Unit 2
Northrop Grumman
Bethpage, New York



Well Pair ID	Measuring Point Elevation (ft NAVD 88)	Well Screen Midpoint Elevation (ft NAVD 88)	Water-Level Elevation (ft NAVD 88)	Field-Measured Vertical Gradient ⁽¹⁾ (ft/ft) x 10-3	Model-Predicted, Steady-State Vertical Gradient ⁽²⁾ (ft/ft) x 10-3	Difference Between Field Measured and Model Predicted Gradients ⁽³⁾
In Zone 3						
GM-74D2	107.63	-444.37	59.39	-23.84	-28.49	-4.65
GM-74D3	107.58	-527.42	61.37			
GM-73D2 ⁽⁴⁾⁽⁵⁾	103.63	-438.37	65.49	30.07	29.59	0.48
GM-73D3 ⁽⁴⁾⁽⁵⁾	103.04	-539.46	62.45			
RE109D1 ⁽⁵⁾	100.03	-424.97	60.30	6.02	-2.81	-8.83
RE109D2 ⁽⁵⁾	100.15	-459.85	60.09			
RE126D1 ⁽⁵⁾	101.03	-408.97	62.02	54.72	-1.12	-55.84
RE126D2 ⁽⁵⁾	101.39	-463.61	59.03			

Notes and Abbreviations:

- ⁽¹⁾ Vertical hydraulic gradients are calculated as follows:

$$\frac{(\text{Water-Level Elevation}_1 - \text{Water-Level Elevation}_2)}{(\text{Screen Midpoint Elevation}_1 - \text{Screen Midpoint Elevation}_2)}$$
₁ - Shallower well of pairing
₂ - Deeper well of pairing
 Positive gradient value indicates a downward hydraulic gradient.
 Negative gradient value indicates an upward hydraulic gradient.
- ⁽²⁾ The 2019 model was used to calculate the Steady State Vertical Gradient when OU2 ONCT remedial wells were operating at rates designed to prevent off-Site migration of VOC-impacted groundwater .
- ⁽³⁾ Positive value indicates an increase compared to model predicted gradient.
 Negative value indicates a decrease compared to model predicted gradient.
- ⁽⁴⁾ Wells GM-73D, GM-73D2, and GM-73D3 were located and resurveyed on December 12, 2023 due to the well casing modification from construction activities performed in the B109 construction area.
- ⁽⁵⁾ Water level data for this well was collected by Arcadis on behalf of Navy.
- (ft NAVD 88) Feet relative to North American Vertical Datum 1988.
 OU2 Operable Unit 2

Table 11
Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
Upgradient of the ONCT System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Zone 1							Zone 2		
		FW-03 FW-03 5/22/2024	GM-13D GM-13D 4/30/2024	HN-24I HN-24I 5/22/2024	HN-40I HN-40I 4/25/2024	HN-40S HN-40S 4/25/2024	HN-42I HN-42I 4/25/2024	HN-42S HN-42S 4/25/2024	MW-3-1 MW-3-1 4/30/2024	MW-3-1 REP043024KK1 4/30/2024	MW-3-1 MW-3-1 10/21/2024
		NYSDEC SCGs (ug/L) ⁽²⁾									
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	0.63 J	0.98 J
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	0.94 J	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	1.6
1,1-Dichloroethene	5	<1.0	0.80 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	1.7
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10 J	<10 J	<10 J	<10 J	<10	<10	<10 J
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0 J	<2.0	<2.0	<2.0 J	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.80 J	0.89 J
Chloroform	7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	<1.0	2.3	0.51 J	<1.0	<1.0	<1.0	<1.0	8.6	10.4	10.9
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	5	<2.0	<2.0	<2.0	<2.0	<2.0 J	<2.0 J	<2.0	<2.0	<2.0	<2.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene (Monomer)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	<1.0	12.2	2.8	1.3	<1.0	<1.0	<1.0	15.2	17.7	20.5
Toluene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	5	<1.0	7.6	6.8	<1.0	<1.0	<1.0	<1.0	128	141	124
Vinyl chloride	2	<1.0	<1.0	<1.0	<1.0 J	<1.0	<1.0	<1.0 J	32.6	39.7	38.2
Total Vocs ⁽³⁾⁽⁴⁾		ND	23.8	11.3	1.3	ND	ND	ND	189	213	200

Notes and Abbreviations on last page

Table 11
Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
Upgradient of the ONCT System
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

- ⁽¹⁾ Samples analyzed for the TCL VOCs using USEPA Method 8260C.
- ⁽²⁾ Standards, Criteria, and Guidance (SCG) values based on NYSDEC TOGs (NYSDEC 1998); most stringent values are listed.
- ⁽³⁾ TVOC concentrations are rounded to the number of decimal places of the individual VOC with the least precision (decimal places), including whole numbers with no decimal place.
- ⁽⁴⁾ Acetone, 2-Butanone (MEK), and Dichloromethane (Methylene Chloride), are recognized lab contaminants and are not included on the list of COCs in Appendix A and therefore, are not included in the total VOC values on this table.

Results for the program are validated at 20% frequency, per protocols specified in OU2 Groundwater Monitoring Plan (Arcadis 2016).

Bold value indicates a detection.

	Compound detected in exceedance of NYSDEC SCG Criteria
< 5.0	Compound not detected above its method detection limit
µg/L	Micrograms per Liter
ND	Non-Detect
J	Value is estimated concentration
NYSDEC	New York State Department of Environmental Conservation
TCL	Target Compound List
TVOCs	Total Volatile Organic Compounds (known lab contaminants acetone, 2-butanone, and methylene chloride are not included in calculation of TVOCs)
TOGs	Technical and Operational Guidance Series
VOCs	Volatile Organic Compounds
USEPA	United States Environmental Protection Agency
Zone	Describes depth
COCs	Contaminants of Concern

Table 12
Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
Proximate and Near to the ONCT System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Proximate to ONCT							
		Zone 1							
		GM-15I GM-15I 4/23/2024	GM-15I GM-15I 10/15/2024	GM-15SR GM-15SR 4/23/2024	GM-15SR GM-15SR 10/15/2024	GM-17D GM-17D 4/30/2024	GM-17D GM-17D 10/17/2024	GM-17I GM-17I 4/30/2024	GM-17I GM-17I 10/17/2024
Volatile Organic Compounds (VOCs) ⁽¹⁾	NYSDEC SCGs (ug/L)⁽²⁾								
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene (Monomer)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	5	0.97 J	0.79 J	9.9	0.62 J	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs ⁽³⁾⁽⁴⁾		0.97	0.79	9.9	0.62	ND	ND	ND	ND

Notes and Abbreviations on last page

Table 12
Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
Proximate and Near to the ONCT System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Proximate to ONCT							
		Zone 1							
		GM-18D GM-18D 4/17/2024	GM-18D GM-18D 10/16/2024	GM-18I GM-18I 4/17/2024	GM-18I GM-18I 10/16/2024	GM-20D GM-20D 4/18/2024	GM-20I GM-20I 4/18/2024	GM-21D GM-21D 4/29/2024	GM-21I GM-21I 4/29/2024
Volatile Organic Compounds (VOCs) ⁽¹⁾	NYSDEC SCGs (ug/L)⁽²⁾								
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	0.64 J	<1.0	1.0
1,1-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 J	<1.0 J
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10	<10	<10	<10	<10 J
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.69 J
Chloromethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 J
cis-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene (Monomer)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	5	0.76 J	0.82 J	<1.0	<1.0	0.70 J	<1.0	0.62 J	<1.0
Vinyl chloride	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 J	<1.0 J
Total VOCs ⁽³⁾⁽⁴⁾		0.76	0.82	ND	ND	0.70	0.64	0.62	1.7

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Table 12
Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
Proximate and Near to the ONCT System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Proximate to ONCT							
		Zone 1							
		GM-21S GM-21S 4/29/2024	GM-39DA GM-39DA 4/18/2024	GM-39DA GM-39DA 10/17/2024	GM-74I GM-74I 4/15/2024	GM-74I GM-74I 10/21/2024	GM-78I GM-78I 4/24/2024	GM-79D GM-79D 4/17/2024	GM-79D GM-79D 10/22/2024
Volatile Organic Compounds (VOCs) ⁽¹⁾	NYSDEC SCGs (ug/L)⁽²⁾								
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	5	0.87 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10	<10 J	<10	<10	<10 J
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0 J	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 J
Chloroform	7	0.62 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene (Monomer)	5	<1.0 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	5	<1.0	6.1	3.4	<1.0	<1.0	0.66 J	16.1	14.4
Vinyl chloride	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs ⁽³⁾⁽⁴⁾		3.2	6.1	3.4	ND	ND	0.66	16.1	14.4

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Table 12
Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
Proximate and Near to the ONCT System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Proximate to ONCT							
		Zone 1				Zone 2			
		GM-79I	GM-79I	N-10631R	N-10631R	GM-15D	GM-15D	GM-39DB	GM-39DB
		GM-79I	GM-79I	N-10631R	N-10631R	GM-15D	GM-15D	GM-39DB	GM-39DB
		4/17/2024	10/22/2024	4/16/2024	10/16/2024	4/23/2024	10/15/2024	4/18/2024	10/17/2024
Volatile Organic Compounds (VOCs) ⁽¹⁾	NYSDEC SCGs (ug/L) ⁽²⁾								
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10 J	<10	<10	<10	<10	<10	<10
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene (Monomer)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	0.63 J	<1.0	<1.0
Toluene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	5	0.57 J	<1.0	<1.0	<1.0	<1.0	<1.0	22.7	14.7
Vinyl chloride	2	<1.0	<1.0 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs ⁽³⁾⁽⁴⁾		0.57	ND	ND	ND	ND	0.63	22.7	14.7

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Table 12
Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
Proximate and Near to the ONCT System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Proximate to ONCT							
		Zone 2							
		GM-73D	GM-73D	GM-74D	GM-74D	GM-78D	GM-78D	GM-78D2	GM-78D2
		GM-73D	GM-73D	GM-74D	GM-74D	GM-78D	GM-78D	GM-78D2	GM-78D2
		4/15/2024	10/21/2024	4/15/2024	10/21/2024	4/24/2024	10/22/2024	4/24/2024	10/22/2024
Volatile Organic Compounds (VOCs) ⁽¹⁾	NYSDEC SCGs (ug/L) ⁽²⁾								
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10	<10	<10 J	<10	<10 J
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0 J	<2.0	<2.0 J	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 J	<1.0	<1.0 J
cis-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene (Monomer)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	1.2	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	5	102	95.6	2.3	1.2	0.88 J	0.65 J	1.1	0.79 J
Vinyl chloride	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 J	<1.0	<1.0 J
Total VOCs ⁽³⁾⁽⁴⁾		103	96.9	2.3	1.2	0.88	0.65	1.1	0.79

Notes and Abbreviations on last page

Table 12
Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
Proximate and Near to the ONCT System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Proximate to ONCT							
		Zone 3							
		GM-15D2	GM-15D2	GM-21D2	GM-21D2	GM-21D2	GM-21D2	GM-33D2	GM-33D2
		GM-15D2	GM-15D2	GM-21D2	GM-21D2	GM-21D2	GM-21D2	GM-33D2	GM-33D2
		4/23/2024	10/14/2024	2/8/2024	4/29/2024	7/29/2024	10/21/2024	4/16/2024	10/16/2024
Volatile Organic Compounds (VOCs) ⁽¹⁾	NYSDEC SCGs (ug/L) ⁽²⁾								
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	0.66 J	1.5 J
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0 J	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10 J	<10 J	<10	<10	<10	<10
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0 J	<2.0	<2.0	<2.0 J	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0 J	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0 J	<1.0 J	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene (Monomer)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	2.5	2.2	0.59 J	0.66 J	<1.0	<1.0	<1.0	0.88 J
Toluene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	5	5.8	5.4	4.1	3.9	3.8	3.3	3.3	4.6
Vinyl chloride	2	<1.0	<1.0	<1.0	<1.0 J	<1.0	<1.0	<1.0	<1.0
Total VOCs ⁽³⁾⁽⁴⁾		8.3	7.6	4.7	4.6	3.8	3.3	4.0	7.0

Notes and Abbreviations on last page

Table 12
Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
Proximate and Near to the ONCT System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Proximate to ONCT							
		Zone 3							
		GM-33D2 REP101624KK1 10/16/2024	GM-73D2 GM-73D2 4/15/2024	GM-73D2 REP041524PQ1 4/15/2024	GM-73D2 GM-73D2 10/21/2024	GM-73D2 REP102124AH1 10/21/2024	GM-73D3 GM-73D3 6/25/2024	GM-73D3 GM-73D3 10/21/2024	GM-74D2 GM-74D2 4/15/2024
Volatile Organic Compounds (VOCs) ⁽¹⁾	NYSDEC SCGs (ug/L)⁽²⁾								
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane	5	1.5 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2
1,1-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10	<10	<10	<10 J	<10
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0 J	<2.0 J	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene (Monomer)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	0.90 J	<1.0	<1.0	<1.0	<1.0	1.5	1.6	8.0
Toluene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	5	4.8	18.4	18.9	12.0	11.9	1.9	1.9	14.2
Vinyl chloride	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs ⁽³⁾⁽⁴⁾		7.2	18.4	18.9	12.0	11.9	3.4	3.5	26.4

Notes and Abbreviations on last page

Table 12
Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
Proximate and Near to the ONCT System
Operable Unit 2
Northrop Grumman
Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Proximate to ONCT			Near Central				
		Zone 3			Zone 1		Zone 2	Zone 3	
		GM-74D2	GM-74D3	GM-74D3	GM-37D	N-10624	GM-37D2	GM-75D2	GM-75D2
		GM-74D2	GM-74D3	GM-74D3	GM-37D	N-10624	GM-37D2	GM-75D2	GM-75D2
		10/21/2024	4/15/2024	10/21/2024	5/22/2024	4/16/2024	4/22/2024	4/16/2024	10/16/2024
Volatile Organic Compounds (VOCs) ⁽¹⁾	NYSDEC SCGs (ug/L)⁽²⁾								
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,2-trichloro-1,2,2-trifluoroethane	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	5	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10 J	<10	<10	<10	<10	<10	<10	<10
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0 J	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	5	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene (Monomer)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	7.8	3.5	3.9	<1.0	<1.0	0.90 J	<1.0	<1.0
Toluene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	5	14.5	3.2	4.0	6.9	<1.0	0.87 J	9.1	9.7
Vinyl chloride	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs ⁽³⁾⁽⁴⁾		27.1	6.7	7.9	6.9	ND	1.77	9.1	9.7

Notes and Abbreviations on last page

Table 12
Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
Proximate and Near to the ONCT System
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

- ⁽¹⁾ Samples analyzed for the TCL VOCs using USEPA Method 8260C.
- ⁽²⁾ Standards, Criteria, and Guidance (SCG) values based on NYSDEC TOGs (NYSDEC 1998); most stringent values are listed.
- ⁽³⁾ TVOC concentrations are rounded to the number of decimal places of the individual VOC with the least precision (decimal places), including whole numbers with no decimal place.
- ⁽⁴⁾ Acetone, 2-Butanone (MEK), and Dichloromethane (Methylene Chloride), are recognized lab contaminants and are not included on the list of COCs in Appendix A and therefore, are not included in the total VOC values on this table.

Results for the program are validated at 20% frequency, per protocols specified in OU2 Groundwater Monitoring Plan (Arcadis 2016.)

Bold value indicates a detection.

< 5.0	Compound not detected above its method detection limit
ND	Non-Detect
µg/L	micrograms per Liter
J	Value is estimated concentration
NYSDEC	New York State Department of Environmental Conservation
TCL	Target Compound List
TOGs	Technical and Operational Guidance Series
TVOCs	Total Volatile Organic Compounds (known lab contaminants acetone, 2-butanone, and methylene chloride are not included in calculation of TVOCs).
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
REP	Blind duplicate sample
	Compound detected in exceedance of NYSDEC SCG Criteria

Table 13
 Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
 Downgradient of the ONCT System
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Far Central											GM-38 Area						
		Zone 1		Zone 2				Zone 3					Zone 2						
		GM-36D	GM-34D	GM-34D	GM-34D	GM-70D2	GM-71D2	GM-34D2	GM-34D2	GM-35D2	GM-35D2	GM-36D2	GM-38D	GM-38D	GM-38D	GM-38D	GM-38D	GM-38D2	GM-38D2
		GM-36D	GM-34D	REP041724PQ1	GM-34D	GM-70D2	GM-71D2	GM-34D2	GM-34D2	GM-35D2	GM-35D2	GM-36D2	GM-38D	REP042224SV1	GM-38D	REP102224KK1	GM-38D2	GM-38D2	
Volatile Organic Compounds (VOCs)⁽¹⁾	NYSDEC SCGs (ug/L)⁽²⁾																		
1,1,1-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.56 J	0.63 J
1,1,2,2-Tetrachloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.71 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	1.7
1,1-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	1.5
1,2-Dichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.87 J	0.92 J	1.0	0.95 J	<1.0	<1.0	
1,2-Dichloropropane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10 J	<10	<10	<10	<10 J	<10 J	<10	<10	<10 J
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.58	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 J	<1.0	<1.0	<1.0	<1.0 J	<1.0 J	<1.0	<1.0	<1.0 J
cis-1,2-Dichloroethene	5	<1.0	1.9	1.6	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.54 J	0.60 J	0.60 J	<1.0	1.0	0.86 J	
cis-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl N-Butyl Ketone (2-Hexanone)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene (Monomer)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	<1.0	5.5	4.9	4.7	1.8	<1.0	5.0	3.7	3.2	3.1	<1.0	1.5	1.4	1.8	1.6	<1.0	<1.0	
Toluene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	5	<1.0	56.8	58.9	43.6	4.2	7.5	27.5	20.0	11.3	12.1	3.7	130	134	108	103	122	147	
Vinyl chloride	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 J	<1.0	<1.0	<1.0	<1.0 J	<1.0 J	<1.0	<1.0	<1.0 J
TVOCs⁽³⁾⁽⁴⁾		ND	64.2	65.4	49.8	6.0	8.2	32.5	24.3	14.5	15.2	3.7	133	137	111	106	126	152	

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Table 13
 Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
 Downgradient of the ONCT System
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Outpost Well																				
		Zone 1				Zone 2												Zone 3				
		BPOW 1-1	BPOW 1-1	BPOW 1-1	BPOW 1-1	BPOW 1-2	BPOW 1-2	BPOW 1-2	BPOW 1-2	BPOW 1-2	BPOW 1-3	BPOW 1-3	BPOW 1-3	BPOW 1-3	BPOW 1-4	BPOW 1-4	BPOW 1-4	BPOW 1-4	BPOW 1-5	BPOW 1-5	BPOW 1-5	BPOW 1-5
		5/14/2024	9/3/2024	11/6/2024	11/6/2024	2/20/2024	5/14/2024	8/5/2024	11/6/2024	5/14/2024	9/3/2024	11/6/2024	2/21/2024	5/16/2024	8/6/2024	11/6/2024	2/21/2024	5/16/2024	8/6/2024	11/6/2024		
Volatile Organic Compounds (VOCs)⁽¹⁾	NYSDEC SCGs (ug/L)⁽²⁾																					
1,1,1-Trichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
1,1,2,2-Tetrachloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
1,1,2-Trichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
1,1-Dichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
1,1-Dichloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
1,2-Dichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
1,2-Dichloropropane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
2-Butanone (MEK)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
4-Methyl-2-Pentanone	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		
Acetone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Bromodichloromethane	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.58	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Bromoform	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Bromomethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Carbon Disulfide	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Carbon Tetrachloride	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Chlorobenzene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Chlorodibromomethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.38 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Chloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Chloroform	7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Chloromethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
cis-1,2-Dichloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
cis-1,3-Dichloropropene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Dichloromethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Ethylbenzene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
m&p-Xylenes	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Methyl N-Butyl Ketone (2-Hexanone)	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		
o-Xylene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Styrene (Monomer)	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Tetrachloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Toluene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
trans-1,2-Dichloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
trans-1,3-Dichloropropene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Trichloroethene	5	0.68	0.69	0.77	0.70	0.61	0.25 J	0.40 J	0.62	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Vinyl chloride	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
TVOCs⁽³⁾⁽⁴⁾		0.68	0.69	0.77	0.70	0.61	0.25 J	2.6	0.62	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		

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Table 13
 Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
 Downgradient of the ONCT System
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Outpost Well					Outpost Well													
		Zone 4					Zone 2								Zone 3					
		BPOW 1-6	BPOW 1-6	BPOW 1-6	BPOW 1-6	BPOW 1-6	BPOW 2-1	BPOW 2-1	BPOW 2-1	BPOW 2-1	BPOW 2-1	BPOW 2-1	BPOW 2-2	BPOW 2-2	BPOW 2-2	BPOW 2-2	BPOW 2-3	BPOW 2-3	BPOW 2-3	BPOW 2-3
		2/21/2024	5/16/2024	5/16/2024	8/6/2024	11/6/2024	2/28/2024	5/16/2024	8/5/2024	11/7/2024	11/7/2024	2/28/2024	5/16/2024	8/7/2024	11/7/2024	2/28/2024	5/16/2024	8/5/2024	11/7/2024	
Volatile Organic Compounds (VOCs)⁽¹⁾	NYSDEC SCGs (ug/L)⁽²⁾																			
1,1,1-Trichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,2,2-Tetrachloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
1,1,2-Trichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1-Dichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1-Dichloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,2-Dichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,2-Dichloropropane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2-Butanone (MEK)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
4-Methyl-2-Pentanone	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Acetone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Bromodichloromethane	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Bromoform	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Bromomethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Carbon Disulfide	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Carbon Tetrachloride	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Chlorobenzene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Chlorodibromomethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Chloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Chloroform	7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Chloromethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 J	<0.50 J	<0.50	<0.50	<0.50	<0.50 J	<0.50	<0.50	<0.50	<0.50 J	
cis-1,2-Dichloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
cis-1,3-Dichloropropene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Dichloromethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Ethylbenzene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
m&p-Xylenes	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Methyl N-Butyl Ketone (2-Hexanone)	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
o-Xylene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Styrene (Monomer)	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Tetrachloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Toluene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
trans-1,2-Dichloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
trans-1,3-Dichloropropene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Trichloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Vinyl chloride	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
TVOCs⁽³⁾⁽⁴⁾		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

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Table 13
 Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
 Downgradient of the ONCT System
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Outpost Well																
		Zone 2			Zone 3													
		BPOW 3-1	BPOW 3-1	BPOW 3-1	BPOW 3-2	BPOW 3-2	BPOW 3-2	BPOW 3-3	BPOW 3-3	BPOW 3-3	BPOW 3-3	BPOW 3-3	BPOW 3-4	BPOW 3-4	BPOW 3-4	BPOW 3-4		
		5/20/2024	8/30/2024	11/5/2024	5/20/2024	8/30/2024	11/5/2024	2/19/2024	5/20/2024	8/8/2024	11/5/2024	2/19/2024	2/19/2024	5/20/2024	8/8/2024	11/5/2024		
Volatile Organic Compounds (VOCs)⁽¹⁾	NYSDEC SCGs (ug/L)⁽²⁾																	
1,1,1-Trichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.53	0.48 J	0.69	0.74	0.74
1,1,2,2-Tetrachloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.97 J	1.2	0.89 J	0.96 J	6.9	6.0	10.4	11.3	10.3		
1,1,2-Trichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	1.1	1.5	1.4	1.2		
1,1-Dichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	0.98	1.4	1.4	1.4		
1,1-Dichloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7.8	7.0	11.9	11.5	12.5		
1,2-Dichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.23 J	0.19 J	0.20 J		
1,2-Dichloropropane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Butanone (MEK)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acetone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromomethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Disulfide	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.89	0.75	0.99	1.0	1.2		
Chlorobenzene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chlorodibromomethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	1.4	1.7	1.6 B	1.5		
Chloromethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	2.1	2.5	2.6	2.3		
cis-1,3-Dichloropropene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichloromethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m&p-Xylenes	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl N-Butyl Ketone (2-Hexanone)	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene (Monomer)	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,3-Dichloropropene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	171 D	193 D	212	207	252 D		
Vinyl chloride	2	<0.50	<0.50 J	<0.50	<0.50	<0.50 J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
TVOCs⁽³⁾⁽⁴⁾		ND	ND	ND	ND	ND	ND	0.97	1.2	0.89	0.96	194	213	243	239	283		

Notes and Abbreviations on last page

Table 13
 Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
 Downgradient of the ONCT System
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Constituents units in ug/L	Zone: Well ID: Sample ID: Date:	Outpost Well							
		Zone 3				Zone 4			
		BPOW 4-1R	BPOW 4-1R	BPOW 4-1R	BPOW 4-1R	BPOW 4-2R	BPOW 4-2R	BPOW 4-2R	BPOW 4-2R
		2/16/2024	5/13/2024	9/3/2024	11/4/2024	2/16/2024	5/13/2024	8/8/2024	11/4/2024
Volatile Organic Compounds (VOCs)⁽¹⁾	NYSDEC SCGs (ug/L)⁽²⁾								
1,1,1-Trichloroethane	5	<0.50	0.22 J	<0.50	0.23 J	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	5	45.6	52.2	33.7	45.5	37.9	44.8	48.8	36.1
1,1,2-Trichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethene	5	1.2	1.4	0.90	1.4	0.80	1.0	1.0	0.85
1,2-Dichloroethane	5	<0.50	<0.50	<0.50	0.18 J	<0.50	<0.50	<0.50	<0.50
1,2-Dichloropropane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Butanone (MEK)	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acetone	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromomethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Disulfide	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	5	0.44 J	0.43 J	0.31 J	0.45 J	0.28 J	0.30 J	0.32 J	0.26 J
Chlorobenzene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chlorodibromomethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	7	0.53	0.49 J	0.63	0.67	<0.50	<0.50	<0.50	<0.50
Chloromethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethene	5	0.58	0.57	0.32 J	0.55	0.35 J	0.32 J	0.34 J	0.31 J
cis-1,3-Dichloropropene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichloromethane	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m&p-Xylenes	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl N-Butyl Ketone (2-Hexanone)	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene (Monomer)	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	5	<0.50	<0.50	<0.50	<0.50	1.4	1.5	1.7	1.5
Toluene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,3-Dichloropropene	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethene	5	2.2	2.4	1.3	2.2	4.2	4.5	4.8	4.2
Vinyl chloride	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
TVOCs⁽³⁾⁽⁴⁾		50.6	57.7	37.2	51.2	44.9	52.4	57.0	43.2

Notes and Abbreviations on last page

Table 13
 Summary of Volatile Organic Compound Concentrations in Groundwater for 2024
 Downgradient of the ONCT System
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York

Notes and Abbreviations:

- ⁽¹⁾ Samples were analyzed using USEPA Method 8260C.
- ⁽²⁾ Standards, Criteria, and Guidance (SCG) values based on NYSDEC TOGs (NYSDEC 1998); most stringent values are listed.
- ⁽³⁾ TVOC concentrations are rounded to the number of decimal places of the individual VOC with the least precision (decimal places), including whole numbers with no decimal place.
- ⁽⁴⁾ Acetone, 2-Butanone (MEK), and Dichloromethane (Methylene Chloride), are recognized lab contaminants and are not included on the list of COCs in Appendix A and therefore, are not included in the total VOC values on this table.

Results for the program are validated at 20% frequency, per protocols specified in OU2 Groundwater Monitoring Plan (Arcadis 2016).

Bold value indicates a detection.

< 5.0	Compound not detected above its method detection limit
µg/L	micrograms per liter
D	Concentration is based on a diluted sample analysis
J	Value is estimated concentration.
NYSDEC	New York State Department of Environmental Conservation
OU2	Operable Unit 2
REP	Blind duplicate sample
TOGs	Technical and Operational Guidance Series
TVOCs	Total Volatile Organic Compounds (known lab contaminants acetone, 2-butanone, and methylene chloride are not included in calculation of TVOCs)
VOCs	Volatile Organic Compounds
	Compound detected in exceedance of NYSDEC SCG Criteria
USEPA	United States Environmental Protection Agency

Table 14
 Summary of Metals Concentrations in Groundwater for 2024
 Proximate to Former Northrop Grumman Plants 1 and 2
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Constituent (units in ug/L)	Location:	Plant 1										
	Well ID:	GM-15SR	GM-15SR	PLT1 MW-04	PLT1 MW-04	PLT1 MW-05	PLT1 MW-05	PLT1 MW-05 ⁽²⁾	PLT1 MW-05	PLT1 MW-05	PLT1 MW-06	PLT1 MW-06
	Sample ID:	GM-15SR	GM-15SR	PLT1 MW-04	PLT1 MW-04	PLT1 MW-05	REP042324PQ1	PLT1 MW-05	PLT1 MW-05	REP101524AH1	PLT1 MW-06	PLT1 MW-06
	Sample Date:	4/23/2024	10/15/2024	4/23/2024	10/15/2024	4/23/2024	4/23/2024	6/3/2024	10/15/2024	10/15/2024	4/23/2024	10/15/2024
	NYSDEC SCGs (ug/L) ⁽¹⁾											
Cadmium (Total)	5	--	--	--	--	--	--	--	--	--	--	--
Cadmium (Dissolved)	5	--	--	--	--	--	--	--	--	--	--	--
Chromium (Total)	50	207	309	12.0	<10	982	1010	828	284	283	131	110
Chromium (Dissolved)	50	204	291	13.5	<10	1020	1030	854	276	285	129	104

Notes and Abbreviations on last page

Table 14
 Summary of Metals Concentrations in Groundwater for 2024
 Proximate to Former Northrop Grumman Plants 1 and 2
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Constituent (units in ug/L)	Location:	Plant 2								
	Well ID:	GM-78I	GM-78S	MW-01GF	MW-01GF	MW-02GF	MW-02GF ⁽²⁾	MW-02GF	N-10631R	N-10631R
	Sample ID: Sample Date:	GM-78I 4/24/2024	GM-78S 4/24/2024	MW-01GF 4/24/2024	MW-01GF 11/11/2024	MW-02GF 4/24/2024	MW-02GF 6/3/2024	MW-02GF 10/16/2024	N-10631R 4/16/2024	N-10631R 10/16/2024
	NYSDEC SCGs (ug/L)⁽¹⁾									
Cadmium (Total)	5	<3.0	<3.0	<3.0	<3.0	<3.0	--	<3.0	<3.0	<3.0
Cadmium (Dissolved)	5	<3.0	<3.0	<3.0	<3.0	<3.0	--	<3.0	<3.0	<3.0
Chromium (Total)	50	<10	<10	<10	<10	32.1	19.9	10.3	20.1	16.8
Chromium (Dissolved)	50	<10	<10	<10	<10	31.8	20.1	<10	18.3	16.8

Notes and Abbreviations on last page

Table 14
Summary of Metals Concentrations in Groundwater for 2024
Proximate to Former Northrop Grumman Plants 1 and 2
Operable Unit 2
Northrop Grumman
Bethpage, New York

Notes and Abbreviations:

(1) Standards, Criteria, and Guidance (SCG) values based on documents referenced in the Groundwater Feasibility Study Report (ARCADIS Geraghty & Miller, Inc. 2000) that are based on the NYSDEC TOGs (NYSDEC 1998); most stringent values listed.

(2) MW-02GF and PLT1 MW-05 were resampled for metals on June 3, 2024 to confirm April sampling results due to variations from historical results.

Samples analyzed for Cadmium and Chromium using USEPA Method 6010C; Total indicates unfiltered sample and dissolved indicates filtered sample.

Results for the program are validated at 20% frequency, per protocols specified in OU2 Groundwater Monitoring Plan (Arcadis 2016).

Location of monitoring well relative to former Northrop Grumman Plants 1 and 2 are identified within this table.

Bold value indicates a detection.

--	Not analyzed
< 3.0	Compound not detected above its laboratory quantification limit
µg/L	Micrograms per liter
NYSDEC	New York State Department of Environmental Conservation
OU2	Operable Unit 2
REP	Blind Duplicate Sample
TOGs	Technical Operational and Guidance Series
USEPA	United States Environmental Protection Agency
 	Compound detected in exceedance of NYSDEC SCG Criteria

Table 15
Summary of 1,4-Dioxane Concentrations in Groundwater for 2024
Operable Unit 2
Northrop Grumman
Bethpage, New York



Well ID	Sample ID	Sample Date	1,4-Dioxane (µg/L)
Zone 1			
BPOW 1-1	BPOW 1-1	5/14/2024	<0.200 B
BPOW 1-1	BPOW 1-1	9/3/2024	0.0840 J
BPOW 1-1	BPOW 1-1	11/6/2024	0.0578 J
BPOW 1-1	REP110624BM1	11/6/2024	0.0434 J
FW-03	FW-03	5/22/2024	<0.25
GM-13D	GM-13D	4/30/2024	2.1
GM-15I	GM-15I	4/23/2024	1.0
GM-15I	GM-15I	10/15/2024	1.6
GM-15SR	GM-15SR	4/23/2024	1.8
GM-15SR	GM-15SR	10/15/2024	1.4
GM-17D	GM-17D	4/30/2024	5.6
GM-17D	GM-17D	10/17/2024	5.6
GM-17I	GM-17I	4/30/2024	5.1
GM-17I	GM-17I	10/17/2024	4.3
GM-18D	GM-18D	4/17/2024	8.2
GM-18D	GM-18D	10/16/2024	7.8
GM-18I	GM-18I	4/17/2024	6.5
GM-18I	GM-18I	10/16/2024	6.5
GM-20D	GM-20D	4/18/2024	4.4
GM-20I	GM-20I	4/18/2024	3.0
GM-21D	GM-21D	4/29/2024	3.9
GM-21I	GM-21I	4/29/2024	2.4
GM-21S	GM-21S	4/29/2024	2.5
GM-36D	GM-36D	4/22/2024	0.97
GM-37D	GM-37D	5/22/2024	<0.23
GM-39DA	GM-39DA	4/18/2024	2.9
GM-39DA	GM-39DA	10/17/2024	1.6
GM-74I	GM-74I	4/15/2024	2.2
GM-74I	GM-74I	10/21/2024	2.3
GM-78I	GM-78I	4/24/2024	2.6
GM-78S	GM-78S	4/24/2024	1.9
GM-79D	GM-79D	4/17/2024	4.9
GM-79D	GM-79D	10/22/2024	5.5
GM-79I	GM-79I	4/17/2024	4.4
GM-79I	GM-79I	10/22/2024	5.8 J
HN-24I	HN-24I	5/22/2024	1.0
HN-40I	HN-40I	4/25/2024	<0.24
HN-40S	HN-40S	4/25/2024	<0.24
HN-42I	HN-42I	4/25/2024	<0.24
HN-42S	HN-42S	4/25/2024	<0.24
N-10624	N-10624	4/16/2024	3.5
N-10631R	N-10631R	4/16/2024	3.5
N-10631R	N-10631R	10/16/2024	3.1

Notes and Abbreviations on last page.

Table 15
Summary of 1,4-Dioxane Concentrations in Groundwater for 2024
Operable Unit 2
Northrop Grumman
Bethpage, New York



Well ID	Sample ID	Sample Date	1,4-Dioxane (µg/L)
Zone 2			
BPOW 1-2	BPOW 1-2	2/20/2024	0.135 J
BPOW 1-2	BPOW 1-2	5/14/2024	<0.200
BPOW 1-2	BPOW 1-2	8/5/2024	0.100 J
BPOW 1-2	BPOW 1-2	11/6/2024	0.105 J
BPOW 1-3	BPOW 1-3	5/14/2024	0.675
BPOW 1-3	BPOW 1-3	9/3/2024	0.296
BPOW 1-3	BPOW 1-3	11/6/2024	0.246
BPOW 1-4	BPOW 1-4	2/21/2024	0.360
BPOW 1-4	BPOW 1-4	5/16/2024	0.415
BPOW 1-4	BPOW 1-4	8/6/2024	0.292
BPOW 1-4	BPOW 1-4	11/6/2024	0.318
BPOW 2-1	BPOW 2-1	2/28/2024	0.919 B
BPOW 2-1	BPOW 2-1	5/16/2024	4.48
BPOW 2-1	BPOW 2-1	8/5/2024	2.71
BPOW 2-1	BPOW 2-1	11/7/2024	1.12
BPOW 2-1	REP110724SH1	11/7/2024	1.14
BPOW 2-2	BPOW 2-2	2/28/2024	0.675 B
BPOW 2-2	BPOW 2-2	5/16/2024	0.594
BPOW 2-2	BPOW 2-2	8/7/2024	0.599
BPOW 2-2	BPOW 2-2	11/7/2024	0.469
BPOW 3-1	BPOW 3-1	5/20/2024	0.680
BPOW 3-1	BPOW 3-1	8/30/2024	0.919
BPOW 3-1	BPOW 3-1	11/5/2024	0.692
GM-15D	GM-15D	4/23/2024	<0.24
GM-15D	GM-15D	10/15/2024	0.11 J
GM-34D	GM-34D	4/17/2024	6.2
GM-34D	REP041724PQ1	4/17/2024	6.6
GM-34D	GM-34D	10/17/2024	4.9
GM-37D2	GM-37D2	4/22/2024	0.69
GM-38D	GM-38D	4/22/2024	3.4
GM-38D	REP042224SV1	4/22/2024	3.3
GM-38D	GM-38D	10/22/2024	3.9
GM-38D	REP102224	10/22/2024	3.4
GM-38D2	GM-38D2	4/22/2024	3.6
GM-38D2	GM-38D2	10/22/2024	4.9
GM-39DB	GM-39DB	4/18/2024	3.3
GM-39DB	GM-39DB	10/17/2024	2.5
GM-70D2	GM-70D2	4/24/2024	4.9
GM-71D2	GM-71D2	4/22/2024	3.2
GM-73D	GM-73D	4/15/2024	0.98
GM-73D	GM-73D	10/21/2024	1.5
GM-74D	GM-74D	4/15/2024	4.4
GM-74D	GM-74D	10/21/2024	4.8
GM-78D	GM-78D	4/24/2024	7.8
GM-78D	GM-78D	10/22/2024	9.1
GM-78D2	GM-78D2	4/24/2024	8.7
GM-78D2	GM-78D2	10/22/2024	11

Notes and Abbreviations on last page.

Table 15
Summary of 1,4-Dioxane Concentrations in Groundwater for 2024
Operable Unit 2
Northrop Grumman
Bethpage, New York



Well ID	Sample ID	Sample Date	1,4-Dioxane (µg/L)
Zone 2 (cont'd)			
MW-3-1	MW-3-1	4/30/2024	6.0
Mw-3-1	REP043024KK1	4/30/2024	5.6
MW-3-1	MW-3-1	10/21/2024	9.5
RE104D1	RE104D1	2/16/2024	3.3 J-
WELL 3R	WELL 3R	2/27/2024	6.5
Well 3R	REP-022724-PD-1	2/27/2024	7.0
WELL 3R	WELL 3R	5/14/2024	7.3
WELL 3R	REP-051424-PD-1	5/14/2024	8.2
WELL 3R	WELL 3R	8/28/2024	7.0
WELL 3R	WELL 3R	11/12/2024	11
Well 3R	REP111224-PD-1	11/12/2024	12
Zone 3			
BPOW 1-5	BPOW 1-5	2/21/2024	<0.200
BPOW 1-5	BPOW 1-5	5/16/2024	<0.200
BPOW 1-5	BPOW 1-5	8/6/2024	<0.200
BPOW 1-5	BPOW 1-5	11/6/2024	<0.200
BPOW 2-3	BPOW 2-3	2/28/2024	3.97 B
BPOW 2-3	BPOW 2-3	5/16/2024	3.52
BPOW 2-3	BPOW 2-3	8/5/2024	3.95
BPOW 2-3	BPOW 2-3	11/7/2024	3.12
BPOW 3-2	BPOW 3-2	5/20/2024	3.28
BPOW 3-2	BPOW 3-2	8/30/2024	2.73
BPOW 3-2	BPOW 3-2	11/5/2024	3.19
BPOW 3-3 ⁽¹⁾	BPOW 3-3	2/19/2024	10.7
BPOW 3-3	BPOW 3-3	5/20/2024	9.32
BPOW 3-3	BPOW 3-3	8/8/2024	9.89
BPOW 3-3	BPOW 3-3	11/5/2024	9.09
BPOW 3-4	BPOW 3-4	2/19/2024	13.6
BPOW 3-4	REP021924ARH	2/19/2024	14.1
BPOW 3-4	BPOW 3-4	5/20/2024	14.4
BPOW 3-4	BPOW 3-4	8/8/2024	15.3
BPOW 3-4	BPOW 3-4	11/5/2024	14.8
BPOW 4-1R	BPOW 4-1R	2/16/2024	6.27
BPOW 4-1R	BPOW 4-1R	5/13/2024	5.92
BPOW 4-1R	BPOW 4-1R	9/3/2024	5.49
BPOW 4-1R	BPOW 4-1R	11/4/2024	5.18
GM-15D2	GM-15D2	4/23/2024	2.8
GM-15D2	GM-15D2	10/15/2024	2.8
GM-21D2	GM-21D2	2/8/2024	5.5 J
GM-21D2	GM-21D2	4/29/2024	4.5
GM-21D2	GM-21D2	7/29/2024	4.8 J
GM-21D2	GM-21D2	10/21/2024	5.9
GM-33D2	GM-33D2	4/16/2024	11
GM-33D2	GM-33D2	10/16/2024	11
GM-33D2	REP101624	10/16/2024	11
GM-34D2	GM-34D2	4/17/2024	7.5
GM-34D2	GM-34D2	10/17/2024	5.9

Notes and Abbreviations on last page.

Table 15
Summary of 1,4-Dioxane Concentrations in Groundwater for 2024
Operable Unit 2
Northrop Grumman
Bethpage, New York



Well ID	Sample ID	Sample Date	1,4-Dioxane (µg/L)
Zone 3 (cont'd)			
GM-35D2	GM-35D2	4/30/2024	5.1
GM-35D2	GM-35D2	10/22/2024	7.7
GM-36D2	GM-36D2	4/22/2024	6.6
GM-73D2	GM-73D2	4/15/2024	1.5
GM-73D2	REPO41524PQ1	4/15/2024	1.5
GM-73D2	GM-73D2	10/21/2024	3.7
GM-73D2	REP102124AH1	10/21/2024	3.4
GM-73D3	GM-73D3	6/25/2024	0.79
GM-73D3	GM-73D3	10/21/2024	1.4
GM-74D2	GM-74D2	4/15/2024	2.1
GM-74D2	GM-74D2	10/21/2024	2.1
GM-74D3	GM-74D3	4/15/2024	1.2
GM-74D3	GM-74D3	10/21/2024	1.7
GM-75D2	GM-75D2	4/16/2024	5.7
GM-75D2	GM-75D2	10/16/2024	7.5 MM
RE109D1	RE109D1	5/8/2024	6.8
RE109D1	RE109D1	10/31/2024	6.3
RE109D2	RE109D2	5/8/2024	8.4
RE109D2	RE109D2	10/31/2024	6.8
RE109D3	RE109D3	5/8/2024	7.6
RE109D3	RE109D3	10/31/2024	6.1
RE122D1 ⁽²⁾	RE122D1-20240221	2/21/2024	3.2 J-
RE122D1 ⁽²⁾	RE122D1-20240916	9/16/2024	3.1
RE122D2 ⁽²⁾	RE122D2-20240221	2/21/2024	4.2 J-
RE122D2 ⁽²⁾	RE122D2-20240916	9/16/2024	4.0
RE122D3 ⁽²⁾	RE122D3-20240221	2/21/2024	<0.200 X
RE122D3 ⁽²⁾	RE122D3-20240221-D	2/21/2024	<0.200 X
RE122D3 ⁽²⁾	RE122D3-20240916	9/16/2024	<0.200
RE123D1 ⁽²⁾	RE123D1-20241001	10/1/2024	0.61 J+
RE123D2 ⁽²⁾	RE123D2-20240916	9/16/2024	0.2 J
RE123D3 ⁽²⁾	RE123D3-20240916	9/16/2024	<0.200
RE123D3 ⁽²⁾	RE123D3-20240916-D	9/16/2024	<0.210
RE126D1 ⁽²⁾	RE126D1-20240215	2/15/2024	2
RE126D1 ⁽²⁾	RE126D1-20240913	9/13/2024	2.8
RE126D1 ⁽²⁾	RE126D1-20240913-D	9/13/2024	2.4
RE126D2 ⁽²⁾	RE126D2-20240215	2/15/2024	2.7
RE126D2 ⁽²⁾	RE126D2-20240912	9/12/2024	3.7
RE126D3 ⁽²⁾	RE126D3-20240913	9/13/2024	1.2
WELL 1	WELL 1	2/27/2024	6.2
WELL 1	WELL 1	5/14/2024	6.4
WELL 1	WELL 1	8/28/2024	5.2
WELL 1	WELL 1	11/12/2024	9.4
WELL 17	WELL 17	2/27/2024	6.4
WELL 17	WELL 17	5/14/2024	7.0
WELL 17	WELL 17	9/10/2024	6.4
WELL 17	WELL 17	11/12/2024	8.7
WELL 18	WELL 18	2/27/2024	4.2
WELL 18	WELL 18	5/14/2024	4.9
WELL 18	WELL 18	9/10/2024	4.4
WELL 18	WELL 18	11/12/2024	6.6
WELL 19	WELL 19	2/27/2024	3.5
WELL 19	WELL 19	5/14/2024	3.2
WELL 19	WELL 19	9/10/2024	3.2
WELL 19	REP-091024-PD-1	9/10/2024	2.9
WELL 19	WELL 19	11/12/2024	3.0

Notes and Abbreviations on last page.

Table 15
 Summary of 1,4-Dioxane Concentrations in Groundwater for 2024
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Well ID	Sample ID	Sample Date	1,4-Dioxane (µg/L)
Zone 4			
BPOW 1-6	BPOW 1-6	2/21/2024	<0.200
BPOW 1-6	BPOW 1-6	5/16/2024	0.0402 J
BPOW 1-6	REP051624SV1	5/16/2024	<0.200
BPOW 1-6	BPOW 1-6	8/6/2024	<0.200
BPOW 1-6	BPOW 1-6	11/6/2024	<0.200
BPOW 4-2R	BPOW 4-2R	2/16/2024	3.12
BPOW 4-2R	BPOW 4-2R	5/13/2024	3.11
BPOW 4-2R	BPOW 4-2R	8/8/2024	3.53
BPOW 4-2R	BPOW 4-2R	11/4/2024	2.42

Notes and Abbreviations on last page.

Table 15
Summary of 1,4-Dioxane Concentrations in Groundwater for 2023
Operable Unit 2
Northrop Grumman
Bethpage, New York



Notes and Abbreviations:

Results are validated at 20% frequency, per protocols specified in OU2 Groundwater Monitoring Plan (Arcadis 2016).

Samples were analyzed for 1,4-Dioxane using USEPA Method 8270D SIM, except for outpost wells (BPOW designation in Well ID) which were analyzed using USEPA Method 522.

⁽¹⁾ During the first quarter 2024 sampling event, BPOW3-3 and BPOW3-4 were analyzed by both SGS laboratory and GEL laboratory. The validated result from GEL laboratory is presented.

⁽²⁾ Analytical data analyzed for 1,4-Dioxane was provided by Tetra Tech on behalf of the Navy.

Bold value indicates constituent detected.

< 0.20	Compound not detected above its laboratory quantification limit
ID	Identification
µg/L	micrograms per liter
J	Value is estimated concentration
J+	Estimated value, but the result may be biased high
J-	Estimated value, but the result may be biased low
B	Analyte found in associated method blank
MM	Indicates that the flagged compound did not meet criteria in the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) prepared and/or analyzed concurrently with the native sample.
R	The sample results are rejected. (unusable data point)
X	Exclusion recommended due to serious deficiencies experienced during analysis
REP	Blind Duplicate Sample
OU2	Operable Unit 2
USEPA	United States Environmental Protection Agency
SIM	Selective Ion Monitoring

Table 16
 Percent Change in Total Volatile Organic Compounds Over Time
 in Monitoring and Remedial Wells
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Well ID	Highest Historical TVOC Concentration		Current TVOC Concentration ⁽¹⁾		Percent Change From Highest Historical TVOC Concentration
	Date	µg/L	Date	µg/L	
Upgradient From OU2 ONCT System					
Zone 1					
FW-03	1/3/2002	64.90	5/22/2024	ND	-100.0%
GM-13D	3/23/2000	2,401.00	4/30/2024	23.8	-99.0%
HN-24I	12/1/1991	58,034.00	5/22/2024	11.3	-100.0%
HN-40I	12/22/2003	53.30	4/25/2024	1.3	-97.6%
HN-40S	3/17/2006	8.00	4/25/2024	ND	-100.0%
HN-42I	7/8/2009	27.40	4/25/2024	ND	-100.0%
HN-42S	3/18/2003	5.00	4/25/2024	ND	-100.0%
Zone 2					
MW-3-1	3/28/2012	1,620.40	10/21/2024	200	-87.7%
Average Upgradient:	--	7,776.75	--	29.6	-99.62%
ONCT Remedial Wells					
Zone 2					
Well 3R	12/13/2017	646.80	11/12/2024	200	-69.1%
Zone 3					
Well 1	3/17/1989	14,362.0	11/12/2024	417	-97.1%
Well 17	3/5/1998	7,200.0	11/12/2024	134	-98.1%
Well 18	10/16/2000	221.0	11/12/2024	44.9	-79.7%
Well 19	2/27/2012	237.26	11/12/2024	59.6	-74.9%
Average ONCT Wells:	--	4,533.41	--	171	-96.23%
Proximate to OU2 ONCT System					
Zone 1					
GM-15SR	6/28/2017	11.10	10/14/2024	0.62	-94.4%
GM-15I	2/24/2010	38.20	10/14/2024	0.79	-97.9%
GM-17D	12/27/2001	3.00	10/17/2024	ND	-100.0%
GM-17I	3/28/2003	2.50	10/17/2024	ND	-100.0%
GM-18D	4/11/2006	12.90	10/16/2024	0.82	-93.6%
GM-18I	10/29/1991	14.00	10/16/2024	ND	-100.0%
GM-20D	6/28/2018	50.19	4/18/2024	0.70	-98.6%
GM-20I	6/5/2001	899.00	4/18/2024	0.64	-99.9%
GM-21D	9/10/2019	8.00	4/29/2024	0.62	-92.3%
GM-21I	10/23/1991	17.00	4/29/2024	1.7	-90.1%
GM-21S	10/22/1991	7.00	4/29/2024	3.2	-54.4%
GM-39DA	3/23/2004	42.00	10/17/2024	3.4	-91.9%
GM-74I	12/9/2013	1.37	10/21/2024	ND	-100.0%
GM-78I	1/9/2002	7.00	4/24/2024	0.66	-90.6%
GM-78S	6/18/2002	8.80	4/24/2024	ND	-100.0%
GM-79D	4/7/2003	115.80	10/22/2024	14.4	-87.6%
GM-79I	2/14/2012	31.36	10/22/2024	ND	-100.0%
Zone 2					
RE123D1	9/29/2015	22.12	10/1/2024	14.3	-35.4%
GM-15D	10/8/2001	39.90	10/14/2024	ND	-100.0%
GM-39DB	1/7/2003	111.00	10/17/2024	14.7	-86.8%
GM-73D	10/18/2002	780.00	10/21/2024	96.9	-87.6%
GM-74D	2/5/2001	87.00	10/21/2024	1.2	-98.6%
GM-78D	4/26/2013	4.78	10/22/2024	0.65	-86.4%
GM-78D2	5/4/2017	1.60	10/22/2024	0.79	-50.6%
Zone 3					
RE123D2	3/9/2017	9.71	9/16/2024	1.91	-80.3%
GM-15D2	3/21/2003	36.50	10/14/2024	7.6	-79.2%
GM-21D2	2/11/2016	277.64	10/21/2024	3.3	-98.8%
GM-33D2	11/2/1994	16,000	10/16/2024	7.2	-100.0%
GM-73D2	11/22/2002	1,204	10/21/2024	12.0	-99.0%
GM-73D3	10/8/2019	3.30	10/21/2024	3.5	6.1%
GM-74D2	3/22/2004	26.80	10/21/2024	27.1	1.1%
GM-74D3	6/13/2015	11.49	10/21/2024	7.9	-31.2%
Zone 4					
RE123D3	3/9/2017	0.95	9/16/2024	ND	-100.0%
Average Proximate:	--	602.61	--	6.9	-98.86%

Notes and Abbreviations on last page

Table 16
 Percent Change in Total Volatile Organic Compounds Over Time
 in Monitoring and Remedial Wells
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Well ID	Highest Historical TVOC Concentration		Current TVOC Concentration ⁽¹⁾		Percent Change From Highest Historical Concentration
	Date	µg/L	Date	µg/L	
Near Central Downgradient of OU2 ONCT System					
Zone 1					
GM-37D	9/7/1999	41.0	5/22/2024	6.9	-83.2%
N-10624	10/26/2023	1.20	4/16/2024	ND	-100.0%
Zone 2					
GM-37D2	7/13/2000	29.0	4/22/2024	1.77	-93.9%
Zone 3					
GM-75D2	10/3/2002	1,566.4	10/16/2024	9.7	-99.4%
RE109D1	12/19/2018	31.23	10/31/2024	9.8	-68.6%
RE109D2	9/17/2019	53.77	10/31/2024	28.7	-46.6%
RE109D3	9/17/2019	91.04	10/31/2024	26.2	-71.2%
RE126D1	12/7/2017	87.50	9/13/2024	17.1	-80.5%
RE126D2	6/22/2021	575.04	9/12/2024	310	-46.1%
RE126D3	3/10/2017	19.84	9/13/2024	7.8	-60.7%
Average Near:	--	227.0	--	41.8	-81.59%
Far Central Downgradient of OU2 ONCT System					
Zone 1					
GM-36D	8/23/1993	255.00	4/22/2024	ND	-100.0%
Zone 2					
GM-34D	11/30/2006	1,172.02	10/17/2024	49.8	-95.8%
GM-36D2	6/26/2018	5.29	4/22/2024	3.7	-30.1%
GM-70D2	12/16/1996	313.60	4/24/2024	6.0	-98.1%
GM-71D2	4/12/2016	26.50	4/22/2024	8.2	-69.0%
Zone 3					
GM-34D2	6/9/2005	415.0	10/17/2024	24.3	-94.1%
GM-35D2	10/3/2002	454.60	10/22/2024	15.2	-96.7%
RE108D1	9/24/2014	143.87	9/13/2024	24.8	-82.8%
RE108D2	3/12/2014	4,653.0	9/13/2024	1510	-67.5%
RE122D1	9/9/2019	764.54	9/16/2024	256	-66.5%
RE122D2	9/9/2019	6,343.30	9/16/2024	3423	-46.0%
Zone 4					
RE122D3	3/13/2017	15.50	9/16/2024	1.7	-89.0%
Average Far:	--	1,213.52	--	444	-63.45%
GM-38 Area Downgradient of OU2 ONCT System					
Zone 2					
GM-38D	12/11/1996	1,622.30	10/22/2024	111	-93.1%
GM-38D2	7/1/2002	2,012.0	10/22/2024	152	-92.5%
Average GM-38 Area:	--	1,817.15	--	132	-92.76%
Former Outpost Wells Downgradient of OU2 ONCT System					
Zone 1					
BPOW 1-1	4/30/2004	30.20	11/6/2024	0.77	-97.5%
Zone 2					
BPOW 1-2	6/7/2016	1.65	11/6/2024	0.62	-62.3%
BPOW 1-3	6/18/2007	16.0	11/6/2024	ND	-100.0%
BPOW 1-4	11/8/2017	0.20	11/6/2024	ND	-100.0%
BPOW 2-1	6/19/2007	229.72	11/7/2024	ND	-100.0%
BPOW 2-2	1/17/2006	2.62	11/7/2024	ND	-100.0%
BPOW 3-1	6/4/2019	0.20	11/5/2024	ND	-100.0%
Zone 3					
BPOW 1-5	8/10/2011	ND	11/6/2024	ND	-100.0%
BPOW 2-3	12/22/2011	0.56	11/7/2024	ND	-100.0%
BPOW 3-2	10/21/2003	0.29	11/5/2024	ND	-100.0%
BPOW 3-3	8/11/2011	ND	11/5/2024	0.96	100.0%
BPOW 3-4	8/11/2011	43.52	11/5/2024	283	551.1%
BPOW 4-1R	12/30/2014	8.84	11/4/2024	51.2	479.0%

Notes and Abbreviations on last page

Table 16
 Percent Change in Total Volatile Organic Compounds Over Time
 in Monitoring and Remedial Wells
 Operable Unit 2
 Northrop Grumman
 Bethpage, New York



Well ID	Highest Historical TVOC Concentration		Current TVOC Concentration ⁽¹⁾		Percent Change From Highest Historical Concentration
	Date	µg/L	Date	µg/L	
Zone 4					
BPOW 1-6	11/29/2016	0.07	11/6/2024	ND	-100.0%
BPOW 4-2R	12/30/2014	11.73	11/4/2024	43.2	268.5%
Average Plume Monitoring Wells:	--	23.04	--	25.3	10.0%

Notes and Abbreviations:

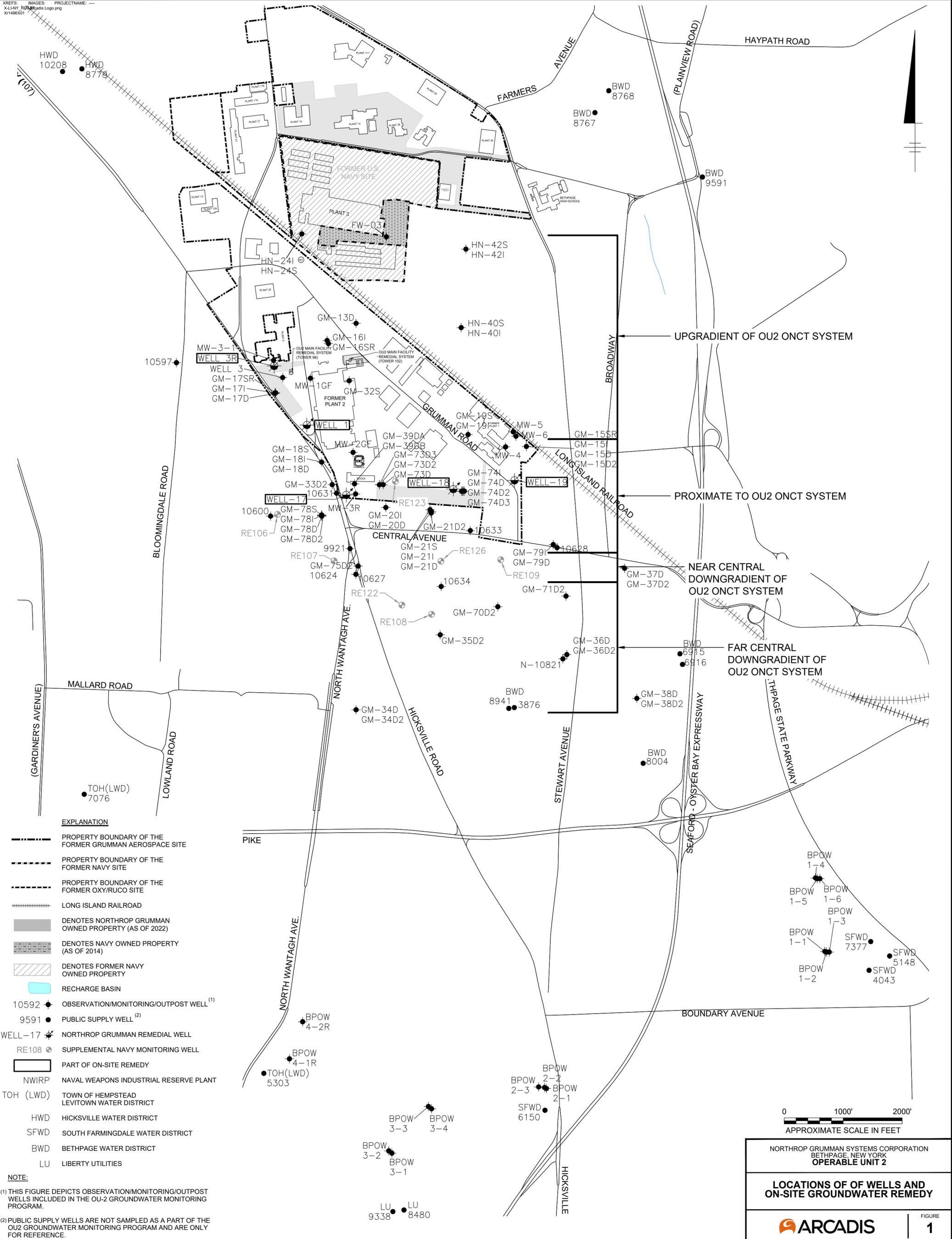
Yellow color indicates % increase from historical high concentration.

Green color indicates % decrease from historical high concentration.

ND Non-Detect

⁽¹⁾ TVOC concentrations are rounded to the number of decimal places of the individual VOC with the least precision (decimal places), including whole numbers with no decimal place.

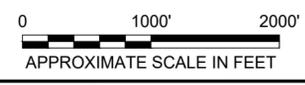
Figures



EXPLANATION

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE SITE
- PROPERTY BOUNDARY OF THE FORMER NAVY SITE
- PROPERTY BOUNDARY OF THE FORMER OXY/RUCO SITE
- +++++ LONG ISLAND RAILROAD
- DENOTES NORTHROP GRUMMAN OWNED PROPERTY (AS OF 2022)
- DENOTES NAVY OWNED PROPERTY (AS OF 2014)
- DENOTES FORMER NAVY OWNED PROPERTY
- RECHARGE BASIN
- 10592 ● OBSERVATION/MONITORING/OUTPOST WELL (1)
- 9591 ● PUBLIC SUPPLY WELL (2)
- WELL-17 ● NORTHROP GRUMMAN REMEDIAL WELL
- RE108 ● SUPPLEMENTAL NAVY MONITORING WELL
- ▭ PART OF ON-SITE REMEDY
- NWIRP NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
- TOH (LWD) TOWN OF HEMPSTEAD LEVITOWN WATER DISTRICT
- HWD HICKSVILLE WATER DISTRICT
- SFWD SOUTH FARMINGDALE WATER DISTRICT
- BWD BETHPAGE WATER DISTRICT
- LU LIBERTY UTILITIES

NOTE:
 (1) THIS FIGURE DEPICTS OBSERVATION/MONITORING/OUTPOST WELLS INCLUDED IN THE OU-2 GROUNDWATER MONITORING PROGRAM.
 (2) PUBLIC SUPPLY WELLS ARE NOT SAMPLED AS A PART OF THE OU2 GROUNDWATER MONITORING PROGRAM AND ARE ONLY FOR REFERENCE.

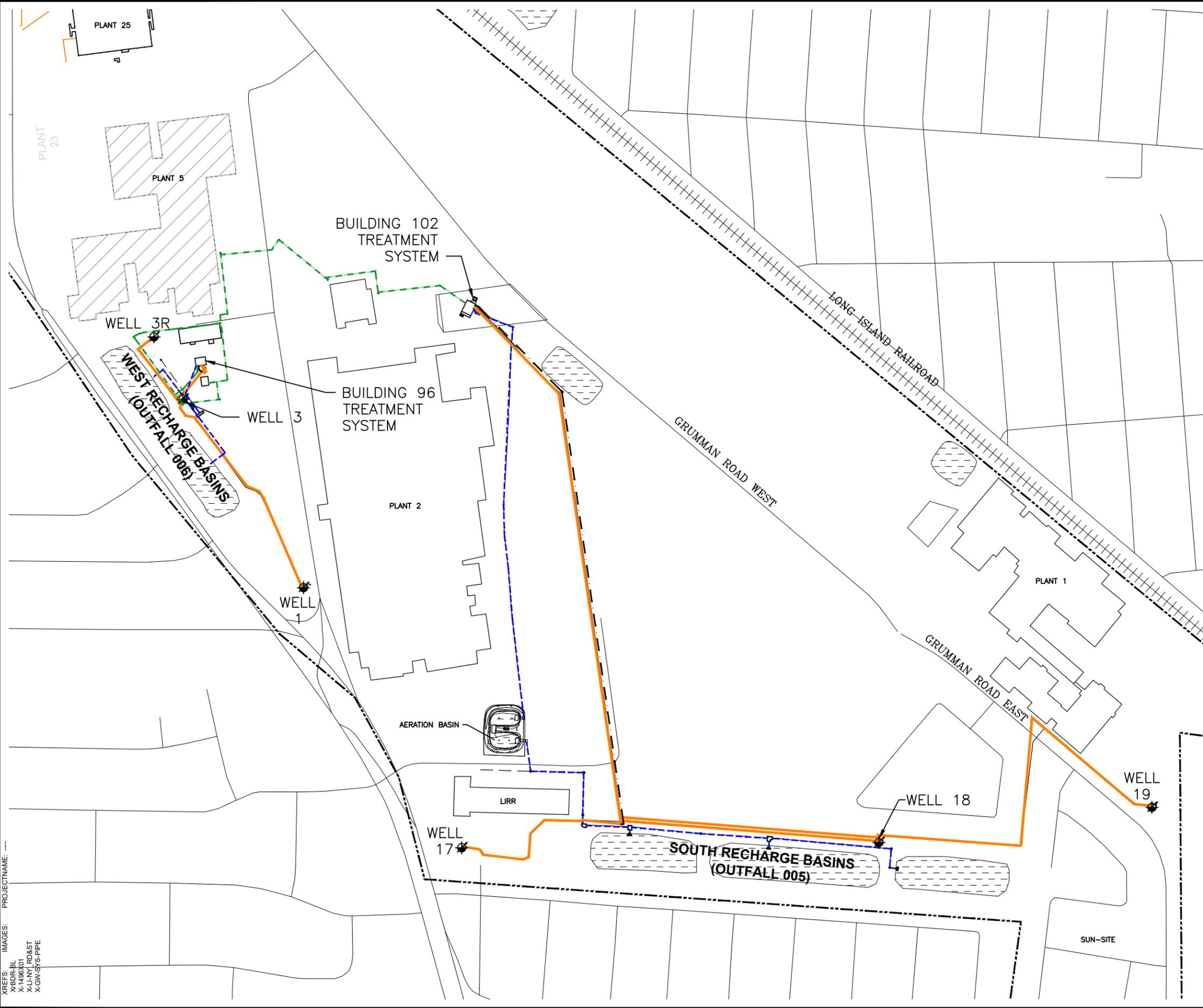


NORTHROP GRUMMAN SYSTEMS CORPORATION
 BETHPAGE, NEW YORK
OPERABLE UNIT 2

LOCATIONS OF OF WELLS AND ON-SITE GROUNDWATER REMEDY

ARCADIS | FIGURE 1

CITY:SYRACUSE,NY DIV:GROUPEPENY DBA:ARCADIS L:DAIS DC:(CIV) PM:(R) TH:(CIV) LVR:(C)ON:4-CFC-REF: C:\Users\smallbrian\OneDrive\Documents\ARCADIS\Projects\BETHPAGE_NY\Project Files\10_WIP\101_ARC_EN\202401-DWG\GEN-ONCT-GW-ETS-STEP\PLAN.DWG LAYOUT: 2. SAVED: 5/30/2024 4:50 PM. ACADVER: 24.2S (LMS TECH) PAGES: 1 OF 1. PLOTTED: 5/30/2024 4:51 PM BY: SMALL BRIAN



LEGEND:

- FORMER NORTHROP GRUMMAN PROPERTY LINE
- INFLUENT LINE
- BYPASS
- STORM DRAIN (EFFLUENT)
- NON POTABLE WATER DISTRIBUTION LINE (EFFLUENT)
- +++++ RAILROAD TRACKS
- x-x-x- FENCE
- WELL 18 REMEDIAL WELL
- BASIN
- ONCT ON-SITE CONTAMINANT

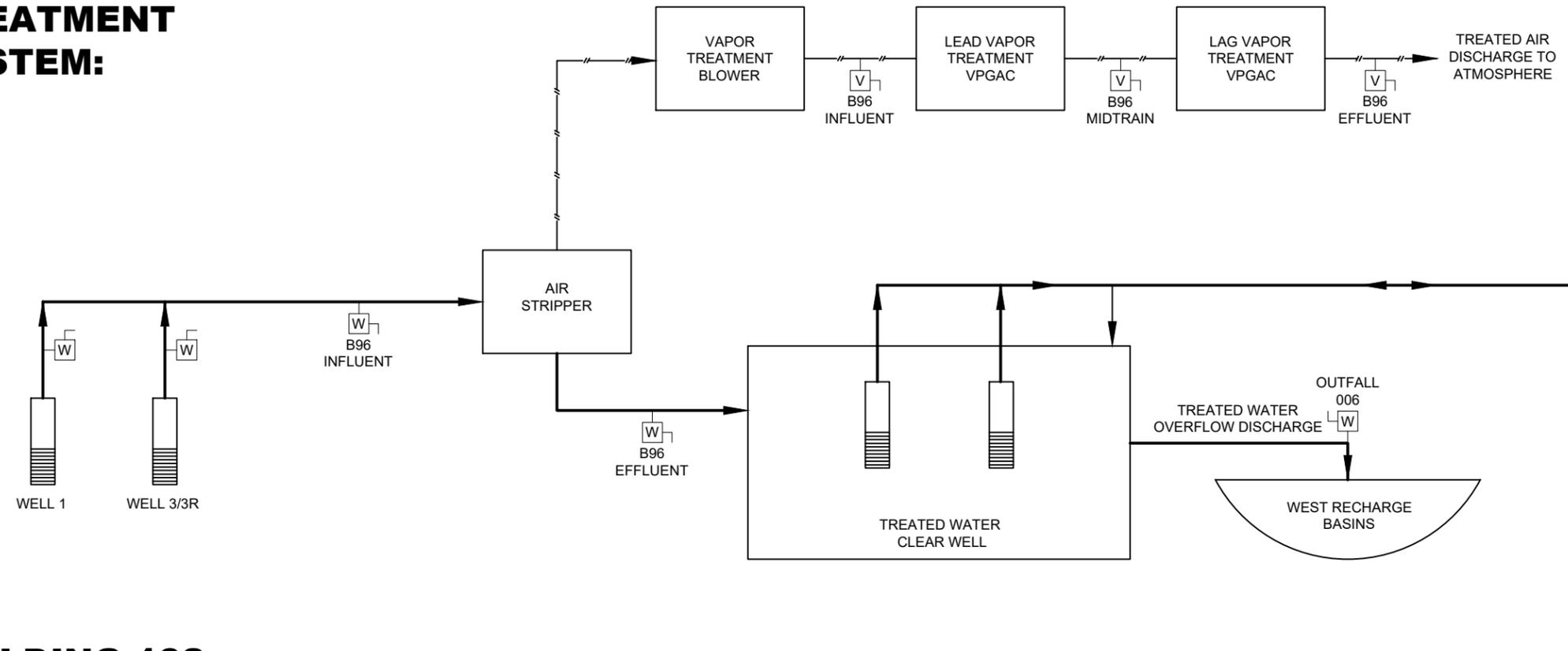
NOTES:

1. DRAWING IS NOT TO BE USED FOR DESIGN PURPOSES. LAYOUT OF PIPING IS FOR REPRESENTATION ONLY (LOCATIONS ARE APPROXIMATE).
2. THE PIPING REPRESENTED IN THIS DRAWING MAY BE CONSTRUCTED OF CAST IRON PIPE (CIP), DUCTILE IRON PIPE (DIP), ASBESTOS CEMENT PIPE (ACP) OR TRANSITE, OR A COMBINATION OF THESE PIPE TYPES.

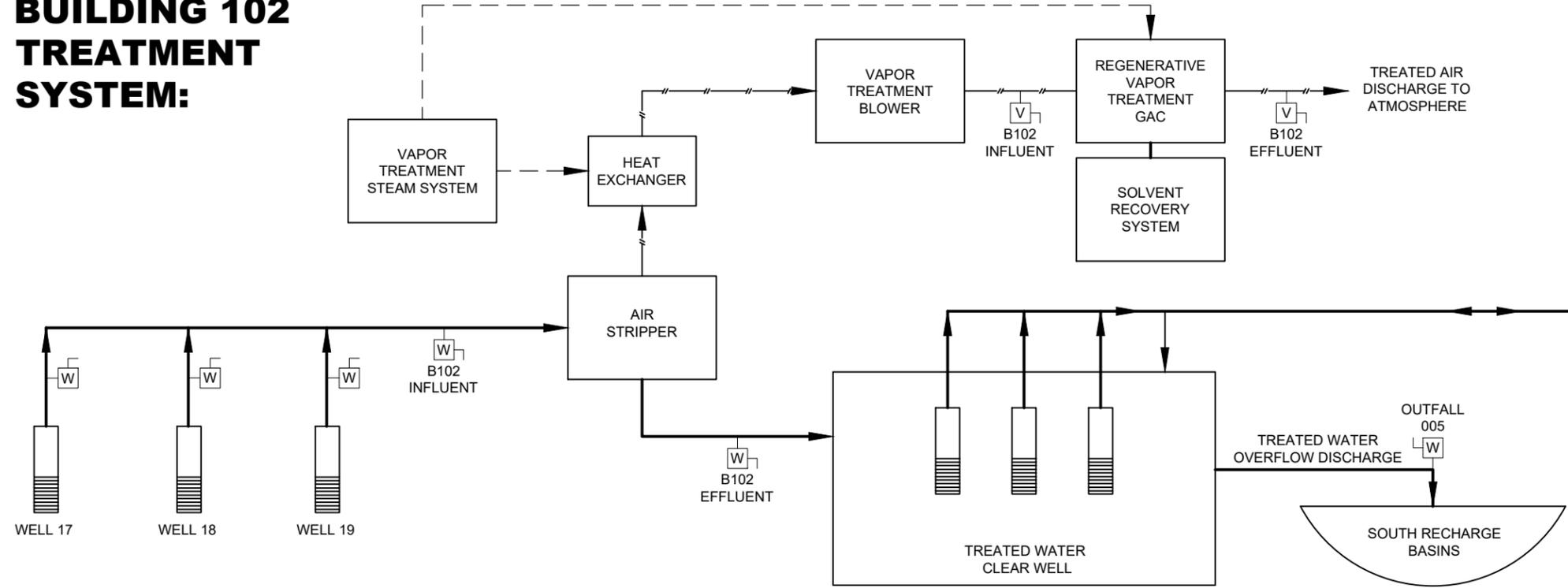
NORTHROP GRUMMAN BETHPAGE, NEW YORK OPERABLE UNIT 2	
ONCT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SITE PLAN	
	FIGURE 2

CITY: MANCHESTER DIV/GRP: ENV/CAD DB: B.SMALL PM: TM
 C:\Users\BSSMAIL\OneDrive\Documents\ARCADIS\ACC\US\AUS\9898989-NOR GRUM_BETHPAGE_NY\Project Files\10_WIP\101_ARC_ENV\202401-DWG\OU2-F03-GWE SYSTEM.dwg LAYOUT: 3
 PLOTTED: 3/28/2024 12:05 PM BY: SMALL, BRIAN
 XREFS: IMAGES: PROJECTNAME: ---
 PAGES: 24.2S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB

BUILDING 96 TREATMENT SYSTEM:



BUILDING 102 TREATMENT SYSTEM:



NOTE: SCHEMATIC REPRESENTS SYSTEM CONFIGURATIONS AT THE TIME OF SAMPLE LOCATION EVENTS, AFTER B96 RECONFIGURATION TO BYPASS THE REGENERATIVE VAPOR-PHASE GAC COMPONENTS

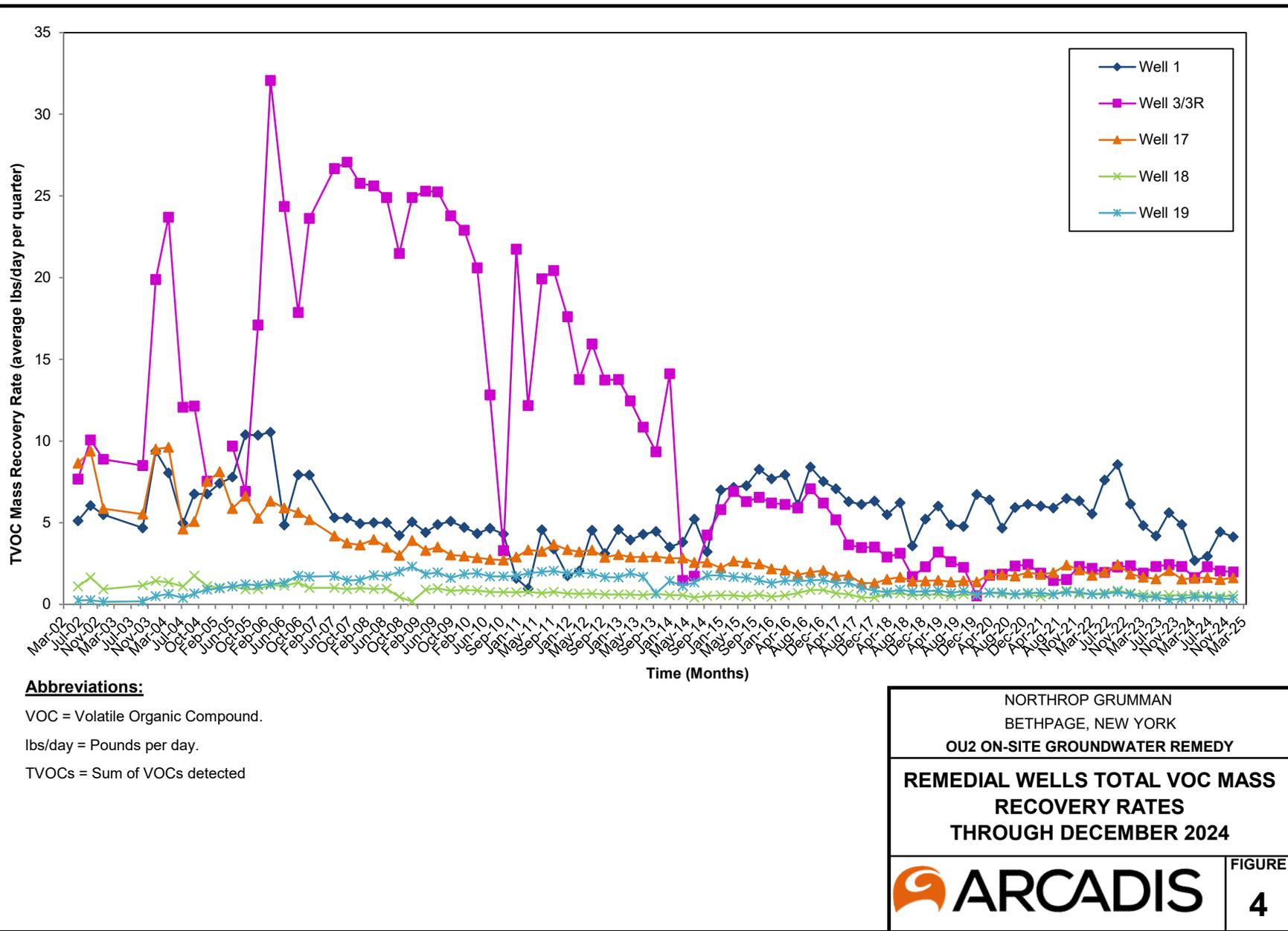
- LEGEND:
- PROCESS WATER
 - - - PROCESS AIR
 - - - - STEAM
 - W SAMPLE LOCATION
 - W WATER SAMPLE
 - V VAPOR SAMPLE
 - ONCT ON-SITE CONTAMINANT

NORTHROP GRUMMAN
 BETHPAGE, NEW YORK
OPERABLE UNIT 2

**ONCT GROUNDWATER
 EXTRACTION AND TREATMENT
 SYSTEM SCHEMATIC**

ARCADIS

FIGURE
3

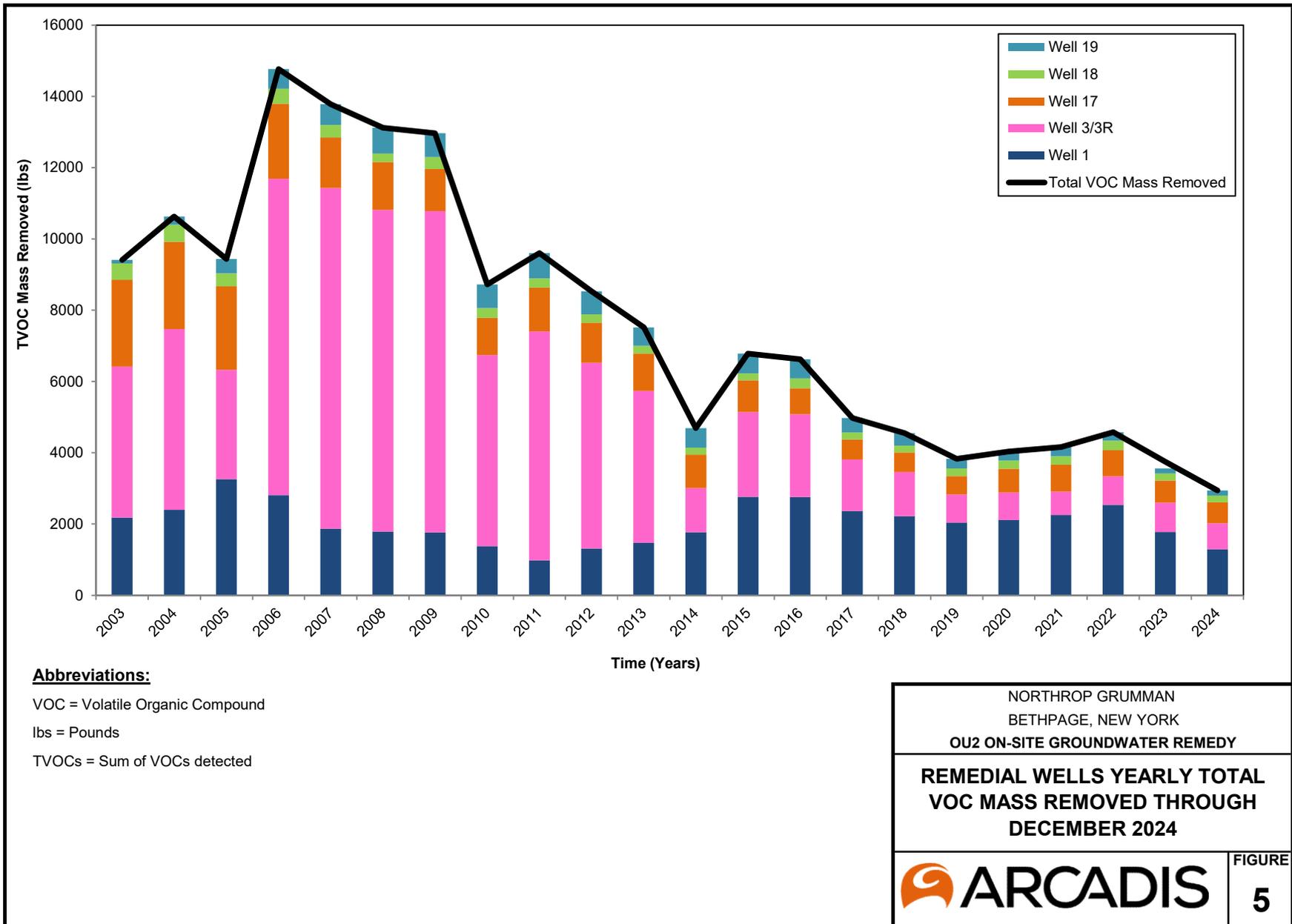


NORTHROP GRUMMAN
 BETHPAGE, NEW YORK
 OU2 ON-SITE GROUNDWATER REMEDY

**REMEDIAL WELLS TOTAL VOC MASS
 RECOVERY RATES
 THROUGH DECEMBER 2024**

 **ARCADIS**

FIGURE
4

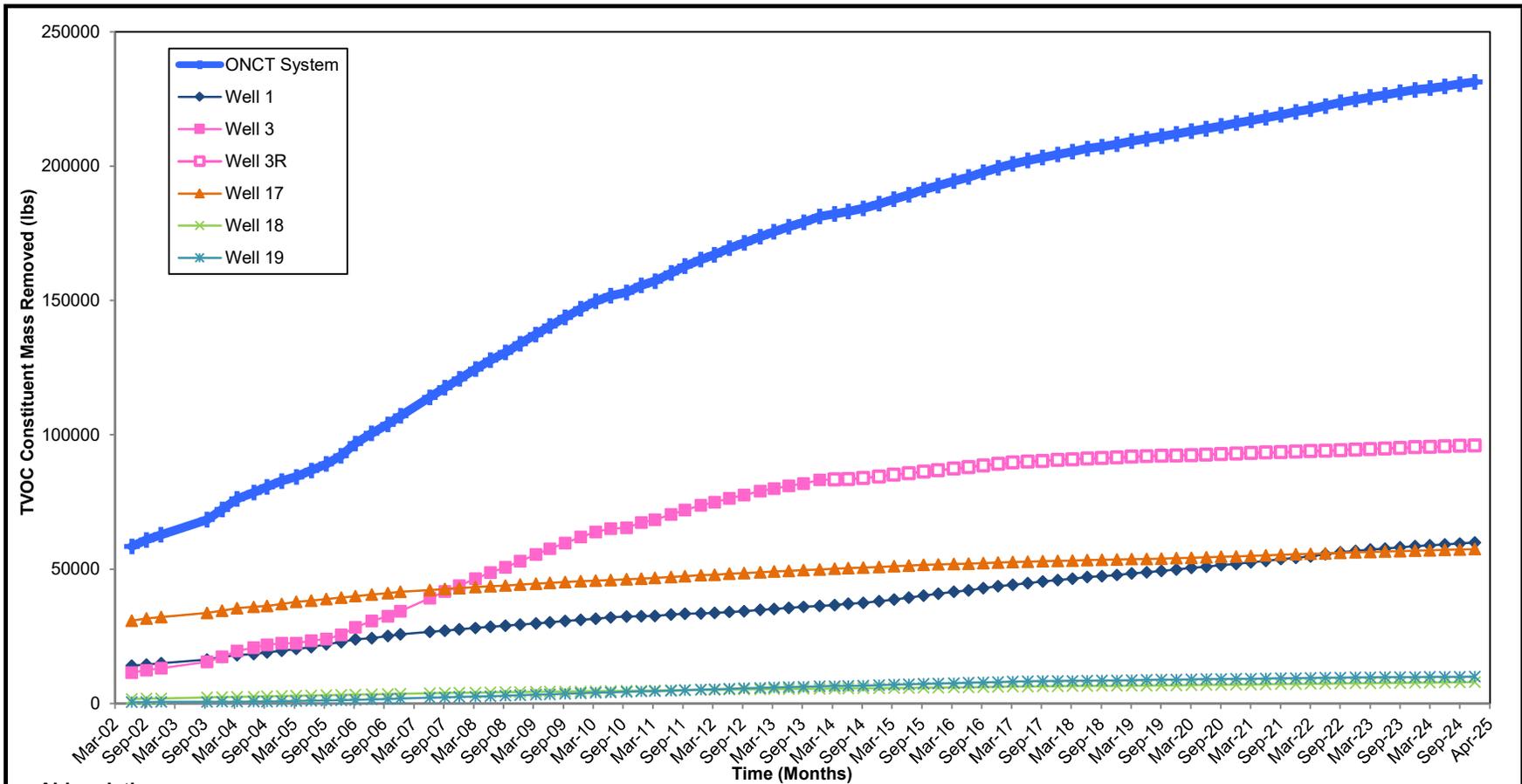


NORTHROP GRUMMAN
 BETHPAGE, NEW YORK
 OU2 ON-SITE GROUNDWATER REMEDY

**REMEDIAL WELLS YEARLY TOTAL
 VOC MASS REMOVED THROUGH
 DECEMBER 2024**

 **ARCADIS**

FIGURE
5



Abbreviations:

VOC = Volatile Organic Compound

lbs = Pounds

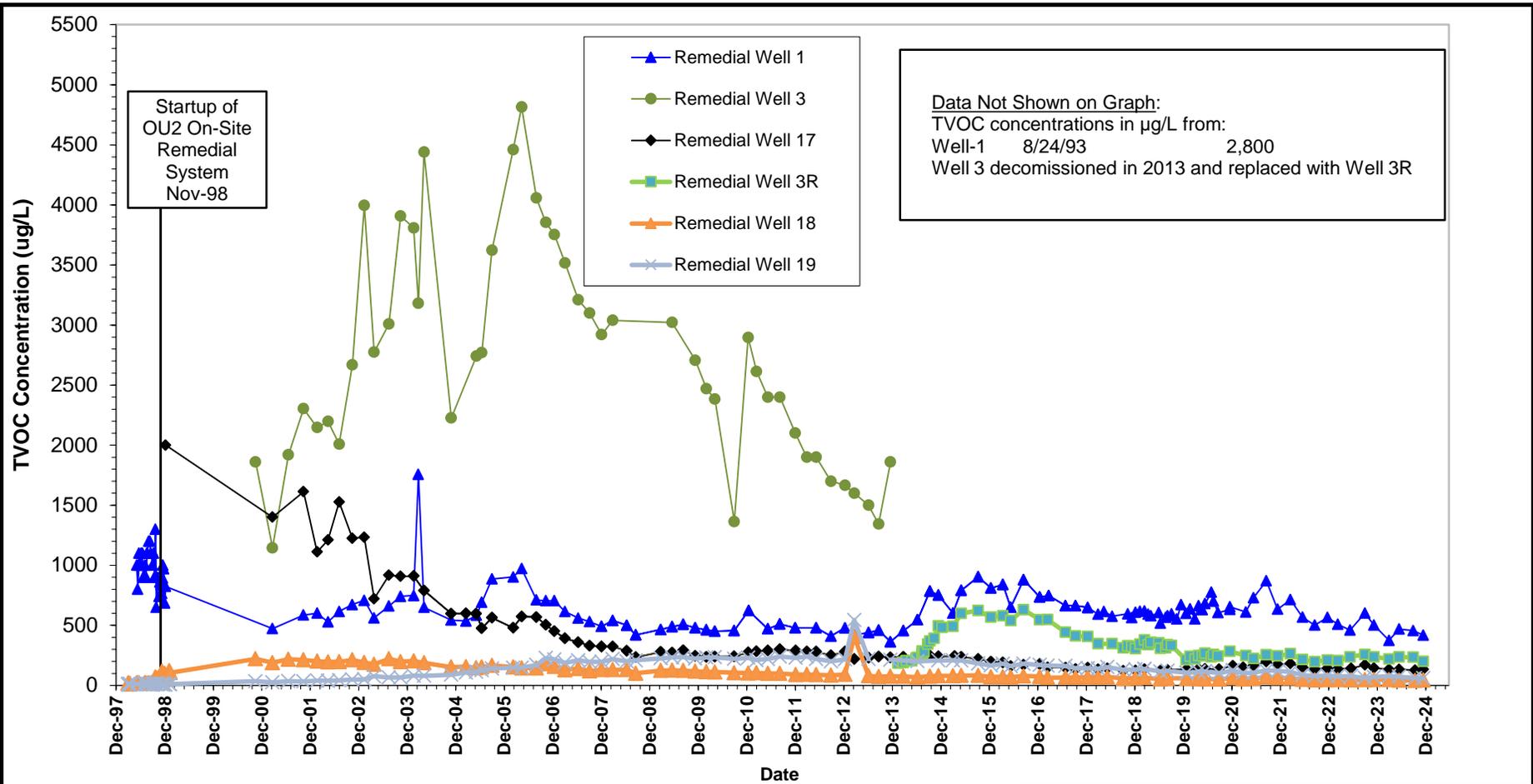
TVOCs = Sum of VOCs detected

ONCT = On-Site Containment

Notes:

1. Cumulative Total VOC Mass Removed includes mass removed since startup of the ONCT system in November 1998.
2. First, second and third quarters 2003, and first and second quarters 2007 were reported jointly.

NORTHROP GRUMMAN BETHPAGE, NEW YORK OU2 ON-SITE GROUNDWATER REMEDY	
REMEDIAL WELLS CUMULATIVE TOTAL VOC MASS REMOVED THROUGH DECEMBER 2024	
	FIGURE 6

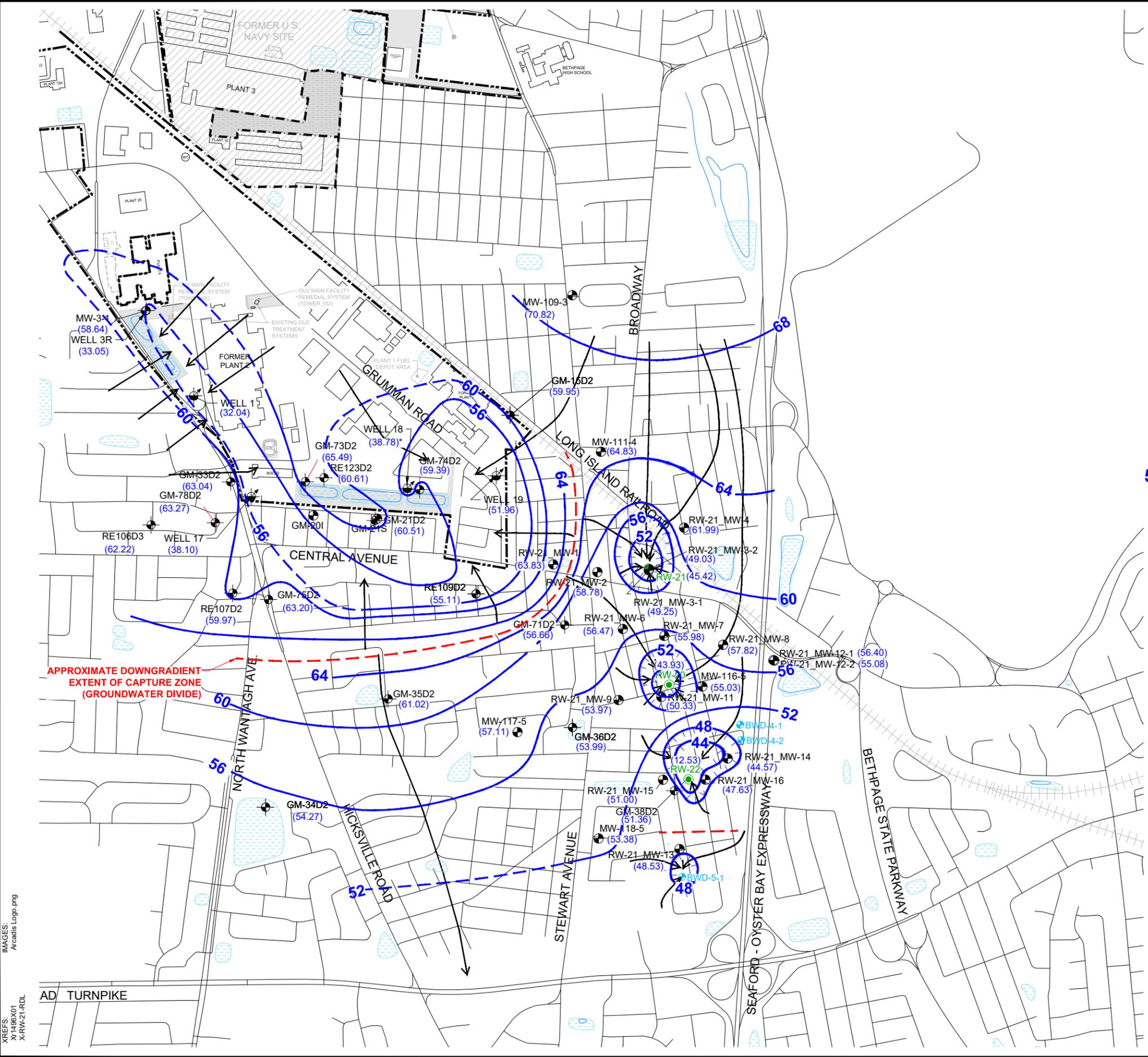


Notes and Abbreviations:

TVOC: Total volatile organic compound
 Total VOCs: Sum of VOCs detected
 $\mu\text{g/L}$: micrograms per liter

NORTHROP GRUMMAN BETHPAGE, NEW YORK OPERABLE UNIT 2	
Total Volatile Organic Compound Concentrations in On-Site Zone 3 OU2 Remedial Wells	
	FIGURE 7

C:\Users\BSS\small\DWG\ACCD\aces\Arcadis ACC.US\AUS-09090909-NOR GRUMMAN_BETHPAGE_NY\Project Files\10_WIP\101_ARC_ENV\202501-DWG\RW21-FIG08-POTENTIOMETRIC SURFACE.dwg LAYOUT: 9. PAGES: 24.2S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: XREFS: X:\1496\X01 X-RW-21-HDL IMAGES: Arcadis Logo.png



EXPLANATION:

- FORMER NORTHROP GRUMMAN PROPERTY BOUNDARY
- FORMER OCCIDENTAL CHEMICAL CORPORATION PROPERTY BOUNDARY
- NORTHROP GRUMMAN OWNED PROPERTY (AS OF 2022)
- NAVY OWNED PROPERTY (AS OF 2014)
- FORMER NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
- RECHARGE BASIN
- OU3 MONITORING WELL
- PUBLIC SUPPLY WELL
- OU2 MONITORING WELL
- REMEDIAL WELL
- LINE OF EQUAL WATER-LEVEL ELEVATION IN FEET ABOVE NAVD88 LEVEL (FT NAVD88) (DASHED WHERE LINE OF EQUAL WATER-LEVEL ELEVATION IS LESS CERTAIN)
- GROUNDWATER POTENTIOMETRIC SURFACE DEPRESSION (58.88)
- WATER-LEVEL ELEVATION (FT NAVD88)
- DIRECTION OF HORIZONTAL COMPONENT OF GROUNDWATER FLOW
- GROUNDWATER DIVIDE

NOTES:

1. RW-21_MW-16 WATER LEVEL ELEVATION VALUE OBTAINED FROM 2024 QUARTER 2 GROUNDWATER PURGE LOG.
2. OU3 SYNOPTIC WATER LEVEL MEASUREMENTS COLLECTED DURING 2024 QUARTER 2 LONG TERM MONITORING EVENT.
3. WATER LEVEL MEASUREMENTS FOR RW-21_MW-3-1 AND RW-21_MW-3-2 COLLECTED DURING 2024 QUARTER 2 LONG TERM GROUNDWATER MONITORING EVENT.
4. WATER LEVEL MEASUREMENTS FOR OU2 MONITORING WELLS COLLECTED 2024 QUARTER 2.

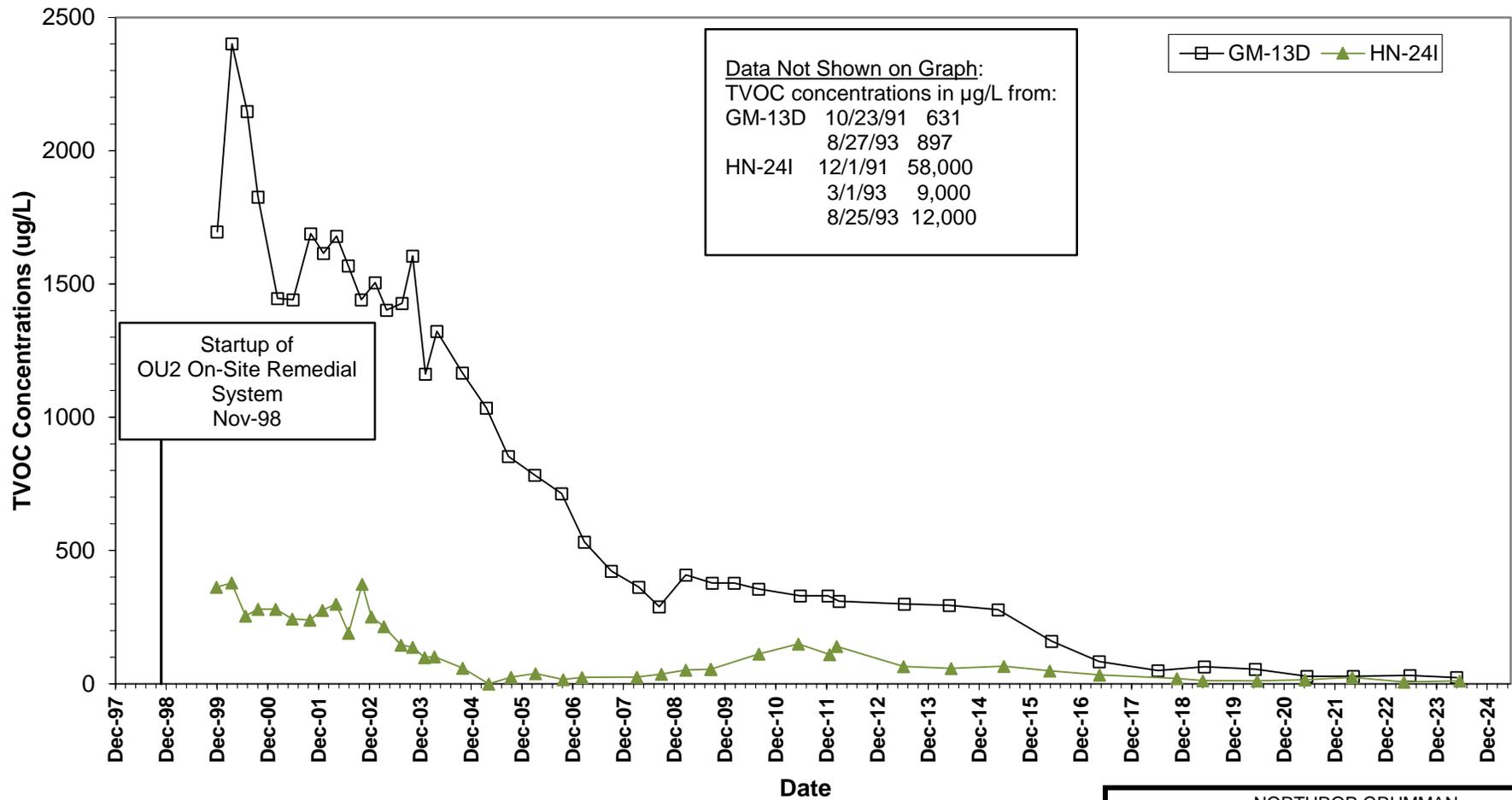


NORTHROP GRUMMAN
RW-21 PROJECT AREA
GROUNDWATER TREATMENT REMEDY
BETHPAGE, NEW YORK

**POTENTIOMETRIC SURFACE ELEVATION
AND GENERALIZED HORIZONTAL
GROUNDWATER FLOW DIRECTIONS IN ZONE 3 (500
TO 700 FEET BELOW LAND SURFACE DURING 2ND
QUARTER 2024)**

ARCADIS

FIGURE
9



Notes and Abbreviations:

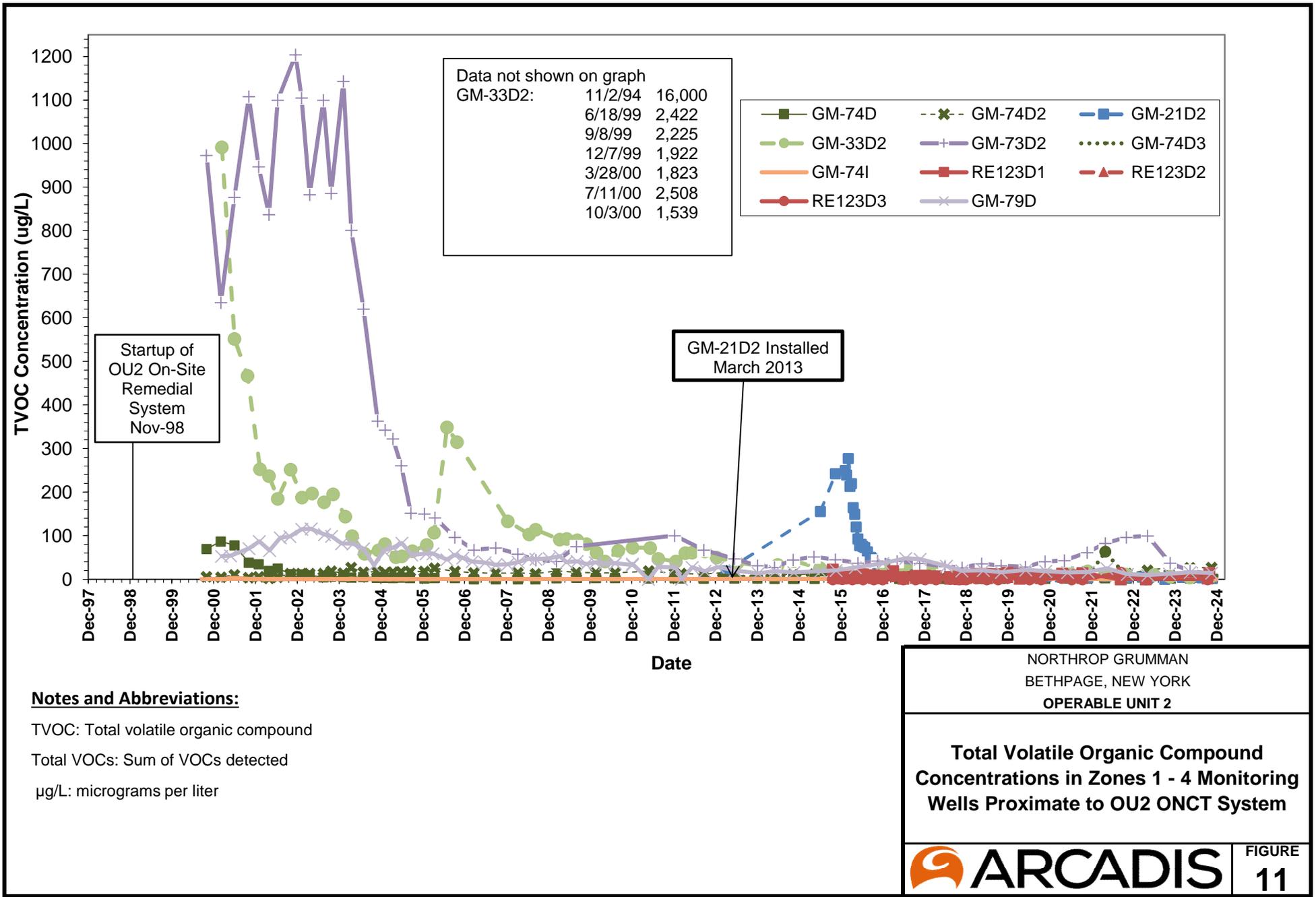
TVOC: Total volatile organic compound
 Total VOCs: Sum of VOCs detected
 $\mu\text{g/L}$: micrograms per liter

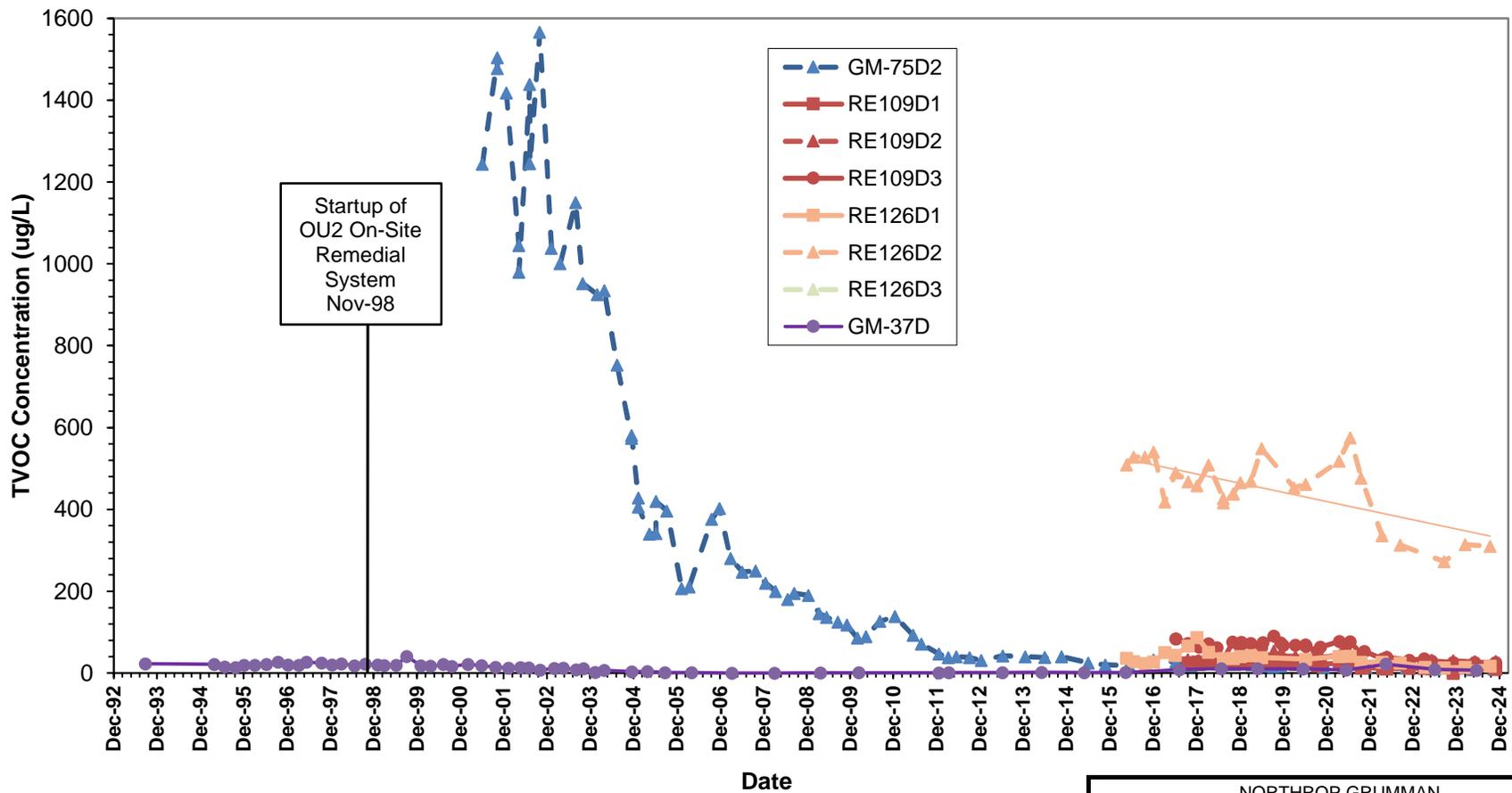
NORTHROP GRUMMAN
 BETHPAGE, NEW YORK
 OPERABLE UNIT 2

**Total Volatile Organic Compound
 Concentrations in Zone 1 Monitoring
 Wells Upgradient of OU2 ONCT System**



FIGURE
10



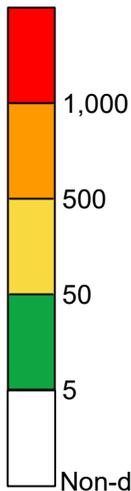
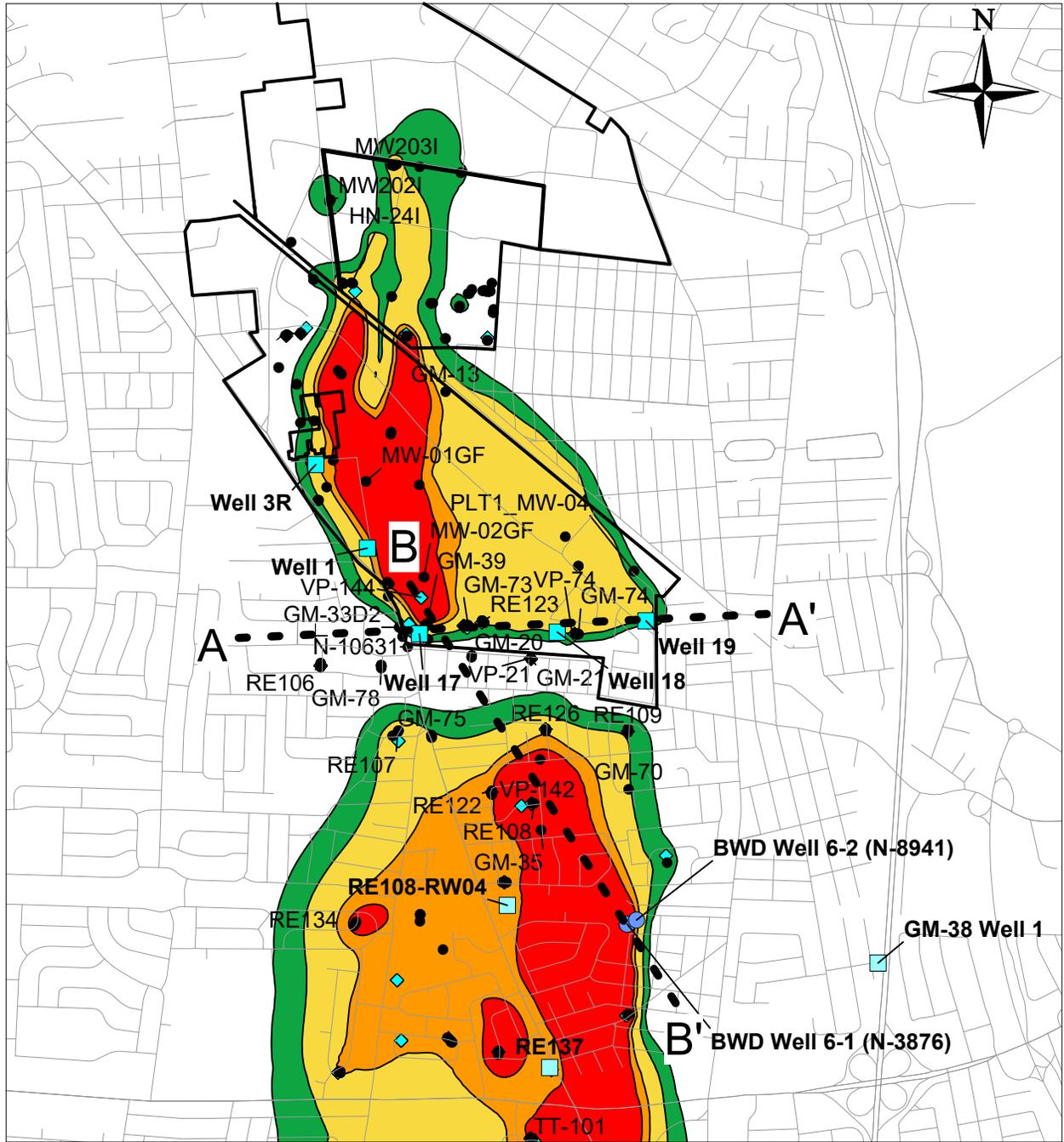


Startup of
OU2 On-Site
Remedial
System
Nov-98

Notes and Abbreviations:

- TVOC: Total volatile organic compound
- Total VOCs: Sum of VOCs detected
- µg/L: micrograms per liter
- Trend line shown for RE-126D2

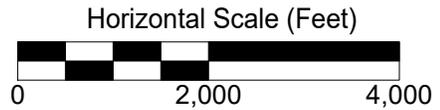
NORTHROP GRUMMAN BETHPAGE, NEW YORK OPERABLE UNIT 2	
Total Volatile Organic Compound Concentrations in Zones 2 and 3 Monitoring Wells Near Central Downgradient and Cross Gradient of OU2 ONCT System	
	FIGURE 12



Total Volatile Organic Compound (TVOC)
Concentrations ($\mu\text{g/L}$)

- Boundary of the Former Northrop Grumman / NWIRP Site
- A-A'** - - Cross-Section Line
- Monitoring Well
- ◆ Vertical Profile Boring
- Remediation Well
- Public Supply Well

Plume is based on the most recently available data from each sampling location collected between 2016 and 2024. Data were collected from monitoring wells, vertical profile borings, remedial wells, and public supply wells.

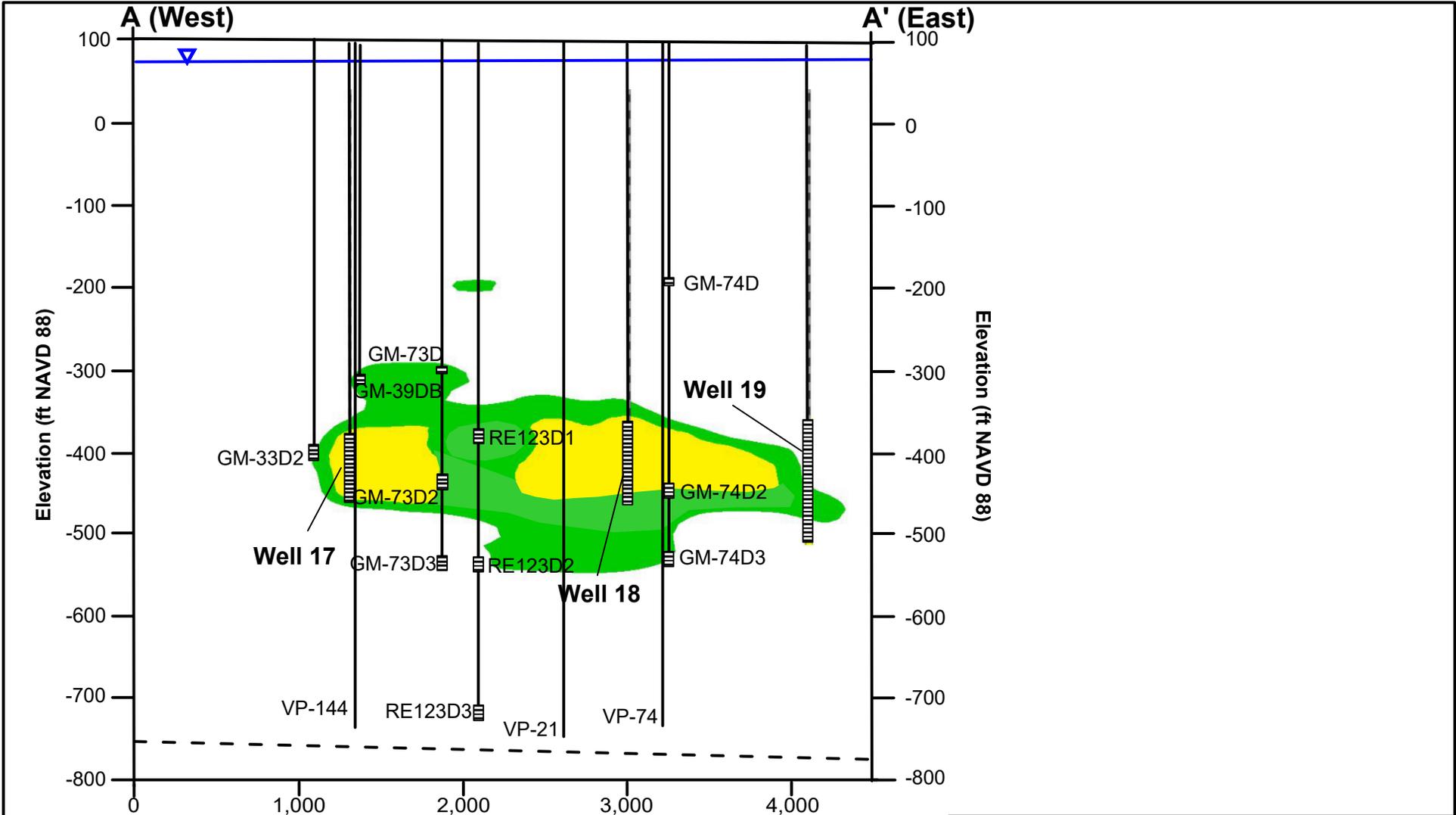


Horizontal Scale (Feet)

Northrop Grumman
Bethpage, New York

CROSS-SECTION LINES AND MAXIMUM TVOC CONCENTRATIONS 2024





Distance Along Cross-Section (ft)

NAVD 88 = North American Vertical Datum of 1988

TVOC = Total Volatile Organic Compound

Vertical Exaggeration is 5:1.

TVOC Concentrations (µg/L)



LEGEND

- Approximate Land Surface
- Approximate Water Table
- Approximate Top of Raritan
- - - Confining Unit
- ▤ Well Screen Interval

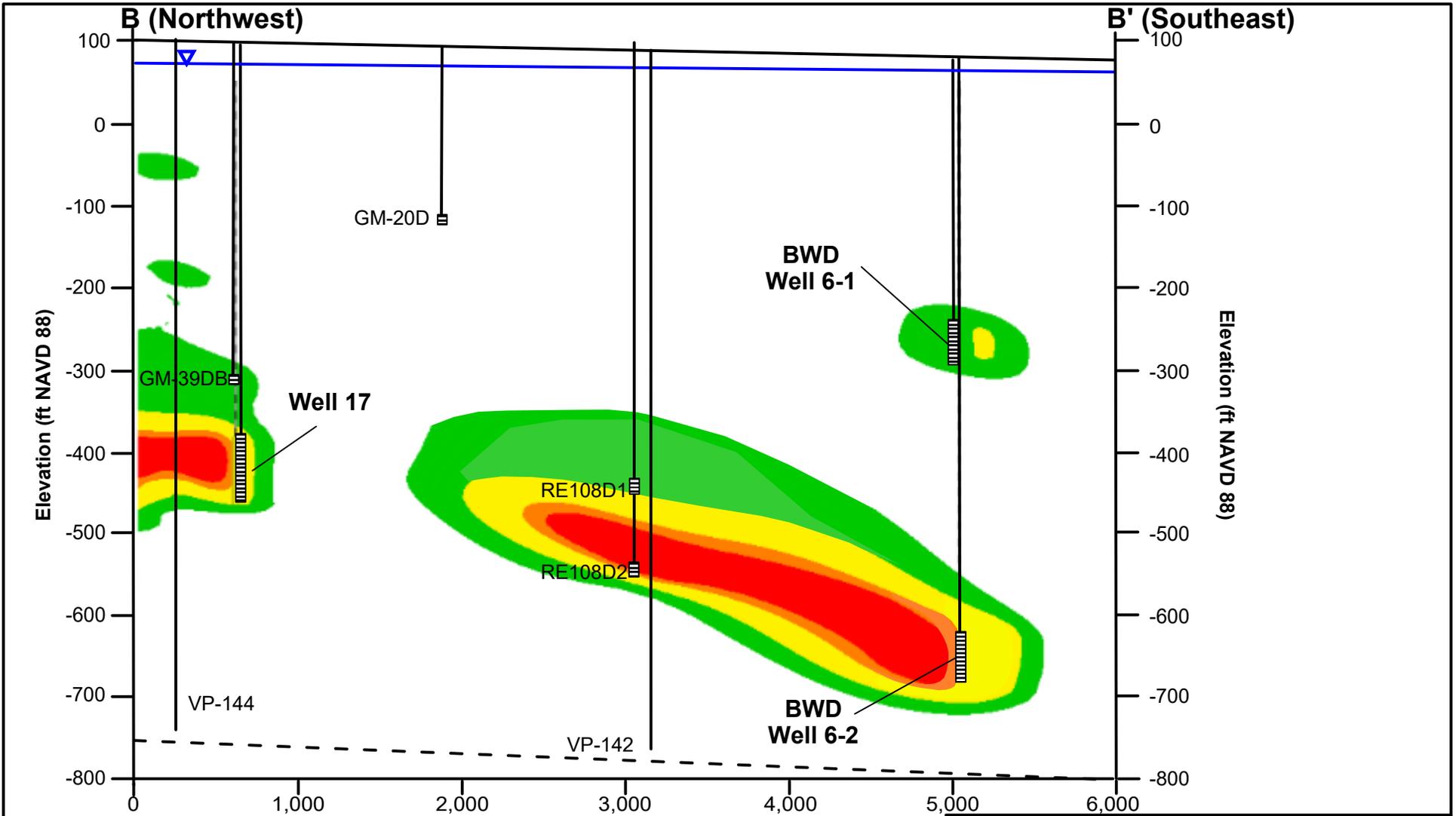
NORTHROP GRUMMAN
BETHPAGE, NEW YORK

TVOCs IN GROUNDWATER 2024
CROSS-SECTION A-A'



FIGURE

14

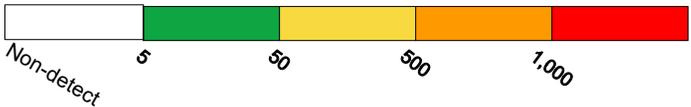


NAVD 88 = North American Vertical Datum of 1988

TVOC = Total Volatile Organic Compound

Vertical Exaggeration is 5:1.

TVOC Concentrations (µg/L)



Distance Along Cross-Section (ft)

LEGEND

- Approximate Land Surface
- Approximate Water Table
- Approximate Top of Raritan
- - - Confining Unit
- ▤ Well Screen Interval

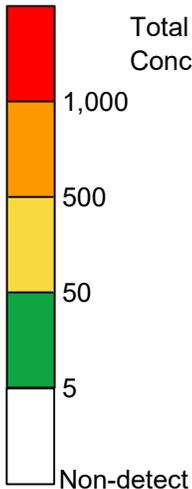
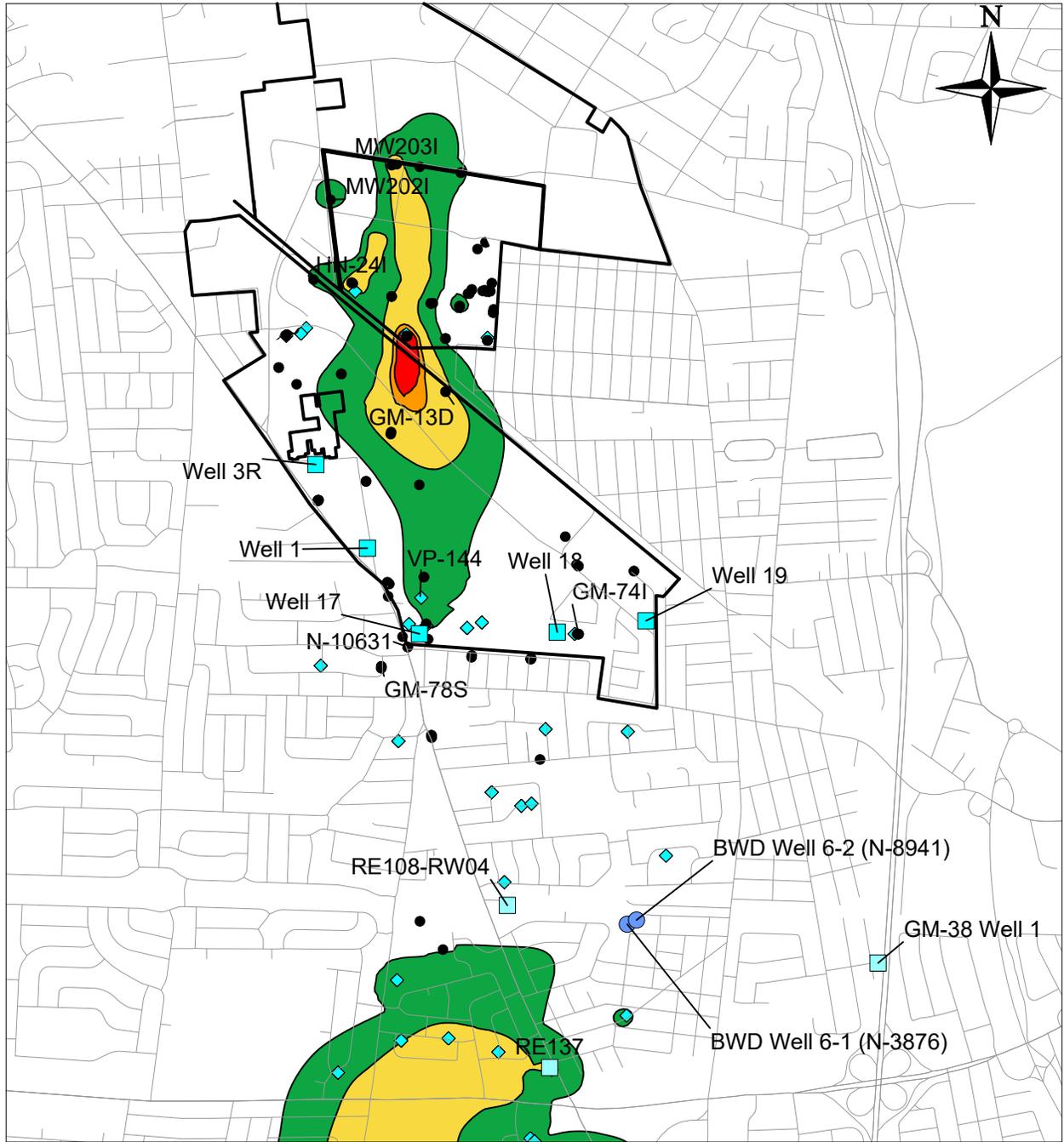
NORTHROP GRUMMAN
BETHPAGE, NEW YORK

TVOCs IN GROUNDWATER 2024
CROSS-SECTION B-B'



FIGURE

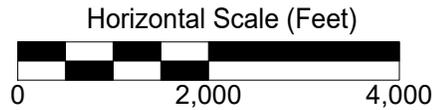
15



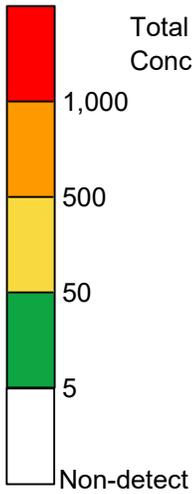
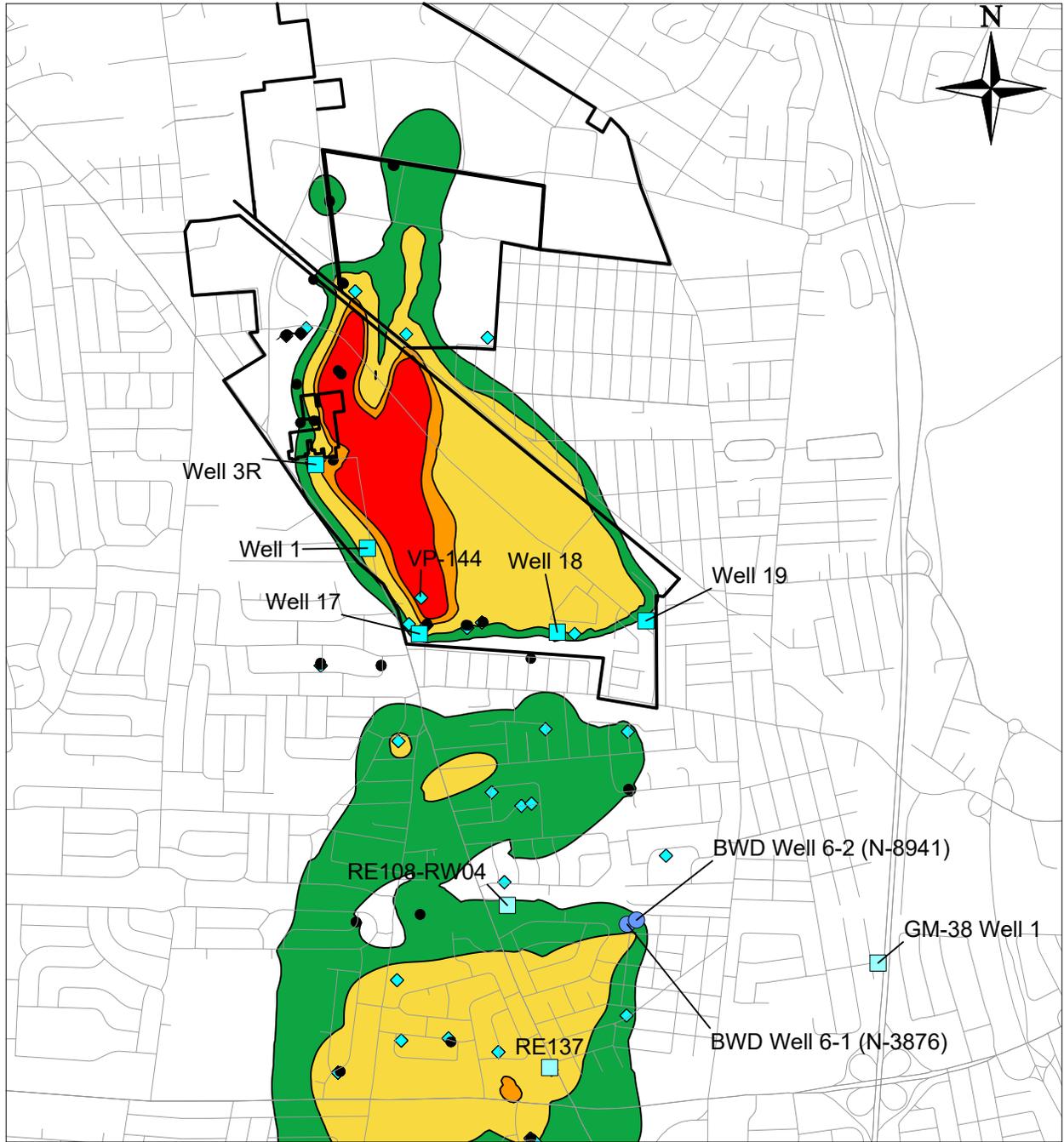
Total Volatile Organic Compound (TVOC)
Concentrations ($\mu\text{g/L}$)

- Boundary of the Former Northrop Grumman / NWIRP Site
- Monitoring Well
- ◆ Vertical Profile Boring
- Remediation Well
- Public Supply Well

Remediation and public supply wells are shown for reference and are not necessarily screened in this zone. Plume is based on the most recently available data from each sampling location collected between 2016 and 2024. Data were collected from monitoring wells, vertical profile borings, remedial wells, and public supply wells.



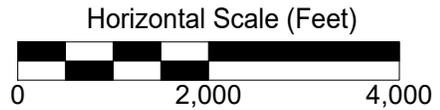
Northrop Grumman Bethpage, New York	
ZONE 1 (0 TO 300 FEET BELOW LAND SURFACE) MAXIMUM TVOC CONCENTRATIONS 2024	
	FIGURE 16



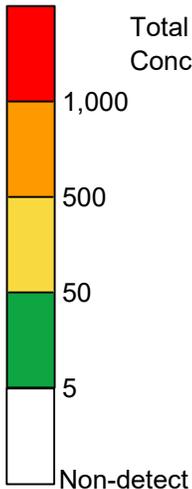
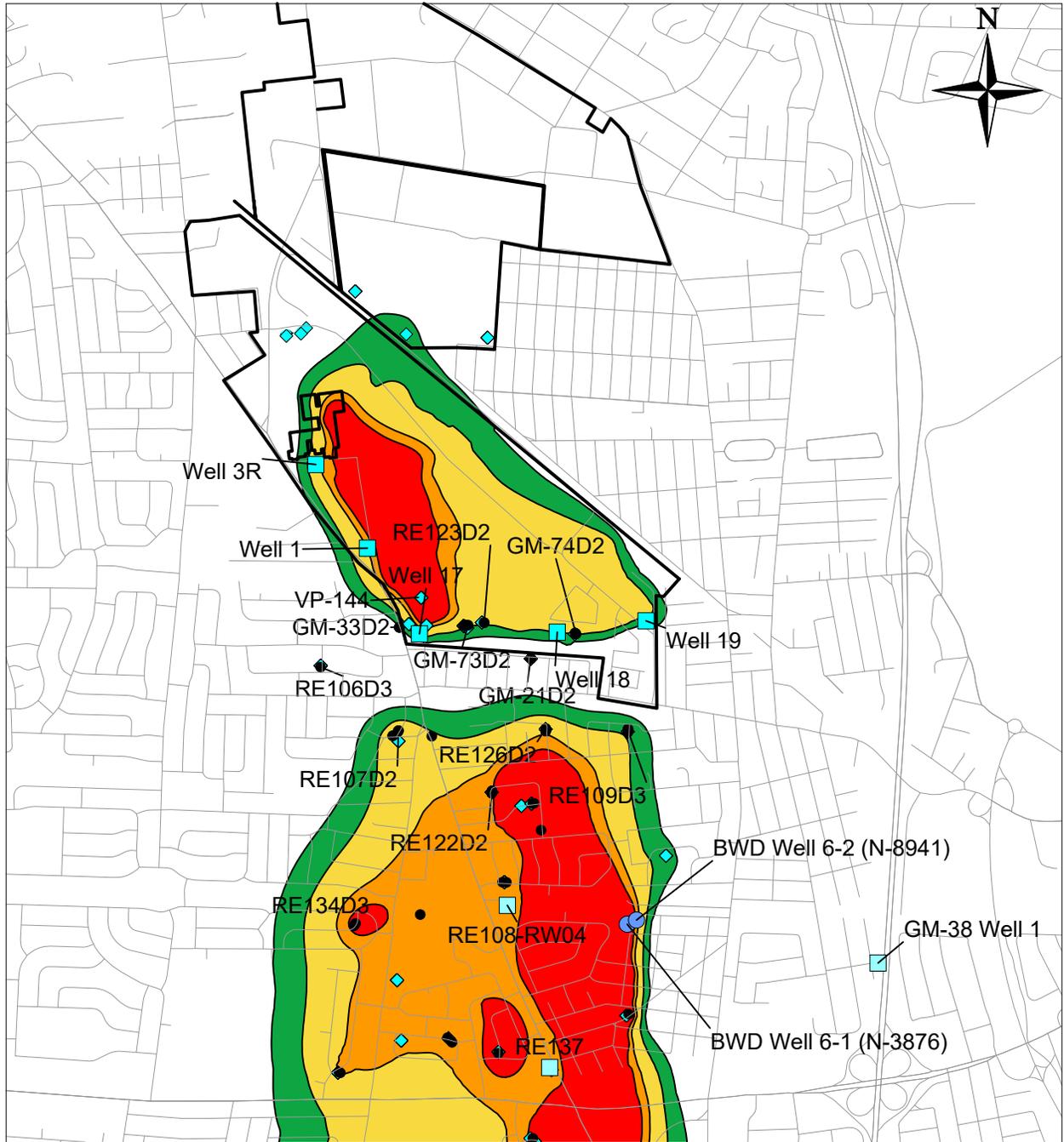
Total Volatile Organic Compound (TVOC)
Concentrations ($\mu\text{g/L}$)

- Boundary of the Former Northrop Grumman / NWIRP Site
- Monitoring Well
- ◆ Vertical Profile Boring
- Remediation Well
- Public Supply Well

Remediation and public supply wells are shown for reference and are not necessarily screened in this zone. Plume is based on the most recently available data from each sampling location collected between 2016 and 2024. Data were collected from monitoring wells, vertical profile borings, remedial wells, and public supply wells.



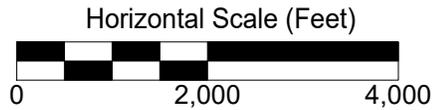
Northrop Grumman Bethpage, New York	
ZONE 2 (300 TO 500 FEET BELOW LAND SURFACE) MAXIMUM TVOC CONCENTRATIONS 2024	
	FIGURE 17



Total Volatile Organic Compound (TVOC)
Concentrations ($\mu\text{g/L}$)

- Boundary of the Former Northrop Grumman / NWIRP Site
- Monitoring Well
- ◆ Vertical Profile Boring
- Remediation Well
- Public Supply Well

Remediation and public supply wells are shown for reference and are not necessarily screened in this zone. Plume is based on the most recently available data from each sampling location collected between 2016 and 2024. Data were collected from monitoring wells, vertical profile borings, remedial wells, and public supply wells.

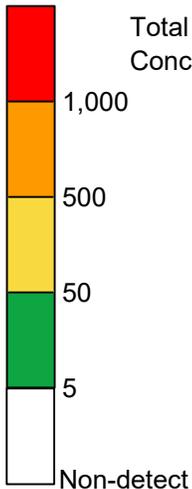
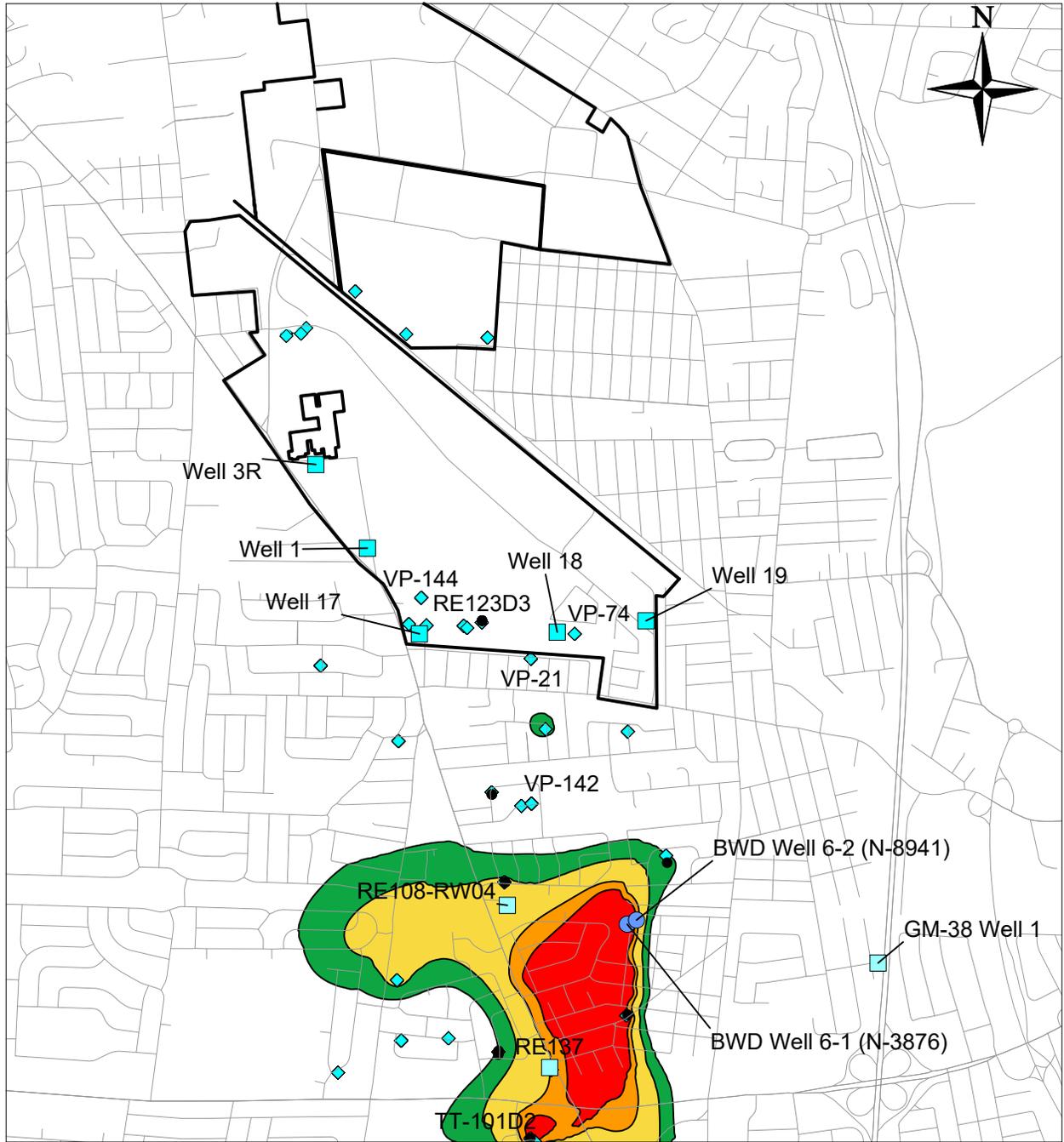


Northrop Grumman
Bethpage, New York

ZONE 3 (500 TO 700 FEET BELOW LAND SURFACE) MAXIMUM TVOC CONCENTRATIONS 2024



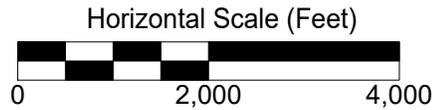
FIGURE
18



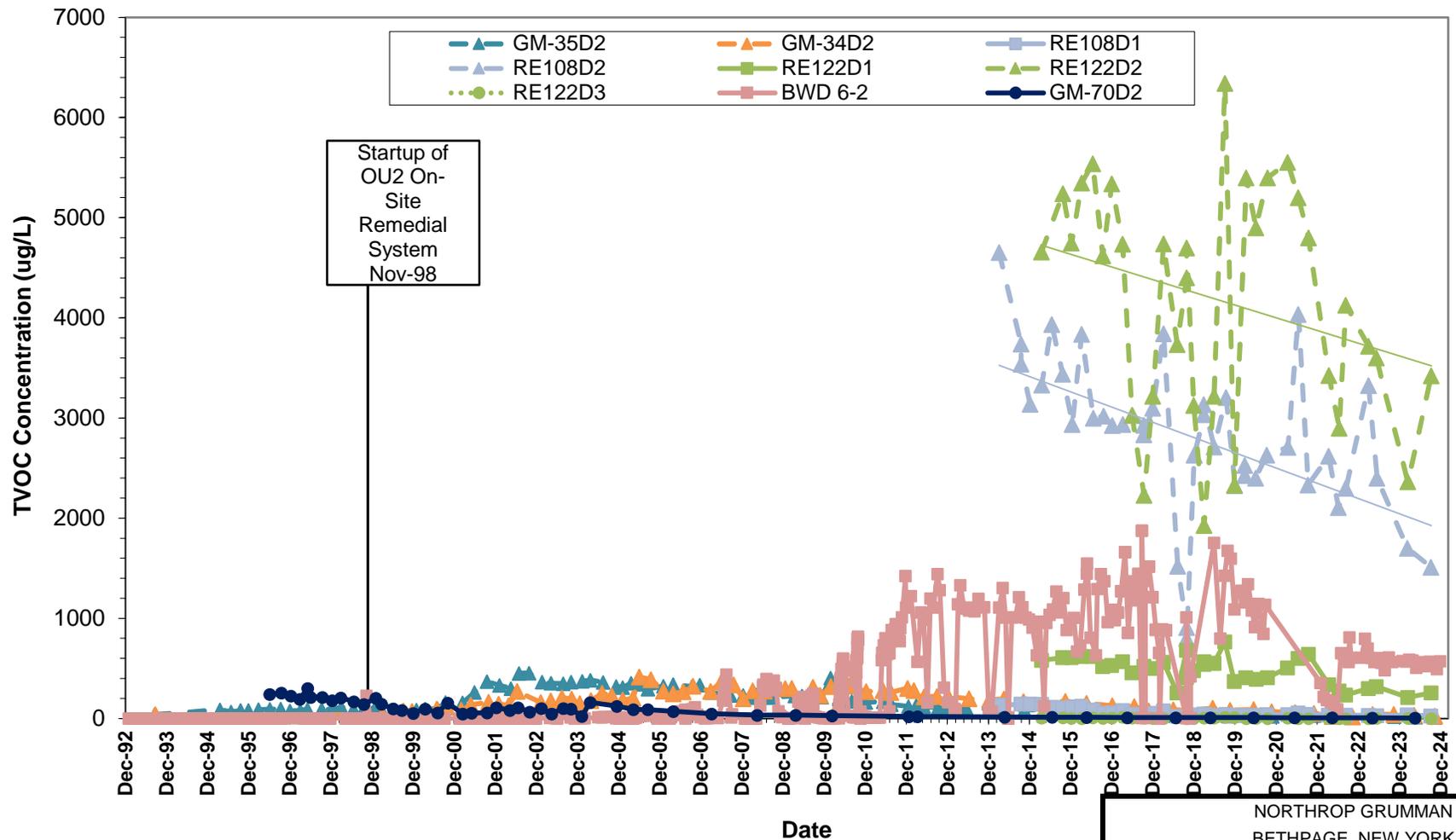
Total Volatile Organic Compound (TVOC)
Concentrations ($\mu\text{g/L}$)

- Boundary of the Former Northrop Grumman / NWIRP Site
- Monitoring Well
- ◆ Vertical Profile Boring
- Remediation Well
- Public Supply Well

Remediation and public supply wells are shown for reference and are not necessarily screened in this zone. Plume is based on the most recently available data from each sampling location collected between 2016 and 2024. Data were collected from monitoring wells, vertical profile borings, remedial wells, and public supply wells.



Northrop Grumman Bethpage, New York	
ZONE 4 (GREATER THAN 700 FEET BELOW LAND SURFACE) MAXIMUM TVOC CONCENTRATIONS 2024	
	FIGURE 19



Notes and Abbreviations:

TVOC: Total volatile organic compound

Total VOCs: Sum of VOCs detected

µg/L: micrograms per liter

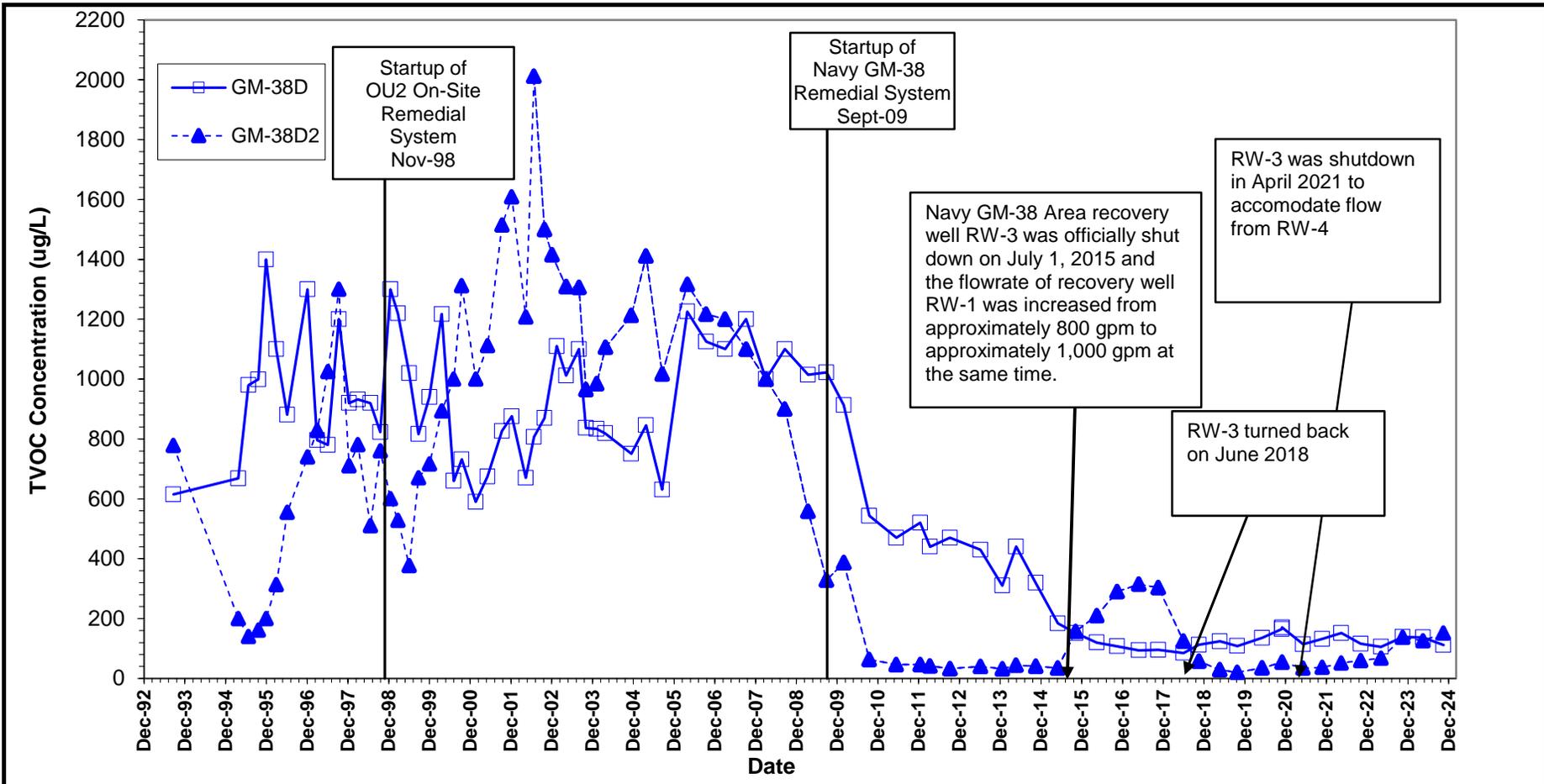
Trend lines shown for RE-108D2 and RE-122D2

NORTHROP GRUMMAN
BETHPAGE, NEW YORK
OPERABLE UNIT 2

**Total Volatile Organic Compound
Concentrations in
Zones 3 and 4 Monitoring Wells and Zone
4 BWD Well 6-2 Far Central Downgradient
of OU2 ONCT System**

ARCADIS

FIGURE
20



Notes and Abbreviations:

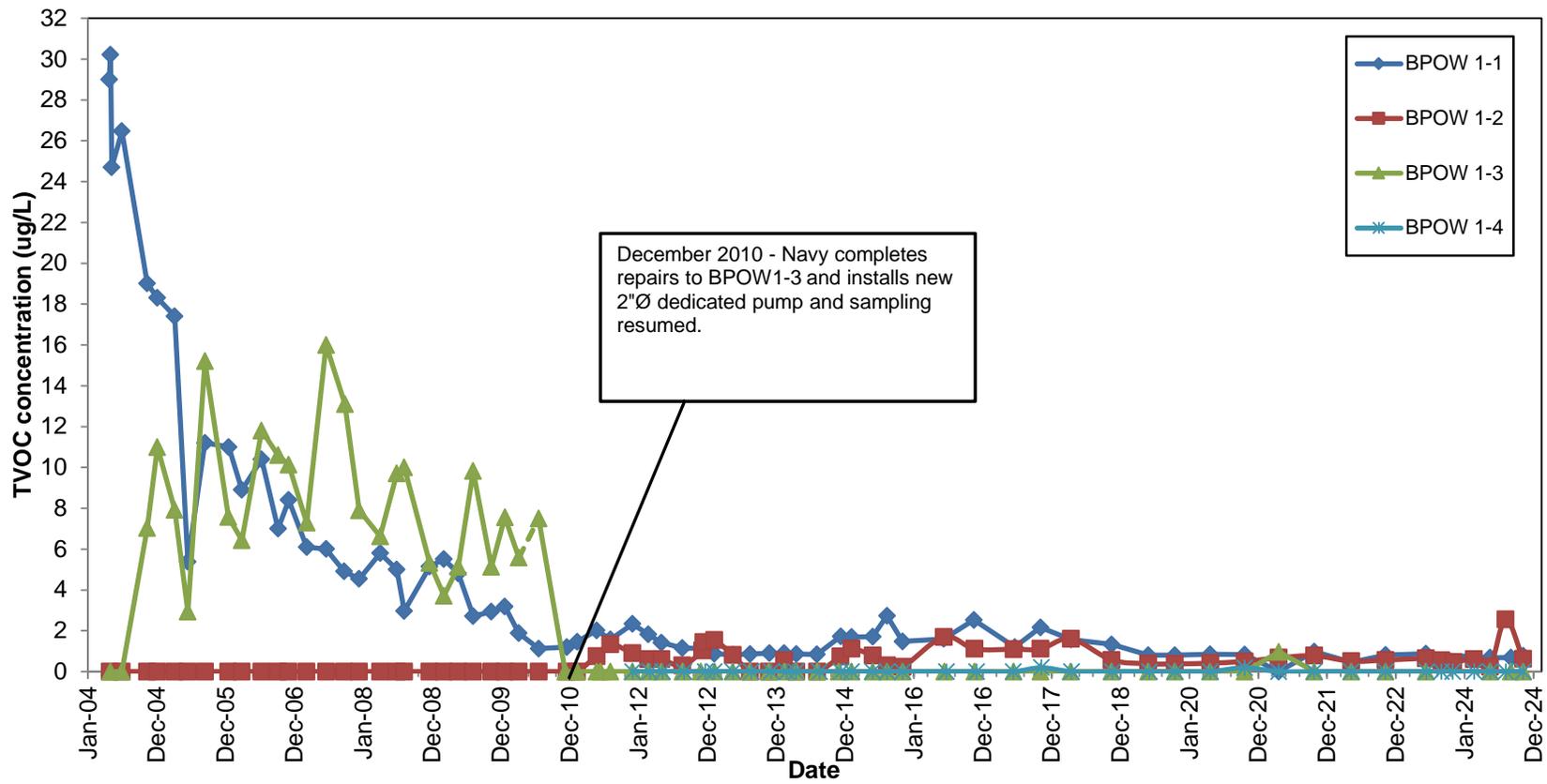
TVOC: Total volatile organic compound
 Total VOCs: Sum of VOCs detected
 µg/L: micrograms per liter

NORTHROP GRUMMAN
 BETHPAGE, NEW YORK
 OPERABLE UNIT 2

**Total Volatile Organic Compound
 Concentrations in Zones 1 and 2 GM-38
 Area Monitoring Wells**



FIGURE
21



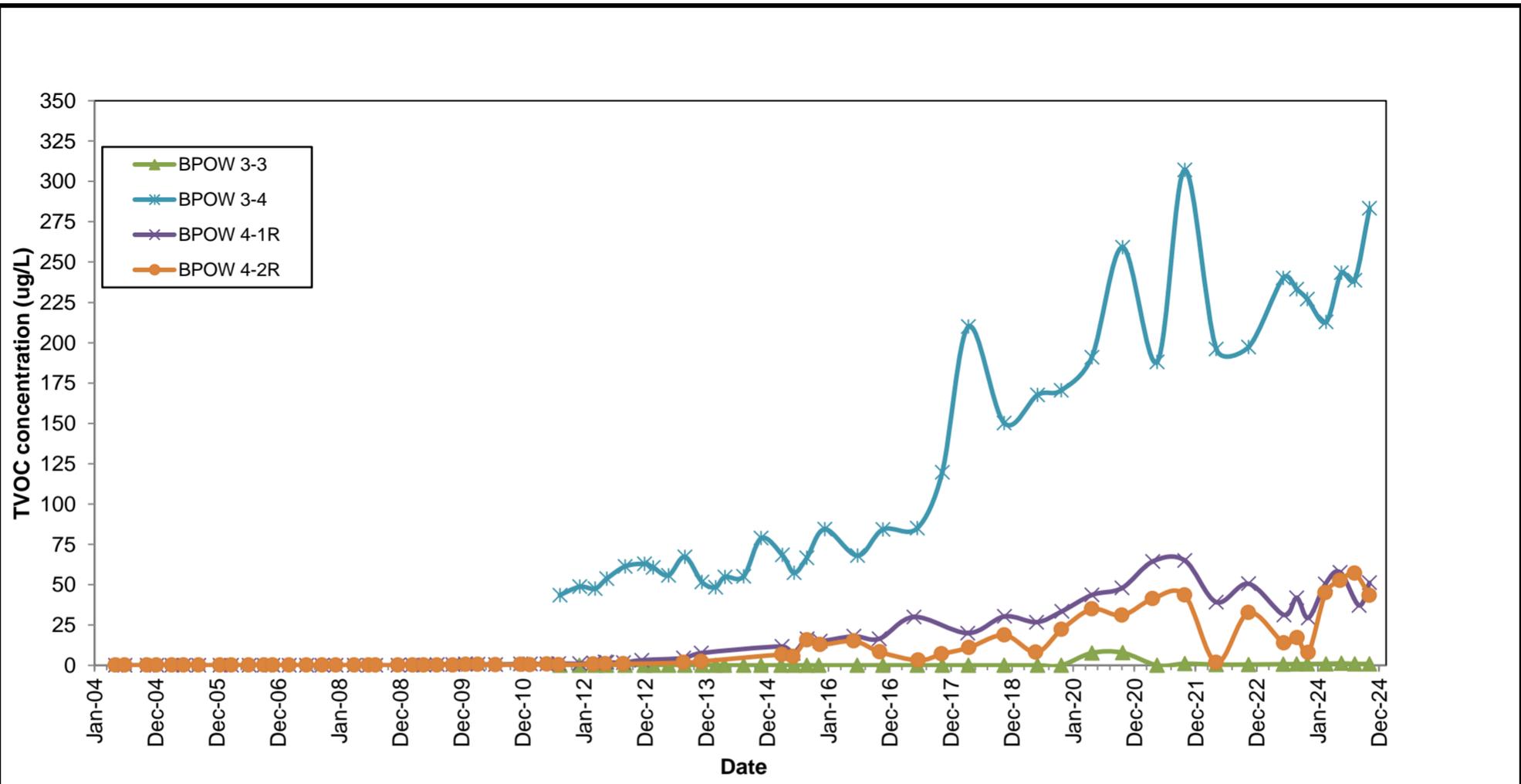
December 2010 - Navy completes repairs to BPOW1-3 and installs new 2"Ø dedicated pump and sampling resumed.

Notes and Abbreviations:

TVOCs for BPOW 1-5 and 1-6 are non detect for the period of record.
 TVOC: Total volatile organic compound
 SFWD: South Farmingdale Water District
 ug/L: micrograms per Liter
 Total VOCs: Sum of VOCs detected

NORTHROP GRUMMAN
 BETHPAGE, NEW YORK
OPERABLE UNIT 2

**Total Volatile Organic Compound
 Concentrations in Offsite Outpost Wells
 (Wells monitor SFWD Well Field 1)**



Notes and Abbreviations:

BPOW 3-3/3-4 Wells Monitor NYLU Seaman's Neck Road Well Field and BPOW 4-1R/4-2R Monitor Town of Hempstead Levittown Water District Well N-5303.

TVOCs for both BPOW 3-1 and BPOW 3-2 are non-detect for the period of record except for a detection of 0.2 ug/L in well BPOW 3-1 in June 2019.

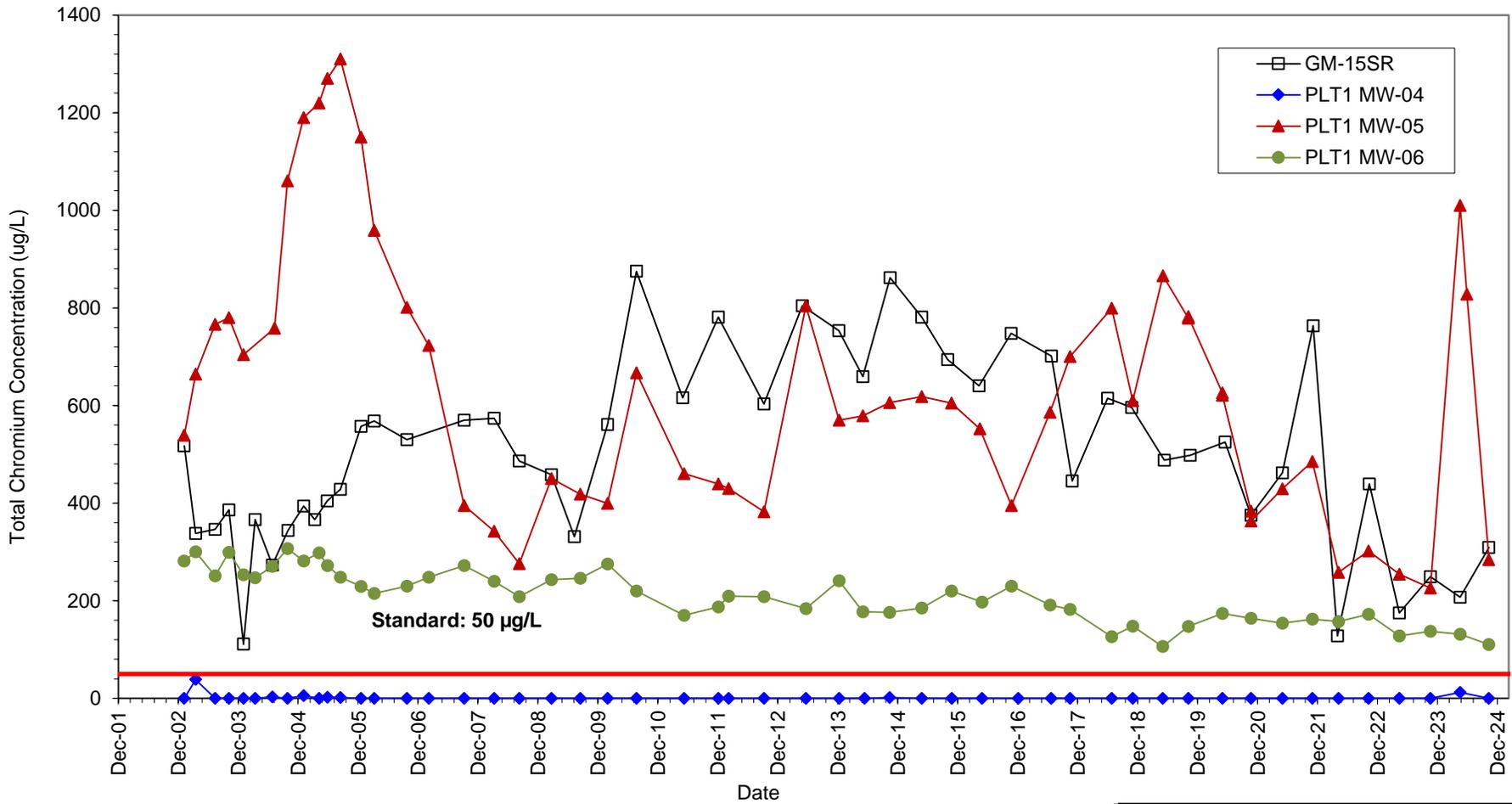
TVOC: Total volatile organic compound

NYLU: New York Liberty Utilities

ug/L: micrograms per Liter

Total VOCs: Sum of VOCs detected

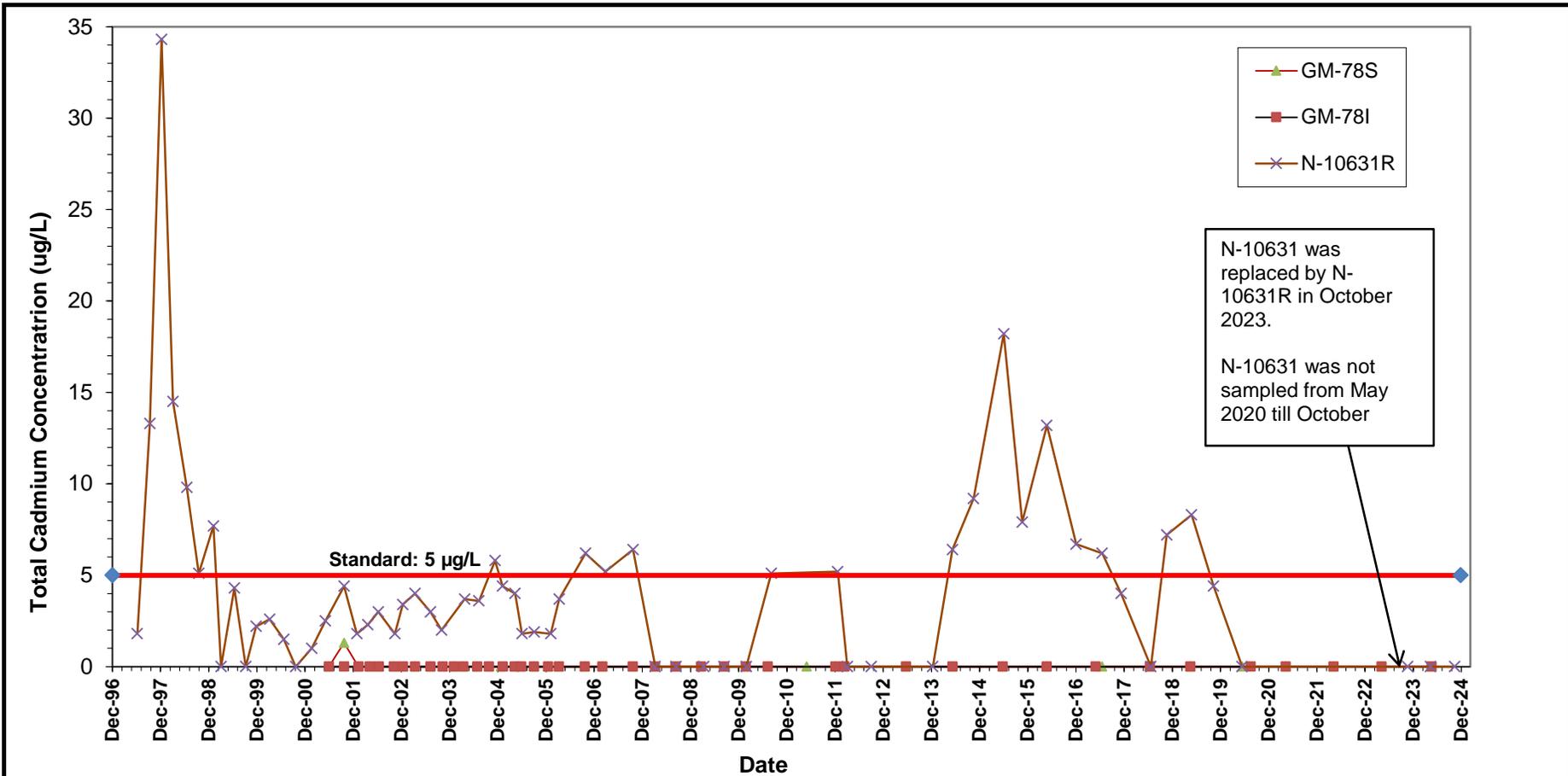
NORTHROP GRUMMAN BETHPAGE, NEW YORK OPERABLE UNIT 2	
Total Volatile Organic Compound Concentrations in Outpost Wells BPOW 3-3, BPOW 3-4, BPOW 4-1R, and BPOW 4-2R	
	23



Notes and Abbreviations:

µg/L: micrograms per liter

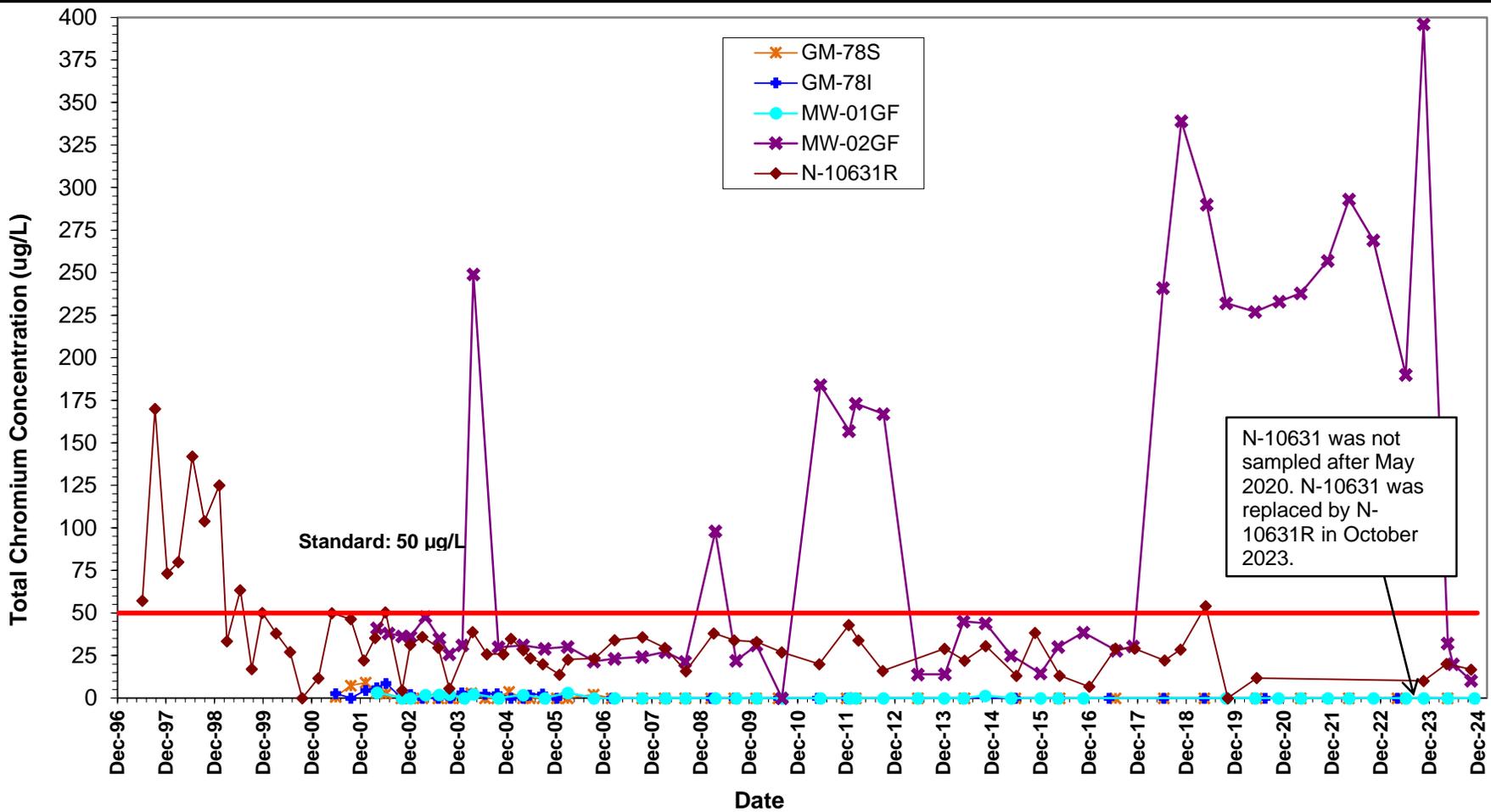
NORTHROP GRUMMAN BETHPAGE, NEW YORK OPERABLE UNIT 2	
Total Chromium (unfiltered) Concentrations in Zone 1 Monitoring Wells Near Former Plant 1	
 ARCADIS	FIGURE 24



Notes and Abbreviations:

µg/L: micrograms per liter

NORTHROP GRUMMAN BETHPAGE, NEW YORK OPERABLE UNIT 2	
Total Cadmium (unfiltered) Concentrations in Zone 1 Monitoring Wells Near Former Plant 2	
	FIGURE 25



Notes and Abbreviations:

$\mu\text{g/L}$: micrograms per liter

NORTHRUP GRUMMAN BETHPAGE, NEW YORK OPERABLE UNIT 2	
Total Chromium (unfiltered) Concentrations in Zone 1 Monitoring Wells Near Former Plant 2	
	FIGURE 26

Appendix A

AROD Table 1 OU2 Plume Constituents

ppb with an average of 1,362 ppb. The average annual TCE concentration in raw, untreated groundwater from Well 6-2 increased over 700 percent from 2008 (161 ppb) to 2017 (1,362 ppb). In 2017, TCE concentrations in raw, untreated water from Bethpage Water District Well 4-1 ranged from 85 ppb to 183 ppb with an average of 143 ppb. The average annual TCE concentration in raw, untreated groundwater from Well 4-1 increased nearly 300 percent from 2008 (36 ppb) to 2017 (143 ppb). The Bethpage Water District provides treatment at each of its wells prior to distribution of water to customers.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb) ^a	SCG ^b (ppb)	Frequency Exceeding SCG
VOCs			
1,1,1-Trichloroethane	0.1 - 110	5	31 of 4,618
1,1,2,2-Tetrachloroethane	0.2 - 0.25	5	0 of 4,596
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	0.22 - 250	5	335 of 4,107
1,1,2-Trichloroethane	0.21 - 5	1	83 of 4,604
1,1-Dichloroethane	0.16 - 110	5	205 of 4,615
1,1-Dichloroethene	0.19 - 110	5	195 of 4,618
1,2-Dichloroethane	0.14 - 39.9	0.6	133 of 4,616
1,2-Dichloroethene	0.21 - 1,100	5	43 of 1,843
1,2-Dichloropropane	0.28 - 32.7	1	38 of 4,433
1,4-Dioxane	0.046 - 190	0.35	306 of 634
Carbon Disulfide	0.089 - 18	60	0 of 4,231
Carbon Tetrachloride	0.09 - 8	5	3 of 4,605
Chlorobenzene	0.3 - 7	5	2 of 4,605
Chlorodifluoromethane (Freon 22)	0.21 - 400	5	22 of 1,276
Chloroform	0.11 - 110	7	100 of 4,550
Chromium, Total	0.4 - 804	5	56 of 113
Cis-1,2-Dichloroethylene	0.19 - 210,000	5	494 of 4,243
Dichlorodifluoromethane (Freon 12)	0.2 - 32	5	5 of 3,767
Tetrachloroethylene (PCE)	0.2 - 940	5	890 of 5,447
Toluene	0.06 - 84,000	5	59 of 4,441
Trans-1,2-Dichloroethene	0.23 - 95	5	23 of 4,238
Trichloroethylene (TCE)	0.23 - 11,200	5	2,257 of 5,545
Vinyl Chloride	0 - 6,300	2	568 of 5,403
Inorganics			
Iron	120 - 1,700	300	11 of 15
Nickel	30.6 - 30.6	100	0 of 15

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.

b - SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

Based on the findings of the expanded investigation combined with earlier RIs, the past disposal of hazardous waste has resulted in the contamination of on-site and off-site groundwater. While on-site groundwater contamination identified during the previous RIs was addressed during the IRMs described in Section 7.3.2 and will be further addressed in accordance with existing RODs, contaminant concentrations in off-site groundwater continue to increase and the plume continues to migrate to the south-southeast. The site contaminants that are

Appendix B

Daily and Monthly Logs

T96 Daily Inspection Form Jan-Dec 2024

**Appendix B-1: Building 96 Daily Inspection Forms
2024 Electronic Fulcrum Data**

Date and Time	Technician	T96 System Operating?	AS Influent Flow Recorder (gpm) (Typical: 1,500, max: 1,800)	AS Influent Flow Recorder Totalizer (x100 gal)	Blower Influent Pressure (iwc) (Typical -5 to -6)	Blower Effluent Pressure (iwc) (Typical 2-4)	Blower Effluent Temperature (F) (Typical 80-100)	Air Flow Rate (x10 acfm) (Typical 4800)	Oxy Effluent Pressure (iwc) (Typical 4.5-5)	Clear Well Discharge Pressure (psi) (Typical 60)
1/2/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
1/3/2024	NG Operator	yes	1676	14525046	5	3	60	4400	5	70.3
1/4/2024	NG Operator	yes	1667	14549553	5	3	60	4390	5	72.5
1/5/2024	NG Operator	yes	1665	14572199	5	3	58	4390	5	71.5
1/8/2024	NG Operator	yes	1649	14642689	5.5	3.8	88	4434	5	72
1/9/2024	NG Operator	yes	1647	14666701	5.2	3.8	86	4386	5	72
1/10/2024	NG Operator	yes	1652	14690498	5.6	3.4	88	4532	5	74
1/11/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
1/12/2024	NG Operator	yes	1667	14739328	5	3	60	4390	5	72.4
1/15/2024	NG Operator	yes	1659	14809321	5	3	60	4390	5	73.8
1/16/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
1/17/2024	NG Operator	yes	1667	14856794	5	3	60	4400	5	74
1/18/2024	NG Operator	yes	1662	14880954	5	3.5	60	4400	5	74.4
1/19/2024	NG Operator	yes	1673	149044207	5	3	60	4410	5	73.5
1/22/2024	NG Operator	yes	1671	14975219	5	3	60	4380	5	71.9
1/23/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
1/24/2024	NG Operator	yes	1668	15026012	5	3	60	4380	5	72.8
1/25/2024	NG Operator	yes	1673	15049658	5	3	60	4370	5	74
1/26/2024	NG Operator	yes	1668	15071315	5	3	60	4400	5	74
1/29/2024	NG Operator	yes	1667	15144224	5	3	60	4400	5	71.1
1/30/2024	NG Operator	yes	1670	15165125	5	3	60	4390	5	70.5
1/31/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
2/1/2024	NG Operator	yes	1672	15217110	5	3	60	4390	5	73.8
2/2/2024	NG Operator	yes	1667	15236716	5	3	60	4380	5	72.6
2/5/2024	NG Operator	yes	1663	15307485	5	3	60	4380	5	73.1
2/7/2024	NG Operator	yes	1662	15357239	5	3	60	4380	5	70.9
2/8/2024	NG Operator	yes	1667	15381430	5	3	60	4390	5	74
2/9/2024	NG Operator	yes	1665	15402927	5	NR	65	4370	5	72.5
2/12/2024	NG Operator	yes	1668	15474185	5	3	60	4410	5	73.1
2/14/2024	NG Operator	yes	1774	15525043	5	3	60	4380	5	NR
2/14/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
2/15/2024	NG Operator	yes	1665	15544346	5	3	60	4400	5	71.1
2/16/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
2/19/2024	NG Operator	yes	1668	15640877	5	3	60	4400	5	73
2/21/2024	NG Operator	yes	1660	15686296	5	3	58	4410	5	73.1
2/22/2024	NG Operator	yes	1665	15710362	5	3	60	4380	5	73
2/23/2024	NG Operator	yes	1665	15721837	5	4	60	4420	5	74.2
2/26/2024	NG Operator	yes	1664	157951695	5	3	62	4390	5	75.2
2/27/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
2/28/2024	NG Operator	yes	1665	15843667	5	3	60	4400	5	75.2
2/29/2024	NG Operator	yes	1664	15867494	6	4	62	4440	5	74.1
3/1/2024	NG Operator	yes	1655	15886285	6	4	62	4430	5	74.8
3/4/2024	NG Operator	yes	820	15922583	5.2	3.6	88	4512	5	57
3/5/2024	NG Operator	no	NR	NR	NR	NR	NR	NR	NR	NR
3/7/2024	NG Operator	no	NR	NR	NR	NR	NR	NR	NR	NR
3/8/2024	NG Operator	no	NR	NR	NR	NR	NR	NR	NR	NR
3/11/2024	NG Operator	no	NR	15923800	NR	NR	NR	NR	NR	NR
3/12/2024	NG Operator	no	NR	NR	NR	NR	NR	NR	NR	NR
3/19/2024	NG Operator	no	NR	NR	NR	NR	NR	NR	NR	NR
3/26/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
3/28/2024	NG Operator	yes	1697	15994289	5	3.6		4430	5	72.9
3/29/2024	NG Operator	yes	1692	16018838	6	4	60	4430	5	74.3
4/1/2024	NG Operator	yes	1688	16089632	6	4	60	4430	5	74.9
4/2/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
4/3/2024	NG Operator	yes	1686	16139400	5	4	60	4460	5	76.2
4/4/2024	NG Operator	yes	1691	16158356	5	4	60	4460	5	73.8
4/5/2024	NG Operator	yes	1692	16180102	5	4	60	4470	5	73.5
4/9/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
4/10/2024	NG Operator	yes	1690	16299583	5	4	80	4450	5	72.7
4/11/2024	NG Operator	yes	1688	16326258	5	4	60	4440	5	73.1
4/12/2024	NG Operator	yes	1686	16347639	5	3	60	4450	5	72.5
4/15/2024	NG Operator	yes	1691	16418312	5	4	60	4440	5	73.4
4/16/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
4/17/2024	NG Operator	yes	1682	16467814	5	4	60	4470	5	75.3
4/19/2024	NG Operator	yes	824	16490929	5	4	60	4510	5	74.9
4/22/2024	NG Operator	yes	826	16526874		3	60	4520	5	71.3
4/23/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
4/24/2024	NG Operator	yes	818	16549367	6	4	60	4510	5	72.5
4/25/2024	NG Operator	yes	812	16560741	6	4	60	4530	5	72
4/26/2024	NG Operator	yes	814	16573332	6	4	60	4500	5	72.1
4/29/2024	NG Operator	yes	818	16606170	6	4	60	4510	5	72.3
4/30/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
5/1/2024	NG Operator	yes	1647	16642408	5	4	60	4430	5	75.8
5/2/2024	NG Operator	yes	1641	16664952	5	4	60	4420	5	72.3
5/3/2024	NG Operator	yes	1623	16686723	6	4	60	4450	5	76.2
5/6/2024	NG Operator	yes	1640	16757944	6	4	60	4400	5	73.2
5/7/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
5/8/2024	NG Operator	yes	1647	16807366	5	4	60	4430	5	74.6
5/9/2024	NG Operator	yes	1643	16828856	6	4	60	4400	5	73.4
5/10/2024	NG Operator	yes	1642	16852728	6	3	60	4430	5	73.2

**Appendix B-1: Building 96 Daily Inspection Forms
2024 Electronic Fulcrum Data**

Date and Time	Technician	T96 System Operating?	AS Influent Flow Recorder (gpm) (Typical: 1,500, max: 1,800)	AS Influent Flow Recorder Totalizer (x100 gal)	Blower Influent Pressure (iwc) (Typical -5 to -6)	Blower Effluent Pressure (iwc) (Typical 2-4)	Blower Effluent Temperature (F) (Typical 80-100)	Air Flow Rate (x10 acfm) (Typical 4800)	Oxy Effluent Pressure (iwc) (Typical 4.5-5)	Clear Well Discharge Pressure (psi) (Typical 60)
5/13/2024	NG Operator	yes	1624	16925409	5.6	3.8	88	4684	5	73
5/14/2024	NG Operator	yes	1622	16945738	5.6	4.1	88	4782	5	72
5/15/2024	NG Operator	yes	1639	16970888	5	3.5	60	4370	5	70.7
5/16/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
5/17/2024	NG Operator	yes	1639	17016628	5	4	60	4410	5	73.4
5/20/2024	NG Operator	yes	1636	17084812	5.5	4	60	4340	5	72.8
5/21/2024	NG Operator	yes	1599	17108186	5.2	3.8	86	4684	5	71
5/22/2024	NG Operator	yes	1619	17131974	5.5	4	82	4430	5	72.6
5/23/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
5/24/2024	NG Operator	yes	1618	17177292	5.5	4	60	4430	5	68.9
5/28/2024	NG Operator	yes	1613	17271034	6	3.5	80	4430	5	72.7
5/29/2024	NG Operator	yes	1598	17291680	5.4	3.8	88	4735	5	71
5/30/2024	NG Operator	yes	1592	17315444	5.2	4.2	88	4682	5	71
5/31/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
6/3/2024	NG Operator	yes	1605	17408190	5.2	3.8	88	4649	5	71
6/4/2024	NG Operator	yes	1619	17430918	5.5	4	68	4310	5	73
6/5/2024	NG Operator	yes	1620	17456962	5.6	3.5	60	4420	5	70
6/6/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
6/7/2024	NG Operator	yes	1620	17499304	5.5	4	60	4410	5	71.1
6/10/2024	NG Operator	yes	NR	17571060	6	4	60	4430	5	71
6/11/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
6/12/2024	NG Operator	yes	1619	17616896	5.5	3	68	4420	5	73.5
6/13/2024	NG Operator	yes	1623	17638292	5.5	3	70	4430	5	73.1
6/14/2024	NG Operator	yes	1625	17660382	5.5	4	70	4410	5	72.4
6/17/2024	NG Operator	yes	1629	17730112	5.6	3.5	70	4510	5	73.1
6/18/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
6/19/2024	NG Operator	yes	1614	17776584	5.5	4	70	4420	5	71.1
6/20/2024	NG Operator	yes	1605	17798518	5.5	3	60	4410	5	71
6/21/2024	NG Operator	yes	1598	17821740	5.5	4	62	4400	5	68.8
6/24/2024	NG Operator	yes	1606	17891916	5.6	3	70	4420	5	70.2
6/25/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
6/26/2024	NG Operator	yes	1603	17937734	5.5	3	70	4430	4.9	70
6/27/2024	NG Operator	yes	1602	17960996	5.6	4	70	4420	5	70.5
6/28/2024	NG Operator	yes	1601	17982148	5.5	3	65	4430	5	72.4
7/1/2024	NG Operator	yes	1601	18052190	5.6	4.2	86	4408	5	71
7/3/2024	NG Operator	yes	1604	18097278	5.5	3	70	4430	5	72
7/5/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
7/8/2024	NG Operator	yes	1604	18217352	5.5	3	70	4400	5	70
7/9/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
7/10/2024	NG Operator	yes	1607	18260088	5.5	3	70	4430	5	68.4
7/11/2024	NG Operator	yes	1605	18282992	5.5	4	65	4400	5	71.1
7/12/2024	NG Operator	yes	1601	18305528	5.6	3	68	4410	5	72.3
7/15/2024	NG Operator	yes	1600	18376740	5	3	68	4410	4.8	68.5
7/16/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
7/18/2024	NG Operator	yes	1606	18440050	5.2	3.8	86	4421	5	69
7/19/2024	NG Operator	yes	1599	18461862	5.8	3.6	84	4592	5	70
7/22/2024	NG Operator	yes	1599	18530598	5.6	3.8	86	4672	5	70
7/23/2024	NG Operator	yes	1601	18553446	5.2	3.6	84	4517	5	70
7/24/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
7/25/2024	NG Operator	yes	1599	18598818	5.2	3.8	84	4672	5	70
7/26/2024	NG Operator	yes	1599	18621752	5.2	3.8	84	4528	5	71
7/29/2024	NG Operator	yes	1602	18691646	5.5	3	80	4420	5	67
7/30/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR	NR	NR
7/31/2024	NG Operator	yes	1602	18738328	5.5	3	76	4430	5	67.1
8/1/2024	NG Operator	yes	1599	18760136	5.6	4.2	86	4728	5	70
8/2/2024	NG Operator	yes	1599	18783236	5.4	3.8	86	4729	5	69
8/6/2024	NG Operator	yes	1599	18871550	5.8	3.4	88	4378	5	70
8/9/2024	NG Operator	yes	1601	18903064	5.6	3.8	82	4628	5	70
8/14/2024	NG Operator	yes	776	18959954	5	4	88	4452	5	71
8/15/2024	NG Operator	yes	808	18971656	5	4	82	4538	5	70
8/16/2024	NG Operator	yes	1609	18992410	5	4	82	4582	5	71
8/26/2024	NG Operator	yes	1584	19216798	5	4	82	4560	5	71
8/29/2024	NG Operator	yes	1573	1928513	5	3	82	4652	5	71
8/30/2024	NG Operator	yes	1571	19308702	5	4	82	4582	5	70
9/3/2024	NG Operator	yes	1571	19397370	5	4	82	4650	5	71
9/4/2024	NG Operator	yes	1569	19425946	5	4	80	4620	5	71
9/5/2024	NG Operator	yes	1570	19442526	5	3	82	4620	5	71
9/9/2024	NG Operator	yes	1565	19534826	5	4	80	4320	5	71
9/10/2024	NG Operator	yes	1571	19555980	5	4	80	4650	5	71
9/16/2024	NG Operator	yes	1575	19676656	5	4	80	4650	5	68
9/23/2024	NG Operator	yes	1570	19836266	5	3	82	4650	5	71
9/24/2024	NG Operator	yes	1570	19861258	5	4	82	4750	5	71
9/25/2024	NG Operator	yes	1578	19881242	5	3	82	4350	5	71
9/26/2024	NG Operator	yes	1571	19903326	5	4	80	4520	5	71
9/30/2024	NG Operator	yes	1574	19997720	5	4	82	4320	5	71
10/2/2024	NG Operator	yes	1562	NR	5	4	84	4460	5	71
10/3/2024	NG Operator	yes	1572	20062456	4.5	4	78	4390	5	70.5
10/7/2024	NG Operator	yes	1569	20156156	4.3	4	82	4350	5	69
10/8/2024	NG Operator	yes	1565	20174459	5	4	80	4650	5	70
10/9/2024	NG Operator	yes	1580	20199444	5	3	82	4520	5	71

T102 Daily Inspection Form Jan-Dec 2024

**Appendix B-3: Building 102 Daily Inspection Form
2024 Electronic Fulcrum Data**

Date and Time	Technician	T102 System Operating?	AS Inflow Recorder (Typical 2,300)	AS Inflow Recorder Totalizer (x1000gal)	Blower Inflow Pressure (iwc) (Typical-6 to -8)	Blower Effluent Pressure (iwc) (Typical 18-22)	Blower Effluent Temperature (F) (Typical 80-100)	Steam Header Pressure (psi) (Typical 15-20)
1/2/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
1/3/2024	NG Operator	yes	2525	116752149	8	22	80	49
1/4/2024	NG Operator	yes	2533	116788433	8	22	80	48
1/5/2024	NG Operator	yes	2524	116825465	8	22	80	52
1/8/2024	NG Operator	yes	2523	116933614	7	22	89	20
1/9/2024	NG Operator	yes	2547	116970515	7.2	21	88	22
1/10/2024	NG Operator	yes	2527	117008534	7	21	88	22
1/11/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
1/12/2024	NG Operator	yes	2526	117079359	8	22	80	47
1/15/2024	NG Operator	yes	2526	117187967	8	22	80	49
1/16/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
1/17/2024	NG Operator	yes	2528	117261161	8	22	80	29
1/18/2024	NG Operator	yes	2528	117296305	8	22	NR	48
1/19/2024	NG Operator	yes	2536	117333885	8	22	80	29
1/22/2024	NG Operator	yes	2533	117442292	8	22	80	38
1/23/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
1/24/2024	NG Operator	yes	2529	117515938	8	22	90	32
1/25/2024	NG Operator	yes	2519	117550966	8	22	80	38
1/26/2024	NG Operator	yes	2531	117587474	8	22	80	50
1/29/2024	NG Operator	yes	2526	117696168	8	22	80	52
1/30/2024	NG Operator	yes	2525	117732695	8	22	80	48
1/31/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
2/1/2024	NG Operator	yes	2533	117805929	8	22	80	34
2/2/2024	NG Operator	yes	2528	117841756	8	22	80	49
2/5/2024	NG Operator	yes	2529	117951143	8	22	80	51
2/6/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
2/8/2024	NG Operator	yes	2531	118059880	8	22	80	51
2/9/2024	NG Operator	yes	2528	118096860	8	22	80	26
2/12/2024	NG Operator	yes	2527	118205250	8	22	80	34
2/14/2024	NG Operator	yes	2527	118281825	8	22	80	49
2/14/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
2/15/2024	NG Operator	yes	2530	118409146	8	22	80	50
2/16/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
2/19/2024	NG Operator	yes	2527	118454559	8	22	80	50
2/20/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
2/21/2024	NG Operator	yes	2523	118528571	8	22	80	50
2/22/2024	NG Operator	yes	2517	118564262	8	22	80	48
2/23/2024	NG Operator	yes	2521	118601571	8	22	80	44
2/26/2024	NG Operator	yes	2528	118716969	8	22	80	49
2/27/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
2/28/2024	NG Operator	yes	2524	118789260	8	22	80	48
2/29/2024	NG Operator	yes	118818515	8	22	80	47	
3/1/2024	NG Operator	yes	2527	118858965	8	22	80	47
3/4/2024	NG Operator	yes	2511	118970825	7	21	88	20
3/5/2024	NG Operator	yes	2522	119010299	7	20	88	20
3/6/2024	NG Operator	yes	2514	119043631	7.2	20	88	20
3/7/2024	NG Operator	yes	2512	119080065	7	20	86	20
3/8/2024	NG Operator	yes	2518	119099165	7	21	86	21
3/11/2024	NG Operator	yes	2514	119204541	8	22	80	48
3/12/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
3/13/2024	NG Operator	yes	2520	119288896	8	22	80	47
3/14/2024	NG Operator	yes	2529	119313230	8	22	80	46
3/15/2024	NG Operator	yes	2519	119349627	8	22	80	38
3/18/2024	NG Operator	yes	2537	119458549	8	22	80	37
3/19/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
3/20/2024	NG Operator	yes	2521	119531372	8	22	80	30
3/21/2024	NG Operator	yes	2515	119567607	8	22	80	38
3/22/2024	NG Operator	yes	2513	119604210	8	22	80	30
3/25/2024	NG Operator	yes	2521	119711315	8	22	80	29
3/26/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
3/27/2024	NG Operator	yes	2514	119785114	8	22	80	26
3/28/2024	NG Operator	yes	2524	119821042	8	22	80	30
3/29/2024	NG Operator	yes	2521	119857638	8	22	80	28
4/1/2024	NG Operator	yes	2514	119965783	8	22	80	28
4/2/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
4/3/2024	NG Operator	yes	2521	120043680	8	22	80	30

**Appendix B-3: Building 102 Daily Inspection Form
2024 Electronic Fulcrum Data**

Date and Time	Steam Pressure into Bed (psi) (Typical 3-4; desorb)	VPGAC Influent Steam Temperature (F) (Typical 215-275; Desorb)	VPGAC Effluent Steam Temperature (F) (Typical 180-250; Desorb)	Cooling Water Flow rate (gpm) (Typical 85-125)	Cooling Water Influent Temperature (F) (Typical 50-60)	Separator Vent Temperature (F) (Typical 90-100) (Desorb only)	Air Flow Rate (x10 acfm) (Typical 8,000-10,000)	Weir Flow Meter Totalizer (x1000 gal)	Clear Well Discharge Pressure (psi) (Typical 50-60)
1/2/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
1/3/2024	3.5	241	200	145	59	91	7760	22674.75	66.8
1/4/2024	3.4	235	200	150	59	91	7790	22709.73	70
1/5/2024	3.5	246	200	148	59	92	7650	22745.52	68.6
1/8/2024	3.3	242	202	122	59	98	7432	22850	69
1/9/2024	3.3	242	202	130	59	98	7714	22885	70
1/10/2024	3.5	240	202	128	59	98	7864	22922	71
1/11/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
1/12/2024	3.5	239	200	149	59	91	7870	22991.43	69
1/15/2024	3.6	254	200	150	59	91	7950	23096.66	70.4
1/16/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
1/17/2024	3.5	226	200	151	59	92	8030	23167.79	70.8
1/18/2024	3.5	239	200	150	59	91	7880	23201.92	70.8
1/19/2024	3.4	226	200	150	59	90	8280	23238.45	70.6
1/22/2024	3.5	238	200	149	59	90	8170	23343.62	69.5
1/23/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
1/24/2024	3.5	241	200	150	59	90	8120	23414.96	70.5
1/25/2024	3.5	239	200	150	59	90	7930	23448.93	70.5
1/26/2024	3.5	236	200	151	59	92	8100	23484.35	70.8
1/29/2024	3.5	256	200	149	59	90	7690	23589.86	69.7
1/30/2024	3.4	248	200	147	50	90	8250	23625.2	67.2
1/31/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
2/1/2024	3.4	231	200	151	59	90	7730	23696.03	71.2
2/2/2024	3.5	230	200	150	59	91	7750	23730.79	70.5
2/5/2024	3.5	248	200	150	59	90	8130	23836.86	70.4
2/6/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
2/8/2024	3.5	257	200	151	59	91	7630	23942.08	71.3
2/9/2024	3.4	233	200	150	59	90	8090	23977.9	70.5
2/12/2024	3.5	237	200	151	59	91	7940	24082.87	71.4
2/14/2024	3.5	237	200	149	50	90	8040	24157.64	68.9
2/14/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
2/15/2024	3.5	247	201	148	59	91	8030	24184.07	68.7
2/16/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
2/19/2024	3.5	246	200	150	59	90	7450	24325.02	70.2
2/20/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
2/21/2024	3.5	253	200	150	59	90	8020	24396.92	70.6
2/22/2024	3.5	241	200	150	59	90	7650	24431.51	70.5
2/23/2024	3.5	233	200	153	59	90	7710	24455.33	76.4
2/26/2024	3.5	245	200	153	59	91	8040	24566.69	73.1
2/27/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
2/28/2024	3.5	233	200	150	59	91	8160	24634.89	70.7
2/29/2024	3.5	243	200	152	59	90	7940	24662.91	73.1
3/1/2024	3.4	236	200	152	59	90	8080	24701.74	72.7
3/4/2024	3.4	240	201	130	59	98	7960	24784	72
3/5/2024	3.3	242	202	130	59	98	7689	24802	71
3/6/2024	3.2	240	201	130	59	98	8021	24817	72
3/7/2024	3.3	240	199	127	59	95	8427	24834	72
3/8/2024	3.4	242	199	128	59	98	7385	24837	73
3/11/2024	3.5	236	200	152	59	91	8210	24885.87	72
3/12/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
3/13/2024	3.5	239	199	147	59	91	7930	24918.97	67.5
3/14/2024	3.5	241	200	145	59	90	8120	24934.78	65.7
3/15/2024	3.5	243	200	148	59	90	7790	24951.07	69.1
3/18/2024	3.5	238	200	149	59	90	7830	25000.49	69.4
3/19/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
3/20/2024	3.5	241	148	NR	59	90	8070	25034.15	68.5
3/21/2024	3.5	233	200	145	59	90	8090	25051.07	64.7
3/22/2024	3.5	231	200	141	59	90	8180	25067.41	61.4
3/25/2024	3.4	237	200	145	59	90	7730	25116.12	66.3
3/26/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
3/27/2024	3.4	238	200	151	59	90	8150	25182.21	71
3/28/2024	3.5	242	200	152	59	91	8220	25216.74	72.4
3/29/2024	3.5	245	200	151	59	90	7630	25251.92	71.7
4/1/2024	3.5	239	200	154	59	90	8140	25355.95	73.9
4/2/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
4/3/2024	3.4	239	200	153	59	90	7830	25430.93	73.4

**Appendix B-3: Building 102 Daily Inspection Form
2024 Electronic Fulcrum Data**

Date and Time	Technician	T102 System Operating?	AS Inflow Recorder (Typical 2,300)	AS Inflow Recorder Totalizer (x1000gal)	Blower Inflow Pressure (iwc) (Typical-6 to -8)	Blower Effluent Pressure (iwc) (Typical 18-22)	Blower Effluent Temperature (F) (Typical 80-100)	Steam Header Pressure (psi) (Typical 15-20)
4/4/2024	NG Operator	yes	2540	120083838	8	22	80	30
4/5/2024	NG Operator	yes	2523	120111172	8	22	80	40
4/8/2024	NG Operator	yes	2516	120219835	7	20	88	20
4/9/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
4/10/2024	NG Operator	yes	2521	120294711	8	22	80	29
4/11/2024	NG Operator	yes	2517	120335324	8	22	80	40
4/12/2024	NG Operator	yes	2518	120364770	8	22	80	40
4/15/2024	NG Operator	yes	2530	120478683	8	22	80	39
4/16/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
4/17/2024	NG Operator	yes	2511	120539392	8	22	80	22
4/18/2024	NG Operator	yes	2509	120575295	8	22	80	25
4/19/2024	NG Operator	yes	2510	120610864	8	22	80	38
4/22/2024	NG Operator	yes	2517	120719177	8	22	80	40
4/23/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
4/24/2024	NG Operator	yes	2513	120797429	8	22	80	47
4/25/2024	NG Operator	yes	2512	120828178	8	22	80	36
4/26/2024	NG Operator	yes	2513	120867466	8	22	80	38
4/29/2024	NG Operator	yes	2515	120972744	8	22	80	48
4/30/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
5/1/2024	NG Operator	yes	2510	121043268	8	22	80	48
5/2/2024	NG Operator	yes	2512	121084728	8	22	80	49
5/3/2024	NG Operator	yes	2513	121115967	8	22	80	47
5/6/2024	NG Operator	yes	2514	121223760	8	22	80	40
5/7/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
5/8/2024	NG Operator	yes	2518	121300369	8	22	80	40
5/9/2024	NG Operator	yes	2514	121335814	8	22	90	38
5/10/2024	NG Operator	yes	2518	121369400	8	22	80	20
5/13/2024	NG Operator	yes	2524	121478354	8	21	88	20
5/13/2024	NG Operator	yes	2523	121478226	8	21	88	20
5/14/2024	NG Operator	yes	2522	121513856	7.8	21	88	20
5/15/2024	NG Operator	yes	2533	121553916	8	22	80	20
5/16/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
5/17/2024	NG Operator	yes	2519	121623073	8	22	80	30
5/20/2024	NG Operator	yes	2518	121731450	8	22	80	49
5/22/2024	NG Operator	yes	2506	121808514	8	22	80	30
5/23/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
5/24/2024	NG Operator	yes	2503	121877147	8	22	80	20
5/28/2024	NG Operator	yes	2504	122020178	8	22	80	20
5/29/2024	NG Operator	yes	2496	122056767	7	21	86	20
5/30/2024	NG Operator	yes	2505	122092276	7	21	88	20
5/31/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
6/3/2024	NG Operator	yes	2499	122236252	7	21	88	20
6/4/2024	NG Operator	yes	2505	122278952	8	22	80	0
6/6/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
6/7/2024	NG Operator	yes	2501	122383103	8	22	80	18
6/10/2024	NG Operator	yes	2494	122491974	8	22	80	30
6/11/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
6/12/2024	NG Operator	yes	2506	122560882	8	22	80	50
6/13/2024	NG Operator	yes	2503	122596890	8	22	80	50
6/14/2024	NG Operator	yes	2510	122633276	8	22	80	50
6/17/2024	NG Operator	yes	2501	122736532	8	22	80	18
6/18/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
6/19/2024	NG Operator	yes	2503	122808795	8	22	80	30
6/20/2024	NG Operator	yes	2499	122850307	8	22	80	48
6/21/2024	NG Operator	yes	2498	122878781	8	22	80	48
6/25/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
6/26/2024	NG Operator	yes	2486	123058876	8	22	80	48
6/27/2024	NG Operator	yes	2500	123096843	8	22	80	30
6/28/2024	NG Operator	yes	2500	123130579	8	22	82	50
7/3/2024	NG Operator	yes	2506	123308927	8	22	80	40
7/5/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
7/8/2024	NG Operator	yes	2502	123495377	8	22	80	48
7/9/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
7/10/2024	NG Operator	yes	2496	123566049	8	22	80	48
7/12/2024	NG Operator	yes	2501	123631230	8	22	80	40
7/15/2024	NG Operator	yes	2500	123744667	8	22	80	40
7/16/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
7/17/2024	NG Operator	yes	2499	123811135	8	22	80	40
7/18/2024	NG Operator	yes	2497	123853020	7	21	88	20
7/19/2024	NG Operator	yes	2496	123884084	7	21	88	22
7/22/2024	NG Operator	yes	2502	123991288	7	22	86	20
7/23/2024	NG Operator	yes	2502	124027130	7.4	20	86	22
7/24/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
7/25/2024	NG Operator	yes	2486	124098408	7	21	86	20
7/26/2024	NG Operator	yes	2493	124134900	7	22	88	20
7/29/2024	NG Operator	yes	2493	124242337	8	22	80	40
7/30/2024	NG Operator	yes	NR	NR	NR	NR	NR	NR
7/31/2024	NG Operator	yes	2481	124316603	8	22	80	52
8/1/2024	NG Operator	yes	2504	124350314	7	21	88	20
8/2/2024	NG Operator	yes	2499	124386476	7	21	88	22
8/5/2024	NG Operator	yes	2496	124493530	7	20	86	22
8/6/2024	NG Operator	yes	2488	124529778	7.4	21	88	22
8/9/2024	NG Operator	yes	2491	124637416	7	21	88	22
8/14/2024	NG Operator	yes	2495	124817066	7	21	84	22

**Appendix B-3: Building 102 Daily Inspection Form
2024 Electronic Fulcrum Data**

Date and Time	Steam Pressure into Bed (psi) (Typical 3-4; Desorb)	VPGAC Influent Steam Temperature (F) (Typical 215-275; Desorb)	VPGAC Effluent Steam Temperature (F) (Typical 180-250; Desorb)	Cooling Water Flow rate (gpm) (Typical 85-125)	Cooling Water Influent Temperature (F) (Typical 50-60)	Separator Vent Temperature (F) (Typical 90-100) (Desorb only)	Air Flow Rate (x10 acfm) (Typical 8,000-10,000)	Weir Flow Meter Totalizer (x1000 gal)	Clear Well Discharge Pressure (psi) (Typical 50-60)
4/4/2024	3.5	249	201	151	59	90	8240	25469.52	73.1
4/5/2024	3.4	235	200	151	59	90	8150	25495.79	71
4/8/2024	3.2	242	202	133	59	96	7496	25600	73
4/9/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
4/10/2024	3.5	248	200	149	59	90	7940	25672.17	69.3
4/11/2024	3.5	241	200	149	69	90	8160	25711.36	69.6
4/12/2024	3.4	243	200	150	59	91	8120	25739.53	70.3
4/15/2024	3.5	249	200	150	59	91	7880	25849.29	70.2
4/16/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
4/17/2024	3.5	237	200	151	59	90	8160	25907.85	72.3
4/18/2024	3.4	233	200	152	59	90	7430	25942.65	72.1
4/19/2024	3.4	243	200	151	59	90	7450	25977.04	71.9
4/22/2024	3.4	268	200	147	59	90	8110	26082.02	67.9
4/23/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
4/24/2024	3.4	245	200	149	59	90	7830	26157.69	69.1
4/25/2024	3.4	239	200	149	59	91	7740	26187.4	69.2
4/26/2024	3.4	243	200	150	59	91	8040	26225.4	70.4
4/29/2024	3.4	253	200	149	59	90	7740	26327.15	69.5
4/30/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
5/1/2024	3.4	247	200	151	59	90	8160	26395.32	71.5
5/2/2024	3.4	244	200	150	59	90	8130	26435.42	70.3
5/3/2024	3.4	249	200	152	59	91	8150	26465.64	73.4
5/6/2024	3.4	247	200	151	59	90	8220	26570.01	71
5/7/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
5/8/2024	3.4	249	200	150	59	90	7840	26643.98	70.5
5/9/2024	3.4	245	200	150	59	90	7640	26678.21	70.9
5/10/2024	3.5	239	200	148	59	90	7820	26710.62	69.4
5/13/2024	3.3	242	202	130	59	96	7836	26815	71
5/13/2024	3.3	240	202	130	59	96	7958	26815	71
5/14/2024	3.4	240	202	130	59	98	7855	26850	70
5/15/2024	3.4	235	200	147	59	90	7730	26888.74	67.9
5/16/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
5/17/2024	3.5	245	200	151	59	90	8030	26955.61	71.9
5/20/2024	3.5	249	200	151	59	90	7740	27060.45	71.1
5/22/2024	3.4	253	200	148	59	90	8040	27134.22	68.9
5/23/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
5/24/2024	NR	251	200	150	59	90	8140	27199.87	70.3
5/28/2024	3.4	245	200	151	59	90	7640	27336.62	71.4
5/29/2024	3.3	240	202	133	59	96	7985	27371	70
5/30/2024	3.4	242	202	134	59	98	7214	27405	70
5/31/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
6/3/2024	3.3	238	202	130	59	98	7846	27543	70
6/4/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
6/6/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
6/7/2024	3.5	141	200	149	59	92	8090	27685.53	69.1
6/10/2024	3.5	258	200	148	59	90	7820	27791.07	68.6
6/11/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
6/12/2024	3.5	257	200	151	59	92	8080	27857.94	71.5
6/13/2024	3.5	258	200	151	59	91	8150	27892.81	70.9
6/14/2024	3.5	261	202	149	59	91	8100	27928.04	69.3
6/17/2024	3.5	259	202	150	59	90	8160	28028.19	71.2
6/18/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
6/19/2024	3.5	245	202	151	59	90	7760	28097.89	71
6/20/2024	3.5	259	200	146	59	92	7750	28138.08	66.5
6/21/2024	3.5	259	202	147	59	90	7790	28165.63	67.1
6/25/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
6/26/2024	3.5	255	200	148	59	91	7910	28340.06	68.4
6/27/2024	3.5	253	200	148	59	91	8110	28476.86	68.7
6/28/2024	3.4	249	200	150	59	90	7830	28409.61	70.7
7/3/2024	3.5	251	200	151	59	92	7840	28582.45	71.1
7/5/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
7/8/2024	3.5	255	200	144	59	92	8190	28762.74	64
7/9/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
7/10/2024	3.5	251	200	147	59	91	7730	28831.16	67.2
7/12/2024	3.4	253	200	149	59	91	8120	28894.24	69.5
7/15/2024	3.5	255	201	145	59	NR	7850	29004.22	65.2
7/16/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
7/17/2024	3.5	253	200	146	59	90	8160	29068.52	66.2
7/18/2024	3.6	248	202	135	59	98	7186	29089	79
7/19/2024	3.2	248	204	130	59	94	7354	29105	80
7/22/2024	3.6	246	202	135	59	98	7846	29160	80
7/23/2024	3.3	248	202	130	59	94	7939	29178	79
7/24/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
7/25/2024	3.6	246	199	132	59	96	7278	29246	68
7/26/2024	3.2	248	202	130	59	94	7155	29281	69
7/29/2024	3.4	237	200	146	59	90	7730	29386.44	66.1
7/30/2024	NR	NR	NR	NR	NR	NR	NR	NR	NR
7/31/2024	3.5	251	200	145	59	80	7810	29458.44	65.7
8/1/2024	3.4	248	202	128	59	98	7846	29491	70
8/2/2024	3.2	248	202	128	59	98	8003	29526	65
8/5/2024	3.4	248	202	130	59	98	7194	29629	66
8/6/2024	3.6	246	202	133	59	96	7614	29665	67
8/9/2024	3.2	248	202	138	59	96	7628	29766	66
8/14/2024	3	248	202	130	59	90	7335	29940	69

**Appendix B-3: Building 102 Daily Inspection Form
2024 Electronic Fulcrum Data**

Date and Time	Technician	T102 System Operating?	AS Influent Flow Recorder (gpm) (Typical 2,300)	AS Influent Flow Recorder Totalizer (x1000gal)	Blower Influent Pressure (iwc) (Typical-6 to -8)	Blower Effluent Pressure (iwc) (Typical 18-22)	Blower Effluent Temperature (F) (Typical 80-100)	Steam Header Pressure (psi) (Typical 15-20)
8/15/2024	NG Operator	yes	2491	124853571	7	21	82	15

**Appendix B-3: Building 102 Daily Inspection Form
2024 Electronic Fulcrum Data**

Date and Time	Steam Pressure into Bed (psi) (Typical 3-4; desorb)	VPGAC Influent Steam Temperature (F) (Typical 215-275; Desorb)	VPGAC Effluent Steam Temperature (F) (Typical 180-250; Desorb)	Cooling Water Flow rate (gpm) (Typical 85-125)	Cooling Water Influent Temperature (F) (Typical 50-60)	Separator Vent Temperature (F) (Typical 90-100) (Desorb only)	Air Flow Rate (x10 acfm) (Typical 8,000-10,000)	Weir Flow Meter Totalizer (x1000 gal)	Clear Well Discharge Pressure (psi) (Typical 50-60)
8/15/2024	3	246	202	130	59	90	7625	29975	69

**Appendix B-3: Building 102 Daily Inspection Form
2024 Electronic Fulcrum Data**

Date and Time	Technician	T102 System Operating?	AS Inluent Flow Recorder (Typical 2,300)	AS Inluent Flow Recorder Totalizer (x1000gal)	Blower Inluent Pressure (iwc) (Typical-6 to -8)	Blower Effluent Pressure (iwc) (Typical 18-22)	Blower Effluent Temperature (F) (Typical 80-100)	Steam Header Pressure (psi) (Typical 15-20)
8/16/2024	NG Operator	yes	2496	124889944	7	21	84	15
8/19/2024	NG Operator	yes	2510	124999809	7	21	84	20
8/21/2024	NG Operator	yes	2505	125069284	7	21	86	22
8/26/2024	NG Operator	yes	2491	125248427	7	21	86	30
8/27/2024	NG Operator	yes	2497	125284329	7	21	84	26
8/28/2024	NG Operator	yes	2494	125320871	7	21	86	38
8/29/2024	NG Operator	yes	2497	125358119	7	22	86	30
8/30/2024	NG Operator	yes	2501	125394216	7	21	84	30
9/3/2024	NG Operator	yes	2518	125536213	7	21	80	30
9/4/2024	NG Operator	yes	2510	125572470	7	21	80	30
9/5/2024	NG Operator	yes	2521	125608767	7	21	82	30
9/9/2024	NG Operator	yes	2507	125753205	7	22	80	30
9/10/2024	NG Operator	yes	2512	125789337	7	21	82	30
9/12/2024	NG Operator	yes	2501	125862349	7	21	82	30
9/16/2024	NG Operator	yes	2505	126006138	7	21	82	30
9/23/2024	NG Operator	yes	2495	126249830	7	21	82	30
9/26/2024	NG Operator	yes	2504	126357972	7	21	82	30
9/30/2024	NG Operator	yes	2501	126502420	7	21	82	30
10/2/2024	NG Operator	yes	2515	126577283	7	21	82	30
10/3/2024	NG Operator	yes	2509	126602421	9	22	80	30
10/4/2024	NG Operator	yes	2501	12638987	9	22	79	30
10/7/2024	NG Operator	yes	2508	126751644	7	23	80	30
10/8/2024	NG Operator	yes	2511	126781930	7	21	82	30
10/9/2024	NG Operator	yes	2509	126817566	7	21	84	30
10/10/2024	NG Operator	yes	2494	126855622	7	24	90	30
10/14/2024	NG Operator	yes	2510	126999311	7	21	82	30
10/16/2024	NG Operator	yes	2510	127070826	7	21	82	30
10/18/2024	NG Operator	yes	2501	127145553	8	23	81	30
10/21/2024	NG Operator	yes	2495	127254816	8	23	80	30
10/22/2024	NG Operator	yes	2508	127282519	7	21	82	30
10/23/2024	NG Operator	yes	2509	127317817	7	21	84	30
10/25/2024	NG Operator	yes	2508	127388050	7	21	84	30
10/28/2024	NG Operator	yes	2502	127492668	7	21	80	30
10/30/2024	NG Operator	yes	2491	1275632	7	21	82	30
10/31/2024	NG Operator	yes	2499	127597718	7	21	84	30
11/1/2024	NG Operator	yes	2500	127632766	7	21	82	30
11/4/2024	NG Operator	yes	2488	127722967	7	21	82	30
11/6/2024	NG Operator	yes	2488	127782167	7	21	84	30
11/11/2024	NG Operator	yes	2502	127958319	7	21	82	30
11/12/2024	NG Operator	yes	2502	127994594	7	21	82	30
11/13/2024	NG Operator	yes	2488	128030891	7	21	84	30
11/15/2024	NG Operator	yes	2498	128109281	7	21	84	30
11/18/2024	NG Operator	yes	2502	128211745	7	21	82	30
11/19/2024	NG Operator	yes	2482	128248703	7	21	82	30
11/20/2024	NG Operator	yes	2487	128281891	7	21	84	30
11/21/2024	NG Operator	yes	2486	128317959	7	21	82	30
11/25/2024	NG Operator	yes	2497	128461315	7	21	82	30
11/26/2024	NG Operator	yes	2486	128496237	7	21	82	30
12/2/2024	NG Operator	yes	2484	128711068	7	21	82	30
12/4/2024	NG Operator	yes	2479	128782909	7	21	82	30
12/5/2024	NG Operator	yes	2488	128822641	7	21	82	30
12/6/2024	NG Operator	yes	2489	128854842	7	21	82	30
12/9/2024	NG Operator	yes	2510	128966306	7	21	82	30
12/10/2024	NG Operator	yes	2510	129003944	7	21	82	30
12/12/2024	NG Operator	yes	2508	129068154	7	21	84	30
12/13/2024	NG Operator	yes	2502	129104463	7	21	82	30
12/16/2024	NG Operator	yes	2506	129218209	7	21	82	30
12/19/2024	NG Operator	yes	2502	129322416	7	21	82	30
12/20/2024	NG Operator	yes	2492	129354946	7	21	84	30

**Appendix B-3: Building 102 Daily Inspection Form
2024 Electronic Fulcrum Data**

Date and Time	Steam Pressure into Bed (psi) (Typical 3-4; Desorb)	VPGAC Influent Steam Temperature (F) (Typical 215-275; Desorb)	VPGAC Effluent Steam Temperature (F) (Typical 180-250; Desorb)	Cooling Water Flow rate (gpm) (Typical 85-125)	Cooling Water Influent Temperature (F) (Typical 50-60)	Separator Vent Temperature (F) (Typical 90-100) (Desorb only)	Air Flow Rate (x10 acfm) (Typical 8,000-10,000)	Weir Flow Meter Totalizer (x1000 gal)	Clear Well Discharge Pressure (psi) (Typical 50-60)
8/16/2024	3	248	199	128	59	90	7682	30011	69
8/19/2024	3	248	202	130	59	92	7348	30117	69
8/21/2024	3	258	202	138	59	90	7643	30185	59
8/26/2024	3	258	202	135	59	90	7560	30359	70
8/27/2024	3	252	202	138	59	90	7960	30393	69
8/28/2024	3	268	202	138	59	92	8230	30432	69
8/29/2024	3	248	201	136	59	92	7245	30471	67
8/30/2024	3	246	199	122	59	92	7327	30510	68
9/3/2024	3	248	202	132	59	92	8011	30660	69
9/4/2024	3	252	202	130	59	90	7320	30698	69
9/5/2024	3	248	201	128	59	86	7790	30737	69
9/9/2024	3	248	199	130	59	92	7383	30889	68
9/10/2024	3	252	202	138	59	92	7520	30927	69
9/12/2024	3	250	202	135	59	90	8021	31003	79
9/16/2024	3	245	199	130	59	90	7889	31087	77
9/23/2024	3	250	202	135	59	91	7889	31344	66
9/26/2024	3	248	202	132	59	94	7127	31458	64
9/30/2024	3	246	201	130	59	92	7191	31611	66
10/2/2024	3	248	200	130	59	90	7826	31690	67
10/3/2024	3	248	202	130	59	70	7690	31717	66.5
10/4/2024	5	246	180	89	59	90	7020	31756	66
10/7/2024	4.5	242	185	89	59	90	7210	31874	65.5
10/8/2024	3	242	202	138	59	92	7970	31906	65
10/9/2024	3	248	202	132	59	92	8030	31944	66
10/10/2024	5	295	175	95	59	90	8900	31984	66
10/14/2024	3	242	202	130	59	90	7950	32136	66
10/16/2024	3	246	201	137	59	92	8040	32211	66
10/18/2024	3	244	198	89	59	93	80100	32290	66
10/21/2024	3	248	105	89	59	83	8180	32404	53
10/22/2024	3	242	201	136	59	90	7240	32434	66
10/23/2024	3	246	199	132	59	90	7330	32471	66
10/25/2024	3	242	202	138	59	92	7320	32545	66
10/28/2024	3	240	199	130	59	90	8290	32656	66
10/30/2024	3	246	202	130	59	90	7258	32732	66
10/31/2024	3	242	199	128	59	92	7790	32768	66
11/1/2024	3	246	198	130	59	94	7890	32805	66
11/4/2024	3	245	202	128	59	90	7850	32905	66
11/6/2024	3	246	202	132	59	90	7730	32970	66
11/11/2024	3	248	201	130	59	90	7230	33158	66
11/12/2024	3	244	201	130	59	90	8140	33196	70
11/13/2024	3	244	199	128	59	91	7350	33235	70
11/15/2024	3	246	199	128	59	90	8170	33318	70
11/18/2024	3	242	199	128	59	90	8010	33427	70
11/19/2024	3	242	202	130	59	92	8010	33466	70
11/20/2024	3	246	201	128	59	92	8020	33501	68
11/21/2024	3	242	199	128	59	90	8150	33539	69
11/25/2024	3	242	199	128	59	92	8240	33692	69
11/26/2024	3	244	200	126	59	91	7410	33729	68
12/2/2024	3	240	199	126	59	90	7650	33957	68
12/4/2024	3	238	202	126	59	90	7400	34033	67
12/5/2024	3	242	199	122	59	94	8120	34075	66
12/6/2024	3	242	199	128	59	92	7240	34109	66
12/9/2024	3	245	202	126	59	90	7310	34220	67
12/10/2024	3	242	199	126	59	92	7290	34267	66
12/12/2024	3	238	201	132	59	92	8040	34336	67
12/13/2024	3	240	199	126	59	94	7889	34374	66
12/16/2024	3	242	201	126	59	90	7944	34495	67
12/19/2024	3	238	202	135	59	92	7530	34606	66
12/20/2024	3	238	199	136	59	92	8080	34640	67

**Appendix B-3: Building 102 Daily Inspection Form
2024 Electronic Fulcrum Data**

Date and Time	Technician	T102 System Operating?	AS Influent Flow Recorder (gpm) (Typical 2,300)	AS Influent Flow Recorder Totalizer (x1000gal)	Blower Influent Pressure (iwc) (Typical-6 to -8)	Blower Effluent Pressure (iwc) (Typical 18-22)	Blower Effluent Temperature (F) (Typical 80-100)	Steam Header Pressure (psi) (Typical 15-20)
12/24/2024	NG Operator	yes	2496	129499871	7.9	23	80	88
12/26/2024	NG Operator	yes	2500	129571585	708	24	82	30
12/31/2024	NG Operator	yes	2499	129751267	7.2	23	82	30
Abbreviations:								
NR	Not Recorded							
NG	Northrop Grumman							
Notes:								
(1) Potentially erroneous reported value.								

**Appendix B-3: Building 102 Daily Inspection Form
2024 Electronic Fulcrum Data**

Date and Time	Steam Pressure into Bed (psi) (Typical 3-4; desorb)	VPGAC Influent Steam Temperature (F) (Typical 215-275; Desorb)	VPGAC Effluent Steam Temperature (F) (Typical 180-250; Desorb)	Cooling Water Flow rate (gpm) (Typical 85-125)	Cooling Water Influent Temperature (F) (Typical 50-60)	Separator Vent Temperature (F) (Typical 90-100) (Desorb only)	Air Flow Rate (x10 acfm) (Typical 8,000-10,000)	Weir Flow Meter Totalizer (x1000 gal)	Clear Well Discharge Pressure (psi) (Typical 50-60)
12/24/2024	3	246	201	89	57	98	7860	2652	66
12/26/2024	3	248	196	89	56	92	7370	564100	56
12/31/2024	3	246	218	89	54	98	7330	2657	67
Abbreviations:									
NR	Not Recorded								
NG	Northrop Grumman								
Notes:									
(1) Potentially erroneous reported value.									

T96 Monthly Inspection Form Jan-Dec 2024

Appendix B-2: Building 96 Monthly Inspection Forms 2024 Electronic Fulcrum Data

Date/Time	Technician	Checked well piping for excessive noise and vibration and VFD for excessive heat, dust or noise.	Checked well piping, valves, joints and seals for leakage.	Checked well control panel indicator lights for alarms.	Checked well piping for excessive noise and vibration and VFD for excessive heat, dust or noise.	Checked well piping, valves, joints and seals for leakage.	Checked well control panel indicator lights for alarms.	Checked influent piping for leaks, checked exterior surface, manway and seams for signs of wear/corrosion or leaks.
1/2/2024	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
1/26/2024	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
2/6/2024	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
2/20/2024	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
3/28/2024	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
4/23/2024	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
5/23/2024	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
6/25/2024	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
7/16/2024	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
7/30/2024	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
Note:								
Additional Action items and Comment fields were removed for presentation, as no comments or actions were recorded by the Operator.								
Abbreviations:								
NG	Northrop Grumman							
NR	Not Recorded							

Appendix B-2: Building 96 Monthly Inspection Forms 2024 Electronic Fulcrum Data

Date/Time	Checked air intake screen for obstructions	Cleaned blower motor housing	Visually checked for leaks on above-grade duct work, flexible boot and blower unit.	Checked motor bearing lubrication and lubricate as needed	Checked blower and fan/belt for excessive vibration, temperature or noise	Cleaned Oxy blower motor housing	Visually checked for leaks on above-grade duct work, flexible boot and Oxy blower unit.	Checked Oxy motor bearing lubrication and lubricate as needed
1/2/2024	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
1/26/2024	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
2/6/2024	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
2/20/2024	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
3/28/2024	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
4/23/2024	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
5/23/2024	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
6/25/2024	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
7/16/2024	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
7/30/2024	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
Note:								
Additional Action items and Comment fields were removed for presentation, as no comments or actions were recorded by the Operator.								
Abbreviations:								
NG	Northrop Grumman							
NR	Not Recorded							

Appendix B-2: Building 96 Monthly Inspection Forms 2024 Electronic Fulcrum Data

Date/Time	Checked Oxy blower and fan/belt for excessive vibration, temperature or noise	Bearing Temperature from top of pillow block (Motor Side) (F)	Bearing Temperature from top of pillow block (Belt Side) (F)	Checked pneumatic lines for leaks or breaks	Inspected valves for proper positioning/seating	Inspected damper housing during a desorb cycle for steam vapors and leaks	Manually checked alarm conditions at well house and treatment system building	Checked and drained condensate traps. If condensate trap filters are saturated, replace filters
1/2/2024	Yes - OK	65.5	75.7	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
1/26/2024	Yes - OK	76.2	88.1	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
2/6/2024	Yes - OK	NR	NR	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
2/20/2024	Yes - OK	75.6	74.1	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
3/28/2024	Yes - OK	79.3	74.7	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
4/23/2024	Yes - OK	8.3	72.3	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
5/23/2024	Yes - OK	99	87.8	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
6/25/2024	Yes - OK	89.9	100.5	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
7/16/2024	Yes - OK	107.8	97.3	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
7/30/2024	Yes - OK	104.4	94.4	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
Note:								
Additional Action items and Comment fields were removed for presentation, as no comments or actions were recorded by the Operator.								
Abbreviations:								
NG	Northrop Grumman							
NR	Not Recorded							

Appendix B-2: Building 96 Monthly Inspection Forms 2024 Electronic Fulcrum Data

Date/Time	Checked clearwell pumps and pump motors for excessive noise and vibration	Check clearwell piping and packing glands for leaks or too much overspray	Checked clearwell control panel indicator lights for alarms					
1/2/2024	Yes - OK	Yes - OK	Yes - OK					
1/26/2024	Yes - OK	Yes - OK	Yes - OK					
2/6/2024	Yes - OK	Yes - OK	Yes - OK					
2/20/2024	Yes - OK	Yes - OK	Yes - OK					
3/28/2024	Yes - OK	Yes - OK	Yes - OK					
4/23/2024	Yes - OK	Yes - OK	Yes - OK					
5/23/2024	Yes - OK	Yes - OK	Yes - OK					
6/25/2024	Yes - OK	Yes - OK	Yes - OK					
7/16/2024	Yes - OK	Yes - OK	Yes - OK					
7/30/2024	Yes - OK	Yes - OK	Yes - OK					
Note:								
Additional Action items and Comment fields were removed for presentation, as no comments or actions were recorded by the Operator.								
Abbreviations:								
NG	Northrop Grumman							
NR	Not Recorded							

T102 Monthly Inspection Form Jan-Dec 2024

Appendix B-4: Tower 102 Monthly Inspection Forms 2023 Electronic iForm Data

Date/Time	Technician	Checked well piping for excessive noise and vibration and VFD for excessive heat, dust or noise.	Checked well piping, valves, joints and seals for leakage.	Checked well control panel indicator lights for alarms.	Checked well piping for excessive noise and vibration and VFD for excessive heat, dust or noise.	Checked well piping, valves, joints and seals for leakage.	Checked well control panel indicator lights for alarms.	Checked well piping for excessive noise and vibration and VFD for excessive heat, dust or noise.
1/17/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
2/24/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
3/14/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
3/21/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
4/18/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
5/31/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
6/13/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
7/18/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
8/15/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
9/5/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
10/10/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
11/6/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
11/14/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
12/5/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
12/19/2023	NG Operator	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK	Yes - OK
Note:								
Additional Action items and Comment fields were removed for presentation, as no comments or actions were recorded by the Operator.								
Abbreviations:								
NG	Northrop Grumman							

Appendix C

SPDES Discharge Monitoring Reports

January 2024 - OU2 OU3 SPDES

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-005L-24
March 6, 2024

Jason Pelton
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

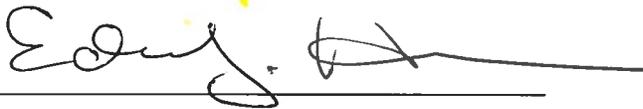
Subject: **Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A
Northrop Grumman Corporation - Bethpage, New York Facility**

Mr. Pelton:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of January 2024, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,



Edward J. Hannon
Corporate Manage ESHM
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-006L-24
March 6, 2024

Jason Pelton
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
January 1, 2024 – January 31, 2024.

Mr. Pelton:

Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – 0.59 ug/L
Outfall 5 – 2.4 ug/L
Outfall 6 – 6.5 ug/L

Sampling results for Outfall 1 for the following:

Ethylbenzene - <1.0
Toluene - <1.0
Benzene - <0.50
Xylene, Ortho - <1.0
Xylene, Meta - <1.0
Xylene, Para - <1.0

If you have any questions, please call me at 516-575-2333
Very truly yours,



Edward J. Hannon
Corporate Manager ESHM
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if
 NAME: NORTHROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	005- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
01/01/2024	01/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUFR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
pH	*****	*****	7.7	SU	0	1/31 Monthly	Grab
0040010 Effluent Gross	*****	*****	Req. Mon. MINIMUM	SU			Grab
pH	*****	*****	5.6	SU	0	1/31 Monthly	Grab
0040010 Intake from Well	*****	*****	Req. Mon. MINIMUM	SU			Grab
Nitrogen, total [as N]	*****	*****	3.7	mg/L	0	1/31 Monthly	Grab
0060010 Effluent Gross	*****	*****	10	mg/L			Grab
Methylene chloride	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
3442310 Effluent Gross	*****	*****	5	ug/L			Grab
Tetrachloroethylene	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
3447510 Effluent Gross	*****	*****	5	ug/L			Grab
1,1-Dichloroethylene	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
3450110 Effluent Gross	*****	*****	5	ug/L			Grab
1,1,1-Trichloroethane	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
3450610 Effluent Gross	*****	*****	5	ug/L			Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-575-2333	03/04/2024
TYPED OR PRINTED	AREA Code	NUMBER
	516	575-2333
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		
<i>Edward J Hannon</i>		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if applicable)
 NAME: NORTROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792
 PERMIT NUMBER
 MONITORING PERIOD
 MM/DD/YYYY
 01/01/2024

005-C
 DISCHARGE NUMBER
 MM/DD/YYYY
 01/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	*****	0	1/31 Monthly	Grab
39175 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
Trichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
39180 1 0 Effluent Gross	*****	*****	0.58	ug/L	0	1/31 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	0	1/31 Monthly	Measured
50050 1 0 Effluent Gross	*****	6.55	*****	*****	0	1/31 Monthly	Measured
Calculated limit	*****	5	*****	*****	0	1/31 Monthly	Measured
74013 1 0 Effluent Gross	*****	DAILY MX	*****	*****	0	1/31 Monthly	Calculated
cis-1,2-Dichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
77093 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
Trichlorotrifluoroethane	*****	*****	*****	*****	0	1/31 Monthly	Grab
81611 1 0 Effluent Gross	*****	*****	<2.0	ug/L	0	1/31 Monthly	Grab
trans-1,2-Dichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
85810 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE NUMBER
 516-515-7333
 DATE
 03/06/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PIT OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

PERMITTEE NAME/ADDRESS (include Facility Name/Location if NAME)
 NORTROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	006- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
01/01/2024	01/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	SU	7.8	0	1/31 Monthly	Grab
00400 1 0 Effluent Gross	*****	*****	*****	*****	SU	7.8	0	1/31 Monthly	Grab
00400 1 0 Intake from Well	*****	*****	*****	*****	SU	5.9	0	1/31 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	mg/L	5.5	0	1/31 Monthly	Grab
00600 1 0 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
3-4+23 1 0 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
3-4+75 1 0 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
1,1- Dichloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
3-4501 1 0 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
1,1,1- Trichloroethane	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
3-4506 1 0 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-575-2333	03/06/2024
TYPED OR PRINTED	AREA Code	NUMBER
	516-575-2333	03/06/2024
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	006- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
01/01/2024	01/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	*****	0	1/31 Monthly	Grab
39175 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
Trichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
39180 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	0	1/31 Monthly	Measured
50050 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Measured
Calculated limit	*****	*****	*****	*****	0	1/31 Monthly	Calculated
7-4013-1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Calculated
cis- 1,2- Dichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
77093 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
Trichlorotrifluoroethane	*****	*****	*****	*****	0	1/31 Monthly	Grab
81611 1 0 Effluent Gross	*****	*****	<2.0	ug/L	0	1/31 Monthly	Grab
trans- 1,2- Dichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
85810 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager TYPED OR PRINTED	516-515-2333	03/06/2024
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	MM/DD/YYYY
	516-515-2333	03/06/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT P1)
 COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA-SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

NY0096792 PERMIT NUMBER	001-WSP-7 DISCHARGE NUMBER
MM/DD/YYYY 01/01/2024	MONITORING PERIOD MM/DD/YYYY 01/31/2024

PERMITTEE NAME/ ADDRESS (include facility Name/Location if NAME):
 NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFFMAN

NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	SU	7.3	0	1/31	Grab
0040010 Effluent Gross	*****	*****	*****	*****	SU	Req. Mon. MAXIMUM	0	Monthly	Grab
pH	*****	*****	*****	*****	SU	6.4	0	1/31	Grab
0040010 Intake from Well	*****	*****	*****	*****	SU	Req. Mon. MINIMUM	0	Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	mg/L	2.5	0	1/31	Grab
0060010 Effluent Gross	*****	*****	*****	*****	mg/L	10 DAILY MX	0	Monthly	Grab
Methylene chloride	*****	*****	*****	*****	ug/L	<2.0	0	1/31	Grab
3442310 Effluent Gross	*****	*****	*****	*****	ug/L	5 DAILY MX	0	Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/31	Grab
3447510 Effluent Gross	*****	*****	*****	*****	ug/L	5 DAILY MX	0	Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/31	Grab
3450110 Effluent Gross	*****	*****	*****	*****	ug/L	5 DAILY MX	0	Monthly	Grab
1,1-Trichloroethane	*****	*****	*****	*****	ug/L	<1.0	0	1/31	Grab
3450610 Effluent Gross	*****	*****	*****	*****	ug/L	5 DAILY MX	0	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM TYPED OR PRINTED	516-575-7333 AREA CODE NUMBER	03/06/2024 MM/DD/YYYY
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW External Outfall
 No Discharge

NY0096792 PERMIT NUMBER	001-WSP-7 DISCHARGE NUMBER
MM/DD/YYYY 01/01/2024	MM/DD/YYYY 01/31/2024

PERMITTEE NAME: ADDRESS (include Facility Name/Location if NAME)
 NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- WIG-035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- WIG-035
 BETHPAGE, NY 11714
 ATTN: JOHN COFFMAN

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
Vinyl chloride	MEASUREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Grab
39175 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Grab
Trichloroethylene	MEASUREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Grab
39180 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Grab
Flow, in conduit or thru treatment plant	MEASUREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Measured
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Measured
Calculated limit	MEASUREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Calculated
74013 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Calculated
cis-1,2-Dichloroethylene	MEASUREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Grab
77093 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Grab
Trichlorotrifluoroethane	MEASUREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Grab
81611 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Grab
trans-1,2-Dichloroethylene	MEASUREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Grab
85810 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	1/31	Monthly	Grab

NAME/TITLE PRINCIPAL, EXECUTIVE OFFICER Edward S Hannon Corporate Manager ESHM	TELEPHONE	DATE
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT <i>Edward S Hannon</i>	516-575-2333 AREA Code NUMBER	03/06/2024 MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

Monitoring Period:

January 2024

1/1/24 12:00 AM 1/31/24 12:00 AM

31 Days

OU2 South Basins: Outfall 005⁽⁶⁾

Combined OU2 Groundwater Remedy Tower 102 and Building 109 Advanced Oxidation Process (AOP) Treatment Systems - Tower 102 Treated Air Stripper Discharge, Building 109 AOP Treatment System Discharge, and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 005 1/1/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	6.11	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	6.55	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾ (Building 109)	--	5.4	NS	SU	Monthly (1/31) Days	Grab	--	--
Influent pH ⁽⁵⁾ (Tower 102)	--	5.8	NS	SU	Monthly (1/31) Days	Grab	--	--
Outfall 005 Effluent pH ⁽⁵⁾	--	7.7	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	3.7	10.0	mg/L	Monthly (1/31) Days	Grab	188.77	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁸⁾	--	ND	1,000	µg/L	Monthly (1/31) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	0.58	5.0	µg/L	Monthly (1/31) Days	Grab	0.03	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,2-Trichloroethane	79-00-5	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-Dichloroethane	107-06-2	< 1.0	0.6	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-Dichloropropane	78-87-5	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Benzene	71-43-2	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,4-Dioxane (Building 109 Influent) ⁽⁹⁾	123-91-1	37	Monitor	µg/L	Monthly (1/31) Days	Grab	NA	lbs/day
1,4-Dioxane (Building 109 Post AOP) ⁽⁹⁾	123-91-1	<0.24	Monitor	µg/L	Monthly (1/31) Days	Grab	na	lbs/day
1,4-Dioxane (Building 109 Effluent) ⁽⁹⁾	123-91-1	<0.24	Monitor	µg/L	Monthly (1/31) Days	Grab	NA	lbs/day
1,4-Dioxane (Outfall 005) ⁽¹⁰⁾	123-91-1	2.4	Monitor	µg/L	Monthly (1/31) Days	Grab	0.12	lbs/day

Notes and abbreviations on last page.

OU2 West Basins: Outfall 006
OU2 Groundwater Remedy Tower 96 Treatment System - Treated Air Stripper Discharge and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 006 1/1/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	1.94	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	2.48	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	5.9	NS	SU	Monthly (1/31) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	7.8	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	5.5	10.0	mg/L	Monthly (1/31) Days	Grab	113.87	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁶⁾	--	ND	1,000	µg/L	Monthly (1/31) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	6.5	Monitor	µg/L	Monthly (1/31) Days	Grab	0.13	lbs/day

Notes and abbreviations on last page.

OU3 Effluent: Outfall 001 (WSP-7)
OU3 Groundwater Remedy Treatment System - Treated Air Stripper and Soil Gas Containment Condensate Discharge to Nassau County Recharge Basins

Parameter ⁽¹⁾	CAS Number	OUTFALL 001 (WSP-7) 1/11/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	0.38	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	0.42	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	6.4	NS	SU	Monthly (1/31) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	7.3	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	2.5	10.0	mg/L	Monthly (1/31) Days	Grab	7.94	lbs/day
Total Iron	7439-89-6	270	600	µg/L	Monthly (1/31) Days	Grab	0.86	lbs/day
Total Manganese	7439-96-5	60.8	600	µg/L	Monthly (1/31) Days	Grab	0.19	lbs/day
Sum of Total Iron and Manganese	--	330.8	1,000	µg/L	Monthly (1/31) Days	Calculated	1.05	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2 (trans)-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-(cis)-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 5.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Benzene	71-43-2	< 0.50	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Ethylbenzene	100-41-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Toluene	108-88-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
o-Xylene	95-47-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
m,p-Xylene	--	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1016	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1221	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1232	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1242	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1248	12672-29-6	0.067	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1254	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1260	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	0.59	Monitor	µg/L	Monthly (1/31) Days	Grab	1.87E-03	lbs/day

Notes and Abbreviations:

- XX** Bold value indicates the constituent was detected at or above its laboratory quantification limit
- <** Compound is not detected above laboratory quantification limit
- Not Applicable
- µg/L** micrograms per liter
- lbs/day** pounds per day
- lb/kg** pounds per kilogram
- MGD** million gallons per day
- mg/L** milligrams per liter
- min** minutes
- SU** Standard Units
- B** Detected in method blank as reported by laboratory
- na** not available
- NA** Not Applicable
- COC** Chain of Custody

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system; Polychlorinated Biphenyls (PCBs) using USEPA Method 608; 1,4-Dioxane using USEPA Method 8270D-SIM-CLLE; Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number: 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively; Total Iron and Manganese using USEPA Method 200.7.

2. Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023.

3. Mass Loading Calculation:

$$Mass\ Loading\ \left(\frac{lb}{day}\right) = Flow\ \left(\frac{gal}{min}\right) * 1440\ \left(\frac{min}{day}\right) * concentration\ \left(\frac{\mu g}{liter}\right) \div 10^9\ \left(\frac{\mu g}{kg}\right) * 3.785\ \left(\frac{liter}{gal}\right) * 2.2046\ \left(\frac{lb}{kg}\right)$$

- 4. Average and daily maximum flow calculated from SCADA reports for the month indicated.
- 5. Field measurement of pH taken by hand held meter on sample date.
- 6. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".
- 7. Average Mass Loading calculations are based on actual flow rates unless otherwise noted.
- 8. At the time of Outfall 005 SPDES sample collection on January 11, 2024, Building 109 AOP Treatment System remedial well flow for RW-20 was approximately 500 gpm, RW-21 was approximately 500 gpm and RW-22 was approximately 600 gpm. These were instantaneous readings taken at the time of sampling.
- 9. Building 109 AOP Treatment System Influent (corresponds to sample B109-INFLUENT on the COC), Post-AOP (corresponds to sample B109-POST-AOP on the COC) and Effluent (corresponds to sample OUTFALL 005-B109 on the COC) samples were collected and analyzed for 1,4-Dioxane as per footnote (1) of the SPDES permit equivalency for Outfall 005.
- 10. Outfall 005 combines discharge from Building 109 and Tower 102 treatment systems; however, Tower 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal.

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 01/11/24
Lab Sample ID: JD80402-2	Date Received: 01/11/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	01/12/24	01/15/24 MM	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	01/12/24	01/15/24 MM	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA55391

(2) Prep QC Batch: MP44229

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 01/11/24
Lab Sample ID: JD80402-2	Date Received: 01/11/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	3.7	0.10	mg/l	1	01/17/24 17:56	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	3.7	0.30	mg/l	1	01/17/24 17:56	JD	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	01/15/24 20:00	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.2
4



ACCUTEST

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

COC #1 PAGE 1 OF 1

MM-01824-27

Form containing Client/Reporting Information, Project Information, Requested Analysis, Matrix Codes, and a table of samples with columns for Field ID, Date, Time, Sampled by, Matrix, # of bottles, and various chemical analysis results.

5.2
5

G:\APROJECT\Northrop Grumman Bethpage\OU2.2 ONCT06 Notes and Data\System Sampling\February (Q.M)\COCs_SGS\PAR_OUT_COCs_labPNs_62233_62235_RevDec2017

SGS COURIER

JD80402: Chain of Custody

Page 1 of 2



Report of Analytical Results

SDG: SR0172

Lab ID:SR0172-1

Client ID: OUTFALL 005

Matrix:AQ

Lab File ID: G8940.D

Sample Date: 11-JAN-24

Extract Date: 12-JAN-24

Extracted By:AN/CMW

Extraction Method:SW846 3520C

Lab Prep Batch: WG348021

Report Date: 18-JAN-24

Analysis Date: 17-JAN-24

Analyst: DT

Analysis Method: SW846 8270D SIM

% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.4	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		54.6	%				

Report of Analytical Results

SDG: SR0172
Lab ID: SR0172-2
Client ID: OUTFALL 005-B109
Matrix: AQ
Lab File ID: G8941.D

Sample Date: 11-JAN-24
Extract Date: 12-JAN-24
Extracted By: AN/CMW
Extraction Method: SW846 3520C
Lab Prep Batch: WG348021

Report Date: 18-JAN-24
Analysis Date: 17-JAN-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		62.9	%				

Report of Analytical Results

SDG: SR0172
Lab ID: SR0172-3
Client ID: OUTFALL 005-T102
Matrix: AQ
Lab File ID: G8942.D

Sample Date: 11-JAN-24
Extract Date: 12-JAN-24
Extracted By: AN/CMW
Extraction Method: SW846 3520C
Lab Prep Batch: WG348021

Report Date: 18-JAN-24
Analysis Date: 17-JAN-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		7.2	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		108.	%				

ID#:

SR0172

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1Lab Work Order #
MSA 3601

Send Results to:	Contact & Company Name: Kevin Czerwinski -Task Manager		Telephone: 631-245-0710 cell		Preservative E																																																																		
	Address: Two Huntington Quad-Suite 1S10		Fax:		Filtered (✓) -																																																																		
	City State Zip Melville NY 11747		E-mail Address: Kevin.Czerwinski@arcadis.com		# of Containers 6																																																																		
					Container Information 2																																																																		
Project Name/Location (City, State): Prog 5C OU3.5 RW-21-ONCT-OMM/SPDES					Project #: 30160626.OMMI3					PARAMETER ANALYSIS & METHOD																																																													
Sampler's Printed Name: Hosam Badawi					Sampler's Signature: 					1,4-Dioxane 8270D-SIM-CLLE																																																													
Sample ID		Collection		Type (✓)		Matrix		<table border="0" style="width: 100%;"> <tr> <td colspan="2">Preservation Key:</td> <td colspan="2">Container Information Key:</td> </tr> <tr> <td>A. H₂SO₄</td> <td>1. 40 ml Vial</td> <td colspan="2"></td> </tr> <tr> <td>B. HCL</td> <td>2. 1 L Amber</td> <td colspan="2"></td> </tr> <tr> <td>C. HNO₃</td> <td>3. 250 ml Plastic</td> <td colspan="2"></td> </tr> <tr> <td>D. NaOH</td> <td>4. 500 ml Plastic</td> <td colspan="2"></td> </tr> <tr> <td>E. None</td> <td>5. Encore</td> <td colspan="2"></td> </tr> <tr> <td>F. Other: _____</td> <td>6. 2 oz. Glass</td> <td colspan="2"></td> </tr> <tr> <td>G. Other: _____</td> <td>7. 4 oz. Glass</td> <td colspan="2"></td> </tr> <tr> <td>H. Other: _____</td> <td>8. 8 oz. Glass</td> <td colspan="2"></td> </tr> <tr> <td></td> <td>9. Other: _____</td> <td colspan="2"></td> </tr> <tr> <td></td> <td>10. Other: _____</td> <td colspan="2"></td> </tr> </table>												Preservation Key:		Container Information Key:		A. H ₂ SO ₄	1. 40 ml Vial			B. HCL	2. 1 L Amber			C. HNO ₃	3. 250 ml Plastic			D. NaOH	4. 500 ml Plastic			E. None	5. Encore			F. Other: _____	6. 2 oz. Glass			G. Other: _____	7. 4 oz. Glass			H. Other: _____	8. 8 oz. Glass				9. Other: _____				10. Other: _____										
		Preservation Key:		Container Information Key:																																																																			
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		Date	Time	Comp	Grab	<table border="0" style="width: 100%;"> <tr> <td colspan="2">Matrix Key:</td> <td colspan="2">Keys</td> </tr> <tr> <td>SO - Soil</td> <td>SE - Sediment</td> <td colspan="2">NL - NAPL/Oil</td> </tr> <tr> <td>W - Water</td> <td>SL - Sludge</td> <td colspan="2">SW - Sample Wipe</td> </tr> <tr> <td>T - Tissue</td> <td>A - Air</td> <td colspan="2">Other: GW-Groundwater</td> </tr> </table>										Matrix Key:		Keys		SO - Soil	SE - Sediment	NL - NAPL/Oil		W - Water	SL - Sludge	SW - Sample Wipe		T - Tissue	A - Air	Other: GW-Groundwater																																									
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						<table border="0" style="width: 100%;"> <tr> <td colspan="2" style="text-align: center;">REMARKS</td> </tr> <tr> <td style="width: 50%;">Outfall 005</td> <td style="width: 50%;">pH: 7.7 Temp: 57.3°F</td> </tr> <tr> <td>Outfall 005-B109</td> <td>pH: 7.5 Temp: 55.4°F</td> </tr> <tr> <td>Outfall 005-T102</td> <td>pH: 7.7 Temp: 58°F</td> </tr> <tr> <td></td> <td>B102 Influent pH: 5.8 Temp: 59.3°F</td> </tr> </table>										REMARKS		Outfall 005	pH: 7.7 Temp: 57.3°F	Outfall 005-B109	pH: 7.5 Temp: 55.4°F	Outfall 005-T102	pH: 7.7 Temp: 58°F		B102 Influent pH: 5.8 Temp: 59.3°F																																														
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Special Instructions/Comments: SVOC extracted by EDD-ARCADIS_EQUIS (EQuIS6-4 file)																																																																							
<input type="checkbox"/> Special QA/QC Instructions(✓):																																																																							
Laboratory Information and Receipt					Relinquished By					Received By					Relinquished By					Laboratory Received By																																																			
Lab Name: Katahdin Analytical		Cooler Custody Seal (✓) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact			Printed Name: Hosam Badawi					Printed Name: M. Baulwenda					Printed Name:					Printed Name:																																																			
<input checked="" type="checkbox"/> Cooler packed with ice (✓)					Signature: 					Signature: 					Signature:					Signature:																																																			
Specify Turnaround Requirements: Normal TAT-10 business		Sample Receipt:			Firm: Arcadis					Firm/Courier: K145					Firm/Courier:					Firm:																																																			
Shipping Tracking #:		Condition/Cooler Temp: _____			Date/Time: 1/11/2024					Date/Time: 1/12/24 1030					Date/Time:					Date/Time:																																																			

Report of Analytical Results

SDG: SR0173
Lab ID: SR0173-1DL
Client ID: B109-INFLUENT
Matrix: AQ
Lab File ID: G8970.D

Sample Date: 11-JAN-24
Extract Date: 12-JAN-24
Extracted By: AN/CMW
Extraction Method: SW846 3520C
Lab Prep Batch: WG348021

Report Date: 22-JAN-24
Analysis Date: 18-JAN-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		37	ug/L	10	.25	2.4	0.80
1,4-Dioxane-D8	D	0.00	%				

Report of Analytical Results

SDG: SR0173
Lab ID: SR0173-2
Client ID: B109-POST-AOP
Matrix: AQ
Lab File ID: G8944.D

Sample Date: 11-JAN-24
Extract Date: 12-JAN-24
Extracted By: AN/CMW
Extraction Method: SW846 3520C
Lab Prep Batch: WG348021

Report Date: 22-JAN-24
Analysis Date: 17-JAN-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8	*	121.	%				

Report of Analysis

Client Sample ID: OUTFALL 006 Lab Sample ID: JD80403-1 Matrix: AQ - Ground Water Method: EPA 624.1 Project: Northrop Grumman, OU2.2 OMM, Program 3	Date Sampled: 01/11/24 Date Received: 01/11/24 Percent Solids: n/a
---	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L362033.D	1	01/15/24 14:50	NW	n/a	n/a	VL11039
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	87%		80-128%
2037-26-5	Toluene-D8 (SUR)	101%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	90%		79-117%
1868-53-7	Dibromofluoromethane (S)	105%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 01/11/24
Lab Sample ID: JD80403-1	Date Received: 01/11/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	01/12/24	01/15/24 MM	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	01/12/24	01/15/24 MM	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA55391

(2) Prep QC Batch: MP44229

RL = Reporting Limit

4.1
4

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 01/11/24
Lab Sample ID: JD80403-1	Date Received: 01/11/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	5.0	0.10	0.090	mg/l	1	01/17/24 18:01	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	5.5	0.30	0.23	mg/l	1	01/17/24 18:01	JD	SM4500 A-11
Nitrogen, Total Kjeldahl	0.50	0.20	0.14	mg/l	1	01/15/24 20:04	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 J = Indicates a result > = MDL but < RL

4.1
4

GW
TB

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

MM-0782428

PV

Client / Reporting Information Company Name: Arcadis Street Address: 2 Huntington Quad, Suite 1S10 City: Melville NY State: NY Zip: 11747 Project Contact: Kevin Czerwinski, Kevin.Czerwinski@arcadis.com Phone #: 631-245-0710 Sampler(s) Name(s): Hosam Badawi Phone #: 631-748-7399		Project Information Project Name: AGMNYM62233 // OU2 System - GW Prog 3 OU2.2-ONCT-OMM/SPDES Street: Bethpage NY Billing Information (If different from Report to): Company Name: Arcadis, U.S., Inc. Street Address: 630 Plaza Drive, Suite 600 City: Highlands Ranch, CO State: CO Zip: 80129 Client Purchase Order #: 30169301.OMMI3 Work Authorization #: NY001496_2015.10.30 Project Manager: Carlo San Giovanni Attention: Accounts Payable		Requested Analysis (see TEST CODE sheet) Matrix Codes: DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment GI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WIP - Wipes FB-Field Blank EB-Equipment Blank RB- Rinse Blank TB-Trip Blank			
Turnaround Time (Business days) <input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink		Approved By (Accutest PM) / Date: _____ _____ _____ _____ _____		Data Deliverable Information <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULL T1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data		Comments / Special Instructions Initial Assessment Label Verification	
Relinquished by Sampler: 1 Hosam Badawi Date Time: 1/11/2024		Received By: 1 U. By # 101 Date Time: _____		Relinquished By: 2 U. By # 101 Date Time: _____		Received By: 2 Date Time: 1/11/24 1730	
Relinquished by Sampler: 3 Date Time: _____		Received By: 3 Date Time: _____		Relinquished By: 4 Date Time: _____		Received By: 4 Date Time: _____	
Relinquished by: 5 Date Time: _____		Received By: 5 Date Time: _____		Custody Seal # <input type="checkbox"/> Intact <input type="checkbox"/> Not intact		On Ice <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Cooler Temp: SR40	

G:\APROJECT\Northrop Grumman Bethpage\OU2.2 ONCT06 Notes and Data\System Sampling\February (Q.M)\COCs_SGS\PAR_OU2_COCs_labPNs_62233_62235_RivDec2017

SGS COURIER

JD80403: Chain of Custody

Page 1 of 3

5.2
5

Report of Analytical Results

SDG: SR0171
Lab ID:SR0171-1
Client ID: OUTFALL 006
Matrix:AQ
Lab File ID: G8939.D

Sample Date: 11-JAN-24
Extract Date: 12-JAN-24
Extracted By:AN/CMW
Extraction Method:SW846 3520C
Lab Prep Batch: WG348021

Report Date: 18-JAN-24
Analysis Date: 17-JAN-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.5	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		66.8	%				



ID#: _____

SRO171

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order #
MSA 3601

Send Results to:	Contact & Company Name: Kevin Czerwinski -Task Manager	Telephone: 631-245-0710 cell	Preservative	E									Preservation Key: A. H ₂ SO ₄ B. HCL C. HNO ₃ D. NaOH E. None F. Other: _____ G. Other: _____ H. Other: _____ Matrix Key: SO - Soil W - Water T - Tissue SE - Sediment SL - Sludge A - Air NL - NAPL/Oil SW - Sample Wipe Other: GW-Groundwater						
	Address: Two Huntington Quad-Suite 1S10	Fax:	Filtered (✓)	-															
	City State Zip Melville NY 11747	E-mail Address: Kevin.Czerwinski@arcadis.com	# of Containers	2															
	Project Name/Location (City, State): Prog 3 OU2.2-ONCT-OMM/SPDES		Project #: 30169301.OMMI3	Container Information	2														
Sampler's Printed Name: Hosam Badawi		Sampler's Signature: 		PARAMETER ANALYSIS & METHOD															
Sample ID		Collection		Type (✓)		Matrix	<i>1,4-Dioxane 8270D-SIM-CLE</i>					REMARKS							
		Date	Time	Comp	Grab														
Outfall 006		1/11/24	11:40		X	GW							X					pH: 7.8	Temp: 57.8
																		B96 Influent pH: 5.9	Temp: 55.7
Special Instructions/Comments: SVOC extracted by EDD-ARCADIS_EQUIS (EQUIS6-4 file)												<input type="checkbox"/> Special QA/QC Instructions(✓):							
Laboratory Information and Receipt				Relinquished By				Received By				Relinquished By				Laboratory Received By			
Lab Name: Katahdin Analytical				Cooler Custody Seal (✓) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact				Printed Name: Hosam Badawi				Printed Name: M Wardwende				Printed Name:			
<input checked="" type="checkbox"/> Cooler packed with ice (✓)								Signature: 				Signature: 				Signature:			
Specify Turnaround Requirements: Normal TAT-10 business				Sample Receipt:				Firm: Arcadis				Firm/Courier: RAS				Firm:			
Shipping Tracking #:				Condition/Cooler Temp: _____				Date/Time: 1/11/2024				Date/Time: 1/12/24 1030				Date/Time:			

Katahdin Analytical Services SR0171 page 0000009 of 000011

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 01/16/24
Lab Sample ID: JD80628-1	Date Received: 01/16/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1N7832.D	1	01/17/24 13:41	LD	n/a	n/a	V1N200
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane ^a	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
106-99-0	1,3-Butadiene ^b	ND	5.0	0.62	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	0.49	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: WSP-7 Lab Sample ID: JD80628-1 Matrix: AQ - Ground Water Method: SW846 8260D Project: Northrop Grumman, OU3.2 OMM, Program 4A	Date Sampled: 01/16/24 Date Received: 01/16/24 Percent Solids: n/a
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VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride ^b	ND	1.0	0.52	ug/l	
75-68-3	1-chloro-1,1-difluoroethane	ND	5.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	101%		82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: WSP-7 Lab Sample ID: JD80401-1 Matrix: AQ - Ground Water Method: EPA 608.3 EPA 608 Project: Northrop Grumman, OU3.2 OMM, Program 4A	Date Sampled: 01/11/24 Date Received: 01/11/24 Percent Solids: n/a
--	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2509723.D	1	01/15/24 09:29	CP	01/12/24 10:00	OP51722A	GXX8422
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	0.067	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	79%		10-156%
877-09-8	Tetrachloro-m-xylene	77%		10-156%
2051-24-3	Decachlorobiphenyl	34%		10-143%
2051-24-3	Decachlorobiphenyl	40%		10-143%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 01/11/24
Lab Sample ID: JD80401-1	Date Received: 01/11/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	270	100	ug/l	1	01/12/24	01/15/24 MM	EPA 200.7 ¹	EPA 200.7 ²
Manganese	60.8	15	ug/l	1	01/12/24	01/15/24 MM	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA55391

(2) Prep QC Batch: MP44229

RL = Reporting Limit

4.1
4

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 01/11/24
Lab Sample ID: JD80401-1	Date Received: 01/11/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.3	0.10	mg/l	1	01/17/24 17:55	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.5	0.30	mg/l	1	01/17/24 17:55	JD	SM4500 A-11
Nitrogen, Total Kjeldahl	0.23	0.20	mg/l	1	01/15/24 19:55	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.1
4

GW
TB

PN

FED-EX Tracking #
Accutest Quote #
Bottle Order Confirmation # **111-2024-27**
Accutest Job # **JD80401**

Client / Reporting Information		Project Information												Matrix Codes					
Company Name Arcadis		Project Name AGMNYM62236 // OU3 BPGWCS - GW												DW-Drinking Water GW-Ground Water WW-Waste Water SW-Surface Water SO-Soil SL-Sludge SED-Sediment OI-Oil LIQ-Other Liquid AIR-Air SOL-Clear Solid WP-Wipe FB-Field Blank EB-Equipment Blank RB-Rinse Blank TB-Trip Blank					
Street Address 2 Huntington Quad, Suite 1S10		Street Bethpage NY																	
City State Zip Melville NY 11747		Billing Information (if different from Report to) Company Name Arcadis, U.S., Inc.																	
Project Contact E-mail Arnas Nemickas, arnas.nemickas@arcadis.com		Street Address 630 Plaza Drive, Suite 600																	
Phone # 631-391-5212		City State Zip Highlands Ranch, CO 80129																	
Sample(s) Name(s) Hosam Badawi		Work Authorization #: NY001496_2015.10.30 Project Manager Arnie Nemickas																	
Phone # 631-748-7399		Client Purchase Order # 30188750.OMMI3																	
Sample #		Attention: Accounts Payable																	
Field ID / Point of Collection		Collection																	
Accutest Sample #	Field ID / Point of Collection	MEOH/DI Val #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	None	DI Water		MEOH	ENCORE	NEURON	LAB USE ONLY	
1	WSP-7		4/11/2024	1000	HB	GW	7	3	1	1	2						E67		
2	TB-1-11-2024-LW-2		4/11/2024		HB	GW	2	2									All		
3	OU3 Post-GAC		4/11/2024	1010	HB	GW	2				2						G41		
																	V562		
Turnaround Time (Business days)		Data Deliverable Information						Comments / Special Instructions											
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink		Approved By (Accutest PM) / Date:						<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data						<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NTASB Category 1s <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDD Format EQus 6 <input checked="" type="checkbox"/> Other COMM+					
Sample Custody must be documented below each time samples change possession, including courier delivery.																			
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:	Custody Seal #	<input type="checkbox"/> Intact <input type="checkbox"/> Not intact											
1 Hosam Badawi	4/11/2024	M. Aly #101	M. Aly #101	M. Aly #101	M. Aly #101	M. Aly #101		Device: 0.5°C Cooler Temp: 4°C											
3																			
5																			

G:\PROJECT\Northrop Grumman Bethpage_Program Wide\04 Project Management\Operations\01-01-2024\01-01-2024\01-01-2024\COCs\Customized_TM_COCs\OU3 GW COCs Revised 9.21.20

SGS COURIER

Report of Analytical Results

SDG: SR0170
Lab ID:SR0170-1
Client ID: WSP-7
Matrix:AQ
Lab File ID: G8971.D

Sample Date: 11-JAN-24
Extract Date: 12-JAN-24
Extracted By:AN/CMW
Extraction Method:SW846 3520C
Lab Prep Batch: WG348021

Report Date: 22-JAN-24
Analysis Date: 18-JAN-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.59	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		67.0	%				

February 2024 - OU2 SPDES

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-007L-24
April 2, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

Subject: **Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A
Northrop Grumman Corporation - Bethpage, New York Facility**

Mr. Pelton:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of February 2024, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Director
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-008L-24
April 2, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
February 1, 2024 – February 29, 2024.

Mr. Pelton:

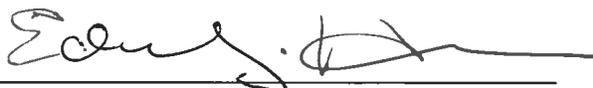
Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – 0.71 ug/L
Outfall 5 – 2.7 ug/L
Outfall 6 – 6.4 ug/L

Sampling results for Outfall 1 for the following:

Ethylbenzene - <1.0
Toluene - <1.0
Benzene - <0.5
Xylene, Ortho - <1.0
Xylene, Meta - <1.0
Xylene, Para - <1.0

If you have any questions, please call me at 516-575-2333
Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Director
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTHROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	005- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
02/01/2024	02/29/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SURR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	SU	7.4	0	1/29 Monthly	Grab
00400 1 0 Effluent Gross	*****	*****	*****	*****	SU	Req. Mon. MAXIMUM	0	1/29 Monthly	Grab
pH	*****	*****	*****	*****	SU	6.65	0	1/29 Monthly	Grab
00400 1 0 Intake from Well	*****	*****	*****	*****	SU	Req. Mon. MINIMUM	0	1/29 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	mg/L	2.8	0	1/29 Monthly	Grab
00600 1 0 Effluent Gross	*****	*****	*****	*****	mg/L	10 DAILY MX	0	1/29 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
34423 1 0 Effluent Gross	*****	*****	*****	*****	ug/L	5 DAILY MX	0	1/29 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
34475 1 0 Effluent Gross	*****	*****	*****	*****	ug/L	5 DAILY MX	0	1/29 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
34501 1 0 Effluent Gross	*****	*****	*****	*****	ug/L	5 DAILY MX	0	1/29 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
34506 1 0 Effluent Gross	*****	*****	*****	*****	ug/L	5 DAILY MX	0	1/29 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-575-2333	04/04/2024
TYPED OR PRINTED	AREA Code	MM/DD/YYYY
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	NUMBER	
<i>Edward J Hannon</i>	516-575-2333	

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (include Facility Name/Location if applicable)
 NAME: NORTROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792
 PERMIT NUMBER

MM/DD/YYYY
 02/01/2024

005-C
 DISCHARGE NUMBER

MONITORING PERIOD
 MM/DD/YYYY
 02/29/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
Vinyl chloride	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Grab
3917510 Effluent Gross	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Grab
Trichloroethylene	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Grab
3918010 Effluent Gross	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Grab
5005010 Effluent Gross	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Measured
Calculated limit	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Calculated
7401310 Effluent Gross	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Calculated
cis-1,2-Dichloroethylene	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Grab
7709310 Effluent Gross	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Grab
Trichlorotrifluoroethane	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Grab
8161110 Effluent Gross	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Grab
trans-1,2-Dichloroethylene	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Grab
8581010 Effluent Gross	*****	*****	*****	*****	*****	*****	0	1/29 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE NUMBER
 516-515-2333

DATE
 04/02/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PFI OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PFI COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

PERMITTEE NAME/ADDRESS (include Facility Name/Location if applicable)
 NORTROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714

FACILITY: NORTROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COIFMAN

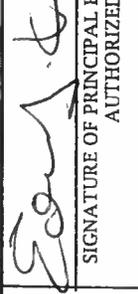
NY0096792
 PERMIT NUMBER
 006- C
 DISCHARGE NUMBER

MM/DD/YYYY
 02/01/2024
 MONITORING PERIOD
 MM/DD/YYYY
 02/29/2024

No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	SU	8.0	0	1/29 Monthly	Grab
0040010 Effluent Gross	*****	*****	*****	*****	SU	8.0	0	1/29 Monthly	Grab
pH	*****	*****	*****	*****	SU	6.5	0	1/29 Monthly	Grab
0040010 Intake from Well	*****	*****	*****	*****	SU	6.5	0	1/29 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	mg/L	3.6	0	1/29 Monthly	Grab
0060010 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
3442310 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
3447510 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
3450110 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
3450610 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE NUMBER
 516-575-2333

DATE
 04/12/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

EPA Form 3320-1 (Rev.01/06) Previous editions may be used. 10/19/2018 Page 1

DISCHARGE MONITORING REPORT (DMR)

DMR No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if NAME: NORTIROP GRUMAN SYSTEMS CORP ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035 BETHPAGE, NY 11714 FACILITY: NORTIROP GRUMAN SYSTEMS CORP LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035 BETHPAGE, NY 11714 ATTN: JOHN COFMAN

NY0096792
 PERMIT NUMBER
 MM/DD/YYYY
 02/01/2024

006-C
 DISCHARGE NUMBER
 MONITORING PERIOD
 MM/DD/YYYY
 02/29/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)

NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	*****	0	1/29 Monthly	Grab
39175 1 0 Effluent Gross	*****	*****	*****	*****	0	1/29 Monthly	Grab
Trichloroethylene	*****	*****	*****	*****	0	1/29 Monthly	Grab
39180 1 0 Effluent Gross	*****	*****	*****	*****	0	1/29 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	0	1/29 Monthly	Measured
50050 1 0 Effluent Gross	*****	*****	*****	*****	0	1/29 Monthly	Measured
Calculated limit	*****	*****	*****	*****	0	1/29 Monthly	Calculated
7-4013-1 0 Effluent Gross	*****	*****	*****	*****	0	1/29 Monthly	Calculated
cis-1,2-Dichloroethylene	*****	*****	*****	*****	0	1/29 Monthly	Grab
77093 1 0 Effluent Gross	*****	*****	*****	*****	0	1/29 Monthly	Grab
Trichlorotrifluoroethane	*****	*****	*****	*****	0	1/29 Monthly	Grab
81611 1 0 Effluent Gross	*****	*****	*****	*****	0	1/29 Monthly	Grab
trans-1,2-Dichloroethylene	*****	*****	*****	*****	0	1/29 Monthly	Grab
85810 1 0 Effluent Gross	*****	*****	*****	*****	0	1/29 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE NUMBER
 516-515-2333

DATE
 04/02/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

DMR Mailing ZIP CODE: 11714
 MINOR (SUJB 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

NY0096792	001-WSP-7
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
02/01/2024	02/29/2024

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	SU	6.6	0	1/29 Monthly	Grab
0040010 Effluent Gross	*****	*****	*****	*****	SU	Req. Mon. MAXIMUM	0	1/29 Monthly	Grab
pH	*****	*****	*****	*****	SU	5.8	0	1/29 Monthly	Grab
0040010 Intake from Well	*****	*****	*****	*****	SU	Req. Mon. MINIMUM	0	1/29 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	mg/L	2.0	0	1/29 Monthly	Grab
0060010 Effluent Gross	*****	*****	*****	*****	mg/L	10 DAILY MX	0	1/29 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	ug/L	<2.0	0	1/29 Monthly	Grab
3442310 Effluent Gross	*****	*****	*****	*****	ug/L	5 DAILY MX	0	1/29 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
3447510 Effluent Gross	*****	*****	*****	*****	ug/L	5 DAILY MX	0	1/29 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
3450110 Effluent Gross	*****	*****	*****	*****	ug/L	5 DAILY MX	0	1/29 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	ug/L	<1.0	0	1/29 Monthly	Grab
3450610 Effluent Gross	*****	*****	*****	*****	ug/L	5 DAILY MX	0	1/29 Monthly	Grab

NAME/TITLE: PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager	516-575-7333	04/24/2024
TYPED OR PRINTED	AREA CODE	NUMBER
	516	575-7333
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		MM/DD/YYYY
		04/24/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

PERMITTEE NAME: ADDRESS (include Facility Name/Location if applicable)
 NAME: NORTROP GRUIMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BEHIPAGE, NY 11714
 FACILITY: NORTROP GRUIMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BEHIPAGE, NY 11714
 ATTN: JOHN COFMAN

DMR Mailing ZIP CODE: 11714
 MINOR (SUJR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

NY0096792 PERMIT NUMBER	001-WSP-1 DISCHARGE NUMBER
MM/DD/YYYY 02/01/2024	MONITORING PERIOD MM/DD/YYYY 02/29/2024

No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	VALUE	UNITS				
Vinyl chloride	3917510 Effluent Gross	*****	*****	*****	<1.0	ug/L	0	1/29 Monthly	Grab	
Trichloroethylene	3918010 Effluent Gross	*****	*****	*****	<1.0	ug/L	0	1/29 Monthly	Grab	
Flow, in conduit or thru treatment plant	5005010 Effluent Gross	*****	0.38	MGD	*****	*****	0	1/29 Monthly	Measured	
Calculated limit	7401310 Effluent Gross	*****	*****	*****	*****	*****	0	1/29 Monthly	Calculated	
cis-1,2-Dichloroethylene	7709310 Effluent Gross	*****	*****	*****	<1.0	ug/L	0	1/29 Monthly	Grab	
Trichlorotrifluoroethane	8161110 Effluent Gross	*****	*****	*****	<5.0	ug/L	0	1/29 Monthly	Grab	
Trans-1,2-Dichloroethylene	8581010 Effluent Gross	*****	*****	*****	<1.0	ug/L	0	1/29 Monthly	Grab	

NAME/TITLE: Edward S Hannon Corporate Manager ESHM	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE NUMBER: 516-575-2333	DATE: 04/24/2024
TYPED OR PRINTED		AREA CODE	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

Monitoring Period:

February 2024

2/1/24 12:00 AM 2/29/24 12:00 AM

29 Days

OU2 South Basins: Outfall 005⁽⁶⁾

Combined OU2 Groundwater Remedy Tower 102 and Building 109 Advanced Oxidation Process (AOP) Treatment Systems - Tower 102 Treated Air Stripper Discharge, Building 109 AOP Treatment System Discharge, and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 005 2/27/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	6.11	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	6.55	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾ (Building 109)	--	5.5	NS	SU	Monthly (1/29) Days	Grab	--	--
Influent pH ⁽⁵⁾ (Tower 102)	--	7.8	NS	SU	Monthly (1/29) Days	Grab	--	--
Outfall 005 Effluent pH ⁽⁵⁾	--	7.4	Range: 5.0-8.5	SU	Monthly (1/29) Days	Grab	--	--
Total Nitrogen (as N)	--	2.8	10.0	mg/L	Monthly (1/29) Days	Grab	142.77	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁸⁾	--	ND	1,000	µg/L	Monthly (1/29) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	0.55	5.0	µg/L	Monthly (1/29) Days	Grab	0.03	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
1,1,2-Trichloroethane	79-00-5	< 1.0	1.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	1.1	5.0	µg/L	Monthly (1/29) Days	Grab	0.06	lbs/day
1,2-Dichloroethane	107-06-2	< 1.0	0.6	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
1,2-Dichloropropane	78-87-5	< 1.0	1.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Benzene	71-43-2	< 1.0	1.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
1,4-Dioxane (Building 109 Influent) ⁽⁹⁾	123-91-1	24	Monitor	µg/L	Monthly (1/29) Days	Grab	NA	lbs/day
1,4-Dioxane (Building 109 Post AOP) ⁽⁹⁾	123-91-1	<0.23	Monitor	µg/L	Monthly (1/29) Days	Grab	na	lbs/day
1,4-Dioxane (Building 109 Effluent) ⁽⁹⁾	123-91-1	<0.24	Monitor	µg/L	Monthly (1/29) Days	Grab	NA	lbs/day
1,4-Dioxane (Outfall 005) ⁽¹⁰⁾	123-91-1	2.7	Monitor	µg/L	Monthly (1/29) Days	Grab	0.14	lbs/day

Notes and abbreviations on last page.

OU2 West Basins: Outfall 006
OU2 Groundwater Remedy Tower 96 Treatment System - Treated Air Stripper Discharge and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 006 2/27/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	1.91	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	2.05	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁶⁾	--	6.5	NS	SU	Monthly (1/29) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	8.0	Range: 5.0-8.5	SU	Monthly (1/29) Days	Grab	--	--
Total Nitrogen (as N)	--	3.6	10.0	mg/L	Monthly (1/29) Days	Grab	61.55	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁸⁾	--	ND	1,000	µg/L	Monthly (1/29) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	6.4	Monitor	µg/L	Monthly (1/29) Days	Grab	0.11	lbs/day

Notes and abbreviations on last page.

OU3 Effluent: Outfall 001 (WSP-7)

OU3 Groundwater Remedy Treatment System - Treated Air Stripper and Soil Gas Containment Condensate Discharge to Nassau County Recharge Basins

Parameter ⁽¹⁾	CAS Number	OUTFALL 001 (WSP-7) 2/14/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	0.37	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	0.38	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	5.8	NS	SU	Monthly (1/29) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.6	Range: 5.0-8.5	SU	Monthly (1/29) Days	Grab	--	--
Total Nitrogen (as N)	--	2.0	10.0	mg/L	Monthly (1/29) Days	Grab	6.14	lbs/day
Total Iron	7439-89-6	295	600	µg/L	Monthly (1/29) Days	Grab	0.91	lbs/day
Total Manganese	7439-96-5	55.1	600	µg/L	Monthly (1/29) Days	Grab	0.17	lbs/day
Sum of Total Iron and Manganese	--	350.1	1,000	µg/L	Monthly (1/29) Days	Calculated	1.07	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 2.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
1,2 (trans)-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
1,2-(cis)-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 5.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Benzene	71-43-2	< 0.50	1.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Ethylbenzene	100-41-4	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Toluene	108-88-3	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
o-Xylene	95-47-6	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
m,p-Xylene	--	< 1.0	5.0	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Aroclor 1016	12674-11-2	< 0.049	0.095	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Aroclor 1221	11104-28-2	< 0.049	0.095	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Aroclor 1232	11141-16-5	< 0.049	0.095	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Aroclor 1242	53469-21-9	< 0.049	0.095	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Aroclor 1248	12672-29-6	< 0.049	0.095	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Aroclor 1254	11097-69-1	< 0.049	0.095	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
Aroclor 1260	11096-82-5	< 0.049	0.095	µg/L	Monthly (1/29) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	0.71	Monitor	µg/L	Monthly (1/29) Days	Grab	2.18E-03	lbs/day

Notes and Abbreviations:

- XX** Bold value indicates the constituent was detected at or above its laboratory quantification limit
- <** Compound is not detected above laboratory quantification limit
- Not Applicable
- µg/L** micrograms per liter
- lbs/day** pounds per day
- lb/kg** pounds per kilogram
- MGD** million gallons per day
- mg/L** milligrams per liter
- min** minutes
- SU** Standard Units
- B** Detected in method blank as reported by laboratory
- na** not available
- NA** Not Applicable
- COC** Chain of Custody

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system; Polychlorinated Biphenyls (PCBs) using USEPA Method 608; 1,4-Dioxane using USEPA Method 8270D-SIM-CLLE; Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number: 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively; Total Iron and Manganese using USEPA Method 200.7.

2. Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023.

3. Mass Loading Calculation:

$$Mass\ Loading\ \left(\frac{lb}{day}\right) = Flow\ \left(\frac{gal}{min}\right) * 1440\ \left(\frac{min}{day}\right) * concentration\ \left(\frac{\mu g}{liter}\right) \div 10^6\ \left(\frac{\mu g}{kg}\right) * 3.785\ \left(\frac{liter}{gal}\right) * 2.2046\ \left(\frac{lb}{kg}\right)$$

- 4. Average and daily maximum flow calculated from SCADA reports for the month indicated.
- 5. Field measurement of pH taken by hand held meter on sample date.
- 6. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".
- 7. Average Mass Loading calculations are based on actual flow rates unless otherwise noted.
- 8. At the time of Outfall 005 SPDES sample collection on February 27, 2024, Building 109 AOP Treatment System remedial well flow for RW-20 was approximately 500 gpm, RW-21 was approximately 500 gpm and RW-22 was approximately 600 gpm. These were instantaneous readings taken at the time of sampling.
- 9. Building 109 AOP Treatment System Influent (corresponds to sample B109-INFLUENT on the COC), Post-AOP (corresponds to sample B109-POST-AOP on the COC) and Effluent (corresponds to sample OUTFALL 005-B109 on the COC) samples were collected and analyzed for 1,4-Dioxane as per footnote (1) of the SPDES permit equivalency for Outfall 005.
- 10. Outfall 005 combines discharge from Building 109 and Tower 102 treatment systems; however, Tower 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal.

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 02/27/24
Lab Sample ID: JD83285-2	Date Received: 02/27/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	02/29/24	03/01/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	02/29/24	03/01/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA55643

(2) Prep QC Batch: MP45039

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 02/27/24
Lab Sample ID: JD83285-2	Date Received: 02/27/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.8	0.10	mg/l	1	02/28/24 20:08	SS	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.8	0.30	mg/l	1	02/29/24 15:46	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	02/29/24 15:46	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.2
4

GW
TB

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0300 FAX: 732-329-3499/3480
www.sgs.com

Client / Reporting Information Company Name: Arcadis Street Address: 2 Huntington Quad, Suite 1S10 City: Melville NY Zip: 11747 Project Contact: Kevin Czerwinski, Kevin.Czerwinski@arcadis.com Phone #: 631-245-0710 Sample(s) Name(s): Patrick Delecare (631) 339-2594		Project Information Project Name: Prog 5C OU3.5 RW-21-ONCT-OMM/SPDES Billing Information (if different from Report to): Company Name: Arcadis, U.S., Inc. Street Address: 630 Plaza Drive, Suite 600 City: Highlands Ranch, CO State: 80129 Attention: Accounts Payable Project Manager: Carlo San Giovanni		Requested Analysis (see TEST CODE sheet) Matrix Codes: DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
Project # 30203681.OMMI3 Client Purchase Order # Work Authorization # NY001496_2015.10.30 Project Manager: Carlo San Giovanni		City: Highlands Ranch, CO State: 80129 Attention: Accounts Payable Project Manager: Carlo San Giovanni		V6242NGSPDS + Chloroform + Benzene + 1,1,2-TCA (40 mL Clear Glass VOA's) V6242NGSPDS + Chloroform + Benzene + 1,1,2-TCA + 1,4-DCA + 1,2-DCA + 1,2-DCEPANE (40 mL Clear Glass VOA's) V6242NGSPDS + Chloroform + Benzene + 1,1,2-TCA + 1,4-DCA + 1,2-DCA + 1,2-DCEPANE (40 mL Clear Glass VOA's) XTNIT - EPA 363.2 & EPA 351.2 w/Total N Calc (250 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic)	
Turnaround Time (Business days) <input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A date available VIA Lablink		Approved By (Accutest PM): / Date: _____		Data Deliverable Information <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> State Forms <input type="checkbox"/> NJ Reduced <input checked="" type="checkbox"/> EDD Format-EQuis 6 <input type="checkbox"/> Commercial "C" <input checked="" type="checkbox"/> Other COMM+ Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data	
Sample Custody must be documented below each time samples change possession, including courier delivery.		Comments / Special Instructions Initial Assessment <u>18-24</u> Initial Verification _____		Signature: <u>[Signature]</u>	
Relinquished by Sampler: Patrick Delecare Date Time: 3/27/24 1600		Received By: M. Dy		Relinquished By: M. Dy Date Time: 2/27	
Relinquished by Sampler: 3 Date Time:		Received By: 3		Relinquished By: 4	
Relinquished by Sampler: 5 Date Time:		Received By: 5		Relinquished By: 4	

G:\PROJECT\Northrop Grumman Bethpage\OU2.2 ONCT08 Notes and Data\System Sampling\February (Q.M)\COCs_SGS\PAR_OU2_COCs_labPNs_82233_82235_RevDec2017

JD83285: Chain of Custody

Page 1 of 2

5.2
5

Report of Analytical Results

SDG: SR0903
Lab ID:SR0903-1
Client ID: OUTFALL 005
Matrix:AQ
Lab File ID: G9225.D

Sample Date: 27-FEB-24
Extract Date: 29-FEB-24
Extracted By:NG
Extraction Method:SW846 3520C
Lab Prep Batch: WG349994

Report Date: 12-MAR-24
Analysis Date: 11-MAR-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.7	ug/L	1	.25	0.23	0.080
1,4-Dioxane-D8		55.5	%				

Report of Analytical Results

SDG: SR0903
Lab ID: SR0903-2
Client ID: OUTFALL 005-B109
Matrix: AQ
Lab File ID: G9226.D

Sample Date: 27-FEB-24
Extract Date: 29-FEB-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG349994

Report Date: 12-MAR-24
Analysis Date: 11-MAR-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		59.6	%				

Report of Analytical Results

SDG: SR0904
Lab ID: SR0904-1DL
Client ID: B109-INFLUENT
Matrix: AQ
Lab File ID: G9252.D

Sample Date: 27-FEB-24
Extract Date: 29-FEB-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG349994

Report Date: 13-MAR-24
Analysis Date: 12-MAR-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		24	ug/L	10	.25	2.4	0.82
1,4-Dioxane-D8	D	0.00	%				

Report of Analytical Results

SDG: SR0904
Lab ID: SR0904-2
Client ID: B109-POST-AOP
Matrix: AQ
Lab File ID: G9229.D

Sample Date: 27-FEB-24
Extract Date: 29-FEB-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG349994

Report Date: 13-MAR-24
Analysis Date: 11-MAR-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.23	ug/L	1	.25	0.23	0.080
1,4-Dioxane-D8		67.9	%				

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 02/27/24
Lab Sample ID: JD83283-2	Date Received: 02/27/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 624.1	
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D134649.D	1	02/29/24 05:07	NW	n/a	n/a	V4D5957
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	87%		80-128%
2037-26-5	Toluene-D8 (SUR)	99%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	96%		79-117%
1868-53-7	Dibromofluoromethane (S)	99%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 02/27/24
Lab Sample ID: JD83283-2	Date Received: 02/27/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	02/29/24	03/01/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	02/29/24	03/01/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA55643

(2) Prep QC Batch: MP45039

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 02/27/24
Lab Sample ID: JD83283-2	Date Received: 02/27/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	3.6	0.10	0.090	mg/l	1	02/28/24 20:04 SS	EPA	353.2/LACHAT
Nitrogen, Total ^a	3.6	0.30	0.23	mg/l	1	02/29/24 15:44 SS	SM4500	A-11
Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14	mg/l	1	02/29/24 15:44 SS	EPA	351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 J = Indicates a result > = MDL but < RL

4.2
4

SGS Accutest New Jersey - Dayton
 2235 Route 130, Dayton, NJ 08810
 TEL: 732-329-0200 FAX: 732-329-3499/3480
 www.sgs.com

GW
1/3

FEDEX Tracking #	Boise Order Control #	M/M-02624-49
Accutest Quote #	Accutest Job #	JD83283
Requested Analysis (see TEST CODE sheet)		Matrix Codes
MRZAGNSPDS + Chloroform + Benzene + 1,1,2-TCA, + 1,1-DCA + 1,2-DCA + 1,2-DCEPANE (40 mL Clear Glass VOA's) V6242NGSPDS+Chloroform (40 mL Clear Glass VOA's)		DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank
X'NIT - EPA 353.2 & EPA 351.2 w/Total N Calc (250 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic)		

Client / Reporting Information		Project Information																				
Company Name Arcadis		Project Name AGMNYM62233 // OU2 System - GW Prog 3 OU2.2-ONCT-OMM/SPDES																				
Street Address 2 Huntington Quad, Suite 1S10		Street																				
City State Zip Melville NY 11747		Billing Information (if different from Report to) City State Bethpage NY																				
Project Contact Kevin Czarwinski, Kevin.Czarwinski@arcadis.com		Company Name Arcadis, U.S., Inc.																				
Phone # 531-245-0710		Street Address 630 Plaza Drive, Suite 800																				
Supplier(s) Name(s) Patrick DeLecare (631) 394-2399		City State Zip Highlands Ranch, CO 80129																				
Client Purchase Order # 30169301.OMMI3		Attention: Accounts Payable																				
Work Authorization # N/Y001496_2015.10.30		Number of preserved Bottles																				
Project Manager Carlo San Giovanni																						
Accutest Sample #	Field ID / Point of Collection	MEQHD/Vial #	Date	Time	Sampled By	Matrix	# of bottles	HD	MD	ND	OD	PD	SD	TD	UD	VD	WD	XD	YD	ZD	LAB USE ONLY	
1	TB-022724-PB-03				PD	TB	2	2														
2	Outfall 006		2/27/24	0910	PD	GW	5	3	1	1												

Turnaround Time (Business days)	Approved By (Accutest PM) / Date:	Data Deliverable Information	Comments / Special Instructions
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink	_____	<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data	Initial Assessment <i>18-200</i> Verification _____

Sample Custody must be documented below each time samples change possession, including courier delivery.			
Relinquished by Sampler: 1 <i>Patrick DeLecare</i>	Date/Time: <i>2/27/24 1600</i>	Received By: 1 <i>L. Dly</i>	Relinquished By: 2 <i>M. Dly</i>
Relinquished by Sampler: 3	Date/Time:	Received By: 3	Relinquished By: 4
Relinquished by: 5	Date/Time:	Received By: 5	Custody Seal #

18-200
19
1240

G:\PROJECT\Northrop Grumman Bethpage\OU2.2 ONCT\06 Notes and Data\System Sampling\Febuary (CLM)\COCs_SGS\PAR_OU2_COCs_16PNS_62233_62235_RevDec2017

Report of Analytical Results

SDG: SR0906
Lab ID: SR0906-1
Client ID: OUTFALL 006
Matrix: AQ
Lab File ID: G9240.D

Sample Date: 27-FEB-24
Extract Date: 29-FEB-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG349994

Report Date: 12-MAR-24
Analysis Date: 11-MAR-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.4	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		63.0	%				

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 02/22/24
Lab Sample ID: JD83023-6	Date Received: 02/22/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
75-68-3	1-chloro-1,1-difluoroethane	ND	5.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	107%		80-120%
460-00-4	4-Bromofluorobenzene	92%		82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.31	5.3	ug/l	J
	system artifact	1.35	6.1	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID: WSP-7 Lab Sample ID: JD83023-6 Matrix: AQ - Ground Water Method: EPA 608.3 EPA 608 Project: Northrop Grumman, OU3.2 OMM, Program 4A	Date Sampled: 02/22/24 Date Received: 02/22/24 Percent Solids: n/a
--	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2511031.D	1	02/29/24 18:47	MLC	02/29/24 07:30	OP52827A	GXX8466
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.049	0.033	ug/l	
11104-28-2	Aroclor 1221	ND	0.049	0.028	ug/l	
11141-16-5	Aroclor 1232	ND	0.049	0.019	ug/l	
53469-21-9	Aroclor 1242	ND	0.049	0.026	ug/l	
12672-29-6	Aroclor 1248	ND	0.049	0.024	ug/l	
11097-69-1	Aroclor 1254	ND	0.049	0.033	ug/l	
11096-82-5	Aroclor 1260	ND	0.049	0.026	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	81%		10-156%
877-09-8	Tetrachloro-m-xylene	68%		10-156%
2051-24-3	Decachlorobiphenyl	54%		10-143%
2051-24-3	Decachlorobiphenyl	60%		10-143%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 02/22/24
Lab Sample ID: JD83023-6	Date Received: 02/22/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	295	100	ug/l	1	02/27/24	02/28/24 MM	EPA 200.7 ¹	EPA 200.7 ²
Manganese	55.1	15	ug/l	1	02/27/24	02/28/24 MM	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA55628

(2) Prep QC Batch: MP44998

RL = Reporting Limit

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 02/22/24
Lab Sample ID: JD83023-6	Date Received: 02/22/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.0	0.10	mg/l	1	02/28/24 19:18	SS	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.0	0.30	mg/l	1	02/28/24 19:18	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	02/26/24 20:05	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

GWO
TB

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

Client / Reporting Information Company Name: Arcadis Street Address: 2 Huntington Quad, Suite 1S10 City: Melville NY State: NY Zip: 11747 Project Contact: Armas Nemickas E-mail: Armas.Nemickas@arcadis.com Phone #: 631-391-5212 Fax #: 		Project Information Project Name: AGMNYM62236 // OU3 BPGWCS - GW Street: Northrop Grumman OU3 Bethpage Groundwater Containment System Billing Information (if different from Report to): Company Name: Bethpage NY City: Bethpage NY State: NY Zip: Company Name: Arcadis, U.S., Inc. Street Address: 630 Plaza Drive, Suite 600 City: Highlands Ranch, CO State: CO Zip: 80129 Client Purchase Order #: 30188750.OMMI3 Project #: Attention: Accounts Payable Work Authorization #: NY001498_2015.10.30 Project Manager: Armas Nemickas		Requested Analysis (see TEST CODE sheet) Matrix Codes: DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank LAB USE ONLY	
Sample(s) Name(s) Phone # Patrick DeBeauvoir (G) 732-224-2594		Collection MED/VDI Val # Date Time Sampled by Matrix # of bottles H2 H3 H4 H5 H6 H7 H8 H9 H10 H11 H12 H13 H14 H15 H16 H17 H18 H19 H20		Number of preserved bottles PCBS - EPA 608 (1 L Amber) V52603NG40GW+2D, VMS+13BUTADN, VMS+F142 (40 mL Clear Glass VOA's) XTNIT - EPA 353.2 & EPA 351.2 w/Total N Calc (500 mL Plastic) Iron + Maganese EPA 200.7 (500 mL Plastic)	
Turnaround Time (Business days) <input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink		Approved By (Accutest PM) / Date: <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLTY (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data		Data Deliverable Information <input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDD Format-EQuS 8 <input checked="" type="checkbox"/> Other COMM+ Comments / Special Instructions PDF-DELIVERABLE "COMM+" EDD-ARCADIS_EQUIS (EQuS6-4 file format) Send sample confirmation receipt within 48 hours 42 target sample list, with NO special low RLs	
Requisitioned by Sampler: 1 Patrick DeBeauvoir Date Time: 2/22/24		Received By: 1 Sean [Signature] Date Time: 2/22/24		Requisitioned By: 2 Sean [Signature] Date Time: 2/22/24	
Requisitioned by Sampler: 3 [Signature] Date Time: 2/22/24		Received By: 3 [Signature] Date Time: 2/22/24		Requisitioned By: 4 [Signature] Date Time: 2/22/24	
Requisitioned by Sampler: 5 [Signature] Date Time: 2/22/24		Received By: 5 [Signature] Date Time: 2/22/24		Requisitioned By: 5 [Signature] Date Time: 2/22/24	

G:\PROJECT\Northrop Grumman Bethpage_Program Wide\04 Project Management\Contracts and POs\Lab\SGS-Accutest\LAB_COCSandCOCs\Customized_TM_COCS\OU3 GW COCs Revised 9 21 20

2/22/24 2:20

7:00pm

Initial Assessment: ZAEA

Label Verification

5.2
5

Report of Analytical Results

SDG: SR0718
Lab ID:SR0718-6
Client ID: WSP-7
Matrix:AQ
Lab File ID: G9206.D

Sample Date: 14-FEB-24
Extract Date: 19-FEB-24
Extracted By:AC/NH
Extraction Method:SW846 3520C
Lab Prep Batch: WG349496

Report Date: 23-FEB-24
Analysis Date: 21-FEB-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.71	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		75.3	%				



ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

Lab Work Order #
MSA 3601

SR0718

Send Results to:	Contact & Company Name: Arnas Nemickas-Task Manager	Telephone: 631-391-5212 cell
	Address: Two Huntington Quad-Suite 1S10	Fax:
	City State Zip: Melville NY 11747	E-mail Address: Arnas.Nemickas@arcadis.com

Preservative	E						
Filtered (✓)	-						
# of Containers	14						
Container Information	2						

Keys

Preservation Key:
 A. H₂SO₄
 B. HCL
 C. HNO₃
 D. NaOH
 E. None
 F. Other: _____
 G. Other: _____
 H. Other: _____

Container Information Key:
 1. 40 ml Vial
 2. 1 L Amber
 3. 250 ml Plastic
 4. 500 ml Plastic
 5. Encore
 6. 2 oz. Glass
 7. 4 oz. Glass
 8. 8 oz. Glass
 9. Other: _____
 10. Other: _____

Matrix Key:
 SO - Soil
 W - Water
 T - Tissue

SE - Sediment
 SL - Sludge
 A - Air

NL - NAPL/Oil
 SW - Sample Wipe
 Other: EFF

Project Name/Location (City, State): Program 3 - OU3 TS/SPDES (Bethpage, NY)	Project #: 30188750.OMMI2 Field
---	---

Sampler's Printed Name: <i>Patrick Dellecane</i>	Sampler's Signature: <i>Patrick Dellecane</i>
---	--

PARAMETER ANALYSIS & METHOD

1,4-dioxane
8270D SIM

Sample ID	Collection		Type (✓)		Matrix								
	Date	Time	Comp	Grab									
WSP-1	2/14/24	0925		X	GW	X							
WSP-2		0940		X	GW	X							
WSP-3		0950		X	GW	X							
WSP-4		0955		X	GW	X							
WSP-5		1000		X	GW	X							
WSP-7		1020		X	GW	X							
REP-021424-PD-1				X	GW	X							

REMARKS

pH/Temp: 5.8 / 60.9°F

pH/Temp: 5.8 / 63.9°F

pH/Temp: 6.5 / 60.6°F

pH/Temp: 5.8 / 58.4°F

pH/Temp: 5.8 / 60.0°F

pH/Temp: 6.6 / 61.3

OU3 Post-GAC pH/Temp: 6.8 / 60.3

Special Instructions/Comments: SVOC extracted by CCLE Special QA/QC Instructions(✓):
 EDD-ARCADIS_EQUIS (EQUIS6-4 file format)

Laboratory Information and Receipt		Relinquished By		Received By		Relinquished By		Laboratory Received By	
Lab Name: Katahdin Analytical Labs	Cooler Custody Seal (✓) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Printed Name: <i>Patrick Dellecane</i>	Signature: <i>Patrick Dellecane</i>	Printed Name: <i>M Van Luvender</i>	Signature: <i>M Van Luvender</i>	Printed Name:	Signature:	Printed Name:	Signature:
Specify Turnaround Requirements: Normal TAT-10 business days	Sample Receipt:	Firm: <i>Arcadis</i>	Date/Time: <i>2/14/24 1230</i>	Firm/Courier: <i>KIAS</i>	Date/Time: <i>2/15/24 915</i>	Firm/Courier:	Date/Time:	Firm:	Date/Time:
Shipping Tracking #:	Condition/Cooler Temp: _____								

Katahdin Analytical Services SR0718 page 0000015 of 0000017

1/1

March 2024 - OU2 SPDES

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-010L-24
April 29, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

Subject: **Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A
Northrop Grumman Corporation - Bethpage, New York Facility**

Mr. Pelton:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of March 2024, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-11L-24
April 29, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
March 1, 2024 – March 31, 2024.

Mr. Pelton:

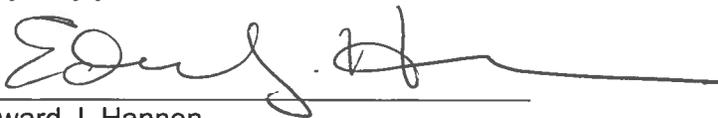
Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – 0.31 ug/L
Outfall 5 – 1.2 ug/L
Outfall 6 – 3.3 ug/L

Sampling results for Outfall 1 for the following:

Ethylbenzene - <1.0
Toluene - <1.0
Benzene - <0.50
Xylene, Ortho - <1.0
Xylene, Meta - <1.0
Xylene, Para - <1.0

If you have any questions, please call me at 516-575-2333
Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if NAME):
 NORTHROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W1G- 035
 BEHIPAGE, NY 11714
 FACILITY: NORTHROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W1G- 035
 BEHIPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	005-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
03/01/2024	03/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
pH	*****	*****	*****	*****	0	1/31 Monthly	Grab
0040010 Effluent Gross	*****	*****	7.2	Req. Mon. MINIMUM	0	1/31 Monthly	Grab
0040010 Intake (from Well)	*****	*****	*****	*****	0	1/31 Monthly	Grab
Nitrogen, total [as N]	*****	*****	5.3	Req. Mon. MINIMUM	0	1/31 Monthly	Grab
0060010 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab
Methylene chloride	*****	*****	3.6	10 mg/L DAILY MX	0	1/31 Monthly	Grab
3442310 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
3447510 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
3450110 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	0	1/31 Monthly	Grab
3450610 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward S Hannon Corporate Manager ESHM		04/29/2024
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code NUMBER
		516-575-2333
		MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFFMAN

NY0096792	005- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
03/01/2024	03/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	*****	0	1/31 Monthly	Grab
39175 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
39180 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	0	1/31 Monthly	Measured
50050 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Measured
Calculated limit	*****	*****	*****	*****	0	1/31 Monthly	Calculated
74013 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Calculated
cis- 1,2- Dichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
77093 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trichlorotrifluoroethane	*****	*****	*****	*****	0	1/31 Monthly	Grab
81611 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trans- 1,2- Dichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
85810 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that all information personally gathered and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE NUMBER
 516-515-2333
 AREA Code NUMBER
 MM/DD/YYYY
 04/29/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

NY0096792
 PERMIT NUMBER

006- C
 DISCHARGE NUMBER

MM/DD/YYYY
 MONITORING PERIOD

03/01/2024
 03/31/2024

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	*****	*****	*****	*****	*****	SU	0	1/31 Monthly	Grab
0040010 Effluent Gross	*****	*****	6.8 Req. Mon. MINIMUM	*****	*****	SU	0	1/31 Monthly	Grab
pH	*****	*****	*****	*****	*****	SU	0	1/31 Monthly	Grab
0040010 Intake from Well	*****	*****	5.0 Req. Mon. MINIMUM	*****	*****	SU	0	1/31 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	*****	mg/L	0	1/31 Monthly	Grab
0060010 Effluent Gross	*****	*****	*****	*****	*****	mg/L	0	1/31 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
3-4-23 10 Effluent Gross	*****	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
3-4-75 10 Effluent Gross	*****	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
3-4-501 10 Effluent Gross	*****	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
3-4-506 10 Effluent Gross	*****	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE NUMBER
 516-575-2333

DATE
 04/29/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	006- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
03/01/2024	03/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	*****	0	1/31 Monthly	Grab
39175 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
39180 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	0	1/31 Monthly	Measured
50050 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Measured
Calculated limit	*****	*****	*****	*****	0	1/31 Monthly	Calculated
74013 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Calculated
cis-1,2-Dichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
77093 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trichlorotrifluoroethane	*****	*****	*****	*****	0	1/31 Monthly	Grab
81611 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab
trans-1,2-Dichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
85810 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM TYPED OR PRINTED	516-575-2333	04/29/2024
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	MM/DD/YYYY
	516-575-2333	04/29/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714

FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714

ATTN: JOHN COFMAN

NY0096792
 PERMIT NUMBER

001- WSP-7
 DISCHARGE NUMBER

MONITORING PERIOD
 MM/DD/YYYY
 03/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUJB 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
00400 1 0 Effluent Gross	*****	*****	7.0	Req. Mon. MINIMUM	SU	7.0	0	1/31 Monthly	Grab
pH	*****	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
00400 1 0 Intake from Well	*****	*****	6.2	Req. Mon. MINIMUM	SU	6.2	0	1/31 Monthly	Grab
Nitrogen, total (as N)	*****	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
00600 1 0 Effluent Gross	*****	*****	*****	*****	*****	10	0	1/31 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	*****	5	0	1/31 Monthly	Grab
34423 1 0 Effluent Gross	*****	*****	*****	*****	*****	5	0	1/31 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	*****	5	0	1/31 Monthly	Grab
34475 1 0 Effluent Gross	*****	*****	*****	*****	*****	5	0	1/31 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	*****	5	0	1/31 Monthly	Grab
34501 1 0 Effluent Gross	*****	*****	*****	*****	*****	5	0	1/31 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	*****	5	0	1/31 Monthly	Grab
34506 1 0 Effluent Gross	*****	*****	*****	*****	*****	5	0	1/31 Monthly	Grab

NAME/TITLE: Edward J Hannon Corporate Manager	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE
TYPED OR PRINTED		516-575-7333	04/29/2024
		AREA CODE NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA) SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

PERMITTEE NAME: ADDRESS (include Facility Name/Location if
 NAME: NORTHTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTHTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

NY0096792 PERMIT NUMBER	001-WSP-7 DISCHARGE NUMBER
MM/DD/YYYY 03/01/2024	MM/DD/YYYY 03/31/2024

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	*****	0	1/31 Monthly	Grab
39175 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
Trichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
39180 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	0	1/31 Monthly	Measured
50050 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Measured
Calculated limit	*****	*****	*****	*****	0	1/31 Monthly	Calculated
74013 1 0 Effluent Gross	*****	*****	*****	*****	0	1/31 Monthly	Calculated
Cis-1,2-Dichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
77093 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
Trichlorotrifluoroethane	*****	*****	*****	*****	0	1/31 Monthly	Grab
81611 1 0 Effluent Gross	*****	*****	<5.0	ug/L	0	1/31 Monthly	Grab
Trans-1,2-Dichloroethylene	*****	*****	*****	*****	0	1/31 Monthly	Grab
85810 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER Edward J Hannon Corporate Manager ESHM	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT 	TELEPHONE	DATE
TYPED OR PRINTED		516-515-2333	04/29/2024
		AREA CODE NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) SUPPLY WELL & OUTFALL. PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

Monitoring Period:

March 2024

3/1/24 12:00 AM 3/31/24 12:00 AM

31 Days

OU2 South Basins: Outfall 005⁽⁶⁾

Combined OU2 Groundwater Remedy Tower 102 and Building 109 Advanced Oxidation Process (AOP) Treatment Systems - Tower 102 Treated Air Stripper Discharge, Building 109 AOP Treatment System Discharge, and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 005 3/18/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	5.90	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	6.88	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾ (Building 109)	--	5.2	NS	SU	Monthly (1/31) Days	Grab	--	--
Influent pH ⁽⁵⁾ (Tower 102)	--	5.4	NS	SU	Monthly (1/31) Days	Grab	--	--
Outfall 005 Effluent pH ⁽⁵⁾	--	7.2	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	3.6	10.0	mg/L	Monthly (1/31) Days	Grab	177.11	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁸⁾	--	ND	1,000	µg/L	Monthly (1/31) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	1.3	5.0	µg/L	Monthly (1/31) Days	Grab	0.06	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,2-Trichloroethane	79-00-5	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	2.2	5.0	µg/L	Monthly (1/31) Days	Grab	0.11	lbs/day
1,2-Dichloroethane	107-06-2	< 1.0	0.6	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-Dichloropropane	78-87-5	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Benzene	71-43-2	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,4-Dioxane (Building 109 Influent) ⁽⁹⁾	123-91-1	11	Monitor	µg/L	Monthly (1/31) Days	Grab	NA	lbs/day
1,4-Dioxane (Building 109 Post AOP) ⁽⁹⁾	123-91-1	<0.10	Monitor	µg/L	Monthly (1/31) Days	Grab	na	lbs/day
1,4-Dioxane (Building 109 Effluent) ⁽⁹⁾	123-91-1	<0.10	Monitor	µg/L	Monthly (1/31) Days	Grab	NA	lbs/day
1,4-Dioxane (Outfall 005) ⁽¹⁰⁾	123-91-1	1.2	Monitor	µg/L	Monthly (1/31) Days	Grab	0.06	lbs/day

Notes and abbreviations on last page.

OU2 West Basins: Outfall 006

OU2 Groundwater Remedy Tower 96 Treatment System - Treated Air Stripper Discharge and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 006 ⁽¹¹⁾ 3/29/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	0.55	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	2.14	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁶⁾	--	5.0	NS	SU	Monthly (1/31) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.8	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	5.0	10.0	mg/L	Monthly (1/31) Days	Grab	89.25	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁸⁾	--	ND	1,000	µg/L	Monthly (1/31) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	3.3	Monitor	µg/L	Monthly (1/31) Days	Grab	0.06	lbs/day

Notes and abbreviations on last page.

OU3 Effluent: Outfall 001 (WSP-7)

OU3 Groundwater Remedy Treatment System - Treated Air Stripper and Soil Gas Containment Condensate Discharge to Nassau County Recharge Basins

Parameter ⁽¹⁾	CAS Number	OUTFALL 001 (WSP-7) 3/18/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	0.37	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	0.38	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	6.2	NS	SU	Monthly (1/31) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	7.0	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	2.3	10.0	mg/L	Monthly (1/31) Days	Grab	7.15	lbs/day
Total Iron	7439-89-6	235	600	µg/L	Monthly (1/31) Days	Grab	0.73	lbs/day
Total Manganese	7439-96-5	49.0	600	µg/L	Monthly (1/31) Days	Grab	0.15	lbs/day
Sum of Total Iron and Manganese	--	284.0	1,000	µg/L	Monthly (1/31) Days	Calculated	0.88	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2 (trans)-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-(cis)-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 5.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Benzene	71-43-2	< 0.50	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Ethylbenzene	100-41-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Toluene	108-88-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
o-Xylene	95-47-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
m,p-Xylene	--	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1016	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1221	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1232	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1242	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1248	12672-29-6	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1254	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1260	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	0.31	Monitor	µg/L	Monthly (1/31) Days	Grab	9.60E-04	lbs/day

Notes and Abbreviations:

- XX** Bold value indicates the constituent was detected at or above its laboratory quantification limit
- <** Compound is not detected above laboratory quantification limit
- Not Applicable
- µg/L** micrograms per liter
- lbs/day** pounds per day
- lb/kg** pounds per kilogram
- MGD** million gallons per day
- mg/L** milligrams per liter
- min** minutes
- SU** Standard Units
- B** Detected in method blank as reported by laboratory
- na** not available
- NA** Not Applicable
- COC** Chain of Custody

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system; Polychlorinated Biphenyls (PCBs) using USEPA Method 608; 1,4-Dioxane using USEPA Method 8270D-SIM (SF Extraction); Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number: 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively; Total Iron and Manganese using USEPA Method 200.7.

2. Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023.

3. Mass Loading Calculation:

$$Mass\ Loading\ \left(\frac{lb}{day}\right) = Flow\ \left(\frac{gal}{min}\right) * 1440\ \left(\frac{min}{day}\right) * concentration\ \left(\frac{\mu g}{liter}\right) \div 10^9\ \left(\frac{\mu g}{kg}\right) * 3.785\ \left(\frac{liter}{gal}\right) * 2.2046\ \left(\frac{lb}{kg}\right)$$

- 4. Average and daily maximum flow calculated from SCADA reports for the month indicated.
- 5. Field measurement of pH taken by hand held meter on sample date.
- 6. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".
- 7. Average Mass Loading calculations are based on actual flow rates unless otherwise noted.
- 8. At the time of Outfall 005 SPDES sample collection on March 18, 2024, Building 109 AOP Treatment System remedial well flow for RW-20 was approximately 553 gpm, RW-21 was approximately 321 gpm and RW-22 was approximately 669 gpm. These were instantaneous readings taken at the time of sampling.
- 9. Building 109 AOP Treatment System Influent (corresponds to sample B109-INFLUENT on the COC), Post-AOP (corresponds to sample B109-POST-AOP on the COC) and Effluent (corresponds to sample OUTFALL 005-B109 on the COC) samples were collected and analyzed for 1,4-Dioxane as per footnote (1) of the SPDES permit equivalency for Outfall 005.
- 10. Outfall 005 combines discharge from Building 109 and Tower 102 treatment systems; however, Tower 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal.
- 11. Samples were taken on separate days due to unscheduled maintenance at Building 96.

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 03/18/24
Lab Sample ID: JD84699-2	Date Received: 03/18/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	03/22/24	03/23/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	03/22/24	03/23/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA55759

(2) Prep QC Batch: MP45455

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 03/18/24
Lab Sample ID: JD84699-2	Date Received: 03/18/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	3.6	0.10	mg/l	1	03/21/24 17:36	SS	EPA 353.2/LACHAT
Nitrogen, Total ^a	3.6	0.30	mg/l	1	03/25/24 21:00	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	03/25/24 21:00	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.2
4

TB
 GW

JD 84699

MAN-021974-215

Client / Reporting Information		Project Information				Requested Analysis (see TEST CODE SHEET)												Matrix Codes
Company Name Arcadis Street Address 2 Huntington Quad, Suite 1S10 City State Zip Melville NY 11747 Project Contact Kevin Czerwinski, Kevin.Czerwinski@arcadis.com Phone # 631-245-0710 Sampler(s) Name(s)		Project Name: Prog 5C OU3.5 RW-21-ONCT-OMM/SPDES Street Bethpage NY Company Name Arcadis, U.S., Inc. Street Address 630 Plaza Drive, Suite 600 City State Zip Highlands Ranch, CO 80129 Project Manager Carlo San Giovanni Accounts Payable				Matrix Codes DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment CH - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank												LAB USE ONLY
Field ID / Point of Collection TB-031824-LW-2 2 Outfall 005 3 Outfall 005-B109 4 Outfall 005-T102		Collection MEQ/MDI Vial # Date Time 3-18-24 1235 3-18-24 1315 3-18-24 1215				Number of preserved Bottles TB 2 2 GW 5 3 1 1 GW 5 3 1 1 GW 5 3 1 1												
Turnaround Time (Business days) <input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available via Lablink		Approved By (Accutest PM): I Date: Initial Assessment 3AHK Label Verification				Data Deliverable Information <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> Commercial "A" + Results Only <input type="checkbox"/> Commercial "B" + Results + QC Summary <input type="checkbox"/> NJ Reduced + Results + QC Summary + Initial Findings												Comments / Special Instructions
Sample Custody must be documented below each time samples change possession, including courier delivery.																		
Relinquished by Sampler: 1 LARRY WRIGHT Date Time: 3-18-24/1504		Received By: 1 [Signature] Date Time: 3/18/24				Relinquished By: 2 [Signature] Date Time: 3/18/24												Received By: 2 [Signature]
Relinquished by Sampler: 3 [Signature] Date Time: 3/18/24		Received By: 3 [Signature] Date Time: 3/18/24				Relinquished By: 4 [Signature] Date Time: 3/18/24												Received By: 4 [Signature]
Relinquished by: 5 [Signature] Date Time: 3/18/24		Received By: 5 [Signature] Date Time: 3/18/24				Relinquished By: 5 [Signature] Date Time: 3/18/24												Received By: 5 [Signature]

G:\PROJECT\Northrop Grumman Bethpage\OU2.2 ONCT\08 Notes and Data\System Sampling\Febuary (Q.M)\COCA_SGS\PAR_OU2_COCA_MPNs_62233_62235_RevDec2017

6:10 PM

SGS COURIER

5.2
 5

Report of Analysis

Client Sample ID: OUTFALL 005 Lab Sample ID: JD84738-1 Matrix: AQ - Ground Water Method: SW846 8270E BY SIM SW846 3510C Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	Date Sampled: 03/18/24 Date Received: 03/19/24 Percent Solids: n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M122724.D	1	03/22/24 22:28	JY	03/21/24 14:30	OP53256A	E4M5757
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane ^a	1.15	0.10	0.050	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
4165-60-0	Nitrobenzene-d5	68%		23-127%		
321-60-8	2-Fluorobiphenyl	59%		23-114%		
1718-51-0	Terphenyl-d14	61%		10-121%		

(a) Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.

ND = Not detected RL = Reporting Limit E = Indicates value exceeds calibration range	MDL = Method Detection Limit J = Indicates an estimated value B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound
--	--

Report of Analysis

Client Sample ID: OUTFALL 005-B109 Lab Sample ID: JD84738-2 Matrix: AQ - Ground Water Method: SW846 8270E BY SIM SW846 3510C Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	Date Sampled: 03/18/24 Date Received: 03/19/24 Percent Solids: n/a
--	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M122725.D	1	03/22/24 22:50	JY	03/21/24 14:30	OP53256A	E4M5757
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane ^a	ND	0.10	0.050	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
4165-60-0	Nitrobenzene-d5	54%		23-127%		
321-60-8	2-Fluorobiphenyl	49%		23-114%		
1718-51-0	Terphenyl-d14	58%		10-121%		

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected RL = Reporting Limit E = Indicates value exceeds calibration range	MDL = Method Detection Limit J = Indicates an estimated value B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound
--	--

4.2
4

Report of Analysis

Client Sample ID: B109-INFLUENT Lab Sample ID: JD84737-1 Matrix: AQ - Influent Method: SW846 8270E BY SIM SW846 3510C Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	Date Sampled: 03/18/24 Date Received: 03/19/24 Percent Solids: n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M122722.D	1	03/22/24 21:43	JY	03/21/24 14:30	OP53256A	E4M5757
Run #2	4M122752.D	5	03/25/24 13:00	KM	03/21/24 14:30	OP53256A	E4M5759

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2	1000 ml	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	11.2 ^a	0.50	0.25	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
4165-60-0	Nitrobenzene-d5	58%	60%	23-127%		
321-60-8	2-Fluorobiphenyl	50%	69%	23-114%		
1718-51-0	Terphenyl-d14	58%	61%	10-121%		

(a) Result is from Run# 2

ND = Not detected RL = Reporting Limit E = Indicates value exceeds calibration range	MDL = Method Detection Limit J = Indicates an estimated value B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound
--	--

4.1
4

Report of Analysis

Client Sample ID:	B109-POST-AOP	
Lab Sample ID:	JD84737-2	Date Sampled: 03/18/24
Matrix:	AQ - Ground Water	Date Received: 03/19/24
Method:	SW846 8270E BY SIM SW846 3510C	Percent Solids: n/a
Project:	Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M122723.D	1	03/22/24 22:06	JY	03/21/24 14:30	OP53256A	E4M5757
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane ^a	ND	0.10	0.050	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
4165-60-0	Nitrobenzene-d5	72%		23-127%		
321-60-8	2-Fluorobiphenyl	64%		23-114%		
1718-51-0	Terphenyl-d14	64%		10-121%		

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 03/29/24
Lab Sample ID: JD85511-1	Date Received: 03/29/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 624.1	
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D135454.D	1	04/02/24 06:30	NW	n/a	n/a	V4D5987
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	116%		80-128%
2037-26-5	Toluene-D8 (SUR)	104%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	106%		79-117%
1868-53-7	Dibromofluoromethane (S)	103%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 03/29/24
Lab Sample ID: JD85511-1	Date Received: 03/29/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E BY SIM SW846 3510C	
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M122974.D	1	04/02/24 10:46	KM	04/01/24 08:15	OP53490A	E4M5767
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane ^a	3.25	0.10	0.050	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
4165-60-0	Nitrobenzene-d5	57%		23-127%		
321-60-8	2-Fluorobiphenyl	48%		23-114%		
1718-51-0	Terphenyl-d14	39%		10-121%		

(a) Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OUTFALL 006 Lab Sample ID: JD85511-1 Matrix: AQ - Ground Water Project: Northrop Grumman, OU2.2 OMM, Program 3	Date Sampled: 03/29/24 Date Received: 03/29/24 Percent Solids: n/a
---	---

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	04/02/24	04/02/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	04/02/24	04/02/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA55810

(2) Prep QC Batch: MP45670

RL = Reporting Limit



Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 03/29/24
Lab Sample ID: JD85511-1	Date Received: 03/29/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	5.0	0.20	0.18	mg/l	2	04/02/24 20:47 SS	EPA	353.2/LACHAT
Nitrogen, Total ^a	5.0	0.40	0.32	mg/l	1	04/03/24 15:47 SS	SM4500	A-11
Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14	mg/l	1	04/03/24 15:47 SS	EPA	351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 J = Indicates a result > = MDL but < RL

4.1
4

Report of Analysis

Client Sample ID: WSP-7		Date Sampled: 03/18/24
Lab Sample ID: JD84702-1		Date Received: 03/18/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260D		
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1T8783.D	1	03/20/24 18:05	CF	n/a	n/a	V1T237
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) ^a	ND	10	2.7	ug/l	
106-99-0	1,3-Butadiene ^a	ND	5.0	0.62	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-45-6	Chlorodifluoromethane ^a	ND	5.0	0.49	ug/l	
75-00-3	Chloroethane ^b	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WSP-7		Date Sampled: 03/18/24
Lab Sample ID: JD84702-1		Date Received: 03/18/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260D		
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
75-68-3	1-chloro-1,1-difluoroethane	ND	5.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	121% ^c		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	97%		82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

- (a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.
- (c) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 03/18/24
Lab Sample ID: JD84702-1	Date Received: 03/18/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 608.3 EPA 608	
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G140544.D	1	03/22/24 06:10	CP	03/21/24 14:35	OP53244A	G3G5142
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	89%		10-156%
877-09-8	Tetrachloro-m-xylene	138%		10-156%
2051-24-3	Decachlorobiphenyl	86%		10-143%
2051-24-3	Decachlorobiphenyl	111%		10-143%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 03/18/24
Lab Sample ID: JD84702-1	Date Received: 03/18/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	235	100	ug/l	1	03/22/24	03/23/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	49.0	15	ug/l	1	03/22/24	03/23/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA55759

(2) Prep QC Batch: MP45455

RL = Reporting Limit

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 03/18/24
Lab Sample ID: JD84702-1	Date Received: 03/18/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.3	0.10	mg/l	1	03/21/24 17:52	SS	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.3	0.30	mg/l	1	03/25/24 21:02	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	03/25/24 21:02	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Report of Analysis

3.1
3

Client Sample ID: WSP-7	Date Sampled: 03/18/24
Lab Sample ID: JD84736-1	Date Received: 03/19/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270E BY SIM SW846 3510C	
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M122721.D	1	03/22/24 21:21	JY	03/21/24 14:30	OP53256A	E4M5757
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane ^a	0.309	0.10	0.050	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
4165-60-0	Nitrobenzene-d5	64%		23-127%		
321-60-8	2-Fluorobiphenyl	54%		23-114%		
1718-51-0	Terphenyl-d14	58%		10-121%		

(a) Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

April 2024 - OU2 SPDES

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-16L-24
June 4, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
April 1, 2024 – April 30, 2024.

Sarah Johnston:

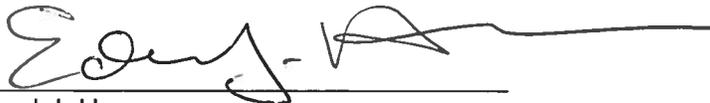
Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – 0.48 ug/L
Outfall 5 – 2.4 ug/L
Outfall 6 – 7.4 ug/L

Sampling results for Outfall 1 for the following:

Ethylbenzene - <1.0
Toluene - <1.0
Benzene - <0.50
Xylene, Ortho - <1.0
Xylene, Meta - <1.0
Xylene, Para - <1.0

If you have any questions, please call me at 516-575-2333
Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-015L-24
June 4, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

Subject: **Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A
Northrop Grumman Corporation - Bethpage, New York Facility**

Sarah Johnston:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of April 2024, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W1G- 035
 BEHHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W1G- 035
 BEHHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	005-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
04/01/2024	04/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUHR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	UNITS			
pH	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. MINIMUM	*****	Req. Mon. MAXIMUM	0	Monthly	Grab
pH	SAMPLE MEASUREMENT	*****	*****	*****	4.95	*****	4.95	0	1/30	Grab
00400 1 0 Intake from Well	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. MINIMUM	*****	Req. Mon. MAXIMUM	0	Monthly	Grab
Nitrogen, total [as N]	SAMPLE MEASUREMENT	*****	*****	*****	3.9	*****	3.9	0	1/30	Grab
00600 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	10	*****	DAILY MX	0	Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	*****	ug/L	0	1/30	Grab
34423 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	DAILY MX	*****	DAILY MX	0	Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	*****	ug/L	0	1/30	Grab
34475 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	DAILY MX	*****	DAILY MX	0	Monthly	Grab
1,1 - Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	*****	ug/L	0	1/30	Grab
34501 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	DAILY MX	*****	DAILY MX	0	Monthly	Grab
1,1,1 - Trichloroethane	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	*****	ug/L	0	1/30	Grab
34506 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	DAILY MX	*****	DAILY MX	0	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

Signature of Principal Executive Officer or Authorized Agent: 

TELEPHONE: 516-575-2333
 AREA Code: 516-575-2333
 NUMBER: 061012024
 MM/DD/YYYY

DATE: 06/10/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS UPPLY WELL & OUTFALL PH MONTHLY & REPORT P11 COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA).SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

PERMITTEE NAME/ADDRESS: (include Facility Name/Location if appropriate)
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COHMAN

NY0096792	005-C
PERMIT NUMBER	DISCHARGE NUMBER
MM/DD/YYYY	MM/DD/YYYY
04/01/2024	04/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Vinyl chloride	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Grab
39175 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Grab
39180 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Measured
Flow, in conduit or thru treatment plant	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Measured
50050 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Measured
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Calculated
74013 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Calculated
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Calculated
cis-1,2-Dichloroethylene	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Calculated
77093 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Calculated
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Calculated
Trichlorotrifluoroethane	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Calculated
81611 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Calculated
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Calculated
Trans-1,2-Dichloroethylene	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Calculated
85810 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Calculated
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Calculated

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Edward J Hannon
Corporate Manager ESHM
 TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete; and I am under the duty to disclose the potential for such false information, including the possibility of late and inappropriate for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE: 516-515-2333
 DATE: 06/04/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA, SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COIMAN

NY00096792	006- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
04/01/2024	04/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO CW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	UNITS	VALUE	UNITS			
PH	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	Req. Mon. MINIMUM	*****	Req. Mon. MAXIMUM	*****	0	Monthly	Grab
PH	SAMPLE MEASUREMENT	*****	*****	4.9	*****	Req. Mon. MINIMUM	*****	0	1/30	Grab
00400 1 0 Intake from Well	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. MAXIMUM	*****	0	Monthly	Grab
Nitrogen, total [as N]	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/30	Grab
00600 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	10 DAILY MX	*****	0	Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT	*****	*****	*****	*****	<1.0	ug/L	0	1/30	Grab
34423 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	5 DAILY MX	*****	0	Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	<1.0	ug/L	0	1/30	Grab
34475 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	5 DAILY MX	*****	0	Monthly	Grab
1,1- Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	<1.0	ug/L	0	1/30	Grab
34501 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	5 DAILY MX	*****	0	Monthly	Grab
1,1,1- Trichloroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	<1.0	ug/L	0	1/30	Grab
34506 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	5 DAILY MX	*****	0	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted, based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering, verifying, and compiling the information. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE: 516-575-2333
 AREA CODE: 516
 NUMBER: 575-2333
 DATE: 06/04/2024
 MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL CWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

NATIONAL POLLUTANT DISCHARGE ELIMINATION ACT (CERCLA)
DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
NAME: NORTROR GRUIMMAN SYSTEMS CORP
ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
BETHPAGE, NY 11714
FACILITY: NORTROR GRUIMMAN SYSTEMS CORP
LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
BETHPAGE, NY 11714
ATTN: JOHN COFMAN

NY0096792	006-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
04/01/2024	04/30/2024

DMR Mailing ZIP CODE: 11714
MINOR (SUBR 01)
NC COOLING & STORM WATER TO GW
External Outfall
No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE			
Vinyl chloride	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
30175 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
39180 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Calculated limit	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
74013 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
cis-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
77093 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Trichlorotrifluoroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
81611 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
85810 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER Edward J Hannon Corporate Manager ESHM TYPED OR PRINTED	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT 	TELEPHONE	DATE
			516-575-7333	04/01/2024
			AREA Code NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0084

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTIKOP GRIMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTIKOP GRIMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COFFMAN

NY00967912	001-W-SP-1
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
04/01/2024	04/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUHR 01)
 NC COOLING & STORM WATER TO CW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			UNITS	NO. OF ANALYSIS	FREQUENCY	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE				
pH	MEASUREMENT	*****	*****	*****	*****	*****	*****			1/30	Grab
00400 1 0	PERMIT REQUIREMENT	*****	*****	*****	6.6	Req. Mon. MINIMUM	*****			Monthly	Grab
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	6.2	Req. Mon. MAXIMUM	*****			1/30	Grab
Intake from Well	PERMIT REQUIREMENT	*****	*****	*****	6.2	Req. Mon. MINIMUM	*****			Monthly	Grab
Nitrogen, total (as N)	SAMPLE MEASUREMENT	*****	*****	*****	2.6	Req. Mon. MAXIMUM	*****			1/30	Grab
00600 1 0	PERMIT REQUIREMENT	*****	*****	*****	10	Req. Mon. MINIMUM	*****			Monthly	Grab
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	42.0	Req. Mon. MAXIMUM	*****			1/30	Grab
Methylene chloride	PERMIT REQUIREMENT	*****	*****	*****	5	Req. Mon. MAXIMUM	*****			Monthly	Grab
34423 1 0	SAMPLE MEASUREMENT	*****	*****	*****	41.0	Req. Mon. MAXIMUM	*****			1/30	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	5	Req. Mon. MAXIMUM	*****			Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	41.0	Req. Mon. MAXIMUM	*****			1/30	Grab
34475 1 0	PERMIT REQUIREMENT	*****	*****	*****	5	Req. Mon. MAXIMUM	*****			Monthly	Grab
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	41.0	Req. Mon. MAXIMUM	*****			1/30	Grab
1,1-Dichloroethylene	PERMIT REQUIREMENT	*****	*****	*****	5	Req. Mon. MAXIMUM	*****			Monthly	Grab
34501 1 0	SAMPLE MEASUREMENT	*****	*****	*****	41.0	Req. Mon. MAXIMUM	*****			1/30	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	5	Req. Mon. MAXIMUM	*****			Monthly	Grab
1,1,1-Trichloroethane	SAMPLE MEASUREMENT	*****	*****	*****	41.0	Req. Mon. MAXIMUM	*****			1/30	Grab
34506 1 0	PERMIT REQUIREMENT	*****	*****	*****	5	Req. Mon. MAXIMUM	*****			Monthly	Grab
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	41.0	Req. Mon. MAXIMUM	*****			1/30	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	EDWARD J HANMON Corporate Manager ESHM	TELEPHONE	56-575-7333	DATE	06/04/2024
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		AREA CODE	
				NUMBER	
				MM/DD/YYYY	

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

NATIONAL POLLUTANT DISCHARGE REPORT (DMR)
DISCHARGE MONITORING REPORT (DMR)

DMR No. 2010-0004

PERMIT THE NAME/ ADDRESS (include Facility Name/Location if
 NAME: NORTRHOP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTRHOP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714

NY0096792	001-WSP-1
PERMIT NUMBER	DISCHARGE NUMBER
MM/DD/YYYY	MM/DD/YYYY
04/01/2024	04/30/2024
MONITORING PERIOD	

DMR Mailing ZIP CODE: 11714
 MINOR (SUFR 01)
 NC COOLING & STORM WATER TO CW
 External Outfall
 No Discharge

ATTN: JOHN COHMAN

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	UNITS			
Vinyl chloride	MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
39175 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
39180 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
50050 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Calculated limit	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
74013 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
cis-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
77093 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Trichlorofluoromethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
81611 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
85810 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Edward S Hannan
Corporate Manager ESHM
 TYPED OR PRINTED

TELEPHONE: 516-575-2333
 DATE: 06/04/2024

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WEIR/NATURAL CW HAS PI OUTSIDE RANGE. IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS UPPLY WELL & OUTFALL. PI MONTHLY REPORT. PI COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

Monitoring Period:

April 2024
 4/1/24 12:00 AM 4/30/24 12:00 AM
 30 Days

OU2 South Basins: Outfall 005⁽⁶⁾

Combined OU2 Groundwater Remedy Tower 102 and Building 109 Advanced Oxidation Process (AOP) Treatment Systems - Tower 102 Treated Air Stripper Discharge, Building 109 AOP Treatment System Discharge, and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 005 4/16/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	6.19	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	7.24	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾ (Building 109)	--	4.7	NS	SU	Monthly (1/30) Days	Grab	--	--
Influent pH ⁽⁵⁾ (Tower 102)	--	5.2	NS	SU	Monthly (1/30) Days	Grab	--	--
Outfall 005 Effluent pH ⁽⁵⁾	--	7.0	Range: 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	3.9	10.0	mg/L	Monthly (1/30) Days	Grab	201.53	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁸⁾	--	ND	1,000	µg/L	Monthly (1/30) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	0.44 J	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	0.91 J	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,2-Trichloroethane	79-00-5	< 1.0	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	1.8	5.0	µg/L	Monthly (1/30) Days	Grab	0.09	lbs/day
1,2-Dichloroethane	107-06-2	1.1	0.6	µg/L	Monthly (1/30) Days	Grab	0.06	lbs/day
1,2-Dichloropropane	78-87-5	< 1.0	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Benzene	71-43-2	< 1.0	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane (Building 109 Influent) ⁽⁹⁾	123-91-1	30	Monitor	µg/L	Monthly (1/30) Days	Grab	NA	lbs/day
1,4-Dioxane (Building 109 Post AOP) ⁽⁹⁾	123-91-1	<0.24	Monitor	µg/L	Monthly (1/30) Days	Grab	na	lbs/day
1,4-Dioxane (Building 109 Effluent) ⁽⁹⁾	123-91-1	<0.24	Monitor	µg/L	Monthly (1/30) Days	Grab	NA	lbs/day
1,4-Dioxane (Outfall 005) ⁽¹⁰⁾	123-91-1	2.4	Monitor	µg/L	Monthly (1/30) Days	Grab	0.12	lbs/day

Notes and abbreviations on last page.

OU2 West Basins: Outfall 006
OU2 Groundwater Remedy Tower 96 Treatment System - Treated Air Stripper Discharge and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 006 4/16/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	1.55	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	2.16	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁶⁾	--	4.9	NS	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	7.0	Range: 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	5.2	10.0	mg/L	Monthly (1/30) Days	Grab	93.74	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁸⁾	--	ND	1,000	µg/L	Monthly (1/30) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	7.4	Monitor	µg/L	Monthly (1/30) Days	Grab	0.13	lbs/day

Notes and abbreviations on last page.

OU3 Effluent: Outfall 001 (WSP-7)

OU3 Groundwater Remedy Treatment System - Treated Air Stripper and Soil Gas Containment Condensate Discharge to Nassau County Recharge Basins

Parameter ⁽¹⁾	CAS Number	OUTFALL 001 (WSP-7) 4/16/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	0.37	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	0.38	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	6.2	NS	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.6	Range: 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	2.6	10.0	mg/L	Monthly (1/30) Days	Grab	8.06	lbs/day
Total Iron	7439-89-6	191	600	µg/L	Monthly (1/30) Days	Grab	0.59	lbs/day
Total Manganese	7439-96-5	48.2	600	µg/L	Monthly (1/30) Days	Grab	0.15	lbs/day
Sum of Total Iron and Manganese	--	239.2	1,000	µg/L	Monthly (1/30) Days	Calculated	0.74	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2 (trans)-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2-(cis)-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 5.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Benzene	71-43-2	< 0.50	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Ethylbenzene	100-41-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Toluene	108-88-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
o-Xylene	95-47-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
m,p-Xylene	--	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1016	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1221	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1232	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1242	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1248	12672-29-6	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1254	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1260	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	0.48	Monitor	µg/L	Monthly (1/30) Days	Grab	1.49E-03	lbs/day

Notes and Abbreviations:

- XX** Bold value indicates the constituent was detected at or above its laboratory quantification limit
- <** Compound is not detected above laboratory quantification limit
- Not Applicable
- µg/L** micrograms per liter
- lbs/day** pounds per day
- lb/kg** pounds per kilogram
- MGD** million gallons per day
- mg/L** milligrams per liter
- min** minutes
- SU** Standard Units
- B** Detected in method blank as reported by laboratory
- na** not available
- NA** Not Applicable
- COC** Chain of Custody

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system; Polychlorinated Biphenyls (PCBs) using USEPA Method 608; 1,4-Dioxane using USEPA Method 8270D-SIM (CLLE); Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number: 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively; Total Iron and Manganese using USEPA Method 200.7.

2. Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023.

3. Mass Loading Calculation:

$$Mass\ Loading\ \left(\frac{lb}{day}\right) = Flow\ \left(\frac{gal}{min}\right) * 1440\ \left(\frac{min}{day}\right) * concentration\ \left(\frac{\mu g}{liter}\right) \div 10^9\ \left(\frac{\mu g}{kg}\right) * 3.785\ \left(\frac{liter}{gal}\right) * 2.2046\ \left(\frac{lb}{kg}\right)$$

- 4. Average and daily maximum flow calculated from SCADA reports for the month indicated.
- 5. Field measurement of pH taken by hand held meter on sample date.
- 6. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".
- 7. Average Mass Loading calculations are based on actual flow rates unless otherwise noted.
- 8. At the time of Outfall 005 SPDES sample collection on April 16, 2024, Building 109 AOP Treatment System remedial well flow for RW-20 was approximately 581 gpm, RW-21 was approximately 581 gpm and RW-22 was approximately 702 gpm. These were instantaneous readings taken at the time of sampling.
- 9. Building 109 AOP Treatment System Influent (corresponds to sample B109-INFLUENT on the COC), Post-AOP (corresponds to sample B109-POST-AOP on the COC) and Effluent (corresponds to sample OUTFALL 005-B109 on the COC) samples were collected and analyzed for 1,4-Dioxane as per footnote (1) of the SPDES permit equivalency for Outfall 005.
- 10. Outfall 005 combines discharge from Building 109 and Tower 102 treatment systems; however, Tower 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal.

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 04/16/24
Lab Sample ID: JD86632-2	Date Received: 04/16/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	04/18/24	04/20/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	04/18/24	04/20/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA55916

(2) Prep QC Batch: MP46004

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 04/16/24
Lab Sample ID: JD86632-2	Date Received: 04/16/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	3.9	0.10	mg/l	1	04/18/24 19:26	SS	EPA 353.2/LACHAT
Nitrogen, Total ^a	3.9	0.30	mg/l	1	04/22/24 17:57	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	04/22/24 17:57	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.2
4

Report of Analytical Results

SDG: SR1713

Lab ID: SR1713-1

Client ID: OUTFALL 005

Matrix: AQ

Lab File ID: G9449.D

Sample Date: 16-APR-24

Extract Date: 18-APR-24

Extracted By: AN

Extraction Method: SW846 3520C

Lab Prep Batch: WG351809

Report Date: 29-APR-24

Analysis Date: 23-APR-24

Analyst: DT

Analysis Method: SW846 8270D SIM

% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.4	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		57.0	%				

Report of Analytical Results

SDG: SR1713
Lab ID: SR1713-2
Client ID: OUTFALL 005-B109
Matrix: AQ
Lab File ID: G9450.D

Sample Date: 16-APR-24
Extract Date: 18-APR-24
Extracted By: AN
Extraction Method: SW846 3520C
Lab Prep Batch: WG351809

Report Date: 29-APR-24
Analysis Date: 23-APR-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		61.1	%				

Report of Analytical Results

SDG: SR1732
Lab ID: SR1732-1DL
Client ID: B109-INFLUENT
Matrix: AQ
Lab File ID: G9510.D

Sample Date: 16-APR-24
Extract Date: 22-APR-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG351922

Report Date: 01-MAY-24
Analysis Date: 30-APR-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		30	ug/L	10	.25	2.3	0.80
1,4-Dioxane-D8	D	0.00	%				

Report of Analytical Results

SDG: SR1732
Lab ID: SR1732-2
Client ID: B109-POST-AOP
Matrix: AQ
Lab File ID: G9473.D

Sample Date: 16-APR-24
Extract Date: 22-APR-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG351922

Report Date: 01-MAY-24
Analysis Date: 25-APR-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		58.3	%				

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 04/16/24
Lab Sample ID: JD86634-2	Date Received: 04/16/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 624.1	
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D135897.D	1	04/19/24 20:28	NW	n/a	n/a	V4D6003
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	113%		80-128%
2037-26-5	Toluene-D8 (SUR)	99%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	105%		79-117%
1868-53-7	Dibromofluoromethane (S)	102%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 04/16/24
Lab Sample ID: JD86634-2	Date Received: 04/16/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	04/19/24	04/23/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	04/19/24	04/23/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA55930

(2) Prep QC Batch: MP46034

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 006 Lab Sample ID: JD86634-2 Matrix: AQ - Ground Water Project: Northrop Grumman, OU2.2 OMM, Program 3	Date Sampled: 04/16/24 Date Received: 04/16/24 Percent Solids: n/a
---	---

4.2
4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By Method
Nitrogen, Nitrate + Nitrite	5.0	0.20	0.18	mg/l	2	04/18/24 20:46 SS	EPA 353.2/LACHAT
Nitrogen, Total ^a	5.2	0.40	0.32	mg/l	1	04/22/24 18:08 SS	SM4500 A-11
Nitrogen, Total Kjeldahl	0.21	0.20	0.14	mg/l	1	04/22/24 18:08 SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 J = Indicates a result > = MDL but < RL

Report of Analytical Results

SDG: SR1701
Lab ID: SR1701-1
Client ID: OUTFALL 006
Matrix: AQ
Lab File ID: G9448.D

Sample Date: 16-APR-24
Extract Date: 18-APR-24
Extracted By: AN
Extraction Method: SW846 3520C
Lab Prep Batch: WG351809

Report Date: 24-APR-24
Analysis Date: 23-APR-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		7.4	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		68.2	%				

Report of Analysis

Client Sample ID: WSP-7		Date Sampled: 04/16/24
Lab Sample ID: JD86637-1		Date Received: 04/16/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260D		
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
71-55-6	1,1,1-Trichloroethane ^a	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane ^a	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.52	ug/l	
75-68-3	1-chloro-1,1-difluoroethane	ND	5.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	87%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	93%		82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.51	33	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 04/16/24
Lab Sample ID: JD86637-1	Date Received: 04/16/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 608.3 SW846 3510C	
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2512242.D	1	04/19/24 07:39	CP	04/18/24 15:30	OP53933A	GXX8510
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016 ^a	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	96%		10-156%
877-09-8	Tetrachloro-m-xylene	89%		10-156%
2051-24-3	Decachlorobiphenyl	100%		10-143%
2051-24-3	Decachlorobiphenyl	127%		10-143%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WSP-7		Date Sampled: 04/16/24
Lab Sample ID: JD86637-1		Date Received: 04/16/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	191	100	ug/l	1	04/19/24	04/23/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	48.2	15	ug/l	1	04/19/24	04/23/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA55930

(2) Prep QC Batch: MP46034

RL = Reporting Limit

4.1
4

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 04/16/24
Lab Sample ID: JD86637-1	Date Received: 04/16/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.3	0.10	mg/l	1	04/18/24 19:59	SS	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.6	0.30	mg/l	1	04/22/24 18:09	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	0.27	0.20	mg/l	1	04/22/24 18:09	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.1
4

Report of Analytical Results

SDG: SR1731
Lab ID:SR1731-1
Client ID: WSP-7
Matrix:AQ
Lab File ID: G9471.D

Sample Date: 16-APR-24
Extract Date: 22-APR-24
Extracted By:NG
Extraction Method:SW846 3520C
Lab Prep Batch: WG351922

Report Date: 29-APR-24
Analysis Date: 25-APR-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.48	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		72.2	%				

A Uy 2024 - OU2 SPDES

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-017L-24
June 26, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

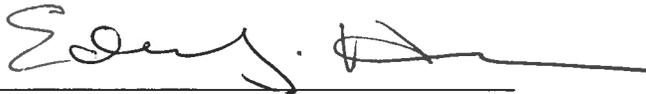
Subject: **Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A
Northrop Grumman Corporation - Bethpage, New York Facility**

Sarah Johnston:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of May 2024, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-18L-24
June 26, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
May 1, 2024 – May 31, 2024.

Sarah Johnston:

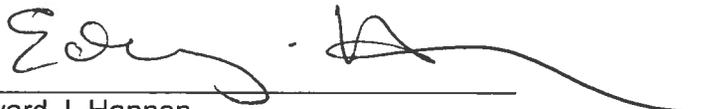
Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – 0.28 ug/L
Outfall 5 – 3.0 ug/L
Outfall 6 – 7.3 ug/L

Sampling results for Outfall 1 for the following:

Ethylbenzene - <1.0
Toluene - <1.0
Benzene - <0.50
Xylene, Ortho - <1.0
Xylene, Meta - <1.0
Xylene, Para - <1.0

If you have any questions, please call me at 516-575-2333
Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if NAME)
 NORTHROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BEETHAVEN, NY 11714

FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BEETHAVEN, NY 11714

ATTN: JOHN COFMAN

NY0096792	005-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
05/01/2024	05/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	SU	6.3	0	1/31 Monthly	Grab
0040010 Effluent Gross	*****	*****	*****	*****	SU	6.3	0	1/31 Monthly	Grab
pH	*****	*****	*****	*****	SU	5.2	0	1/31 Monthly	Grab
0040010 Intake from Well	*****	*****	*****	*****	SU	5.2	0	1/31 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	mg/L	2.5	0	1/31 Monthly	Grab
0060010 Effluent Gross	*****	*****	*****	*****	ug/L	10	0	1/31 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
3442310 Effluent Gross	*****	*****	*****	*****	ug/L	5	0	1/31 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
3447510 Effluent Gross	*****	*****	*****	*****	ug/L	5	0	1/31 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
3450110 Effluent Gross	*****	*****	*****	*****	ug/L	5	0	1/31 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
3450610 Effluent Gross	*****	*****	*****	*****	ug/L	5	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward S Hannon Corporate Manager ESHM	516-575-2333	06/26/2024
TYPED OR PRINTED	AREA Code	MM/DD/YYYY
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if
 NORTHROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	005- C
PERMIT NUMBER	DISCHARGE NUMBER
MM/DD/YYYY	MM/DD/YYYY
05/01/2024	05/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
39175 1 0 Effluent Gross	*****	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
Trichloroethylene	*****	*****	*****	5 DAILY MX	ug/L	0	1/31 Monthly	Grab
39180 1 0 Effluent Gross	*****	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	5 DAILY MX	ug/L	0	1/31 Monthly	Grab
50050 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Measured
Calculated limit	*****	*****	*****	6.96	MGD	0	1/31 Monthly	Measured
74013 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated
cis- 1,2- Dichloroethylene	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated
77093 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated
Trichlorotrifluoroethane	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated
81611 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated
trans- 1,2- Dichloroethylene	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated
85810 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-515-2333	06/26/2024
TYPED OR PRINTED	AREA Code	MM/DD/YYYY
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	NUMBER	
<i>Edward J Hannon</i>		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT) SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if
NAME: NORTROP GRUMMAN SYSTEMS CORP
ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
BETHPAGE, NY 11714
FACILITY: NORTROP GRUMMAN SYSTEMS CORP
LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
BETHPAGE, NY 11714
ATTN: JOHN COFFMAN

NY0096792
PERMIT NUMBER
006- C
DISCHARGE NUMBER
MM/DD/YYYY
05/01/2024
MONITORING PERIOD
MM/DD/YYYY
05/31/2024

DMR Mailing ZIP CODE: 11714
MINOR (SUJR 01)
NC COOLING & STORM WATER TO GW
External Outfall
No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	MEASUREMENT	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
0040010 Effluent Gross	PERMIT REQUIREMENT	*****	*****	7.0	Req. Mon. MINIMUM	7.0	0	1/31 Monthly	Grab
pH	MEASUREMENT	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
0040010 Intake from Well	PERMIT REQUIREMENT	*****	*****	4.9	Req. Mon. MINIMUM	4.9	0	1/31 Monthly	Grab
Nitrogen, total [as N]	MEASUREMENT	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
0060010 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	5.2	0	1/31 Monthly	Grab
Methylene chloride	MEASUREMENT	*****	*****	*****	*****	10	0	1/31 Monthly	Grab
3442310 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	<1.0	0	1/31 Monthly	Grab
Tetrachloroethylene	MEASUREMENT	*****	*****	*****	*****	5	0	1/31 Monthly	Grab
3447510 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	<1.0	0	1/31 Monthly	Grab
1,1-Dichloroethylene	MEASUREMENT	*****	*****	*****	*****	5	0	1/31 Monthly	Grab
3450110 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	<1.0	0	1/31 Monthly	Grab
1,1,1-Trichloroethane	MEASUREMENT	*****	*****	*****	*****	5	0	1/31 Monthly	Grab
3450610 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	<1.0	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Edward J Hannon
Corporate Manager
TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT
Edward J Hannon

TELEPHONE NUMBER
516-575-2333

DATE
06/24/2024

AREA Code
MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if NAME: NORTHOOP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035 BETHPAGE, NY 11714
 FACILITY: NORTHOOP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0090792
 PERMIT NUMBER

MM/DD/YYYY
 05/01/2024

006- C
 DISCHARGE NUMBER

MM/DD/YYYY
 05/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
39175 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trichloroethylene	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
39180 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	*****	0	1/31 Monthly	Measured
50050 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Measured
Calculated limit	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated
74013 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated
cis- 1,2- Dichloroethylene	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
77093 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trichlorotrifluoroethane	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
81611 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
trans- 1,2- Dichloroethylene	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
85810 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE NUMBER
 516-575-2333

DATE
 06/26/2024

AREA Code NUMBER
 516-575-2333

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

DMR Mailing ZIP CODE: 11714
 MINOR (SUJR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

NY0096792 PERMIT NUMBER	001-WSP-7 DISCHARGE NUMBER
MM/DD/YYYY 05/01/2024	MONITORING PERIOD MM/DD/YYYY 05/31/2024

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
pH	*****	*****	*****	*****	0	1/31 Monthly	Grab
0040010 Effluent Gross	*****	*****	6.4	SU	0	1/31 Monthly	Grab
0040010 Intake from Well	*****	*****	*****	SU	0	1/31 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	mg/L	0	1/31 Monthly	Grab
0060010 Effluent Gross	*****	*****	*****	mg/L	0	1/31 Monthly	Grab
Methylene chloride	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
3442310 Effluent Gross	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
3447510 Effluent Gross	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
3450110 Effluent Gross	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
3450610 Effluent Gross	*****	*****	*****	ug/L	0	1/31 Monthly	Grab

NAME/TITLE: PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE:
Edward J Hannon Corporate Manager ESHM	56-575-7333	06/26/2024
TYPED OR PRINTED	AREA CODE	NUMBER
	56-575-7333	06/26/2024
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

NATIONAL POLLUTANT DISCHARGE REPORT (DMR)

PERMITTEE NAME: ADDRESS (include Facility Name/Location if applicable)
 NAME: NORTROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792
 PERMIT NUMBER
 MONITORING PERIOD
 MM/DD/YYYY
 05/01/2024

001-WSP-1
 DISCHARGE NUMBER
 MM/DD/YYYY
 05/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	UNITS			
Vinyl chloride	3917510	*****	*****	*****	*****	0	1/31 Monthly	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trichloroethylene	3918010	*****	*****	*****	*****	0	1/31 Monthly	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
Flow in conduit or thru treatment plant	5005010	*****	0.37	*****	*****	0	1/31 Monthly	Measured
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Measured
Calculated limit	7401310	*****	*****	*****	*****	0	1/31 Monthly	Calculated
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Calculated
cis-1,2-Dichloroethylene	7709310	*****	*****	*****	*****	0	1/31 Monthly	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trichlorotrifluoroethane	8161110	*****	*****	*****	*****	0	1/31 Monthly	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
trans-1,2-Dichloroethylene	8581010	*****	*****	*****	*****	0	1/31 Monthly	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward S Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE NUMBER
 516-575-2333

DATE
 06/26/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A



Monitoring Period:

May 2024

5/1/24 12:00 AM 5/31/24 12:00 AM

31 Days

OU2 South Basins: Outfall 005⁽⁶⁾

Combined OU2 Groundwater Remedy Tower 102 and Building 109 Advanced Oxidation Process (AOP) Treatment Systems - Tower 102 Treated Air Stripper Discharge, Building 109 AOP Treatment System Discharge, and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 005 5/7/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	6.26	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	6.96	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾ (Building 109)	--	4.8	NS	SU	Monthly (1/31) Days	Grab	--	--
Influent pH ⁽⁵⁾ (Tower 102)	--	5.6	NS	SU	Monthly (1/31) Days	Grab	--	--
Outfall 005 Effluent pH ⁽⁵⁾	--	6.3	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	2.5	10.0	mg/L	Monthly (1/31) Days	Grab	130.58	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁶⁾	--	ND	1,000	µg/L	Monthly (1/31) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,2-Trichloroethane	79-00-5	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-Dichloroethane	107-06-2	< 1.0	0.6	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-Dichloropropane	78-87-5	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Benzene	71-43-2	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,4-Dioxane (Building 109 Influent) ⁽⁹⁾	123-91-1	34	Monitor	µg/L	Monthly (1/31) Days	Grab	NA	lbs/day
1,4-Dioxane (Building 109 Post AOP) ⁽⁹⁾	123-91-1	<0.24	Monitor	µg/L	Monthly (1/31) Days	Grab	na	lbs/day
1,4-Dioxane (Building 109 Effluent) ⁽⁹⁾	123-91-1	<0.24	Monitor	µg/L	Monthly (1/31) Days	Grab	NA	lbs/day
1,4-Dioxane (Outfall 005) ⁽¹⁰⁾	123-91-1	3.0	Monitor	µg/L	Monthly (1/31) Days	Grab	0.16	lbs/day

Notes and abbreviations on last page.

OU2 West Basins: Outfall 006

OU2 Groundwater Remedy Tower 96 Treatment System - Treated Air Stripper Discharge and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 006 5/7/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	1.21	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	2.18	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	4.9	NS	SU	Monthly (1/31) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	7.0	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	5.2	10.0	mg/L	Monthly (1/31) Days	Grab	94.61	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁶⁾	--	ND	1,000	µg/L	Monthly (1/31) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	7.3	Monitor	µg/L	Monthly (1/31) Days	Grab	0.13	lbs/day

Notes and abbreviations on last page.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A



OU3 Effluent: Outfall 001 (WSP-7)

OU3 Groundwater Remedy Treatment System - Treated Air Stripper and Soil Gas Containment Condensate Discharge to Nassau County Recharge Basins

Parameter ⁽¹⁾	CAS Number	OUTFALL 001 (WSP-7) 5/15/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	0.28	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	0.37	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	5.8	NS	SU	Monthly (1/31) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.4	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	2.2	10.0	mg/L	Monthly (1/31) Days	Grab	5.12	lbs/day
Total Iron	7439-89-6	198	600	µg/L	Monthly (1/31) Days	Grab	0.46	lbs/day
Total Manganese	7439-96-5	43.3	600	µg/L	Monthly (1/31) Days	Grab	0.10	lbs/day
Sum of Total Iron and Manganese	--	241.3	1,000	µg/L	Monthly (1/31) Days	Calculated	0.56	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2 (trans)-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-(cis)-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 5.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Benzene	71-43-2	< 0.50	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Ethylbenzene	100-41-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Toluene	108-88-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
o-Xylene	95-47-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
m,p-Xylene	--	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1016	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1221	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1232	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1242	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1248	12672-29-6	0.086	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1254	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1260	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1016 (Post GAC)	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1221 (Post GAC)	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1232 (Post GAC)	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1242 (Post GAC)	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1248 (Post GAC)	12672-29-6	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1254 (Post GAC)	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1260 (Post GAC)	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
1,4-Dioxane	123-91-1	0.28	Monitor	µg/L	Monthly (1/31) Days	Grab	6.52E-04	lbs/day

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A



Notes and Abbreviations:

XX	Bold value indicates the constituent was detected at or above its laboratory quantification limit		
<	Compound is not detected above laboratory quantification limit		
--	Not Applicable	CAS	Chemical Abstracts Service
µg/L	micrograms per liter	ND	Non Detect
lbs/day	pounds per day	NS	None Specified
lb/kg	pounds per kilogram	NYSDEC	New York State Department of Environmental Conservation
MGD	million gallons per day	SCADA	Supervisory Control and Data Acquisition
mg/L	milligrams per liter	SPDES	State Pollution Discharge Elimination System
min	minutes	TKN	Total Kjeldahl Nitrogen
SU	Standard Units		
B	Detected in method blank as reported by laboratory		
na	not available		
NA	Not Applicable		
COC	Chain of Custody		

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system; Polychlorinated Biphenyls (PCBs) using USEPA Method 608; 1,4-Dioxane using USEPA Method 8270D-SIM (CLLE); Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number: 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively; Total Iron and Manganese using USEPA Method 200.7.

2. Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023.

3. Mass Loading Calculation:

$$Mass\ Loading\ \left(\frac{lb}{day}\right) = Flow\ \left(\frac{gal}{min}\right) * 1440\ \left(\frac{min}{day}\right) * concentration\ \left(\frac{\mu g}{liter}\right) \div 10^9\ \left(\frac{\mu g}{kg}\right) * 3.785\ \left(\frac{liter}{gal}\right) * 2.2046\ \left(\frac{lb}{kg}\right)$$

4. Average and daily maximum flow calculated from SCADA reports for the month indicated.

5. Field measurement of pH taken by hand held meter on sample date.

6. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".

7. Average Mass Loading calculations are based on actual flow rates unless otherwise noted.

8. At the time of Outfall 005 SPDES sample collection on May 7, 2024, Building 109 AOP Treatment System remedial well flow for RW-20 was approximately 519 gpm, RW-21 was approximately 523 gpm and RW-22 was approximately 647 gpm. These were instantaneous readings taken at the time of sampling.

9. Building 109 AOP Treatment System Influent (corresponds to sample B109-INFLUENT on the COC), Post-AOP (corresponds to sample B109-POST-AOP on the COC) and Effluent (corresponds to sample OUTFALL 005-B109 on the COC) samples were collected and analyzed for 1,4-Dioxane as per footnote (1) of the SPDES permit equivalency for Outfall 005.

10. Outfall 005 combines discharge from Building 109 and Tower 102 treatment systems; however, Tower 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal.

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 05/07/24
Lab Sample ID: JD88054-2	Date Received: 05/07/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	05/10/24	05/10/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	05/10/24	05/10/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56057

(2) Prep QC Batch: MP46515

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 05/07/24
Lab Sample ID: JD88054-2	Date Received: 05/07/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.5	0.10	mg/l	1	05/10/24 14:24	SS	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.5	0.30	mg/l	1	05/10/24 14:24	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	05/09/24 19:35	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.2
4

SGS Accutest New Jersey - Dayton
 2235 Route 130, Dayton, NJ 08810
 TEL: 732-329-0200 FAX: 732-329-3499/3480
 WWW.SGS.COM

GW
TB

FED-EX Tracking #
 Accutest Quote #
 Bottle # **PRMA-MM-05124-702**
 Accutest Job # **JD88054**

Client / Reporting Information		Project Information				Requested Analysis (see TEST CODE sheet)												Matrix Codes															
Company Name Arcadis Street Address 2 Huntington Quad, Suite 1S10 City State Zip Melville NY 11747 Project Contact Kevin Czarwinski, Kevin.Czarwinski@arcadis.com Phone # 631-245-0710 Sampler(s) Name(s) Patrick DelleGare, (631)381-2594		Project Name: Prog 5C OU3.5 RW-21-ONCT-OMM/SPDES Street Billing Information (if different from Report to) Company Name Arcadis, U.S., Inc. Street Address 630 Plaza Drive, Suite 600 City State Zip Highlands Ranch, CO 80129 Project Manager Carlo San Giovanni Alteration: Accounts Payable				Requested Analysis (see TEST CODE sheet) V6242NG9SPDS+Chloroform (40 mL Clear Glass VOA's) V6242NG9SPDS + Chloroform + Benzene + 1,1,2-TCA + 1,1-DCEA + 1,2-DCEA + 1,2-DCPAE (40 mL Clear Glass VOA's) XTNIT - EPA 363.2 & EPA 351.2 w/Total N Calc (250 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic)												DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank															
Accepted Sample #	Field ID / Point of Collection	MEQ/HD/ Vol #	Date	Time	Sampled by	Matrix	# of bottles	IC	INCH	INCS	INCEA	INCEB	INCEC	INCEM	INCEH	INCEI	INCEJ	INCEK	INCEL	INCEM	INCEO	INCEP	INCEQ	INCER	INCES	INCEU	INCEV	INCEW	INCEX	INCEY	INCEZ	LAB USE ONLY	
1	TB-050724-PD-1		5/7/24		PP	TB	2	2																									
2	Outfall 005		5/7/24	1155		GW	5	3	1	1																							
3	Outfall 005-B109			1215		GW	5	3	1	1																							
4	Outfall 005-T102			0635		GW	5	3	1	1																							
Turnaround Time (Business days)		Approved By (Accutest PM) / Date:				Data Deliverable Information												Comments / Special Instructions															
<input type="checkbox"/> Std. 10 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 6 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY						<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data												<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDD Format-EQuib # <input checked="" type="checkbox"/> Other COMM+	Initial Assessment Label Verification RBHL														
Emergency & Rush T/A date available VIA Lablink. Sample Custody must be documented below each time samples change possession, including courier delivery.																																	
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:					
Patrick DelleGare		5/7/24 1400		[Signature]		3		[Signature]		3		[Signature]		4		[Signature]		4		[Signature]		4		[Signature]		4		[Signature]		4			
Custody Seal #		On Ice		Cooler Temp.																													

Q:\PROJECT\Northrop Grumman Bethpage\OU2.2 ONCT08 Notes and Data\System Sampling\February (O.M)\COCs_SGS\PAR_OU2_COCs_lab\PNs_82235_82235_RevDec2017



5.2
5

Report of Analytical Results

SDG: SR2118
Lab ID:SR2118-1
Client ID: OUTFALL 005
Matrix:AQ
Lab File ID: G9652.D

Sample Date: 07-MAY-24
Extract Date: 09-MAY-24
Extracted By:NG
Extraction Method:SW846 3520C
Lab Prep Batch: WG352741

Report Date: 21-MAY-24
Analysis Date: 15-MAY-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		3.0	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		66.3	%				

Report of Analytical Results

SDG: SR2118
Lab ID: SR2118-2
Client ID: OUTFALL 005-B109
Matrix: AQ
Lab File ID: G9653.D

Sample Date: 07-MAY-24
Extract Date: 09-MAY-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG352741

Report Date: 21-MAY-24
Analysis Date: 15-MAY-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		78.9	%				

Report of Analytical Results

SDG: SR2117
Lab ID: SR2117-1DL
Client ID: B109-INFLUENT
Matrix: AQ
Lab File ID: G9660.D

Sample Date: 07-MAY-24
Extract Date: 09-MAY-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG352741

Report Date: 21-MAY-24
Analysis Date: 17-MAY-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		34	ug/L	10	.25	2.4	0.80
1,4-Dioxane-D8	D	0.00	%				

Report of Analytical Results

SDG: SR2117
Lab ID: SR2117-2
Client ID: B109-POST-AOP
Matrix: AQ
Lab File ID: G9651.D

Sample Date: 07-MAY-24
Extract Date: 09-MAY-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG352741

Report Date: 21-MAY-24
Analysis Date: 15-MAY-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		64.5	%				

Report of Analysis

Client Sample ID: OUTFALL 006 Lab Sample ID: JD88055-2 Matrix: AQ - Ground Water Method: EPA 624.1 Project: Northrop Grumman, OU2.2 OMM, Program 3	Date Sampled: 05/07/24 Date Received: 05/07/24 Percent Solids: n/a
---	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5A6982.D	1	05/10/24 18:10	NW	n/a	n/a	V5A202
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	95%		80-128%
2037-26-5	Toluene-D8 (SUR)	99%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	92%		79-117%
1868-53-7	Dibromofluoromethane (S)	103%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 05/07/24
Lab Sample ID: JD88055-2	Date Received: 05/07/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	05/13/24	05/13/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	05/13/24	05/13/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56079

(2) Prep QC Batch: MP46545

RL = Reporting Limit

4.2
4

Report of Analysis

Client Sample ID: OUTFALL 006 Lab Sample ID: JD88055-2 Matrix: AQ - Ground Water Project: Northrop Grumman, OU2.2 OMM, Program 3	Date Sampled: 05/07/24 Date Received: 05/07/24 Percent Solids: n/a
---	---

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	5.0	0.10	0.090	mg/l	1	05/10/24 14:36 SS		EPA 353.2/LACHAT
Nitrogen, Total ^a	5.2	0.30	0.23	mg/l	1	05/10/24 14:36 SS		SM4500 A-11
Nitrogen, Total Kjeldahl	0.15 J	0.20	0.14	mg/l	1	05/09/24 19:59 SS		EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 J = Indicates a result > = MDL but < RL

4.2
4

Report of Analytical Results

SDG: SR2119
Lab ID: SR2119-1
Client ID: OUTFALL 006
Matrix: AQ
Lab File ID: G9664.D

Sample Date: 07-MAY-24
Extract Date: 13-MAY-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG352930

Report Date: 21-MAY-24
Analysis Date: 17-MAY-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		7.3	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		69.9	%				

Report of Analysis

Client Sample ID: WSP-7		Date Sampled: 05/15/24
Lab Sample ID: JD88574-6		Date Received: 05/15/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260D		
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D136593.D	1	05/17/24 20:11	BK	n/a	n/a	V4D6031
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane ^a	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
106-99-0	1,3-Butadiene ^b	ND	5.0	0.62	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	0.49	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WSP-7		Date Sampled: 05/15/24
Lab Sample ID: JD88574-6		Date Received: 05/15/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260D		
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
75-68-3	1-chloro-1,1-difluoroethane	ND	5.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		80-120%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	103%		82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	System artifact	4.27	9.1	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID: WSP-7		Date Sampled: 05/15/24
Lab Sample ID: JD88574-6		Date Received: 05/15/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: EPA 608.3 EPA 608		
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3G141620.D	1	05/21/24 08:28	CP	05/20/24 18:00	OP54694A	G3G5183
Run #2 ^b	3G141634.D	1	05/22/24 02:54	CP	05/20/24 18:00	OP54694A	G3G5184

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2	1000 ml	1.0 ml

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016 ^c	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	0.086	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260 ^c	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	42%	42%	10-156%
877-09-8	Tetrachloro-m-xylene	47%	46%	10-156%
2051-24-3	Decachlorobiphenyl	32%	32%	10-143%
2051-24-3	Decachlorobiphenyl	43%	45%	10-143%

- (a) Associated CCV outside control limits biased high. Sample reanalyzed for confirmation with similar results.
- (b) Confirmation run.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID: WSP-7		Date Sampled: 05/15/24
Lab Sample ID: JD88574-6		Date Received: 05/15/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	198	100	ug/l	1	05/18/24	05/19/24 MM	EPA 200.7 ¹	EPA 200.7 ²
Manganese	43.3	15	ug/l	1	05/18/24	05/19/24 MM	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56124

(2) Prep QC Batch: MP46705

RL = Reporting Limit

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 05/15/24
Lab Sample ID: JD88574-6	Date Received: 05/15/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.2	0.10	mg/l	1	05/21/24 20:54	SS	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.2	0.30	mg/l	1	05/21/24 23:57	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	05/21/24 23:57	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Report of Analytical Results

SDG: SR2321
Lab ID:SR2321-6
Client ID: WSP-7
Matrix:AQ
Lab File ID: G9721.D

Sample Date: 15-MAY-24
Extract Date: 20-MAY-24
Extracted By:NG
Extraction Method:SW846 3520C
Lab Prep Batch: WG353278

Report Date: 24-MAY-24
Analysis Date: 23-MAY-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.28	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		53.3	%				



ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

Lab Work Order #
MSA 3601

SR 2321

Send Results to:	Contact & Company Name: Arnas Nemickas-Task Manager		Telephone: 631-391-5212 cell		Preservative	E													
	Address: Two Huntington Quad-Suite 1S10		Fax:		Filtered (✓)	-													
	City State Zip Melville NY 11747		E-mail Address: Arnas.Nemickas@arcadis.com		# of Containers	14													
					Container Information	2													
Project Name/Location (City, State): Program 3 - OU3 TS/SPDES (Bethpage, NY)					Project #: 30188750.OMMI2 Field					PARAMETER ANALYSIS & METHOD									
Sampler's Printed Name: <i>Patrick Dellecave</i>					Sampler's Signature: <i>Patrick Dellecave</i>					1,4-dioxane 8270D SIM									
Sample ID		Collection		Type (✓)		Matrix													
		Date	Time	Comp	Grab														
WSP-1		5/15/24	0825	PD	X	GW	X												
WSP-2			0835		X	GW	X												
WSP-3			0840		X	GW	X												
WSP-4			0850		X	GW	X												
WSP-5			0855		X	GW	X												
WSP-7			0905		X	GW	X												
REP- 051524-PD-1					X	GW	X												
REMARKS																			
pH/Temp: 5.8 / 63.5°F																			
pH/Temp: 5.4 / 64°F																			
pH/Temp: 5.7 / 61.8°F																			
pH/Temp: 5.4 / 60.9°F																			
pH/Temp: 5.8 / 65.3°F																			
pH/Temp: 6.4 / 66°F																			
OU3 Post-GAC pH/Temp: 6.6 / 63.1																			
Special Instructions/Comments: <input type="checkbox"/> Special QA/QC Instructions(✓):																			
SVOC extracted by CCLE																			
EDD-ARCADIS_EQUIS6-4 file format																			
Laboratory Information and Receipt				Relinquished By				Received By				Relinquished By				Laboratory Received By			
Lab Name: Katahdin Analytical Labs		Cooler Custody Seal (✓)		Printed Name: <i>Patrick Dellecave</i>		Printed Name: <i>Evan Price</i>		Printed Name:		Printed Name:		Printed Name:		Printed Name:					
<input checked="" type="checkbox"/> Cooler packed with ice (✓)		<input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact		Signature: <i>Patrick Dellecave</i>		Signature: <i>Evan Price</i>		Signature:		Signature:		Signature:		Signature:					
Specify Turnaround Requirements: Normal TAT-10 business days		Sample Receipt:		Firm: Arcadis		Firm/Courier: Katahdin		Firm/Courier:		Firm/Courier:		Firm:		Firm:					
Shipping Tracking #:		Condition/Cooler Temp: _____		Date/Time: 5/15/24		Date/Time: 5-16-24 0910		Date/Time:		Date/Time:		Date/Time:		Date/Time:					

Katahdin Analytical Services SR2321 page 0000015 of 0000017

14

June 2024 - OU2 SPDES

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-021L-24
August 28, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

Subject: **Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A
Northrop Grumman Corporation - Bethpage, New York Facility**

Sarah Johnston:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of June 2024, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409



Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-22L-24
August 28, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
June 1, 2024 – June 30, 2024.

Mr. Pelton:

Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – <0.24 ug/L
Outfall 5 – 1.1 ug/L
Outfall 6 – 5.3 ug/L

Sampling results for Outfall 1 for the following:

Ethylbenzene - <1.0
Toluene - <1.0
Benzene - <0.50
Xylene, Ortho - <1.0
Xylene, Meta - <1.0
Xylene, Para - <1.0

If you have any questions, please call me at 516-575-2333
Very truly yours,

Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

PERMITTEE NAME/ADDRESS (include Facility Name/Location if NAME)
 NORTHROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

NY0096792	005- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
06/01/2024	06/30/2024

No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
00400 1 0 Effluent Gross	*****	*****	6.4	Req. Mon. MINIMUM	*****	Req. Mon. MAXIMUM	0	1/30 Monthly	Grab
pH	*****	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
00400 1 0 Intake from Well	*****	*****	6.5	Req. Mon. MINIMUM	*****	Req. Mon. MAXIMUM	0	1/30 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
00600 1 0 Effluent Gross	*****	*****	*****	*****	*****	4.2	0	1/30 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	*****	10 DAILY MX	0	1/30 Monthly	Grab
34423 1 0 Effluent Gross	*****	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab
34475 1 0 Effluent Gross	*****	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab
34501 1 0 Effluent Gross	*****	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab
34506 1 0 Effluent Gross	*****	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-575-2333	08/28/2024
TYPED OR PRINTED	AREA Code	NUMBER
	516-575-2333	08/28/2024
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

*PERMITTEE NAME/ADDRESS (Include Facility Name/Location if NAME):
 NORTHROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714

ATTN: JOHN COFMAN

NY0096792	005- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
06/01/2024	06/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
Vinyl chloride	*****	*****	*****	*****	*****	<1.0	5	ug/L	1/30 Monthly	Grab
39175 1 0 Effluent Gross	*****	*****	*****	*****	*****	0.49	5	ug/L	1/30 Monthly	Grab
Trichloroethylene	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
39180 1 0 Effluent Gross	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
50050 1 0 Effluent Gross	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Calculated limit	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
74013 1 0 Effluent Gross	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
cis- 1,2- Dichloroethylene	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
77093 1 0 Effluent Gross	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Trichlorotrifluoroethane	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
81611 1 0 Effluent Gross	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
trans- 1,2- Dichloroethylene	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
85810 1 0 Effluent Gross	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-515-2333	08/28/2024
TYPED OR PRINTED	AREA Code	NUMBER
	516	515-2333
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		MM/DD/YYYY
		08/28/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

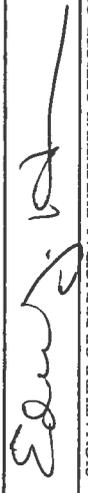
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (include facility name/location if
 NAME: NORTROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COIFMAN

NY0096792	006- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
06/01/2024	06/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
pH	*****	*****	*****	*****	0	1/30 Monthly	Grab
0040010 Effluent Gross	*****	*****	6.6	Req. Mon. MINIMUM	0	1/30 Monthly	Grab
pH	*****	*****	*****	*****	0	1/30 Monthly	Grab
0040010 Intake from well	*****	*****	5.4	Req. Mon. MINIMUM	0	1/30 Monthly	Grab
Nitrogen, total (as N)	*****	*****	*****	*****	0	1/30 Monthly	Grab
0060010 Effluent Gross	*****	*****	5.2	10 DAILY MX	0	1/30 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	0	1/30 Monthly	Grab
3442310 Effluent Gross	*****	*****	<1.0	5 DAILY MX	0	1/30 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	0	1/30 Monthly	Grab
3447510 Effluent Gross	*****	*****	<1.0	5 DAILY MX	0	1/30 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	0	1/30 Monthly	Grab
3450110 Effluent Gross	*****	*****	<1.0	5 DAILY MX	0	1/30 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	0	1/30 Monthly	Grab
3450610 Effluent Gross	*****	*****	<1.0	5 DAILY MX	0	1/30 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM TYPED OR PRINTED	516-575-2333	08/28/2024
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER
	516-575-2333	08/28/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

DMR No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if NAME): NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	006- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
06/01/2024	06/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING		QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	VALUE	UNITS			
Vinyl chloride	PERMIT REQUIREMENT	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
39175 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
39180 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Measured
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Calculated
74013-1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Calculated
cis-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
77093 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab
Trichlorotrifluoroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	<2.0	0	1/30 Monthly	Grab
81611 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab
trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
85810 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-515-2333	08/28/2024
TYPED OR PRINTED	AREA Code	MM/DD/YYYY
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	NUMBER	
<i>Edward J Hannon</i>	516-515-2333	

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

DMR No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714

FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714

ATTN: JOHN COFMAN

NY0006792
 PERMIT NUMBER
 MM/DD/YYYY
 06/01/2024

001-WSP-7
 DISCHARGE NUMBER
 MM/DD/YYYY
 06/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SU/RR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
pH	*****	*****	*****	*****	0	1/30	Grab
0040010 Effluent Gross	*****	*****	5.5	Reg. Mon. MINIMUM	0	Monthly	Grab
pH	*****	*****	*****	*****	0	1/30	Grab
0040010 Intake from Well	*****	*****	5.5	Reg. Mon. MAXIMUM	0	Monthly	Grab
Nitrogen, total (as N)	*****	*****	6.5	Reg. Mon. MINIMUM	0	Monthly	Grab
0060010 Effluent Gross	*****	*****	*****	*****	0	1/30	Grab
Methylene chloride	*****	*****	2.7	10 DAILY MX	0	Monthly	Grab
3442310 Effluent Gross	*****	*****	*****	*****	0	1/30	Grab
Tetrachloroethylene	*****	*****	*****	*****	0	Monthly	Grab
3447510 Effluent Gross	*****	*****	*****	*****	0	1/30	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	0	Monthly	Grab
3450110 Effluent Gross	*****	*****	*****	*****	0	1/30	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	0	Monthly	Grab
3450610 Effluent Gross	*****	*****	*****	*****	0	1/30	Grab

NAME/TITLE: PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

TELEPHONE: _____ DATE: _____

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT: 

AIRCA Code NUMBER: 56-575-7333 MM/DD/YYYY: 08/28/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME: ADDRESS include Facility Name/Location if
 NAME: NORTHROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 APTN: JOHN COFMAN

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

NY0096792 PERMIT NUMBER	001-WSP-7 DISCHARGE NUMBER
MM/DD/YYYY 06/01/2024	MM/DD/YYYY 06/30/2024

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	*****	0	1/30 Monthly	Grab
3917510 Effluent Gross	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
Trichloroethylene	*****	*****	*****	*****	0	1/30 Monthly	Grab
3918010 Effluent Gross	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	0	1/30 Monthly	Measured
5005010 Effluent Gross	*****	*****	*****	*****	0	1/30 Monthly	Measured
Calculated limit	*****	*****	*****	*****	0	1/30 Monthly	Calculated
7401310 Effluent Gross	*****	*****	*****	*****	0	1/30 Monthly	Calculated
Cis-1,2-Dichloroethylene	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
7709310 Effluent Gross	*****	*****	*****	*****	0	1/30 Monthly	Grab
Trichlorotrifluoroethane	*****	*****	<5.0	ug/L	0	1/30 Monthly	Grab
8161110 Effluent Gross	*****	*****	*****	*****	0	1/30 Monthly	Grab
trans-1,2-Dichloroethylene	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
8581010 Effluent Gross	*****	*****	*****	*****	0	1/30 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER Edward S Hannon Corporate Manager ESHM	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT <i>Edward S Hannon</i>	TELEPHONE NUMBER 516-575-2333	DATE 08/28/2024
TYPED OR PRINTED		AREA Code	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A



Monitoring Period:

June 2024

6/1/24 12:00 AM 6/30/24 12:00 AM

30 Days

OU2 South Basins: Outfall 005⁽⁶⁾

Combined OU2 Groundwater Remedy Tower 102 and Building 109 Advanced Oxidation Process (AOP) Treatment Systems - Tower 102 Treated Air Stripper Discharge, Building 109 AOP Treatment System Discharge, and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 005 6/12/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	6.29	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	7.03	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾ (Building 109)	--	6.5	NS	SU	Monthly (1/30) Days	Grab	--	--
Influent pH ⁽⁵⁾ (Tower 102)	--	6.4	NS	SU	Monthly (1/30) Days	Grab	--	--
Outfall 005 Effluent pH ⁽⁵⁾	--	6.4	Range: 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	4.2	10.0	mg/L	Monthly (1/30) Days	Grab	220.42	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁶⁾	--	ND	1,000	µg/L	Monthly (1/30) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	0.49 J	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,2-Trichloroethane	79-00-5	< 1.0	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2-Dichloroethane	107-06-2	< 1.0	0.6	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2-Dichloropropane	78-87-5	< 1.0	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Benzene	71-43-2	< 1.0	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane (Building 109 Influent) ⁽⁹⁾	123-91-1	21	Monitor	µg/L	Monthly (1/30) Days	Grab	NA	lbs/day
1,4-Dioxane (Building 109 Post AOP) ⁽⁹⁾	123-91-1	<0.23	Monitor	µg/L	Monthly (1/30) Days	Grab	na	lbs/day
1,4-Dioxane (Building 109 Effluent) ⁽⁹⁾	123-91-1	<0.23	Monitor	µg/L	Monthly (1/30) Days	Grab	NA	lbs/day
1,4-Dioxane (Outfall 005) ⁽¹⁰⁾	123-91-1	1.1	Monitor	µg/L	Monthly (1/30) Days	Grab	0.06	lbs/day

Notes and abbreviations on last page.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A



OU2 West Basins: Outfall 006

OU2 Groundwater Remedy Tower 96 Treatment System - Treated Air Stripper Discharge and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 006 6/12/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	1.73	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	2.19	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	5.4	NS	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.6	Range: 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	5.2	10.0	mg/L	Monthly (1/30) Days	Grab	94.09	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁶⁾	--	ND	1,000	µg/L	Monthly (1/30) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	5.3	Monitor	µg/L	Monthly (1/30) Days	Grab	0.10	lbs/day

Notes and abbreviations on last page.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A

OU3 Effluent: Outfall 001 (WSP-7)

OU3 Groundwater Remedy Treatment System - Treated Air Stripper and Soil Gas Containment Condensate Discharge to Nassau County Recharge Basins

Parameter ⁽¹⁾	CAS Number	OUTFALL 001 (WSP-7) 6/12/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	0.35	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	0.39	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	5.5	NS	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.5	Range: 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	2.7	10.0	mg/L	Monthly (1/30) Days	Grab	7.90	lbs/day
Total Iron	7439-89-6	1800 ⁽¹¹⁾	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	84.8	600	µg/L	Monthly (1/30) Days	Grab	0.25	lbs/day
Sum of Total Iron and Manganese	--	1884.8	1,000	µg/L	Monthly (1/30) Days	Calculated	0.25	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2 (trans)-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2-(cis)-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 5.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Benzene	71-43-2	< 0.50	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Ethylbenzene	100-41-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Toluene	108-88-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
o-Xylene	95-47-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
m,p-Xylene	--	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1016	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1221	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1232	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1242	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1248	12672-29-6	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1254	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1260	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1016 (Post GAC)	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1221 (Post GAC)	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1232 (Post GAC)	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1242 (Post GAC)	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1248 (Post GAC)	12672-29-6	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1254 (Post GAC)	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1260 (Post GAC)	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
1,4-Dioxane	123-91-1	< 0.24	Monitor	µg/L	Monthly (1/30) Days	Grab	--	lbs/day

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A

Notes and Abbreviations:

XX	Bold value indicates the constituent was detected at or above its laboratory quantification limit		
<	Compound is not detected above laboratory quantification limit		
--	Not Applicable	CAS	Chemical Abstracts Service
µg/L	micrograms per liter	ND	Non Detect
lbs/day	pounds per day	NS	None Specified
lb/kg	pounds per kilogram	NYSDEC	New York State Department of Environmental Conservation
MGD	million gallons per day	SCADA	Supervisory Control and Data Acquisition
mg/L	milligrams per liter	SPDES	State Pollution Discharge Elimination System
min	minutes	TKN	Total Kjeldahl Nitrogen
SU	Standard Units		
B	Detected in method blank as reported by laboratory		
na	not available		
NA	Not Applicable		
COC	Chain of Custody		

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system; Polychlorinated Biphenyls (PCBs) using USEPA Method 608; 1,4-Dioxane using USEPA Method 8270D-SIM (CLLE); Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number: 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively; Total Iron and Manganese using USEPA Method 200.7.

2. Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023.

3. Mass Loading Calculation:

$$Mass\ Loading\ \left(\frac{lb}{day}\right) = Flow\ \left(\frac{gal}{min}\right) * 1440\ \left(\frac{min}{day}\right) * concentration\ \left(\frac{\mu g}{liter}\right) \div 10^9\ \left(\frac{\mu g}{kg}\right) * 3.785\ \left(\frac{liter}{gal}\right) * 2.2046\ \left(\frac{lb}{kg}\right)$$

4. Average and daily maximum flow calculated from SCADA reports for the month indicated.

5. Field measurement of pH taken by hand held meter on sample date.

6. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".

7. Average Mass Loading calculations are based on actual flow rates unless otherwise noted.

8. At the time of Outfall 005 SPDES sample collection on June 12, 2024, Building 109 AOP Treatment System remedial well flow for RW-20 was approximately 537 gpm, RW-21 was approximately 537 gpm and RW-22 was approximately 663 gpm. These were instantaneous readings taken at the time of sampling.

9. Building 109 AOP Treatment System Influent (corresponds to sample B109-INFLUENT on the COC), Post-AOP (corresponds to sample B109-POST-AOP on the COC) and Effluent (corresponds to sample OUTFALL 005-B109 on the COC) samples were collected and analyzed for 1,4-Dioxane as per footnote (1) of the SPDES permit equivalency for Outfall 005.

10. Outfall 005 combines discharge from Building 109 and Tower 102 treatment systems; however, Tower 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal.

11. WSP-7 iron readings exceeds discharge limits. Iron results will be monitored next sampling event to confirm the spike in iron.

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 06/12/24
Lab Sample ID: JD90450-2	Date Received: 06/13/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	06/18/24	06/19/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	06/18/24	06/19/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56321

(2) Prep QC Batch: MP47344

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 06/12/24
Lab Sample ID: JD90450-2	Date Received: 06/13/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	4.0	0.10	mg/l	1	06/18/24 17:10	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	4.2	0.30	mg/l	1	06/18/24 19:48	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	06/18/24 19:48	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.2
4

Report of Analytical Results

SDG: SR2930
Lab ID: SR2930-1
Client ID: OUTFALL 005
Matrix: AQ
Lab File ID: G9965.D

Sample Date: 12-JUN-24
Extract Date: 17-JUN-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG354804

Report Date: 24-JUN-24
Analysis Date: 21-JUN-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		1.1	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8	*	24.3	%				

Report of Analytical Results

SDG: SR2930
Lab ID: SR2930-2
Client ID: OUTFALL 005-B109
Matrix: AQ
Lab File ID: G9966.D

Sample Date: 12-JUN-24
Extract Date: 17-JUN-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG354804

Report Date: 24-JUN-24
Analysis Date: 21-JUN-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.23	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		58.0	%				

Report of Analytical Results

SDG: SR2929
Lab ID: SR2929-1DL
Client ID: B109-INFLUENT
Matrix: AQ
Lab File ID: G9985.D

Sample Date: 12-JUN-24
Extract Date: 17-JUN-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG354804

Report Date: 25-JUN-24
Analysis Date: 24-JUN-24
Analyst: EP
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		21	ug/L	10	.25	2.4	0.80
1,4-Dioxane-D8	D	0.00	%				

Report of Analytical Results

SDG: SR2929
Lab ID: SR2929-2
Client ID: B109-POST-AOP
Matrix: AQ
Lab File ID: G9964.D

Sample Date: 12-JUN-24
Extract Date: 17-JUN-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG354804

Report Date: 25-JUN-24
Analysis Date: 21-JUN-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.23	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		43.5	%				

Report of Analysis

Client Sample ID: OUTFALL 006 Lab Sample ID: JD90449-2 Matrix: AQ - Ground Water Method: EPA 624.1 Project: Northrop Grumman, OU2.2 OMM, Program 3	Date Sampled: 06/12/24 Date Received: 06/13/24 Percent Solids: n/a
---	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4A7954.D	1	06/19/24 04:09	BK	n/a	n/a	V4A232
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	99%		80-128%
2037-26-5	Toluene-D8 (SUR)	100%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	94%		79-117%
1868-53-7	Dibromofluoromethane (S)	97%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 06/12/24
Lab Sample ID: JD90449-2	Date Received: 06/13/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	06/18/24	06/19/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	06/18/24	06/19/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56321

(2) Prep QC Batch: MP47344

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 006		Date Sampled: 06/12/24
Lab Sample ID: JD90449-2		Date Received: 06/13/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3		

4.2
4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	5.0	0.10	0.090	mg/l	1	06/18/24 17:09 JD	EPA	353.2/LACHAT
Nitrogen, Total ^a	5.2	0.30	0.23	mg/l	1	06/18/24 19:47 SS	SM4500	A-11
Nitrogen, Total Kjeldahl	0.15 J	0.20	0.14	mg/l	1	06/18/24 19:47 SS	EPA	351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

SGS Accutest New Jersey - Dayton
 2235 Route 130, Dayton, NJ 08810
 TEL: 732-329-0200 FAX: 732-329-3499/3480
 www.sgs.com

7377 5627 7547 *Item - online OK 4/24/32*
 Account Quote # _____
 Account Job # *JD90449*

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet			Matrix Codes					
Company Name Arcadis		Project Name AGMNYM62233 // OU2 System - GW Prog 3 OU2.2-ONCT-OMM/SPDES		V6242NGSPDS + Chloroform + Benzene + 1,1,2-TCA 1,1-DCA + 1,2-DCA + 1,2-DCAAT, P, D-DAPNE 40 mL Clear Glass VOA(S) V6242NGSPDS+Chloroform (40 mL Clear Glass VOA S) XTNIT - EPA 353.2 & EPA 351.2 w/Total N Calc (250 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic)			DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank					
Street Address 2 Huntington Quad, Suite 1S10		Street Bethpage NY										
City State Zip Melville NY 11747		Billing Information (if different from Report to) Company Name Arcadis, U.S., Inc.		V6242NGSPDS + Chloroform + Benzene + 1,1,2-TCA 1,1-DCA + 1,2-DCA + 1,2-DCAAT, P, D-DAPNE 40 mL Clear Glass VOA(S) V6242NGSPDS+Chloroform (40 mL Clear Glass VOA S) XTNIT - EPA 353.2 & EPA 351.2 w/Total N Calc (250 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic)			DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank					
Project Contact Kevin Czarwinski, Kevin.Czarwinski@arcadis.com		Project # 30169301.OMMI3										
Phone # 631-245-0710		Client Purchase Order # 30169301.OMMI3		V6242NGSPDS + Chloroform + Benzene + 1,1,2-TCA 1,1-DCA + 1,2-DCA + 1,2-DCAAT, P, D-DAPNE 40 mL Clear Glass VOA(S) V6242NGSPDS+Chloroform (40 mL Clear Glass VOA S) XTNIT - EPA 353.2 & EPA 351.2 w/Total N Calc (250 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic)			DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank					
Sampler(s) Name(s) Phone # Patrick Delcave (631) 339-2599		Work Authorization #: NY001496_2015.10.30										
Project Manager Carlo San Giovanni		City State Zip Highlands Ranch, CO 80129		V6242NGSPDS + Chloroform + Benzene + 1,1,2-TCA 1,1-DCA + 1,2-DCA + 1,2-DCAAT, P, D-DAPNE 40 mL Clear Glass VOA(S) V6242NGSPDS+Chloroform (40 mL Clear Glass VOA S) XTNIT - EPA 353.2 & EPA 351.2 w/Total N Calc (250 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic)			DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank					
Accounts Payable		Attention:										
Turnaround Time (Business days)		Data Deliverable Information		Comments / Special Instructions								
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink		Approved By (Accutest PM) / Date: _____ _____ _____ _____ _____		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data			<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDD Format-EQuIS 6 <input checked="" type="checkbox"/> Other COMMC+			Initial Assessment 2/28/24 Label Verification		
Sample Custody must be documented below each time samples change possession, including courier delivery.												
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Received By:	Cooler Temp.							
1 Patrick Delcave	6/12/24	1 Fedex	2 Fedex	2 10:30	1.9							
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Received By:	Cooler Temp.							
3		3	4	4	1.9							
Relinquished by:	Date Time:	Received By:	Custody Seal #	Intact	Cooler Temp.							
5		5		<input type="checkbox"/> Intact <input type="checkbox"/> Not intact	1.9							

G:\PROJECT\Northrop Grumman Bethpage\OU2.2 ONCT\06 Notes and Data\System Sampling\Febuary (Q.M)\COCs_SGS\PAR_OU2_COCs_labPNs_62233_62235_RevDec2017

5.2
5

CIP 1R50

Report of Analytical Results

SDG: SR2932
Lab ID: SR2932-1
Client ID: OUTFALL 006
Matrix: AQ
Lab File ID: G9969.D

Sample Date: 12-JUN-24
Extract Date: 17-JUN-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG354804

Report Date: 25-JUN-24
Analysis Date: 21-JUN-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.3	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		46.3	%				



ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

Lab Work Order #

MSA 3601

SR 2932

Send Results to:	Contact & Company Name:	Telephone:	Preservative	E								Keys Preservation Key: A. H ₂ SO ₄ B. HCL C. HNO ₃ D. NaOH E. None F. Other: _____ G. Other: _____ H. Other: _____ Matrix Key: SO - Soil W - Water T - Tissue SE - Sediment SL - Sludge A - Air NL - NAPL/Oil SW - Sample Wipe Other: GW-Groundwater		
	Kevin Czerwinski -Task Manager	631-245-0710 cell	Filtered (✓)	-										
	Address:	Fax:	# of Containers	2										
	Two Huntington Quad-Suite 1S10		Container Information	2										
City	State	Zip	PARAMETER ANALYSIS & METHOD											
Melville	NY	11747	1,4-Dioxane 8270D-SIM-CLE											
Project Name/Location (City, State):												Project #:		
Prog 3 OU2.2-ONCT-OMM/SPDES												30169301.OMMI3		
Sample's Printed Name:												Sampler's Signature:		
Patrick DeFecane			Patrick DeFecane											
Sample ID	Collection		Type (✓)		Matrix						REMARKS			
	Date	Time	Comp	Grab										
Outfall 006	6/12/14	110	PO	X	GW	X						pH/Temp: 6.6 / 62.7°F		
												B96 Inf pH/Temp: 5.3 / 61.7°F		
Special Instructions/Comments:											<input type="checkbox"/> Special QA/QC Instructions(✓):			
SVOC extracted by														
EDD-ARCADIS_EQUIS (EQUIS6-4 file)														
Laboratory Information and Receipt			Relinquished By			Received By			Relinquished By			Laboratory Received By		
Lab Name:	Cooler Custody Seal (✓)		Printed Name:			Printed Name:			Printed Name:			Printed Name:		
Katahdin Analytical	<input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact		Patrick DeFecane			Evan Price								
<input checked="" type="checkbox"/> Cooler packed with ice (✓)			Signature:			Signature:			Signature:			Signature:		
			Patrick DeFecane			Evan Price								
Specify Turnaround Requirements:	Sample Receipt:		Firm:			Firm/Courier:			Firm/Courier:			Firm:		
Normal TAT-10 business			Arcadis			Katahdin								
Shipping Tracking #:	Condition/Cooler Temp: _____		Date/Time:			Date/Time:			Date/Time:			Date/Time:		
			6/12/14			6-13-14 0930								

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 06/12/24
Lab Sample ID: JD90448-1	Date Received: 06/13/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4A7922.D	1	06/18/24 16:47	BK	n/a	n/a	V4A231
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
106-99-0	1,3-Butadiene ^a	ND	5.0	0.62	ug/l	
75-15-0	Carbon disulfide ^a	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride ^a	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-45-6	Chlorodifluoromethane ^a	ND	5.0	0.49	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-71-8	Dichlorodifluoromethane ^b	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene ^a	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene ^a	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WSP-7 Lab Sample ID: JD90448-1 Matrix: AQ - Ground Water Method: SW846 8260D Project: Northrop Grumman, OU3.2 OMM, Program 4A	Date Sampled: 06/12/24 Date Received: 06/13/24 Percent Solids: n/a
--	---

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
71-55-6	1,1,1-Trichloroethane ^a	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
75-68-3	1-chloro-1,1-difluoroethane	ND	5.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	96%		82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.26	15	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: WSP-7		
Lab Sample ID: JD90448-1		Date Sampled: 06/12/24
Matrix: AQ - Ground Water		Date Received: 06/13/24
Method: EPA 608.3 EPA 608		Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2513343.D	1	06/18/24 05:52	CP	06/17/24 12:00	OP55472A	GXX8548
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	70%		10-156%
877-09-8	Tetrachloro-m-xylene	72%		10-156%
2051-24-3	Decachlorobiphenyl	60%		10-143%
2051-24-3	Decachlorobiphenyl	73%		10-143%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 06/12/24
Lab Sample ID: JD90448-1	Date Received: 06/13/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	1800	100	ug/l	1	06/18/24	06/19/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	84.8	15	ug/l	1	06/18/24	06/19/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56321

(2) Prep QC Batch: MP47344

RL = Reporting Limit

4.1
4

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 06/12/24
Lab Sample ID: JD90448-1	Date Received: 06/13/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.3	0.10	mg/l	1	06/18/24 17:08	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.7	0.30	mg/l	1	06/18/24 19:46	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	0.43	0.20	mg/l	1	06/18/24 19:46	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.1
4

Report of Analysis

Client Sample ID: OU3 POST-GAC Lab Sample ID: JD90448-3 Matrix: AQ - Ground Water Method: EPA 608.3 EPA 608 Project: Northrop Grumman, OU3.2 OMM, Program 4A	Date Sampled: 06/12/24 Date Received: 06/13/24 Percent Solids: n/a
---	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2513344.D	1	06/18/24 06:10	CP	06/17/24 12:00	OP55472A	GXX8548
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	59%		10-156%
877-09-8	Tetrachloro-m-xylene	62%		10-156%
2051-24-3	Decachlorobiphenyl	67%		10-143%
2051-24-3	Decachlorobiphenyl	77%		10-143%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
4



GW TB

CHAIN OF CUSTODY

Accutest New Jersey/SPL Environmental
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

COC #7 PAGE 1 OF 1

7377

FED-Ex Tracking # 3022 7544
Accutest Quote # J990448
Bill of Materials Control # J990448
Accutest Job # J990448

Client / Reporting Information		Project Information										Matrix Codes	
Company Name Arcadis		Project Name: AGMNYM62236 // OU3 BPGWCS - GW										DW-Drinking Water GW-Ground Water WW-Waste Water SW-Surface Water SO-Soil SL-Sludge SED-Sediment OI-Oil LIQ-Other Liquid AIR-Air SOL-Other Solid WF-Wipe FB-Field Blank EB-Equipment Blank RB-Rinse Blank TB-Trip Blank	
Street Address 2 Huntington Quad, Suite 1S10		Street Prog 4A OU3.2-ONCT-OMM/SPDES											
City State Zip Melville NY 11747		Billing Information (if different from Report to) Company Name Bethpage NY Arcadis, U.S., Inc.											
Project Contact E-mail Arnas Nemickas, arnas.nemickas@arcadis.com		Street Address 630 Plaza Drive, Suite 600											
Phone # Fax # 631-391-5212		Client Purchase Order #		City State Zip Highlands Ranch, CO 80129		Work Authorization #: NY001496_2015.10.30		Project Manager Arnie Nemickas		Attention: Accounts Payable		VCB2603NG40GW+20, VMS+13BUTADIN, VMS+F142 (40 mL Clear Glass VOA's) XTNIT - EPA 353.2 & EPA 351.2 w/Total N Calc. (500 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic) PCBs - EPA 608 (1 L Amber)	
Sampler(s) Name(s) Phone # Patrick Delcave (631)391-2591		MECH/DI Val #		Date Time		Sampled by		Matrix		# of bottles			LAB USE ONLY E33 A1 B3 V518
Field ID / Point of Collection													
1 WSP-7				6/12/24 0820		PD		GW		7 3			
2 TB-061224 - PD -1								GW		2 2			
3 OU3 Post-GAC								GW		2 2			
Turnaround Time (Business days)		Approved By (Accutest PM): / Date:		Data Deliverable Information		Comments / Special Instructions						Initial Assessment 2/1/24 Label Verification Received By: [Signature] Date: 6-30-24 Cooler Temp: 1.9 CIP 11250	
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> opt. 10 business days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink				<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data				<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDD Format EQUS 6 <input checked="" type="checkbox"/> Other COMM+					
Sample Custody must be documented below each time samples change possession, including courier delivery.													
Relinquished by Sampler: 1 Patrick Delcave		Date Time: 6/12/24		Received By: 1 [Signature]		Relinquished By: 2 [Signature]		Received By: 3 [Signature]		Relinquished By: 4 [Signature]			Received By: 4 [Signature]
Relinquished by Sampler: 3		Date Time:		Received By: 3		Relinquished By:		Received By:		Relinquished By:		Received By:	
Relinquished by: 5		Date Time:		Received By: 5		Custody Seal #		<input type="checkbox"/> Intact <input type="checkbox"/> Not intact		<input type="checkbox"/> On Ice <input checked="" type="checkbox"/> Cooler Temp: 1.9			

G:\PROJECT\Northrop Grumman Bethpage_Program Wide\04 Project Management\Contracts and POs\Labs\SGS-Accutest\LAB_CODESandCOCs\Customized_TM_COCs\OU3 GW COCs Revised 9.21.20

JD90448: Chain of Custody

Page 1 of 2



5.2
5

Report of Analytical Results

SDG: SR2931
Lab ID: SR2931-1
Client ID: WSP-7
Matrix: AQ
Lab File ID: G9968.D

Sample Date: 12-JUN-24
Extract Date: 17-JUN-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG354804

Report Date: 25-JUN-24
Analysis Date: 21-JUN-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		33.2	%				

July 2024 - OU2 SPDES

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-019L-24
August 28, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

Subject: **Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A
Northrop Grumman Corporation - Bethpage, New York Facility**

Sarah Johnston:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of July 2024, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

bcc: D. Stern (AG&M)

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-20L-24
August 28, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
July 1, 2024 – July 31, 2024.

Sarah Johnston:

Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – 0.57 ug/L
Outfall 5 – 2.5 ug/L
Outfall 6 – 6.3 ug/L

Sampling results for Outfall 1 for the following:

Ethylbenzene - <1.0
Toluene - <1.0
Benzene - <0.50
Xylene, Ortho - <1.0
Xylene, Meta - <1.0
Xylene, Para - <1.0

If you have any questions, please call me at 516-575-2333
Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

bcc: D. Stern (AG&M)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTHROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714

NY0906792	005- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
07/01/2024	07/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUFR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

ATTN: JOHN COFMAN

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE			
pH	MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	6.9	Req. Mon. MINIMUM	*****	*****	*****	*****
pH	SAMPLE MEASUREMENT	*****	*****	*****	5.9	*****	*****	*****	*****	*****
00400 1 0 Intake from Well	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. MINIMUM	*****	*****	*****	*****
Nitrogen, total (as N)	SAMPLE MEASUREMENT	*****	*****	*****	3.7	*****	*****	*****	*****	*****
00600 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Methylene chloride	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	DAILY MX	*****	*****	*****	*****
34423 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Tetrachloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	DAILY MX	*****	*****	*****	*****
34475 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
1,1-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	DAILY MX	*****	*****	*****	*****
34501 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
1,1,1-Trichloroethane	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	DAILY MX	*****	*****	*****	*****
34506 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	EDWARD J HANNON Corporate Manager ESHM	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE
TYPED OR PRINTED			516-575-2333	08/28/2024
I hereby under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure the maximum integrity of the information submitted and I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.				

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS UPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA) SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COHMAN

NY0096792	005-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
07/01/2024	07/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE				
Vinyl chloride	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab	
39175 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab	
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab	
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab	
39180 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab	
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab	
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	9.25	*****	*****	*****	*****	0	1/31	Measured	
50050 1 0	PERMIT REQUIREMENT	*****	5	MGD	*****	*****	*****	0	Monthly	Measured	
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Calculated	
74013 1 0	PERMIT REQUIREMENT	*****	*****	N=0;Y=1	*****	*****	*****	0	Monthly	Calculated	
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab	
77093 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab	
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab	
Trichlorotrifluoroethane	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab	
81611 1 0	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab	
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab	
trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab	
85810 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab	
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab	

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Edward J Hannon
Corporate Manager ESHM
 TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete; I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE: 516-515-2333
 DATE: 08/26/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NA/TITRAL, GW HAS PI1 OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) UPPLY WELL & OUTFALL PH MONTHLY & REPORT P11
 COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA, SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if appropriate)
NORTROP GRUMMAN SYSTEMS CORP
ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
BETHPAGE, NY 11714
FACILITY: NORTROP GRUMMAN SYSTEMS CORP
LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
BETHPAGE, NY 11714
ATTN: JOHN COJMAN

NY09096792	006-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
07/01/2024	07/31/2024

DMR Mailing ZIP CODE: 11714
MINOR (SUFR 01)
NC COOLING & STORM WATER T/O GW
External Outfall
No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE		
		VALUE	VALUE	UNITS	VALUE	VALUE	UNITS					
pH	MEASUREMENT	*****	*****	*****	7.3	*****	7.3	*****	SI	0	1/31	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. MINIMUM	*****	Req. Mon. MAXIMUM	*****	SU	0	Monthly	Grab
pH	SAMPLE MEASUREMENT	*****	*****	*****	6.0	*****	6.0	*****	SI	0	1/31	Grab
00400 1 0 Intake from Well	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. MINIMUM	*****	Req. Mon. MAXIMUM	*****	SU	0	Monthly	Grab
Nitrogen, total [as N]	SAMPLE MEASUREMENT	*****	*****	*****	4.9	*****	4.9	*****	mg/L	0	1/31	Grab
00600 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	10	*****	10	*****	mg/L	0	Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT	*****	*****	*****	< 1.0	*****	< 1.0	*****	ug/L	0	1/31	Grab
34423 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	5	*****	5	*****	ug/L	0	Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	< 1.0	*****	< 1.0	*****	ug/L	0	1/31	Grab
34475 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	5	*****	5	*****	ug/L	0	Monthly	Grab
1,1-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	< 1.0	*****	< 1.0	*****	ug/L	0	1/31	Grab
34501 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	5	*****	5	*****	ug/L	0	Monthly	Grab
1,1,1-Trichloroethane	SAMPLE MEASUREMENT	*****	*****	*****	< 1.0	*****	< 1.0	*****	ug/L	0	1/31	Grab
34506 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	5	*****	5	*****	ug/L	0	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	Edward J Hannon Corporate Manager ESHM	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE
TYPED OR PRINTED			516-575-2333	08/28/2024
			AREA CODE NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

PERMITTEE NAME/ADDRESS (include Facility Name/Location if applicable)
 NAME: NORTIROP GRUIMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTIROP GRUIMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 AITN: JOHN COHMAN

NY0096792	006- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
07/01/2024	07/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE	
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE				
Vinyl chloride	MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	0	1/31	Grab
39175 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	0	1/31	Grab
39180 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	2.78	*****	*****	*****	*****	*****	0	1/31	Measured
50050 1 0	PERMIT REQUIREMENT	*****	4.25 DAILY MX	*****	*****	*****	*****	*****	0	Monthly	Measured
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	0	1/31	Calculated
74013 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Calculated
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Calculated
cis- 1,2- Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	0	1/31	Grab
77093 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Trichlorotrifluoroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	0	1/31	Grab
81611 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
trans- 1,2- Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	0	1/31	Grab
85810 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	0	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Edward J Hannon
Corporate Manager ESHM

TYPE OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE: 516-575-2333
 AREA Code: NUMBER: 08/28/2024
 DATE: MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *include Facility Name/Location if*
 NAME: NORTRROP GRIMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTRROP GRIMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COHMAN

NY0096792	01-MS-P-1
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
07/01/2024	07/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUFR 01)
 NC COOLING & STORM WATER TO CIV
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE				
PH	MEASUREMENT	6.7	6.7	Req. Mon. MINIMUM	6.7	Req. Mon. MAXIMUM	SI	0	1/31	Grab	
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	SI	0	Monthly	Grab	
00400 1 0 Intake from Well	SAMPLE MEASUREMENT	6.2	6.2	Req. Mon. MINIMUM	6.2	Req. Mon. MAXIMUM	SI	0	1/31	Grab	
00400 1 0 Nitrogen, total (as N)	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	mg/L	0	1/31	Grab	
00600 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	mg/L	0	Monthly	Grab	
Methylene chloride	SAMPLE MEASUREMENT	<2.0	<2.0	*****	<2.0	*****	ug/L	0	1/31	Grab	
34423 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	ug/L	0	Monthly	Grab	
Tetrachloroethylene	SAMPLE MEASUREMENT	<1.0	<1.0	*****	<1.0	*****	ug/L	0	1/31	Grab	
34475 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	ug/L	0	Monthly	Grab	
1,1-Dichloroethylene	SAMPLE MEASUREMENT	<1.0	<1.0	*****	<1.0	*****	ug/L	0	1/31	Grab	
34501 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	ug/L	0	Monthly	Grab	
1,1,1-Trichloroethane	SAMPLE MEASUREMENT	<1.0	<1.0	*****	<1.0	*****	ug/L	0	1/31	Grab	
34506 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	ug/L	0	Monthly	Grab	

NAME/TITLE: PRINCIPAL EXECUTIVE OFFICER	EDWARD J HANNON Corporate Manager ESHM	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE
COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)	I hereby certify under penalty of law that this document and all attachments were prepared under my personal supervision or immediate supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.			
COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)	WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) UPY WEL & OUTFALL PH MONTHLY REPORT. PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.			
COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)	EPA Form 3320-1 (Rev.01/06) Previous editions may be used.			

NATIONAL POLLUTION DISCHARGE ELIMINATION ACT
DISCHARGE MONITORING REPORT (DMR)

DMR No. 2040-0004

PERMITTEE NAME/ ADDRESS (include Facility Name/Location if applicable)
NAME: NORTRHOP GRILMAN SYSTEMS CORP
ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
FACILITY: NORTRHOP GRILMAN SYSTEMS CORP
LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
ATTN: JOHN COHMAN

NY0096792	001-WSP-1
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
07/01/2024	07/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUHR 011)
 NC COOLING & STORM WATER TO C/W
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE				
Vinyl chloride	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
39175 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
39180 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
50050 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Calculated limit	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
74013 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
cis-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
77093 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Trichlorotrifluoroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
81611 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
85810 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

NAME/TITLE: PRINCIPAL EXECUTIVE OFFICER	EDWARD S HANNON Corporate Manager ESHM	TELEPHONE	516-575-2333	DATE	08/28/2024
NAME/TITLE: PRINCIPAL EXECUTIVE OFFICER	(Typed or Printed)	TELEPHONE	ALIDA Code NUMBER	DATE	MM/DD/YYYY

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete, and I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL C/W HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) UP WELL & OUTFALL PH MONTHLY REPORT P11 COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

Notes and Abbreviations:

XX	Bold value indicates the constituent was detected at or above its laboratory quantification limit		
<	Compound is not detected above laboratory quantification limit		
–	Not Applicable	CAS	Chemical Abstracts Service
µg/L	micrograms per liter	ND	Non Detect
lbs/day	pounds per day	NS	None Specified
lb/kg	pounds per kilogram	NYSDEC	New York State Department of Environmental Conservation
MGD	million gallons per day	SCADA	Supervisory Control and Data Acquisition
mg/L	milligrams per liter	SPDES	State Pollution Discharge Elimination System
min	minutes	TKN	Total Kjeldahl Nitrogen
SU	Standard Units		
B	Detected in method blank as reported by laboratory		
na	not available		
NA	Not Applicable		
COC	Chain of Custody		

1 Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system, Polychlorinated Biphenyls (PCBs) using USEPA Method 608, 1,4-Dioxane using USEPA Method 8270D-SIM (CLLE), Total Nitrogen is calculated as the sum of Nitrogen (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively, Total Iron and Manganese using USEPA Method 200.7.

2 Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023

3 Mass Loading Calculation

$$Mass\ Loading\ \left(\frac{lb}{day}\right) = Flow\ \left(\frac{gal}{min}\right) \cdot 1440\ \left(\frac{min}{day}\right) \cdot concentration\ \left(\frac{\mu g}{liter}\right) \div 10^6\ \left(\frac{\mu g}{kg}\right) \cdot 3.785\ \left(\frac{liter}{gal}\right) \cdot 2.2046\ \left(\frac{lb}{kg}\right)$$

4 Average and daily maximum flow calculated from SCADA reports for the month indicated

5 Field measurement of pH taken by hand held meter on sample date

6 When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND"

7 Average Mass Loading calculations are based on actual flow rates unless otherwise noted

8 At the time of Outfall 005 SPDES sample collection on July 18, 2024, Building 109 AOP Treatment System remedial well flow for RW-20 was approximately 413 gpm, RW-21 was approximately 413 gpm and RW-22 was approximately 511 gpm. These were instantaneous readings taken at the time of sampling

9 Building 109 AOP Treatment System Influent (corresponds to sample B109-INFLUENT on the COC), Post-AOP (corresponds to sample B109-POST-AOP on the COC) and Effluent (corresponds to sample OUTFALL 005-B109 on the COC) samples were collected and analyzed for 1,4-Dioxane as per footnote (1) of the SPDES permit equivalency for Outfall 005.

10 Outfall 005 combines discharge from Building 109 and Tower 102 treatment systems, however, Tower 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal

Report of Analysis

Client Sample ID:	OUTFALL 005	
Lab Sample ID:	JD92583-2	Date Sampled: 07/18/24
Matrix:	AQ - Ground Water	Date Received: 07/18/24
Method:	EPA 624.1	Percent Solids: n/a
Project:	Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E182770.D	1	07/23/24 12:25	NW	n/a	n/a	V2E8862
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.71	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.42	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.96	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.96	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.41	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	89%		80-128%
2037-26-5	Toluene-D8 (SUR)	97%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	95%		79-117%
1868-53-7	Dibromofluoromethane (S)	105%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID:	OUTFALL 005	Date Sampled:	07/18/24
Lab Sample ID:	JD92583-2	Date Received:	07/18/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C		

4.2
4

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	146	100	ug/l	1	07/23/24	07/26/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	07/23/24	07/26/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56551

(2) Prep QC Batch: MP47993

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OUTFALL 005	Date Sampled:	07/18/24
Lab Sample ID:	JD92583-2	Date Received:	07/18/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C		

4.2
4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	3.7	0.10	mg/l	1	07/24/24 18:15	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	3.7	0.30	mg/l	1	07/24/24 20:27	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	<0.20	0.20	mg/l	1	07/24/24 20:27	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

NY Accutest New Jersey - Bethpage
 2715 Road 100 Dayton, NJ 08804
 TEL: 732-989-7800 FAX: 732-989-7499
 www.sgs.com

EST 11/1/98
 Order Date: 07/24/18
 Order Ref: JD92583

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)										Matrix Codes
Company Name Arcadis Address 2 Huntington Quad, Suite 1S10 City: Mohville NY 11747 Project Contact: Kevin Czerwinski, Kevin.Czerwinski@arcadis.com Phone #: 631 245-0710 Sample ID Name(s): Purich Deleena 021391258		Project Name Prog 5C OU3.5 RW-21-ONCT-OMMSPDES Street Bethpage NY Company Name Arcadis, U.S., Inc. Street Address 630 Plaza Drive, Suite 600 City Highlana Ranch, CO 80129 Work Authorization # NY001416, 2016 10 30 Project Manager Carlo San Giovanni		Requested Analysis (see TEST CODE sheet) 1,1,2,7,8 1,1,2,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,121,122,123,124,125,126,127,128,129,130,131,132,133,134,135,136,137,138,139,140,141,142,143,144,145,146,147,148,149,150,151,152,153,154,155,156,157,158,159,160,161,162,163,164,165,166,167,168,169,170,171,172,173,174,175,176,177,178,179,180,181,182,183,184,185,186,187,188,189,190,191,192,193,194,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209,210,211,212,213,214,215,216,217,218,219,220,221,222,223,224,225,226,227,228,229,230,231,232,233,234,235,236,237,238,239,240,241,242,243,244,245,246,247,248,249,250,251,252,253,254,255,256,257,258,259,260,261,262,263,264,265,266,267,268,269,270,271,272,273,274,275,276,277,278,279,280,281,282,283,284,285,286,287,288,289,290,291,292,293,294,295,296,297,298,299,300,301,302,303,304,305,306,307,308,309,310,311,312,313,314,315,316,317,318,319,320,321,322,323,324,325,326,327,328,329,330,331,332,333,334,335,336,337,338,339,340,341,342,343,344,345,346,347,348,349,350,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,368,369,370,371,372,373,374,375,376,377,378,379,380,381,382,383,384,385,386,387,388,389,390,391,392,393,394,395,396,397,398,399,400,401,402,403,404,405,406,407,408,409,410,411,412,413,414,415,416,417,418,419,420,421,422,423,424,425,426,427,428,429,430,431,432,433,434,435,436,437,438,439,440,441,442,443,444,445,446,447,448,449,450,451,452,453,454,455,456,457,458,459,460,461,462,463,464,465,466,467,468,469,470,471,472,473,474,475,476,477,478,479,480,481,482,483,484,485,486,487,488,489,490,491,492,493,494,495,496,497,498,499,500,501,502,503,504,505,506,507,508,509,510,511,512,513,514,515,516,517,518,519,520,521,522,523,524,525,526,527,528,529,530,531,532,533,534,535,536,537,538,539,540,541,542,543,544,545,546,547,548,549,550,551,552,553,554,555,556,557,558,559,560,561,562,563,564,565,566,567,568,569,570,571,572,573,574,575,576,577,578,579,580,581,582,583,584,585,586,587,588,589,590,591,592,593,594,595,596,597,598,599,600,601,602,603,604,605,606,607,608,609,610,611,612,613,614,615,616,617,618,619,620,621,622,623,624,625,626,627,628,629,630,631,632,633,634,635,636,637,638,639,640,641,642,643,644,645,646,647,648,649,650,651,652,653,654,655,656,657,658,659,660,661,662,663,664,665,666,667,668,669,670,671,672,673,674,675,676,677,678,679,680,681,682,683,684,685,686,687,688,689,690,691,692,693,694,695,696,697,698,699,700,701,702,703,704,705,706,707,708,709,710,711,712,713,714,715,716,717,718,719,720,721,722,723,724,725,726,727,728,729,730,731,732,733,734,735,736,737,738,739,740,741,742,743,744,745,746,747,748,749,750,751,752,753,754,755,756,757,758,759,760,761,762,763,764,765,766,767,768,769,770,771,772,773,774,775,776,777,778,779,780,781,782,783,784,785,786,787,788,789,790,791,792,793,794,795,796,797,798,799,800,801,802,803,804,805,806,807,808,809,810,811,812,813,814,815,816,817,818,819,820,821,822,823,824,825,826,827,828,829,830,831,832,833,834,835,836,837,838,839,840,841,842,843,844,845,846,847,848,849,850,851,852,853,854,855,856,857,858,859,860,861,862,863,864,865,866,867,868,869,870,871,872,873,874,875,876,877,878,879,880,881,882,883,884,885,886,887,888,889,890,891,892,893,894,895,896,897,898,899,900,901,902,903,904,905,906,907,908,909,910,911,912,913,914,915,916,917,918,919,920,921,922,923,924,925,926,927,928,929,930,931,932,933,934,935,936,937,938,939,940,941,942,943,944,945,946,947,948,949,950,951,952,953,954,955,956,957,958,959,960,961,962,963,964,965,966,967,968,969,970,971,972,973,974,975,976,977,978,979,980,981,982,983,984,985,986,987,988,989,990,991,992,993,994,995,996,997,998,999,1000,1001,1002,1003,1004,1005,1006,1007,1008,1009,1010,1011,1012,1013,1014,1015,1016,1017,1018,1019,1020,1021,1022,1023,1024,1025,1026,1027,1028,1029,1030,1031,1032,1033,1034,1035,1036,1037,1038,1039,1040,1041,1042,1043,1044,1045,1046,1047,1048,1049,1050,1051,1052,1053,1054,1055,1056,1057,1058,1059,1060,1061,1062,1063,1064,1065,1066,1067,1068,1069,1070,1071,1072,1073,1074,1075,1076,1077,1078,1079,1080,1081,1082,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,1105,1106,1107,1108,1109,1110,1111,1112,1113,1114,1115,1116,1117,1118,1119,1120,1121,1122,1123,1124,1125,1126,1127,1128,1129,1130,1131,1132,1133,1134,1135,1136,1137,1138,1139,1140,1141,1142,1143,1144,1145,1146,1147,1148,1149,1150,1151,1152,1153,1154,1155,1156,1157,1158,1159,1160,1161,1162,1163,1164,1165,1166,1167,1168,1169,1170,1171,1172,1173,1174,1175,1176,1177,1178,1179,1180,1181,1182,1183,1184,1185,1186,1187,1188,1189,1190,1191,1192,1193,1194,1195,1196,1197,1198,1199,1200,1201,1202,1203,1204,1205,1206,1207,1208,1209,1210,1211,1212,1213,1214,1215,1216,1217,1218,1219,1220,1221,1222,122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3,2224,2225,2226,2227,2228,2229,2230,2231,2232,2233,2234,2235,2236,2237,2238,2239,2240,2241,2242,2243,2244,2245,2246,2247,2248,2249,2250,2251,2252,2253,2254,2255,2256,2257,2258,2259,2260,2261,2262,2263,2264,2265,2266,2267,2268,2269,2270,2271,2272,2273,2274,2275,2276,2277,2278,2279,2280,2281,2282,2283,2284,2285,2286,2287,2288,2289,2290,2291,2292,2293,2294,2295,2296,2297,2298,2299,2300,2301,2302,2303,2304,2305,2306,2307,2308,2309,2310,2311,2312,2313,2314,2315,2316,2317,2318,2319,2320,2321,2322,2323,2324,2325,2326,2327,2328,2329,2330,2331,2332,2333,2334,2335,2336,2337,2338,2339,2340,2341,2342,2343,2344,2345,2346,2347,2348,2349,2350,2351,2352,2353,2354,2355,2356,2357,2358,2359,2360,2361,2362,2363,2364,2365,2366,2367,2368,2369,2370,2371,2372,2373,2374,2375,2376,2377,2378,2379,2380,2381,2382,2383,2384,2385,2386,2387,2388,2389,2390,2391,2392,2393,2394,2395,2396,2397,2398,2399,2400,2401,2402,2403,2404,2405,2406,2407,2408,2409,2410,2411,2412,2413,2414,2415,2416,2417,2418,2419,2420,2421,2422,2423,2424,2425,2426,2427,2428,2429,2430,2431,2432,2433,2434,2435,2436,2437,2438,2439,2440,2441,2442,2443,2444,2445,2446,2447,2448,2449,2450,2451,2452,2453,2454,2455,2456,2457,2458,2459,2460,2461,2462,2463,2464,2465,2466,2467,2468,2469,2470,2471,2472,2473,2474,2475,2476,2477,2478,2479,2480,2481,2482,2483,2484,2485,2486,2487,2488,2489,2490,2491,2492,2493,2494,2495,2496,2497,2498,2499,2500,2501,2502,2503,2504,2505,2506,2507,2508,2509,2510,2511,2512,2513,2514,2515,2516,2517,2518,2519,2520,2521,2522,2523,2524,2525,2526,2527,2528,2529,2530,2531,2532,2533,2534,2535,2536,2537,2538,2539,2540,2										

Report of Analytical Results

SDG: SR3732
Lab ID:SR3732-1
Client ID: OUTFALL 005
Matrix:AQ
Lab File ID: U3159.D

Sample Date: 18-JUL-24
Extract Date: 22-JUL-24
Extracted By:NG
Extraction Method:SW846 3520C
Lab Prep Batch: WG356509

Report Date: 09-AUG-24
Analysis Date: 07-AUG-24
Analyst: EP
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.5	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		93.0	%				

Report of Analytical Results

SDG: SR3732
Lab ID:SR3732-2
Client ID:OUTFALL 005-B109
Matrix:AQ
Lab File ID: U3160.D

Sample Date: 18-JUL-24
Extract Date: 22-JUL-24
Extracted By:NG
Extraction Method:SW846 3520C
Lab Prep Batch: WG356509

Report Date: 09-AUG-24
Analysis Date: 07-AUG-24
Analyst: EP
Analysis Method:SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	I	.25	0.24	0.080
1,4-Dioxane-D8		112.	%				



ID#

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

SR 3732

Page ___ of ___ Lab Work Order # MSA 3601

Send Results to:	Client & Company Name	Kevin Czerwinski - Task Manager	Telephone	631-245-0710 cell	Preservative	E							Keys Preservation Key: A. H ₂ SO ₄ B. HCL C. HNO ₃ D. NaOH E. None F. Other: _____ G. Other: _____ H. Other: _____ Matrix Key: SO - Soil W - Water T - Tissue SE - Sediment SL - Sludge A - Air NL - NAPL/Oil SW - Sample Wipe Other: GW-Groundwater
	Address	Two Huntington Quad-Suite 1S10	Fax		Filtered (-)	-							
	City	State	Zip	11747	# of Containers	6							
	Email Address			Kevin.Czerwinski@arcadis.com			Container Information	2					

Project Name/Location (City, State)	Project #
Prog 5C OJ2 5 RW-21-ONCT-OMM/SPDES	30223092 OMMI3
Sampling & Analysis Name	Sampling Location
Patrick Deleane	Patrick Deleane

Sample ID	Collection		Type (✓)		Matrix	PARAMETER ANALYSIS & METHOD										REMARKS		
	Date	Time	Comp	Grab		1,4-Dioxane	8270D-SIM-CLE											
Outfall 005	7/18/24	0930	PP	X	GW	X												pH/Temp: 6.9 / 64°F
Outfall 005-B109		1100		X	GW	X												pH/Temp: 6.8 / 59.9°F
Outfall 005-T102		0855		X	GW	X												pH/Temp: 7.1 / 66°F
																		B102 Inf pH/Temp: 6.1 / 63.5°F

Special Instructions/Comments: SVOC extracted by EDD-ARCADIS_EQUIS (EQUIS6-4 file) Special QA/QC Instructions(✓)

Laboratory Information and Receipt Lab Name: Katahdin Analytical <input checked="" type="checkbox"/> Cooler packed with ice (✓) <input checked="" type="checkbox"/> Cooler Custody Seal (✓) Intact <input type="checkbox"/> Not Intact Specify Technical Requirements: Normal TAT-10 business Shipping Instructions: Condition/Cooler Temp: _____		Relinquished By Project Name: Patrick Deleane Signature: Patrick Deleane Firm: Arcadis Date/Time: 7/18/24		Received By Project Name: Ever Pro Signature: Ever Pro Firm: Ever Pro Date/Time: 7-19-24 1110		Relinquished By Project Name: _____ Signature: _____ Firm: _____ Date/Time: _____		Laboratory Received By Project Name: _____ Signature: _____ Firm: _____ Date/Time: _____	
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20130928 CatC AR Form 08 27 2013 Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis

G:\PROJECT\Northrop Grumman Bathpage\Program\Widdell\04 Project Management\Contracts and POs\lab\Katahdin Analytical\OJ2 Navy Wef's COC Mast\

Katahdin Analytical Services SR3732 page 0000012 of 0000014

Report of Analytical Results

SDG: SR3731
Lab ID:SR3731-1DL
Client ID:B109-INFLUENT
Matrix:AQ
Lab File ID: U3192.D

Sample Date: 18-JUL-24
Extract Date:22-JUL-24
Extracted By:NG
Extraction Method:SW846 3520C
Lab Prep Batch: WG356509

Report Date: 09-AUG-24
Analysis Date: 08-AUG-24
Analyst: EP
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		15	ug/L	10	.25	2.4	0.80
1,4-Dioxane-D8	D	0.00	%				

Report of Analytical Results

SDG: SR3731
Lab ID:SR3731-2
Client ID:B109-POST-AOP
Matrix:AQ
Lab File ID: U3158.D

Sample Date: 18-JUL-24
Extract Date: 22-JUL-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG356509

Report Date: 09-AUG-24
Analysis Date: 07-AUG-24
Analyst: EP
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		113.	%				



ID#

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

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Lab Work Order #
MSA 3601

SR 3731

Send Results to:	Contact & Company Name Kevin Czerwinski - Task Manager	Telephone 631-245-0710 cell	Preservation E							Keys Preservation Key: A. H ₂ SO ₄ B. HCl C. HNO ₃ D. NaOH E. None F. Other: _____ G. Other: _____ H. Other: _____ Matrix Key: SO - Soil W - Water T - Tissue Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz Glass 7. 4 oz Glass 8. 8 oz Glass 9. Other: _____ 10. Other: _____ Matrix Key: SE - Sediment SL - Sludge A - Air NL - NAPL/Oil SW - Sample Wipe Other - Groundwater
	Address Two Huntington Quad-Suite 1S10	Fax	# of Containers 4							
	City, State, Zip Melville NY 11747	Email Address Kevin.Czerwinski@arcadis.com	Container Information 2							
	Project Name/Location (City, State) Prog 5C OJ3 5 RW 21 ONCT-OMW/SPDE5	Project # 30223092 OMMI3	PARAMETER ANALYSIS & METHOD							
Analyst & Printed Name Patrick Bellean	Sampler's Signature <i>Patrick Bellean</i>	1,4-Dioxane 8270D-SiM-C11E								
Sample ID	Collection	Type (✓)	Matrix							
	Date Time	Comp Grab								
B109-Influent	7/16/24 1115	PD	X GW	X						pH/Temp: 5.7/56.6°F
B109-Post-AOP	7/16/24 1110	PD	X GW	X						pH/Temp: 7.1/57.1°F

Special Instructions/Comments: SVOC extracted by EDD-ARCADIS_EQUIS6-4 file

Special QA/QC Instructions (-):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name Katahdin Analytical	Cooler Custody Seal (✓) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Printed Name Patrick Bellean	Printed Name Evan Price	Printed Name	Printed Name
<input checked="" type="checkbox"/> Cooler packed with ice (✓)		Signature <i>Patrick Bellean</i>	Signature <i>Evan Price</i>	Signature	Signature
Specify Turnaround Requirements Normal TAT-10 business	Sample Receipt	Firm Arcadis	Firm/Counter Katahdin	Firm/Counter	Firm
Shipping Tracking #	Condition/Cooler Temp	Date/Time 7/18/24	Date/Time 7-19-24 11:05	Date/Time	Date/Time

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 Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis
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Katahdin Analytical Services SR3731 page 0000011 of 0000013

Report of Analysis

Client Sample ID: OUTFALL 006 Lab Sample ID: JD92585-2 Matrix: AQ - Ground Water Method: EPA 624.1 Project: Northrop Grumman, OU2.2 OMM, Program 3	Date Sampled: 07/18/24 Date Received: 07/18/24 Percent Solids: n/a
--	--

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E182776.D	1	07/23/24 15:00	NW	n/a	n/a	V2E8862
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	93%		80-128%
2037-26-5	Toluene-D8 (SUR)	98%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	94%		79-117%
1868-53-7	Dibromofluoromethane (S)	107%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID:	OUTFALL 006	Date Sampled:	07/18/24
Lab Sample ID:	JD92585-2	Date Received:	07/18/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrop Grumman, OU2.2 OMM, Program 3		

4.2
4

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	07/23/24	07/26/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	07/23/24	07/26/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56551

(2) Prep QC Batch: MP47993

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OUTFALL 006	Date Sampled:	07/18/24
Lab Sample ID:	JD92585-2	Date Received:	07/18/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrop Grumman, OU2.2 OMM, Program 3		

4.2
4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	4.9	0.10	0.090	mg/l	1	07/24/24 18:23 JD	EPA	353.2/LACHAT
Nitrogen, Total ^a	4.9	0.30	0.23	mg/l	1	07/24/24 20:31 SS	SM4500 A 11	
Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14	mg/l	1	07/24/24 20:31 SS	EPA	351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result >= MDL but < RL

Report of Analytical Results

SDG: SR3730
Lab ID:SR3730-1
Client ID:OUTFALL 006
Matrix:AQ
Lab File ID: U3156.D

Sample Date: 18-JUL-24
Extract Date: 22-JUL-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG356509

Report Date: 09-AUG-24
Analysis Date: 07-AUG-24
Analyst: EP
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
I,4-Dioxane		6.3	ug/L	1	.25	0.24	0.080
I,4-Dioxane-D8		104.	%				

ID# **CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM**

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SR 3730

Lab Work Order #
MSA 3601

Send Results to:	Contact & Company Name Kevin Czerwinski -Task Manager	Telephone 631-245-0710 cell	Preservative	E							Keys Preservation Key: A. H ₂ SO ₄ B. HCL C. HNO ₃ D. NaOH E. None F. Other: _____ G. Other: _____ H. Other: _____ Matrix Key: SD - Soil SE - Sediment NL - NAPL/GW W - Water SL - Sludge SW - Sample Wipe T - Tissue A - Air Other: GW-Groundwater	
	Address: Two Huntington Quad-Suite 1S10	Fac:	# of Containers	2								
	City State Zip Melville NY 11747	E-mail Address: Kevin.Czerwinski@arcadis.com		Container Information	2							
	PARAMETER ANALYSIS & METHOD											
Project Name/Location (City, State): Prog 3 OU2 2-ONCT-OMM/SPDES		Project #: 30218437.OMM13		<div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); display: inline-block;"> 1,4-Dioxane 8270D-SIM-CLE </div>								
Company's Printed Name: <i>Patrick Delleave</i>		Signature: <i>Patrick Delleave</i>										
Sample ID	Collection		Typo (✓)		Matrix							
	Date	Time	Comp	Grab								
Outfall 006	7/15/24	10:00	FD	X	X	GW	REMARKS pH/Temp: 7.3/66°F B96 Inf pH/Temp: 6.0/62.4°F					
Special Instructions/Comments SVOC extracted by EDD-ARCADIS_EQUIS (EQUIS6 4 file)										<input type="checkbox"/> Special QA/QC Instructions(✓)		
Laboratory Information and Receipt		Relinquished By		Received By		Relinquished By		Laboratory Received By				
Lab Name Katahdin Analytical		Cooler Custody Seal (✓) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact		Printed Name: <i>Patrick Delleave</i>		Printed Name: <i>Evan Pica</i>		Printed Name:				
<input type="checkbox"/> Cooler packed with ice (✓)				Signature: <i>Patrick Delleave</i>		Signature: <i>Evan Pica</i>		Signature:				
Specify Turnaround Requirements Normal TAT-10 business		Sample Receipt:		Firm: Arcadis		Firm/Contract: Katahdin		Firm/Contract:				
Shipping Tracking #		Condition/Cooler Temp _____		Date/Time: 7/15/24		Date/Time: 7-19-24 11/0		Date/Time:				

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Katahdin Analytical Services SR3730 page 0000010 of 0000012

Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	07/18/24
Lab Sample ID:	JD92584-1	Date Received:	07/18/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IN14253.D	1	07/24/24 12:50	NW	n/a	n/a	VIN341
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
106-99-0	1,3-Butadiene	ND	5.0	0.62	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	0.49	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	07/18/24
Lab Sample ID:	JD92584-1	Date Received:	07/18/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

4.1
4

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
75-68-3	1-chloro-1,1-difluoroethane	ND	5.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		80-120%
17060-07-0	1,2-Dichloroethane-D4	114%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	96%		82-114%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	07/18/24
Lab Sample ID:	JD92584-1	Date Received:	07/18/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 608.3 EPA 608		
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2514152.D	1	07/24/24 02:49	CP	07/23/24 16:30	OP56328A	GXX8584
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	38%		10-156%
877-09-8	Tetrachloro-m-xylene	49%		10-156%
2051-24-3	Decachlorobiphenyl	69%		10-143%
2051-24-3	Decachlorobiphenyl	94%		10-143%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	07/18/24
Lab Sample ID:	JD92584-1	Date Received:	07/18/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

4.1
4

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	07/23/24	07/26/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	42.3	15	ug/l	1	07/23/24	07/26/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56551

(2) Prep QC Batch: MP47993

RL = Reporting Limit

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 07/18/24
Lab Sample ID: JD92584-1	Date Received: 07/18/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

4.1
4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.3	0.10	mg/l	1	07/24/24 18:20	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.5	0.30	mg/l	1	07/24/24 20:30	SS	SM4500 A 11
Nitrogen, Total Kjeldahl	0.24	0.20	mg/l	1	07/24/24 20:30	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OU3 POST-GAC	Date Sampled:	07/18/24
Lab Sample ID:	JD92584-3	Date Received:	07/18/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 608.3 EPA 608		
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2514153.D	1	07/24/24 03:07	CP	07/23/24 16:30	OP56328A	GXX8584
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	18%		10-156%
877-09-8	Tetrachloro-m-xylene	22%		10-156%
2051-24-3	Decachlorobiphenyl	62%		10-143%
2051-24-3	Decachlorobiphenyl	88%		10-143%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
4



GW
TB

CHAIN OF CUSTODY

Accutest New Jersey SPL Environmental
2375 Route 130 Dayton, NJ 08810
TEL: 732.329.0200 FAX: 732.329.1499 (480)
WWW.ACCUTEST.COM

COC #7 PAGE 1 OF 1

Client / Reporting Information		Project Information										EDLX Tracking #		Project Name			
Company Name Arcadis		Project Name AGMNYM62236 // OJ3 BPGWCS - GW										EDLX Tracking #		Project Name			
Street Address 2 Huntington Quad, Suite 1S10		Prog 4A OJ3 2-ONCT-OMM/SPDES										Accutest Order #		Accutest Job #			
City State Zip Melville NY 11747		Billing Information (if different than Project Info) Company Name Bethpage NY										Accutest Order #		Accutest Job #			
Project Contact Arnas Nemickas, arnas.nemickas@arcadis.com		Client Address Arcadis, U.S., Inc										Accutest Order #		Accutest Job #			
Phone # 631-331-5212		Client Purchase Order # 30227172.OMMI3										Accutest Order #		Accutest Job #			
Sampler(s) Name(s) Patricia Nemickas (631) 331-2591		Client Authorization # (NY 08/1/06, 2016-10-31) Highlands Ranch, CO 80129										Accutest Order #		Accutest Job #			
Project Manager Arnie Nemickas		Adoption Accounts Payable										Accutest Order #		Accutest Job #			
Field ID / Point of Collection		Collection		Sampled By		Matrix		# of bottles		Number of analyzed bottles		Matrix Codes		LAB USE ONLY			
1 WSP-7		7/16/24 07:40		PN		GW		7 3		1 1 2		VCB260-30-40-GW-20, VMS+13-BUTADN, VMS+F142 (40 mL Clear Glass VOA), XTMIT - EPA 353.2 & EPA 351.2 w/Total N Calc - (500 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic) PCBs - EPA 608 (1 L Amber)		CW - Drinking Water GW - Ground Water SW - Surface Water SL - Soil SL - Sediment AQ - Air SL - Other Solid WP - Wastewater EQ - Field Blank EQ - Equipment Blank TB - Trip Blank		ESG AR CS1 VMB S	
2 TB-1571624 - PD - 1		7/16/24		V		GW		2 2									
3 OJ3 Post-GAC		7/16/24 07:50		V		GW		2 2		2							
Turnaround Time (Business days)		Date Deliverable Information										Comments / Special Instructions					
<input type="checkbox"/> Std: 15 Business Days <input checked="" type="checkbox"/> 10 Business Days (by contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 8 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T.A. data available via Labfax		Approved By (Accutest PM) / Date <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw Data										NYASP Category A <input type="checkbox"/> NY ASP Category B <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Formet Equib 6 <input type="checkbox"/> Other COMM+		Initials: <i>AS</i> Label Ver: 0			
Sample Custody must be documented below each time samples change possession, including courier delivery																	
Requested by Sampler 1 Patrick Deluca		Date Time 7/16/24		Received By 1 Raymond JF 11		Requested By 2 Raymond JF 11		Received By 2 [Signature]		Custody Seal #		On Ice		Cooler Temp			
Requested by Sampler 3		Date Time		Received By 3		Requested By 4		Received By 4		Custody Seal #		On Ice		Cooler Temp			
Requested by 5		Date Time		Received By 5		Requested By		Received By		Custody Seal #		On Ice		Cooler Temp			

© WPR/JEC (Northrop Grumman Bethpage, Program Wide) Project Management/Contracts and PO/Labs/SGS Accutest/AD_CODE3 and CODE4/Customized_TM_CODE/01 GW COCs Revised 7/21/20

5.2
5

JD92584: Chain of Custody
Page 1 of 3



Report of Analytical Results

SDG: SR3733
Lab ID:SR3733-1
Client ID: WSP-7
Matrix:AQ
Lab File ID: U3162.D

Sample Date: 18-JUL-24
Extract Date: 22-JUL-24
Extracted By:NG
Extraction Method:SW846 3520C
Lab Prep Batch: WG356509

Report Date: 09-AUG-24
Analysis Date: 07-AUG-24
Analyst: EP
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.57	ug/L	1	.25	0.25	0.084
1,4-Dioxane-D8		107.	%				

August 2024 - OU2 SPDES

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-024L-24
October 9, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

Subject: **Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A
Northrop Grumman Corporation - Bethpage, New York Facility**

Sarah Johnston:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of August 2024, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

northropgrumman.com

ESH&M-23L-24
October 9, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
August 1, 2024 – August 31, 2024.

Mr. Pelton:

Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – <0.49 ug/L
Outfall 5 – 2.8 ug/L
Outfall 6 – 5.9 ug/L

Sampling results for Outfall 1 for the following:

Ethylbenzene - <1.0
Toluene - <1.0
Benzene - <0.50
Xylene, Ortho - <1.0
Xylene, Meta - <1.0
Xylene, Para - <1.0

If you have any questions, please call me at 516-575-2333
Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

bcc: D. Stern (AG&M)

PERMITTEE NAME/ADDRESS (include Facility Name/Location if applicable)
 NAME: NORTRORP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTRORP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	005-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
08/01/2024	08/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO CW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. MINIMUM	*****	Req. Mon. MAXIMUM	0	Monthly	Grab
pH	SAMPLE MEASUREMENT	*****	*****	*****	4.75	*****	4.75	0	1/31	Grab
00400 1 0 Intake from Well	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. MINIMUM	*****	Req. Mon. MAXIMUM	0	Monthly	Grab
Nitrogen, total (as N)	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	3.9	0	1/31	Grab
00600 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	10 DAILY MX	0	Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	<1.0	0	1/31	Grab
34423 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX	0	Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	<1.0	0	1/31	Grab
34475 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX	0	Monthly	Grab
1,1 - Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	<1.0	0	1/31	Grab
34501 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX	0	Monthly	Grab
1,1,1 - Trichloroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	<1.0	0	1/31	Grab
34506 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX	0	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified persons prepare this DMR in accordance with the NPDES rules and regulations. I am aware that there are significant penalties for knowingly violating these rules and regulations, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: 516-575-2333
 AREA Code: 516-575-2333
 NUMBER: 10/01/2024
 MM/DD/YYYY

DATE: 10/01/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL CW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714

NY0096792	005-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
08/01/2024	08/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

ATTN: JOHN COHMAN

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE			
Vinyl chloride	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
39175 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
39180 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	6.71	*****	*****	*****	*****	0	1/31	Measured
50050 10 Effluent Gross	PERMIT REQUIREMENT	*****	5 DAILY MX	*****	*****	*****	*****	0	Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	*****	1	*****	*****	*****	*****	0	1/31	Calculated
74013 10 Effluent Gross	PERMIT REQUIREMENT	*****	Req. Mon. Single Rdg	*****	*****	*****	*****	0	Monthly	Calculated
cis- 1,2- Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
77093 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Trichlorotrifluoroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
81611 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Trans- 1,2- Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
85810 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM

PERMITTEE I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE AREA CODE NUMBER DATE

516-515-2333 10/09/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) UPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
NAME: NORTROP GRUMMAN SYSTEMS CORP
ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
BETHPAGE, NY 11714
FACILITY: NORTROP GRUMMAN SYSTEMS CORP
LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
BETHPAGE, NY 11714
ATTN: JOHN COFMAN

NY0096792	006- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
08/01/2024	08/31/2024

DMR Mailing ZIP CODE: 11714
MINOR (SUBR 01)
NC COOLING & STORM WATER TO GW
External Outfall
No Discharge

PARAMETER	SAMPLING METHOD	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE				
pH	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab	
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0			
00400 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	6.6	0	Monthly	Grab	
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	Reg. Mon. MINIMUM	0			
pH	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	4.9	0	1/31	Grab	
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	Reg. Mon. MINIMUM	0			
00400 1 0 Intake from Well	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	5.0	0	1/31	Grab	
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	Reg. Mon. MAXIMUM	0			
00600 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	1.0	0	1/31	Grab	
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	DAILY MX	0			
Tetrachloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	1.0	0	1/31	Grab	
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	DAILY MX	0			
1,1-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	1.0	0	1/31	Grab	
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	DAILY MX	0			
34501 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	1.0	0	1/31	Grab	
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	DAILY MX	0			
1,1,1-Trichloroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	1.0	0	1/31	Grab	
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	DAILY MX	0			
34506 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	1.0	0	1/31	Grab	
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	DAILY MX	0			

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Edward J Hannon
Corporate Manager ESHM

TELEPHONE: 516-575-2333
DATE: 10/09/2024

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT:

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

PERMITTEE NAME/ADDRESS (include Facility Name/Location if appropriate):
 NAME: NORTRROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTRROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COFFMAN

NY0096792	006-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
08/01/2024	08/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUFR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	REQUIREMENT	VALUE	UNITS	REQUIREMENT			
Vinyl chloride	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
39175 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Effluent Gross	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
Trichloroethylene	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
39180 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Effluent Gross	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
Flow, in conduit or thru treatment plant	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Measured
50050 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Measured
Effluent Gross	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Measured
Calculated limit	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Calculated
74013-1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Calculated
Effluent Gross	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Calculated
cis-1,2-Dichloroethylene	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Calculated
77093 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Calculated
Effluent Gross	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Calculated
Trichlorotrifluoroethane	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Calculated
81611 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Calculated
Effluent Gross	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Calculated
trans-1,2-Dichloroethylene	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Calculated
85810 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Calculated
Effluent Gross	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Calculated

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Edward J Hannon
Corporate Manager ESHM

PERMIT REQUIREMENT

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: 516-575-2333
 AREA CODE: 516
 NUMBER: 575-2333

DATE: 10/09/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) UPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

EPA Form 3320-1 (Rev.01/06) Previous editions may be used.

10/19/2018 Page 2

NATIONAL POLLUTANT DISCHARGE ELIMINATION ACT
DISCHARGE MONITORING REPORT (DMR)

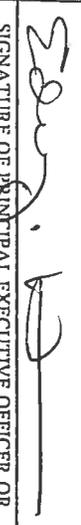
DMR No. 2010-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if known)
 NAME: NORTRHOP GRIMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTRHOP GRIMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COJMAN

NY0096792	061-WSP-1
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
08/01/2024	08/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE			
Vinyl chloride	PERMIT MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
39175 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
39180 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	0.37	*****	*****	*****	*****	0	1/31	Measured
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	5	MGID	*****	*****	*****	0	Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Calculated
74013 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	N=0;Y=1	*****	*****	*****	0	Monthly	Calculated
cis-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
77093 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Trichlorofluoroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
81611 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
85810 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER Edward S Hannon Corporate Manager ESHM	PERMITTEE SIGNATURE 	TELEPHONE	DATE
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	516-575-2333 AREA Code NUMBER	10/01/2024 MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PI OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS ONLY WELL & OUTFALL PH MONTHLY REPORT PI)
 COMPLIANT STATUS (YES/NO) IN CALCULATED LIMIT AREA; SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.
 EPA Form 3320-1 (Rev. 01/06) Previous editions may be used.
 10/19/2018 Page 2

Monitoring Period:

August 2024

8/1/24 12:00 AM - 8/31/24 12:00 AM

31 Days

OU2 South Basins: Outfall 005^(B)

Combined OU2 Groundwater Remedy Tower 102 and Building 109 Advanced Oxidation Process (AOP) Treatment Systems - Tower 102 Treated Air Stripper Discharge, Building 109 AOP Treatment System Discharge, and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 005 8/15/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	6.13	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	6.71	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾ (Building 109)	--	4.5	NS	SU	Monthly (1/31) Days	Grab	--	--
Influent pH ⁽⁵⁾ (Tower 102)	--	5.0	NS	SU	Monthly (1/31) Days	Grab	--	--
Outfall 005 Effluent pH ⁽⁵⁾	--	6.1	Range 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	3.9	10.0	mg/L	Monthly (1/31) Days	Grab	199.35	lbs/day
Total Iron	7439-89-6	851 ⁽¹¹⁾	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	23.8	600	µg/L	Monthly (1/31) Days	Grab	1.22	lbs/day
Sum of Total Iron and Manganese ⁽⁸⁾	--	874.8	1,000	µg/L	Monthly (1/31) Days	Calculated	44.72	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	0.59 J	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,2-Trichloroethane	79-00-5	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-Dichloroethane	107-06-2	< 1.0	0.6	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-Dichloropropane	78-87-5	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Benzene	71-43-2	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,4-Dioxane (Building 109 Influent) ⁽⁹⁾	123-91-1	20	Monitor	µg/L	Monthly (1/31) Days	Grab	NA	lbs/day
1,4-Dioxane (Building 109 Post AOP) ⁽⁹⁾	123-91-1	< 0.24	Monitor	µg/L	Monthly (1/31) Days	Grab	na	lbs/day
1,4-Dioxane (Building 109 Effluent) ⁽⁹⁾	123-91-1	< 0.23	Monitor	µg/L	Monthly (1/31) Days	Grab	NA	lbs/day
1,4-Dioxane (Outfall 005) ⁽¹⁰⁾	123-91-1	2.8	Monitor	µg/L	Monthly (1/31) Days	Grab	0.14	lbs/day

Notes and abbreviations on last page.

Notes and Abbreviations:

XX	Bold value indicates the constituent was detected at or above its laboratory quantification limit		
≠	Compound is not detected above laboratory quantification limit		
—	Not Applicable	CAS	Chemical Abstracts Service
µg/L	micrograms per liter	ND	Non Detect
lbs/day	pounds per day	NS	None Specified
lb/kg	pounds per kilogram	NYSDEC	New York State Department of Environmental Conservation
MGD	million gallons per day	SCADA	Supervisory Control and Data Acquisition
mg/L	milligrams per liter	SPDES	State Pollution Discharge Elimination System
min	minutes	TKN	Total Kjeldahl Nitrogen
SU	Standard Units		
B	Detected in method blank as reported by laboratory		
na	not available		
NA	Not Applicable		
COC	Chain of Custody		

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system, Polychlorinated Biphenyls (PCBs) using USEPA Method 608, 1,4-Dioxane using USEPA Method 8270D-SIM (CLLE), Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively, Total Iron and Manganese using USEPA Method 200.7.

2. Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023.

3. Mass Loading Calculation:

$$Mass\ Loading\ \left(\frac{lb}{day}\right) = Flow\ \left(\frac{gal}{min}\right) \times 1440\ \left(\frac{min}{day}\right) \times concentration\ \left(\frac{\mu g}{liter}\right) \div 10^6\ \left(\frac{\mu g}{kg}\right) \times 3.785\ \left(\frac{liter}{gal}\right) \times 2.2046\ \left(\frac{lb}{kg}\right)$$

4. Average and daily maximum flow calculated from SCADA reports for the month indicated.

5. Field measurement of pH taken by hand held meter on sample date.

6. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".

7. Average Mass Loading calculations are based on actual flow rates unless otherwise noted.

8. At the time of Outfall 005 SPDES sample collection on August 15, 2024, Building 109 AOP Treatment System remedial well flow for RW-20 was approximately 486 gpm, RW-21 was approximately 487 gpm and RW-22 was approximately 595 gpm. These were instantaneous readings taken at the time of sampling.

9. Building 109 AOP Treatment System influent (corresponds to sample B109-INFLUENT on the COC), Post-AOP (corresponds to sample B109-POST-AOP on the COC) and Effluent (corresponds to sample OUTFALL_005_B109 on the COC) samples were collected and analyzed for 1,4-Dioxane as per footnote (1) of the SPDES permit equivalency for Outfall 005.

10. Outfall 005 combines discharge from Building 109 and Tower 102 treatment systems; however, Tower 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal.

11. This total iron analytical result for Outfall 005 is considered anomalous, based on non-detect total iron results obtained for separate samples collected from the treated discharge from the OU2 ONCT system and the OU3 RW-21 system, which are combined to form the Outfall 005 discharge. Additionally, results for samples collected subsequently on 9/5/24 were non-detect for iron. This situation will continue to be monitored closely in the future.

Report of Analysis

Client Sample ID:	OUTFALL 005		Date Sampled:	08/15/24
Lab Sample ID:	JD94287-2		Date Received:	08/15/24
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	EPA 624.1			
Project:	Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C			

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E183249.D	1	08/19/24 19:25	NW	n/a	n/a	V2E8879
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.71	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.42	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.96	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.96	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.41	ug/l	
79-01-6	Trichloroethene	0.59	1.0	0.43	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%		80-128%
2037-26-5	Toluene-D8 (SUR)	96%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	96%		79-117%
1868-53-7	Dibromofluoromethane (S)	117%		84-121%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID:	OUTFALL 005		Date Sampled:	08/15/24
Lab Sample ID:	JD94287-2	Date Received:	08/15/24	
Matrix:	AQ - Ground Water	Percent Solids:	n/a	
Project:	Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C			

4.2
4

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	851	100	ug/l	1	08/23/24	08/23/24 MM	EPA 200.7 ¹	FPA 200.7 ²
Manganese	23.8	15	ug/l	1	08/23/24	08/23/24 MM	EPA 200.7 ¹	FPA 200.7 ²

(1) Instrument QC Batch: MA56744

(2) Prep QC Batch: MP48720

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OUTFALL 005	Date Sampled:	08/15/24
Lab Sample ID:	JD94287-2	Date Received:	08/15/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C		

4.2
4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	3.9	0.10	mg/l	1	08/26/24 19:12	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	3.9	0.30	mg/l	1	08/26/24 19:12	JD	SM4500 A 11
Nitrogen, Total Kjeldahl	<0.20	0.20	mg/l	1	08/23/24 10:06	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Report of Analytical Results

SDG: SR4436
Lab ID: SR4436-1
Client ID: OUTFALL 005
Matrix: AQ
Lab File ID: U3448.D

Sample Date: 15-AUG-24
Extract Date: 20-AUG-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG357898

Report Date: 09-SEP-24
Analysis Date: 06-SEP-24
Analyst: EP
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
I,4-Dioxane		2.8	ug/L	1	.25	0.24	0.080
I,4-Dioxane-D8		82.3	%				

Report of Analytical Results

SDG: SR4436
Lab ID: SR4436-2
Client ID: OUTFALL 005-B109
Matrix: AQ
Lab File ID: U3449.D

Sample Date: 15-AUG-24
Extract Date: 20-AUG-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG357898

Report Date: 09-SEP-24
Analysis Date: 06-SEP-24
Analyst: EP
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
I,4-Dioxane	U	0.23	ug/L	1	.25	0.23	0.080
I,4-Dioxane-D8		84.9	%				



ID# **SR4436**

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

Lab Work Order # **MSA 3601**

Send Results to:	Contact Name: Kevin Czerwinski -Task Manager	Telephone: 631-245-0710 cell	Preservative: F	Filtered (✓):	
	Address: Two Huntington Quad-Suite 1S10	Fax:	# of Containers: 6	Container Information:	2
City: Melville	State: NY	Zip: 11747	E-mail Address: Kevin.Czerwinski@arcadis.com		
Project Name/Location (City, State): Prog 5C OU3 S RW 21-DNCT-OM M/SPDES			Project #: 30223092.OMMI3		
Sample & Packed Name: Patrick Delecurve			Signature: <i>Patrick Delecurve</i>		

- Keys**
- Preservation Key:**
 A. H₂SO₄
 B. HCL
 C. HNO₃
 D. NaOH
 E. None
 F. Other
 G. Other
 H. Other
- Container Information Key:**
 1. 40 ml Vial
 2. 1 L Amber
 3. 250 ml Plastic
 4. 500 ml Plastic
 5. Encoro
 6. 2 oz. Glass
 7. 4 oz. Glass
 8. 8 oz. Glass
 9. Other
 10. Other
- Matrix Key:**
 SO - Soil SE - Sediment NL - NAPL/Oil
 W - Water SL - Sludge SW - Sample Wipe
 T - Tissue A - Air Other: GW-Groundwater

1,4-Dioxane
8270D-SIM-CLE

PARAMETER ANALYSIS & METHOD

Sample ID	Collection		Type (✓)		Matrix					
	Date	Time	Comp	Grab						
Outfall 005	7/5/14	0645		X	GW	X				
Outfall 005-B109		0965		X	GW	X				
Outfall 005-T102		1305		X	GW	X				

REMARKS

pH/Temp: **6.1/63.1°F**
 pH/Temp: **6.2/57.3°F**
 pH/Temp: **6.1/67.6°F**
 B102 Inf pH/Temp: **5.0/60.4°F**

Special Instructions/Comments: **SVOC extracted by EDD-ARCADIS_EQUIS (EQUIS6-4 file)** Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By		Received By		Relinquished By		Laboratory Received By	
LAD Name: Katahdin Analytical	Cooler Custody Seal (✓)	Printed Name: Patrick Delecurve	Signature: <i>Patrick Delecurve</i>	Printed Name: Jacob Bruce	Signature: <i>Jacob Bruce</i>	Printed Name:	Signature:	Printed Name:	Signature:
<input checked="" type="checkbox"/> Cooler packed with ice (✓)	<input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Firm: Arcadis	Date/Time: 8/15/14	Firm: KAS	Date/Time: 8-16-14 1115	Firm: Courier	Date/Time:	Firm:	Date/Time:
Specify Turnaround Requirements: Normal TAT-10 business	Sample Receipt								
Shipping Tracking #	Condition/Cooler Temp								

20719528 CatC AR Form 06 27 2015 Distribution: **WHITE - Laboratory returns with results** **YELLOW - Lab copy** **PINK - Retained by Arcadis**

Katahdin Analytical Services SR4436 page 0000011 of 0000013

Report of Analytical Results

SDG: SR4437
Lab ID: SR4437-1DL
Client ID: B109-INFLUENT
Matrix: AQ
Lab File ID: U3462.D

Sample Date: 15-AUG-24
Extract Date: 20-AUG-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG357898

Report Date: 10-SEP-24
Analysis Date: 09-SEP-24
Analyst: EP
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		.20	ug/L	5	.25	1.2	0.40
1,4-Dioxane-D8		86.9	%				

Report of Analytical Results

SDG: SR4437
Lab ID: SR4437-2
Client ID: B109-POST-AOP
Matrix: AQ
Lab File ID: U3447.D

Sample Date: 15-AUG-24
Extract Date: 20-AUG-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG357898

Report Date: 10-SEP-24
Analysis Date: 06-SEP-24
Analyst: EP
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		75.2	%				

Report of Analysis

Client Sample ID:	OUTFALL 006	Date Sampled:	08/22/24
Lab Sample ID:	JD94768-2	Date Received:	08/22/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 624.1		
Project:	Northrop Grumman, OU2.2 OMM, Program 3		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4A9633.D	1	08/26/24 19:24	NW	n/a	n/a	V4A280
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	119%		80-128%
2037-26-5	Toluene-D8 (SUR)	100%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	103%		79-117%
1868-53-7	Dibromofluoromethane (S)	114%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID:	OUTFALL 006	Date Sampled:	08/22/24
Lab Sample ID:	JD94768-2	Date Received:	08/22/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrop Grumman, OU2.2 OMM, Program 3		

4.2
4

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	08/27/24	08/28/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	08/27/24	08/28/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56766

(2) Prep QC Batch: MP48779

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OUTFALL 006	Date Sampled:	08/22/24
Lab Sample ID:	JD94768-2	Date Received:	08/22/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrop Grumman, OU2.2 OMM, Program 3		

4.2
4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By Method
Nitrogen, Nitrate + Nitrite	5.0	0.10	0.090	mg/l	1	08/28/24 16:26 JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	5.0	0.30	0.23	mg/l	1	08/28/24 19:38 SS	SM4500 A-11
Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14	mg/l	1	08/28/24 19:38 SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

Report of Analytical Results

SDG: SR4576
Lab ID: SR4576-1
Client ID: OUTFALL 006
Matrix: AQ
Lab File ID: U3457.D

Sample Date: 22-AUG-24
Extract Date: 28-AUG-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG358379

Report Date: 09-SEP-24
Analysis Date: 06-SEP-24
Analyst: EP
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.9	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		80.0	%				

Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	08/07/24
Lab Sample ID:	JD93674-6	Date Received:	08/07/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1N14975.D	1	08/12/24 20:02	NW	n/a	n/a	V1N356
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
106-99-0	1,3-Butadiene	ND	5.0	0.62	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	0.49	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane ^a	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	08/07/24
Lab Sample ID:	JD93674-6	Date Received:	08/07/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

4.6
4

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
75-68-3	1-chloro-1,1-difluoroethane	ND	5.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	92%		82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WSP-7		Date Sampled: 08/07/24
Lab Sample ID: JD93674-6		Date Received: 08/07/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: EPA 608.3 SW846 3510C		
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2514966.D	1	08/17/24 17:52	TP	08/16/24 15:00	OP56957A	GXX8613
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	73%		10-156%
877-09-8	Tetrachloro-m-xylene	60%		10-156%
2051-24-3	Decachlorobiphenyl	62%		10-143%
2051-24-3	Decachlorobiphenyl	75%		10-143%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	08/07/24
Lab Sample ID:	JD93674-6	Date Received:	08/07/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

4.6
4

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	255	100	ug/l	1	08/10/24	08/12/24 MM	EPA 200.7 ¹	EPA 200.7 ²
Manganese	40.8	15	ug/l	1	08/10/24	08/12/24 MM	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56661

(2) Prep QC Batch: MP48445

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	08/07/24
Lab Sample ID:	JD93674-6	Date Received:	08/07/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

4.6

4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.2	0.10	mg/l	1	08/13/24 16:08	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.4	0.40	mg/l	1	08/14/24 14:58	SS	SM4500 A 11
Nitrogen, Total Kjeldahl	<0.30	0.30	mg/l	1	08/14/24 14:58	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OU3 POST-GAC	Date Sampled:	08/07/24
Lab Sample ID:	JD93674-9	Date Received:	08/07/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 608.3 SW846 3510C		
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2514967.D	1	08/17/24 18:10	TP	08/16/24 15:00	OP56957A	GXX8613
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	62%		10-156%
877-09-8	Tetrachloro-m-xylene	59%		10-156%
2051-24-3	Decachlorobiphenyl	84%		10-143%
2051-24-3	Decachlorobiphenyl	96%		10-143%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.9
4

Report of Analytical Results

SDG: SR4243
Lab ID: SR4243-6
Client ID: WSP-7
Matrix: AQ
Lab File ID: U3277.D

Sample Date: 07-AUG-24
Extract Date: 12-AUG-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG357530

Report Date: 19-AUG-24
Analysis Date: 16-AUG-24
Analyst: EP
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.49	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		81.5	%				



ID#: **SR4243**

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

Lab Work Order # **MSA 3601**

Send Results to:	Contract & Company Name Arcadis Nemickas-Task Manager		Telephone 631-391-5212 cell	Preservatives E																
	Address Two Huntington Quad-Suite 1S10		Fax	Filtered (✓)	-															
	City Melville	State NY	Zip 11747	Email Address Arcadis Nemickas@arcadis.com	# of Containers 14															
	Project Name/Location (City, State) Program 3 - OJ3 TS/SPDES (Bethpage, NY)			Project # 30227172 OMM12 Field	Container Information 2															

- Keys**
- Preservation Key:**
 A. H₂SO₄
 B. HCL
 C. HNO₃
 D. NaOH
 E. None
 F. Other _____
 G. Other _____
 H. Other _____
- Container Information Key:**
 1. 40 ml Vial
 2. 1 L Amber
 3. 250 ml Plastic
 4. 500 ml Plastic
 5. Enclave
 6. 2 oz Glass
 7. 4 oz Glass
 8. 8 oz Glass
 9. Other _____
 10. Other _____
- Matrix Key**
 SO - Soil
 W - Water
 T - Tissue
 SE - Sediment
 SL - Sludge
 A - Air
 NL - NAPL/Oil
 SW - Sample Wipe
 Other: EFF

Sample ID	Collection		Type (✓)		Matrix	1,4-dioxane 8270D SIM	PARAMETER ANALYSIS & METHOD										REMARKS					
	Date	Time	Comp	Grab																		
WSP-1	8/7/24	1050	PD	X	GW	X																pH/Temp: 5.4 / 66.5°F
WSP-2		1100		X	GW	X																pH/Temp: 5.3 / 65.1°F
WSP-3		1105		X	GW	X																pH/Temp: 5.6 / 62.7°F
WSP-4		1116		X	GW	X																pH/Temp: 5.1 / 63.1°F
WSP-5		1115		X	GW	X																pH/Temp: 5.3 / 64.5°F
WSP-7		1125		X	GW	X																pH/Temp: 6.4 / 63.8°F
REP-080724-PD-1				X	GW	X																
																						OU3 Post-GAC pH/Temp: 6.3 / 63.8°F

Special Instructions/Comments: **SVOC extracted by CCLE** Special QA/QC Instructions (✓):
EDD-ARCADIS_EQUIS (EQUIS6-4 file format)

Laboratory Information and Receipt		Relinquished By		Received By		Relinquished By		Laboratory Received By	
Lab Name Katahdin Analytical Labs	Cooler Custody Seal (✓) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Printed Name Patrick Dellacade	Signature <i>Patrick Dellacade</i>	Printed Name Jacob Bruce	Signature <i>Jacob Bruce</i>	Printed Name	Signature	Printed Name	Signature
Priority Turnaround Requirements Normal TAT-10 business days	Sample Receipt	Firm Arcadis	Firm/Title KAS	Firm/Title	Firm/Title	Firm/Counter	Firm	Firm/Counter	Firm
Shipping Tracking #	Condition/Cooler Temp	Date/Time 8/7/24	Date/Time 8-8-24 0935	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

20170226 CoC AR Form 08 27 2015 Distribution: **WHITE - Laboratory returns with results** **YELLOW - Lab copy** **PINK - Retained by Arcadis**
 G:\PROJECT\Northrup Grumman Bethpage_Program Wide\04 Project Management\Contracts and PO's\Lab\Katahdin Analytical\OU2 Navy Wells CoC Master

Katahdin Analytical Services SR4243 page 0000015 of 0000017

September 2024 - OU2 SPDES



Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

cathleen.sutton@ngc.com

ESH&M-026L-24
October 30, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

**Subject: Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A
Northrop Grumman Corporation - Bethpage, New York Facility**

Sarah Johnston:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of September 2024, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,

A handwritten signature in black ink, appearing to read "Edward J. Hannon", written over a horizontal line.

Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

cathleen.sutton@ngc.com

ESH&M-27L-24
October 30, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
September 1, 2024 – September 30, 2024.

Mr. Pelton:

Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – <0.47 ug/L
Outfall 5 – 3.0 ug/L
Outfall 6 – 6.1 ug/L

Sampling results for Outfall 1 for the following:

Ethylbenzene - <1.0
Toluene - <1.0
Benzene - <0.50
Xylene, Ortho - <1.0
Xylene, Meta - <1.0
Xylene, Para - <1.0

If you have any questions, please call me at 516-575-2333
Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	005- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
09/01/2024	09/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR
 (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
0040010 Effluent Gross	*****	*****	7.2	Req. Mon. MINIMUM	*****	7.2	0	1/30 Monthly	Grab
pH	*****	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
0040010 Intake from Well	*****	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	*****	4.4	0	1/30 Monthly	Grab
0060010 Effluent Gross	*****	*****	*****	*****	*****	10	0	1/30 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
3-4-2310 Effluent Gross	*****	*****	*****	*****	*****	5	0	1/30 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
3-4-47510 Effluent Gross	*****	*****	*****	*****	*****	5	0	1/30 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
3-4-50110 Effluent Gross	*****	*****	*****	*****	*****	5	0	1/30 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
3-4-50610 Effluent Gross	*****	*****	*****	*****	*****	5	0	1/30 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-575-2333	10/30/2024
TYPED OR PRINTED	AREA Code	NUMBER
	516-575-2333	
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		MM/DD/YYYY
		10/30/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714

ATTN: JOHN COFMAN

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

NY0096792	005-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
09/01/2024	09/30/2024

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	*****	0	1/30 Monthly	Grab
39175 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
Trichloroethylene	*****	*****	*****	*****	0	1/30 Monthly	Grab
39180 1 0 Effluent Gross	*****	*****	0.49	ug/L	0	1/30 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	0	1/30 Monthly	Measured
50050 1 0 Effluent Gross	*****	6.28	*****	*****	0	1/30 Monthly	Measured
Calculated limit	*****	5	*****	*****	0	1/30 Monthly	Calculated
74013 1 0 Effluent Gross	*****	DAILY MX	*****	*****	0	1/30 Monthly	Calculated
cis-1,2-Dichloroethylene	*****	*****	*****	*****	0	1/30 Monthly	Grab
77093 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
Trichlorofluoroethane	*****	*****	*****	*****	0	1/30 Monthly	Grab
81611 1 0 Effluent Gross	*****	*****	<2.0	ug/L	0	1/30 Monthly	Grab
trans-1,2-Dichloroethylene	*****	*****	*****	*****	0	1/30 Monthly	Grab
85810 1 0 Effluent Gross	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM TYPED OR PRINTED	516-515-2333 AREA Code NUMBER	10/30/2024 MM/DD/YYYY
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

NY0096792	006- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
09/01/2024	09/30/2024

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS				
pH	*****	*****	*****	*****	SU	0	1/30 Monthly	Grab
0040010 Effluent Gross	*****	*****	7.3 Req. Mon. MINIMUM	*****	SU	0	1/30 Monthly	Grab
pH	*****	*****	*****	*****	SU	0	1/30 Monthly	Grab
0040010 Intake from Well	*****	*****	5.9 Req. Mon. MINIMUM	*****	SU	0	1/30 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	mg/L	0	1/30 Monthly	Grab
0060010 Effluent Gross	*****	*****	5.7 10 DAILY MX	*****	mg/L	0	1/30 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	ug/L	0	1/30 Monthly	Grab
3442310 Effluent Gross	*****	*****	<1.0 5 DAILY MX	*****	ug/L	0	1/30 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	ug/L	0	1/30 Monthly	Grab
3447510 Effluent Gross	*****	*****	<1.0 5 DAILY MX	*****	ug/L	0	1/30 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	ug/L	0	1/30 Monthly	Grab
3450110 Effluent Gross	*****	*****	<1.0 5 DAILY MX	*****	ug/L	0	1/30 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	ug/L	0	1/30 Monthly	Grab
3450610 Effluent Gross	*****	*****	<1.0 5 DAILY MX	*****	ug/L	0	1/30 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-515-2333	10/30/2024
TYPED OR PRINTED	AREA Code	NUMBER
	516-515-2333	10/30/2024
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFFMAN

NY0096792	006- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
09/01/2024	09/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING		QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	VALUE	UNITS			
Vinyl chloride	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
39175 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
39180 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Measured
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Calculated
74013 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Calculated
cis-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
77093 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
Trichlorotrifluoroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
81611 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab
85810 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-575-2333	10/30/2024
TYPED OR PRINTED	AREA Code NUMBER	MM/DD/YYYY
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

OMH No. 2040-01004

PERMITTEE NAME/ADDRESS (include facility Name/Location if
 NAME: NORTROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BEHAPAGE, NY 11714

FACILITY: NORTROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BEHAPAGE, NY 11714

ATTN: JOHN COHMAN

NY0096792
 PERMIT NUMBER

001-WSP-7
 DISCHARGE NUMBER

MONITORING PERIOD
 MM/DD/YYYY
 09/01/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUJR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	*****	*****	0	1/30	Grab
0040010 Effluent Gross	*****	*****	*****	6.8	*****	*****	0	Monthly	Grab
pH	*****	*****	*****	6.5	*****	*****	0	Monthly	Grab
0040010 Intake from Well	*****	*****	*****	Req. Mon. MINIMUM	*****	*****	0	Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	Req. Mon. MINIMUM	*****	*****	0	Monthly	Grab
0060010 Effluent Gross	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Methylene chloride	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
3442310 Effluent Gross	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
3447510 Effluent Gross	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
3450110 Effluent Gross	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
3450610 Effluent Gross	*****	*****	*****	*****	*****	*****	0	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE NUMBER
 516-515-7333

DATE
 10/30/2024

AREA CODE NUMBER
 516-515-7333

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA) SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME: ADDRESS (include Facility Name/Location if
 NAME: NORTROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

NY0096792 PERMIT NUMBER	001-WSP-7 DISCHARGE NUMBER
MM/DD/YYYY 09/01/2024	MONITORING PERIOD MM/DD/YYYY 09/30/2024

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
39175 1 0 Effluent Gross	*****	*****	*****	5 DAILY MX	ug/L			Grab
Trichloroethylene	*****	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
39180 1 0 Effluent Gross	*****	*****	*****	5 DAILY MX	ug/L			Grab
Flow in conduit or thru treatment plant	*****	*****	*****	*****	*****	0	1/30 Monthly	Measured
50050 1 0 Effluent Gross	*****	0.39	*****	*****	*****	0	Monthly	Measured
Calculated limit	*****	*****	*****	*****	*****	0	1/30 Monthly	Calculated
74013 1 0 Effluent Gross	*****	*****	*****	*****	*****	0	1/30 Monthly	Calculated
cis-1,2-Dichloroethylene	*****	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
77093 1 0 Effluent Gross	*****	*****	*****	5 DAILY MX	ug/L			Grab
Trichlorofluoroethane	*****	*****	*****	<5.0	ug/L	0	1/30 Monthly	Grab
81611 0 Effluent Gross	*****	*****	*****	5 DAILY MX	ug/L			Grab
trans-1,2-Dichloroethylene	*****	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
85810 1 0 Effluent Gross	*****	*****	*****	5 DAILY MX	ug/L			Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER Edward S Hannon Corporate Manager ESHM TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT 	TELEPHONE NUMBER 516-575-2333	DATE 10/30/2024
I certify under penalty of law that this document and all attachments were prepared under my direct supervision and/or immediate personal supervision with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		AREA Code	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PI OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PI COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A



Monitoring Period:
September 2024

9/1/24 12:00 AM 9/30/24 12:00 AM
 30 Days

OU2 South Basins: Outfall 005⁽⁸⁾

Combined OU2 Groundwater Remedy Tower 102 and Building 109 Advanced Oxidation Process (AOP) Treatment Systems - Tower 102 Treated Air Stripper Discharge, Building 109 AOP Treatment System Discharge, and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 005 9/5/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	7.19	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	6.28	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾ (Building 109)	--	5.7	NS	SU	Monthly (1/30) Days	Grab	--	--
Influent pH ⁽⁵⁾ (Tower 102)	--	7.2	NS	SU	Monthly (1/30) Days	Grab	--	--
Outfall 005 Effluent pH ⁽⁵⁾	--	7.2	Range: 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	4.4	10.0	mg/L	Monthly (1/30) Days	Grab	263.85	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	15.7	600	µg/L	Monthly (1/30) Days	Grab	0.94	lbs/day
Sum of Total Iron and Manganese ⁽⁶⁾	--	15.7	1,000	µg/L	Monthly (1/30) Days	Calculated	0.94	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	0.49 J	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,2-Trichloroethane	79-00-5	< 1.0	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2-Dichloroethane	107-06-2	< 1.0	0.6	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2-Dichloropropane	78-87-5	< 1.0	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Benzene	71-43-2	< 1.0	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane (Building 109 Influent) ⁽⁹⁾	123-91-1	20	Monitor	µg/L	Monthly (1/30) Days	Grab	NA	lbs/day
1,4-Dioxane (Building 109 Post AOP) ⁽⁹⁾	123-91-1	<0.24	Monitor	µg/L	Monthly (1/30) Days	Grab	na	lbs/day
1,4-Dioxane (Building 109 Effluent) ⁽⁹⁾	123-91-1	<0.24	Monitor	µg/L	Monthly (1/30) Days	Grab	NA	lbs/day
1,4-Dioxane (Outfall 005) ⁽¹⁰⁾	123-91-1	3.0	Monitor	µg/L	Monthly (1/30) Days	Grab	0.18	lbs/day

Notes and abbreviations on last page.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A

OU2 West Basins: Outfall 006

OU2 Groundwater Remedy Tower 96 Treatment System - Treated Air Stripper Discharge and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 006 9/5/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	2.12	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	2.20	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	5.9	NS	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	7.3	Range: 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	5.7	10.0	mg/L	Monthly (1/30) Days	Grab	104.83	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁶⁾	--	ND	1,000	µg/L	Monthly (1/30) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	6.1	Monitor	µg/L	Monthly (1/30) Days	Grab	0.11	lbs/day

Notes and abbreviations on last page.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A

OU3 Effluent: Outfall 001 (WSP-7)

OU3 Groundwater Remedy Treatment System - Treated Air Stripper and Soil Gas Containment Condensate Discharge to Nassau County Recharge Basins

Parameter ⁽¹⁾	CAS Number	OUTFALL 001 (WSP-7) 9/5/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	0.30	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	0.39	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	6.5	NS	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.8	Range: 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	2.7	10.0	mg/L	Monthly (1/30) Days	Grab	6.80	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	42.1	600	µg/L	Monthly (1/30) Days	Grab	0.11	lbs/day
Sum of Total Iron and Manganese	--	42.1	1,000	µg/L	Monthly (1/30) Days	Calculated	0.11	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2 (trans)-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2-(cis)-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 5.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Benzene	71-43-2	< 0.50	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Ethylbenzene	100-41-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Toluene	108-88-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
o-Xylene	95-47-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
m,p-Xylene	--	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1016	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1221	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1232	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1242	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1248	12672-29-6	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1254	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1260	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1016 (Post GAC)	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1221 (Post GAC)	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1232 (Post GAC)	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1242 (Post GAC)	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1248 (Post GAC)	12672-29-6	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1254 (Post GAC)	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1260 (Post GAC)	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
1,4-Dioxane	123-91-1	0.47	Monitor	µg/L	Monthly (1/30) Days	Grab	1.18E-03	lbs/day

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A



Notes and Abbreviations:

XX	Bold value indicates the constituent was detected at or above its laboratory quantification limit		
<	Compound is not detected above laboratory quantification limit		
--	Not Applicable	CAS	Chemical Abstracts Service
µg/L	micrograms per liter	ND	Non Detect
lbs/day	pounds per day	NS	None Specified
lb/kg	pounds per kilogram	NYSDEC	New York State Department of Environmental Conservation
MGD	million gallons per day	SCADA	Supervisory Control and Data Acquisition
mg/L	milligrams per liter	SPDES	State Pollution Discharge Elimination System
min	minutes	TKN	Total Kjeldahl Nitrogen
SU	Standard Units		
B	Detected in method blank as reported by laboratory		
na	not available		
NA	Not Applicable		
COC	Chain of Custody		

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system; Polychlorinated Biphenyls (PCBs) using USEPA Method 608; 1,4-Dioxane using USEPA Method 8270D-SIM (CLLE); Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number: 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively; Total Iron and Manganese using USEPA Method 200.7.

2. Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023.

3. Mass Loading Calculation:

$$Mass\ Loading\ \left(\frac{lb}{day}\right) = Flow\ \left(\frac{gal}{min}\right) * 1440\ \left(\frac{min}{day}\right) * concentration\ \left(\frac{\mu g}{liter}\right) \div 10^9\ \left(\frac{\mu g}{kg}\right) * 3.785\ \left(\frac{liter}{gal}\right) * 2.2046\ \left(\frac{lb}{kg}\right)$$

4. Average and daily maximum flow calculated from SCADA reports for the month indicated.

5. Field measurement of pH taken by hand held meter on sample date.

6. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".

7. Average Mass Loading calculations are based on actual flow rates unless otherwise noted.

8. At the time of Outfall 005 SPDES sample collection on September 5, 2024, Building 109 AOP Treatment System remedial well flow for RW-20 was approximately 559 gpm, RW-21 was approximately 560 gpm and RW-22 was approximately 745 gpm. These were instantaneous readings taken at the time of sampling.

9. Building 109 AOP Treatment System Influent (corresponds to sample B109-INFLUENT on the COC), Post-AOP (corresponds to sample B109-POST-AOP on the COC) and Effluent (corresponds to sample OUTFALL 005-B109 on the COC) samples were collected and analyzed for 1,4-Dioxane as per footnote (1) of the SPDES permit equivalency for Outfall 005.

10. Outfall 005 combines discharge from Building 109 and Tower 102 treatment systems; however, Tower 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal.

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 09/05/24
Lab Sample ID: JD95585-2	Date Received: 09/05/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	09/10/24	09/10/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	15.7	15	ug/l	1	09/10/24	09/10/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56850

(2) Prep QC Batch: MP49081

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 09/05/24
Lab Sample ID: JD95585-2	Date Received: 09/05/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	4.1	0.10	mg/l	1	09/09/24 15:06	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	4.4	0.30	mg/l	1	09/10/24 16:57	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	0.27	0.20	mg/l	1	09/10/24 16:57	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.2
4

Report of Analytical Results

SDG: SR4899
Lab ID: SR4899-1
Client ID: OUTFALL 005
Matrix: AQ
Lab File ID: G0080.D

Sample Date: 05-SEP-24
Extract Date: 10-SEP-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG359005

Report Date: 17-SEP-24
Analysis Date: 16-SEP-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		3.0	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		73.5	%				

Report of Analytical Results

SDG: SR4899
Lab ID: SR4899-2
Client ID: OUTFALL 005-B109
Matrix: AQ
Lab File ID: G0081.D

Sample Date: 05-SEP-24
Extract Date: 10-SEP-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG359005

Report Date: 17-SEP-24
Analysis Date: 16-SEP-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		69.4	%				

Report of Analytical Results

SDG: SR4898
Lab ID: SR4898-1DL
Client ID: B109-INFLUENT
Matrix: AQ
Lab File ID: G0102.D

Sample Date: 05-SEP-24
Extract Date: 10-SEP-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG359005

Report Date: 24-SEP-24
Analysis Date: 19-SEP-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		20	ug/L	5	.25	1.2	0.40
1,4-Dioxane-D8		69.9	%				

Report of Analytical Results

SDG: SR4898
Lab ID: SR4898-2
Client ID: B109-POST-AOP
Matrix: AQ
Lab File ID: G0079.D

Sample Date: 05-SEP-24
Extract Date: 10-SEP-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG359005

Report Date: 24-SEP-24
Analysis Date: 16-SEP-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		60.9	%				

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 09/05/24
Lab Sample ID: JD95584-2	Date Received: 09/05/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 624.1	
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E183749.D	1	09/09/24 21:03	NW	n/a	n/a	V2E8894
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.41	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	108%		80-128%
2037-26-5	Toluene-D8 (SUR)	84%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	89%		79-117%
1868-53-7	Dibromofluoromethane (S)	112%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 09/05/24
Lab Sample ID: JD95584-2	Date Received: 09/05/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	09/10/24	09/10/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	09/10/24	09/10/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56850

(2) Prep QC Batch: MP49081

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 09/05/24
Lab Sample ID: JD95584-2	Date Received: 09/05/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	5.4	0.20	0.18	mg/l	2	09/09/24 17:06 JD	EPA	353.2/LACHAT
Nitrogen, Total ^a	5.7	0.40	0.32	mg/l	1	09/10/24 16:49 SS	SM4500	A-11
Nitrogen, Total Kjeldahl	0.27	0.20	0.14	mg/l	1	09/10/24 16:49 SS	EPA	351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 J = Indicates a result > = MDL but < RL

4.2
4

GW
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FED-EX Tracking #
Bill of Lading # **PREM-MM-082924-44**
Account Quote #
Account Job # **JD95584**

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE)		Matrix Codes			
Company Name Arcadis		Project Name AGMNYM62233 // OU2 System - GW		Requested Analysis (see TEST CODE)		Matrix Codes			
Street Address 2 Huntington Quad, Suite 1S10		Street Bethpage		Requested Analysis (see TEST CODE)		Matrix Codes			
City Melville NY		City Bethpage NY		Requested Analysis (see TEST CODE)		Matrix Codes			
State NY		State NY		Requested Analysis (see TEST CODE)		Matrix Codes			
Zip 11747		Zip 11747		Requested Analysis (see TEST CODE)		Matrix Codes			
Project Contact Kevin Czerwinski, Kevin.Czerwinski@arcadis.com		Project # 30218437.OMM#3		Requested Analysis (see TEST CODE)		Matrix Codes			
Phone # 631-245-0710		Client Purchase Order #		Requested Analysis (see TEST CODE)		Matrix Codes			
Sample(s) Name(s) Patrick Deleauve (631) 839-2544		Work Authorization # NY001406_2015.10.30		Requested Analysis (see TEST CODE)		Matrix Codes			
Phone #		Project Manager Carlo San Giovanni		Requested Analysis (see TEST CODE)		Matrix Codes			
Field ID / Point of Collection		Attention: Accounts Payable		Requested Analysis (see TEST CODE)		Matrix Codes			
MECHOI Vial #		Collection		Requested Analysis (see TEST CODE)		Matrix Codes			
Date		Date		Requested Analysis (see TEST CODE)		Matrix Codes			
Time		Time		Requested Analysis (see TEST CODE)		Matrix Codes			
Sampled by		Sampled by		Requested Analysis (see TEST CODE)		Matrix Codes			
Matrix		Matrix		Requested Analysis (see TEST CODE)		Matrix Codes			
# of bottles		# of bottles		Requested Analysis (see TEST CODE)		Matrix Codes			
NO		NO		Requested Analysis (see TEST CODE)		Matrix Codes			
MCH		MCH		Requested Analysis (see TEST CODE)		Matrix Codes			
PHOS		PHOS		Requested Analysis (see TEST CODE)		Matrix Codes			
PCB/CB		PCB/CB		Requested Analysis (see TEST CODE)		Matrix Codes			
NONE		NONE		Requested Analysis (see TEST CODE)		Matrix Codes			
DI Water		DI Water		Requested Analysis (see TEST CODE)		Matrix Codes			
METH		METH		Requested Analysis (see TEST CODE)		Matrix Codes			
ENDORNE		ENDORNE		Requested Analysis (see TEST CODE)		Matrix Codes			
NIR/DOA		NIR/DOA		Requested Analysis (see TEST CODE)		Matrix Codes			
V6242NG99SPDS + Chloroform + Benzene + 1,1,2-TCB + 1,1-DCA + 1,2-DCA + 1,2-DCEPANE (40 mL Clear Glass VOA's)		V6242NG99SPDS + Chloroform + Benzene + 1,1,2-TCB + 1,1-DCA + 1,2-DCA + 1,2-DCEPANE (40 mL Clear Glass VOA's)		Requested Analysis (see TEST CODE)		Matrix Codes			
V6242NG99SPDS + Chloroform (40 mL Clear Glass VOA's)		V6242NG99SPDS + Chloroform (40 mL Clear Glass VOA's)		Requested Analysis (see TEST CODE)		Matrix Codes			
XTNIT - EPA 353.2 & EPA 351.2 w/Total N Calc (250 mL Plastic)		XTNIT - EPA 353.2 & EPA 351.2 w/Total N Calc (250 mL Plastic)		Requested Analysis (see TEST CODE)		Matrix Codes			
Iron + Manganese EPA 200.7 (500 mL Plastic)		Iron + Manganese EPA 200.7 (500 mL Plastic)		Requested Analysis (see TEST CODE)		Matrix Codes			
LAB USE ONLY		LAB USE ONLY		Requested Analysis (see TEST CODE)		Matrix Codes			
Turnaround Time (Business days)		Data Deliverable Information		Comments / Special Instructions		Matrix Codes			
<input type="checkbox"/> Std. 16 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink		Approved By (Accutest P#) / Date: _____ _____ _____ _____ _____		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data		<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDO Format-EQuib # <input checked="" type="checkbox"/> Other COMMC+		SGS COURIER [Signature]	
Sample Custody must be documented below each time samples change possession, including courier delivery.									
Relinquished by Sampler:		Date Time:		Received By:		Date Time:			
1 Patrick Deleauve		9/5/24 1354		2 Raymond [Signature]		9/5/24 1655			
Relinquished by Sampler:		Date Time:		Received By:		Date Time:			
3				4					
Relinquished by:		Date Time:		Received By:		Date Time:			
5				6					
Custody Seal #		Custody Seal #		Custody Seal #		Custody Seal #			
Intact		Intact		Intact		Intact			
Not Intact		Not Intact		Not Intact		Not Intact			

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JD95584: Chain of Custody

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5.2
5

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Report of Analytical Results

SDG: SR4900
Lab ID: SR4900-1
Client ID: OUTFALL 006
Matrix: AQ
Lab File ID: G0083.D

Sample Date: 05-SEP-24
Extract Date: 10-SEP-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG359005

Report Date: 17-SEP-24
Analysis Date: 16-SEP-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		6.1	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		64.0	%				

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 09/05/24
Lab Sample ID: JD95586-1	Date Received: 09/05/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
75-68-3	1-chloro-1,1-difluoroethane	ND	5.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	95%		82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: WSP-7		
Lab Sample ID: JD95586-1		Date Sampled: 09/05/24
Matrix: AQ - Ground Water		Date Received: 09/05/24
Method: EPA 608.3 EPA 608		Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2515803.D	1	09/12/24 09:31	MLC	09/11/24 17:23	OP57556A	GXX8645
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	84%		10-156%
877-09-8	Tetrachloro-m-xylene	68%		10-156%
2051-24-3	Decachlorobiphenyl	48%		10-143%
2051-24-3	Decachlorobiphenyl	54%		10-143%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 09/05/24
Lab Sample ID: JD95586-1	Date Received: 09/05/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	09/10/24	09/10/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	42.1	15	ug/l	1	09/10/24	09/10/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA56850

(2) Prep QC Batch: MP49081

RL = Reporting Limit

4.1
4

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 09/05/24
Lab Sample ID: JD95586-1	Date Received: 09/05/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.3	0.10	mg/l	1	09/09/24 15:09	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.7	0.30	mg/l	1	09/10/24 16:59	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	0.37	0.20	mg/l	1	09/10/24 16:59	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.1
4

Report of Analysis

Client Sample ID: OU3 POST-GAC		Date Sampled: 09/05/24
Lab Sample ID: JD95586-3		Date Received: 09/05/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: EPA 608.3 EPA 608		
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2515804.D	1	09/12/24 09:48	MLC	09/11/24 17:23	OP57556A	GXX8645
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	65%		10-156%
877-09-8	Tetrachloro-m-xylene	60%		10-156%
2051-24-3	Decachlorobiphenyl	57%		10-143%
2051-24-3	Decachlorobiphenyl	67%		10-143%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
4



GW
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COC #7 PAGE 1 OF 1

FED-EX Tracking #
Accutest Quote #
Bottle Order Control #
Accutest Job #
PREM-MM-082974-43
JD95586

Client / Reporting Information		Project Information										Matrix Codes					
Company Name Arcadis		Project Name: AGMNYM62236 // OU3 BPGWCS - GW										DW-Drinking Water GW-Ground Water WW-Waste Water SW-Surface Water SO-Soil SL-Sludge SED-Sediment OI-Oil LIQ-Other Liquid AIR-Air SOL-Other Solid WP-Pipe FB-Field Blank EB-Equipment Blank RB-Rinse Blank TB-Trip Blank					
Street Address 2 Huntington Quad, Suite 1S10		Project # Prog 4A OU3.2-ONCT-OMM/SPDES															
City State Zip Melville NY 11747		Billing Information (if different from Report to) Company Name Bethpage NY															
Project Contact Arnas Nemickas, arnas.nemickas@arcadis.com		Street Address 830 Plaza Drive, Suite 600															
Phone # 631-391-5212		City State Zip Highlands Ranch, CO 80129															
Sample(s) Name(s) Patrick Delecam (631) 334-2591		Work Authorization #: NY001496_2015.10.30 Project Manager Arnie Nemickas															
Field ID / Point of Collection		MEOH(D) Vol #		Date		Time		Samped by		Matrix			# of bottles		Number of preserved bottles		LAB USE ONLY
1 WSP-7				4/5/24		0825		PP		GW			7		3		X
2 TB-090524 - PD -1				↓		0835		↓		GW			2		2		X
3 OU3 Post-GAC										GW			2		2		X
Turnaround Time (Business days)		Data Deliverable Information										Comments / Special Instructions					
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink		Approved By (Accutest PM): / Date: _____ <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDO Format EQuS 6 <input checked="" type="checkbox"/> Other COMM+ Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data										SGS COURIER VACT					
Sample Custody must be documented below each time samples change possession, including courier delivery.																	
Relinquished by Sampler: 1 Patrick Delecam		Date/Time: 4/5/24 1554		Received By: 1 Raymond Dr II				Relinquished By: 2 Raymond Dr II				Received By: 2 4/5/24 1655					
Relinquished by Sampler: 3		Date/Time:		Received By: 3				Relinquished By: 4				Received By: 4					
Relinquished by: 5		Date/Time:		Received By: 5				Custody Seal #				<input type="checkbox"/> Intact <input type="checkbox"/> Not Intact Office 809-c 1130					

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JD95586: Chain of Custody

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Report of Analytical Results

SDG: SR4901
Lab ID: SR4901-1
Client ID: WSP-7
Matrix: AQ
Lab File ID: G0084.D

Sample Date: 05-SEP-24
Extract Date: 10-SEP-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG359005

Report Date: 17-SEP-24
Analysis Date: 16-SEP-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.47	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		67.9	%				

October 2024 - OU2 SPDES



Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

edward.hannon@ngc.com

ESH&M-031L-24
November 27, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

**Subject: Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A
Northrop Grumman Corporation - Bethpage, New York Facility**

Sarah Johnston:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of October 2024, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,

Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

bcc: D. Stern (AG&M)



Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

edward.hannon@ngc.com

ESH&M-32L-24
November 27, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
October 1, 2024 – October 31, 2024.

Mr. Pelton:

Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – <0.47 ug/L
Outfall 5 – 2.4 ug/L
Outfall 6 – 7.7 ug/L

Sampling results for Outfall 1 for the following:

Ethylbenzene - <1.0
Toluene - <1.0
Benzene - <0.50
Xylene, Ortho - <1.0
Xylene, Meta - <1.0
Xylene, Para - <1.0

If you have any questions, please call me at 516-575-2333
Very truly yours,

Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

bcc: D. Stern (AG&M)

PERMITTEE NAME/ADDRESS (include Facility Name/Location if applicable):
 NAME: NORTHRUP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTHRUP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	005-C
PERMIT NUMBER	DISCHARGE NUMBER
MM/DD/YYYY	MM/DD/YYYY
10/01/2024	10/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	UNITS			
pH	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	6.5	Req. Mon. MINIMUM	*****	0	Monthly	Grab
pH	SAMPLE MEASUREMENT	*****	*****	*****	5.55	Req. Mon. MAXIMUM	*****	0	1/31	Grab
00400 1 0 Intake from Well	PERMIT REQUIREMENT	*****	*****	*****	5.55	Req. Mon. MINIMUM	*****	0	Monthly	Grab
Nitrogen, total (as N)	SAMPLE MEASUREMENT	*****	*****	*****	3.9	Req. Mon. MAXIMUM	*****	0	1/31	Grab
00600 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	10	DAILY MX	*****	0	Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	ug/L	*****	0	1/31	Grab
34423 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	<1.0	DAILY MX	*****	0	Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	ug/L	*****	0	1/31	Grab
34475 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	<1.0	DAILY MX	*****	0	Monthly	Grab
1,1-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	ug/L	*****	0	1/31	Grab
34501 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	<1.0	DAILY MX	*****	0	Monthly	Grab
1,1,1-Trichloroethane	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	ug/L	*****	0	1/31	Grab
34506 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	5	DAILY MX	*****	0	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER: **Edward S Hannon**
Corporate Manager ESHM
 TYPED OR PRINTED

I certify, under penalty of law that this document and all attachments were prepared under my direct supervision and that I am a duly licensed professional engineer with the authority to seal and certify the information submitted hereon in the personal capacity of my profession. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT: *[Signature]*

TELEPHONE: 516-575-2333
 AREA CODE: 516 NUMBER: 575-2333 DATE: 11/27/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

DMR No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTHRUP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTHRUP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COHMAN

NY0096792	005-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
10/01/2024	10/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUFR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE			
Vinyl chloride	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
39175 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	1/31	Grab
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	Monthly	Grab
39180 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	1/31	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	6.69	*****	*****	*****	*****	*****	1/31	Measured
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	5	MGD	*****	*****	*****	*****	Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	1/31	Calculated
74013 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	Req. Mon. Single Rdg	*****	*****	*****	*****	Monthly	Calculated
cis- 1,2- Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	1/31	Grab
77093 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	Monthly	Grab
Trichlorofluorothane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	1/31	Grab
81611 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	Monthly	Grab
Trans- 1,2- Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	1/31	Grab
85810 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM

Signature: *Edward J Hannon*
 AUTHORIZED AGENT

TELEPHONE: 516-515-2533
 AREA CODE: 516 NUMBER: 515-2533

DATE: 11/27/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if applicable)
 NAME: NORTROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	006- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
10/01/2024	10/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	UNITS			
PH	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****				
00400 1 0	PERMIT REQUIREMENT	*****	*****	*****	6.4	*****	6.4	0	1/31	Grab
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	Req. Mon. MINIMUM	*****	Req. Mon. MAXIMUM		Monthly	Grab
00400 1 0	PERMIT REQUIREMENT	*****	*****	*****	5.7	*****	5.7	0	1/31	Grab
Intake from Well	SAMPLE MEASUREMENT	*****	*****	*****	Req. Mon. MINIMUM	*****	Req. Mon. MAXIMUM		Monthly	Grab
Nitrogen, total [as N]	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****		Monthly	Grab
00600 1 0	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****		Monthly	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****		Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****		Monthly	Grab
34423 1 0	PERMIT REQUIREMENT	*****	*****	*****	<1.0	*****	<1.0	0	1/31	Grab
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****		Monthly	Grab
Tetrachloroethylene	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****		Monthly	Grab
34475 1 0	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	*****	<1.0	0	1/31	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****		Monthly	Grab
1,1-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****		Monthly	Grab
34501 1 0	PERMIT REQUIREMENT	*****	*****	*****	<1.0	*****	<1.0	0	1/31	Grab
Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****		Monthly	Grab
1,1,1-Trichloroethane	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****		Monthly	Grab
34506 1 0	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	*****	<1.0	0	1/31	Grab
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****		Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE: 516-575-2333
 ARRA Code: NUMBER: 11/21/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) SUPPLY WELL & OUTFALL PH MONTHLY REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

DMR No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if applicable)
 NAME: NORTRIP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W1G-035
 BETHPAGE, NY 11714
 FACILITY: NORTRIP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W1G-035
 BETHPAGE, NY 11714
 ATTN: JOHN COHMAN

NY0096792	006-C
PERMIT NUMBER	DISCHARGE NUMBER
MM/DD/YYYY	MM/DD/YYYY
10/01/2024	10/31/2024
MONITORING PERIOD	

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Vinyl chloride	MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
39175 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
39180 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
50050 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Calculated limit	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
74013 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
cis- 1,2- Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
77093 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Trichlorofluoroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
81611 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Trans- 1,2- Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
85810 1 0	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****
Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE: 516-575-2333
 AREA Code: NUMBER: 11/21/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

DMR No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if applicable)
 NAME: NORTRROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714

FACILITY: NORTRROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COLEMAN

NY0096792
 PERMIT NUMBER

001- WSP-7
 DISCHARGE NUMBER

MONITORING PERIOD
 MM/DD/YYYY
 10/01/2024

MM/DD/YYYY
 10/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUJR 01)
 NC COOLING & STORM WATER TO CW
 External Outfall

No Discharge

PARAMETER	SAMPLING METHOD	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. OF ANALYSIS	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
0040010 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	6.8	*****	Req. Mon. MINIMUM	0	1/31	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
0040010 Intake from Well	SAMPLE MEASUREMENT	*****	*****	*****	5.9	*****	Req. Mon. MINIMUM	0	1/31	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
0060010 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	2.4	*****	Req. Mon. MAXIMUM	0	1/31	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT	*****	*****	*****	42.0	*****	ug/L	0	1/31	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
3442310 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	*****	ug/L	0	1/31	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	*****	ug/L	0	1/31	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
3447510 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	*****	ug/L	0	1/31	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
1,1-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	*****	ug/L	0	1/31	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
3450110 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	*****	ug/L	0	1/31	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab
3450610 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	<1.0	*****	ug/L	0	1/31	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE: 516-575-7333
 AREA Code: NUMBER: 11/27/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE. SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY REPORT. PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

DMR No. 2040-0004

PERMITTEE NAME/ ADDRESS (include Facility Name/location if applicable)
 NAME: NORTRROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SQ. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTRROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SQ. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN CORMAN

NY00096792	001 - WSP-1
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
10/01/2024	10/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUHR 01)
 NC COOLING & STORM WATER '10 CW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE				
Vinyl chloride	MEASUREMENT	*****	*****	*****	*****	*****	*****	0	1/31	Grab	
39175 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	ug/L	0	Monthly	Grab	
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	0	1/31	Grab	
39180 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	ug/L	0	Monthly	Grab	
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	0.37	*****	*****	*****	*****	0	1/31	Measured	
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	5 DAILY MX	MGID	*****	*****	*****	0	Monthly	Measured	
Calculated limit	SAMPLE MEASUREMENT	*****	1	*****	*****	*****	*****	0	1/31	Calculated	
74013 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	Req. Mon. Single Rdg	*****	*****	*****	*****	0	Monthly	Calculated	
cis-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	0	1/31	Grab	
77093 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	ug/L	0	Monthly	Grab	
Trichlorofluoroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	0	1/31	Grab	
81611 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	ug/L	0	Monthly	Grab	
Trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	0	1/31	Grab	
85810 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	ug/L	0	Monthly	Grab	

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	Edward S Hannon Corporate Manager ESHM	TELEPHONE	DATE
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		516-515-2333	11/27/2024
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	*****	TELEPHONE	DATE
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		*****	*****

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GW HAS PI OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PI MONTHLY & REPORT PI COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

OU2 West Basins: Outfall 006

OU2 Groundwater Remedy Tower 96 Treatment System - Treated Air Stripper Discharge and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 006 10/9/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	2.15	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	2.20	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	5.7	NS	SU	Monthly (1/31) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.4	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	5.0	10.0	mg/L	Monthly (1/31) Days	Grab	91.79	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁶⁾	--	ND	1,000	µg/L	Monthly (1/31) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	7.7	Monitor	µg/L	Monthly (1/31) Days	Grab	0.14	lbs/day

Notes and abbreviations on last page

Table 1
 SPDES Permit Equivalency Monthly Report
 OU2 and OU3 On-Site Containment Systems
 Northrop Grumman Bethpage Facility Site
 NYSDEC Site No. 130003A



OU3 Effluent: Outfall 001 (WSP-7)

OU3 Groundwater Remedy Treatment System - Treated Air Stripper and Soil Gas Containment Condensate Discharge to Nassau County Recharge Basins

Parameter ⁽¹⁾	CAS Number	OUTFALL 001 (WSP-7) 10/9/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	0.26	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	0.37	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	5.9	NS	SU	Monthly (1/31) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.8	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	2.4	10.0	mg/L	Monthly (1/31) Days	Grab	5.22	lbs/day
Total Iron	7439-89-6	365	600	µg/L	Monthly (1/31) Days	Grab	0.79	lbs/day
Total Manganese	7439-96-5	41.3	600	µg/L	Monthly (1/31) Days	Grab	0.09	lbs/day
Sum of Total Iron and Manganese	--	406.3	1,000	µg/L	Monthly (1/31) Days	Calculated	0.88	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2 (trans)-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-(cis)-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 5.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Benzene	71-43-2	< 0.50	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Ethylbenzene	100-41-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Toluene	108-88-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
o-Xylene	95-47-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
m,p-Xylene	--	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1016	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1221	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1232	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1242	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1248	12672-29-6	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1254	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1260	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1016 (Post GAC)	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1221 (Post GAC)	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1232 (Post GAC)	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1242 (Post GAC)	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1248 (Post GAC)	12672-29-6	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1254 (Post GAC)	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1260 (Post GAC)	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
1,4-Dioxane	123-91-1	0.47	Monitor	µg/L	Monthly (1/31) Days	Grab	1.02E-03	lbs/day

Notes and Abbreviations:

XX	Bold value indicates the constituent was detected at or above its laboratory quantification limit		
<	Compound is not detected above laboratory quantification limit		
--	Not Applicable	CAS	Chemical Abstracts Service
µg/L	micrograms per liter	ND	Non Detect
lbs/day	pounds per day	NS	None Specified
lb/kg	pounds per kilogram	NYSDEC	New York State Department of Environmental Conservation
MGD	million gallons per day	SCADA	Supervisory Control and Data Acquisition
mg/L	milligrams per liter	SPDES	State Pollution Discharge Elimination System
min	minutes	TKN	Total Kjeldahl Nitrogen
SU	Standard Units		
B	Detected in method blank as reported by laboratory		
na	not available		
NA	Not Applicable		
COC	Chain of Custody		

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system, Polychlorinated Biphenyls (PCBs) using USEPA Method 608, 1,4-Dioxane using USEPA Method 8270D-SIM (CLLE); Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number: 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively; Total Iron and Manganese using USEPA Method 200.7.

2. Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023.

3. Mass Loading Calculation:

$$Mass\ Loading\ \left(\frac{lb}{day}\right) = Flow\ \left(\frac{gal}{min}\right) \cdot 1440\ \left(\frac{min}{day}\right) \cdot concentration\ \left(\frac{\mu g}{liter}\right) \cdot 10^9\ \left(\frac{\mu g}{kg}\right) \cdot 3.785\ \left(\frac{liter}{gal}\right) \cdot 2.2046\ \left(\frac{lb}{kg}\right)$$

4. Average and daily maximum flow calculated from SCADA reports for the month indicated.

5. Field measurement of pH taken by hand held meter on sample date.

6. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".

7. Average Mass Loading calculations are based on actual flow rates unless otherwise noted.

8. At the time of Outfall 005 SPDES sample collection on October 9, 2024, Building 109 AOP Treatment System remedial well flow for RW-20 was approximately 613 gpm, RW-21 was approximately 613 gpm and RW-22 was approximately 749 gpm. These were instantaneous readings taken at the time of sampling.

9. Building 109 AOP Treatment System Influent (corresponds to sample B109-INFLUENT on the COC), Post-AOP (corresponds to sample B109-POST-AOP on the COC) and Effluent (corresponds to sample OUTFALL 005-B109 on the COC) samples were collected and analyzed for 1,4-Dioxane as per footnote (1) of the SPDES permit equivalency for Outfall 005.

10. Outfall 005 combines discharge from Building 109 and Tower 102 treatment systems, however, Tower 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal.

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 10/09/24
Lab Sample ID: JD98110-2	Date Received: 10/09/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 624.1	
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1F13529.D	1	10/14/24 20:58	NW	n/a	n/a	V1F416
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.71	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.42	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.96	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.96	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.80	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.41	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	94%		80-128%
2037-26-5	Toluene-D8 (SUR)	99%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	94%		79-117%
1868-53-7	Dibromofluoromethane (S)	112%		84-121%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OUTFALL 005	Date Sampled:	10/09/24
Lab Sample ID:	JD98110-2	Date Received:	10/09/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	<100	100	ug/l	1	10/15/24	10/16/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	<15	15	ug/l	1	10/15/24	10/16/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA57093

(2) Prep QC Batch: MP49944

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OUTFALL 005	Date Sampled:	10/09/24
Lab Sample ID:	JD98110-2	Date Received:	10/09/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	3.6	0.10	0.090	mg/l	1	10/14/24 18:01 JD	EPA 353.2/LACHAT	
Nitrogen, Total ^a	3.9	0.30	0.23	mg/l	1	10/15/24 18:55 SS	SM4500 A-11	
Nitrogen, Total Kjeldahl	0.27	0.20	0.14	mg/l	1	10/15/24 18:55 SS	EPA 351.2/LACHAT	

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

TB
GW

LAB ID: 108924-PD-2
Account Code: 108924-29

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE)		Matrix Codes														
Company Name Arcadie Street Address 2 Huntington Quad, Suite 1S10 City State Zip Melville NY 11747 Project Contact Kevin Czarwinski, Kevin.Czarwinski@arcadia.com Phone # 631-245-0710 Sample(s) Name(s) Patrick Delbecq (631) 329-2544		Project Name Prog 5C OU3.5 RW-21-ONCT-OMM/SPDES Street Bethpage NY Billing Information (if different from Report to) Company Name Arcadia, U.S., Inc. Street Address 630 Plaza Drive, Suite 600 City State Zip Highlands Ranch, CO 80129 Client Purchase Order # 30223002 OMMIS Work Authorization # NY001406_2015.12.30 Project Manager Carlo San Giovanni		Requested Analysis (see TEST CODE) Microbials + Chloroform + Benzene + 1,2-TCF + 1,1-DCA + 1,2-DCA + 1,2-DCEPANE + 40 mL Clear Glass VOA's V6242NG38SPDS+Chloroform (40 mL Clear Glass VOA's) XTINIT - EPA 353.2 & EPA 351.2 w/Total N Calc (250 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic)		Matrix Codes DW - Drinking Water GW - Ground Water WW - Wastewater SW - Surface Water SO - Soil SL - Sludge SED - Sediment O - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WIP - Wipes FB - Field Blank EQ - Equipment Blank PB - Rinse Blank TB - Trip Blank														
Sample #	Field ID / Point of Collection	MECHCL Var	Date	Time	Sorted by	Matrix	# of bottles	TD	Micro	Chloro	Benzene	1,2-TCF	1,1-DCA	1,2-DCA	1,2-DCEPANE	40 mL Clear Glass VOA's	XTINIT	Iron + Manganese	LAB USE ONLY	
1	TB-108924-PD-2				TB		2	2												
3	Outfall 005		10/9/24	1020	PD	GW	5	3	1	1							X	X	X	
3	Outfall 005-B109			1040		GW	5	3	1	1							X	X	X	
4	Outfall 005-T102			0945		GW	5	3	1	1							X	X	X	

© WPROJECTV\ndevro Grumman Bethpage\OU3.5 ONCT08 Notes and Data\System Sampling\Faburry (Q:\MYCOC\SGSPAR_OLD_COC\labP\6_82233_RevDec2017

1.9

Report of Analytical Results

SDG: SR5572
Lab ID: SR5572-1
Client ID: OUTFALL 005
Matrix: AQ
Lab File ID: G0212.D

Sample Date: 09-OCT-24
Extract Date: 10-OCT-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG360509

Report Date: 17-OCT-24
Analysis Date: 15-OCT-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		2.4	ug/L	1	.25	0.23	0.079
1,4-Dioxane-D8		58.0	%				

Report of Analytical Results

SDG: SR5572
Lab ID: SR5572-2
Client ID: OUTFALL 005-B109
Matrix: AQ
Lab File ID: G0213.D

Sample Date: 09-OCT-24
Extract Date: 10-OCT-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG360509

Report Date: 17-OCT-24
Analysis Date: 15-OCT-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		72.9	%				

ID#: **CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM**

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SR 5572

Lab Work Order # **MSA_3601**

Contact & Company Name Kevin Czerwinski -Task Manager		Telephone 631-245-0710 cell		Preservative E																	
Address Two Huntington Quad-Suite 1S10		Fax		Filtered (?)																	
City State Zip Melville NY 11747		E-mail Address Kevin.Czerwinski@arcadis.com		No of Containers 6																	
Project No. in Account (Cty, State) Prog SC 0U3 5 RW-21-OMCT-OMMSPOES		Project # 30223092 OMMI3		Sampler Information 2																	
Signature of Project Manager <i>Patrick Delleave</i>		Signature of Analyst <i>Patrick Delleave</i>		PARAMETER ANALYSIS & METHOD																	
Sample ID		Collection		Type (*)		Matrix		1,4-Dioxane 8270D-SIM-CLE													
		Date	Time	Comp	Grab																
Outfall 005		10/9/24	1030		X	GW	X	REMARKS pH/Temp: 6.5 / 60.2°F pH/Temp: 6.6 / 59.3°F pH/Temp: 6.4 / 60.3°F B102 Inf pH/Temp: 5.8 / 60.3°F													
Outfall 005-B109			1040		X	GW	X														
Outfall 005-T102			0945		X	GW	X														

Special Instructions/Comments: SVOC extracted by EDD-ARCADIS_EQUIS (EQUIS-6 file) Special QA/QC Instructions (✓):

Laboratory Information and Receipt		Relinquished By		Received By		Relinquished By		Laboratory Received By	
Lab Name Kalahdin Analytical	Cooler/Custody Seal (✓) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Printed Name <i>Patrick Delleave</i>	Printed Name <i>Evann Price</i>	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
<input checked="" type="checkbox"/> Cooler packed with ice (✓)		Signature <i>Patrick Delleave</i>	Signature <i>Evann Price</i>	Signature	Signature	Signature	Signature	Signature	Signature
Special Turnaround Requirements Normal TAT-10 business	Sample Receipt	Firm Arcadis	Firm/Courier Kalahdin	Firm/Courier	Firm/Courier	Firm/Courier	Firm/Courier	Firm/Courier	Firm/Courier
Shipping Tracking #	Condition/Cooler Temp	Date/Time 10/14/24	Date/Time 10-10-24 0945	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

2973826 Co/C AR Form 08.27.2015 Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis

Kalahdin Analytical Services SR5572 page 0000011 of 0000013

Report of Analytical Results

SDG: SR5573
Lab ID: SR5573-1DL
Client ID: B109-INFLUENT
Matrix: AQ
Lab File ID: G0269.D

Sample Date: 09-OCT-24
Extract Date: 10-OCT-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG360509

Report Date: 31-OCT-24
Analysis Date: 24-OCT-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		19	ug/L	5	.25	1.2	0.40
1,4-Dioxane-D8		64.9	%				

Report of Analytical Results

SDG: SR5573
Lab ID: SR5573-2
Client ID: B109-POST-AOP
Matrix: AQ
Lab File ID: G0216.D

Sample Date: 09-OCT-24
Extract Date: 10-OCT-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG360509

Report Date: 31-OCT-24
Analysis Date: 15-OCT-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		68.1	%				

SR 5573



ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

Lab Work Order #
MSA 3601

Client & Company Name Kevin Czerwinski -Task Manager 631-245-0710 cell		Task ID 831-245-0710 cell		Preservative E													
Address Two Huntington Quad-Suite 1S10 Melville NY 11747		Email/Accounts Kevin.Czerwinski@arcadis.com		Filtered (-) -		# of Containers 4		Container Information 2		Preservation Key: A. H ₂ SO ₄ B. HCL C. HNO ₃ D. NaOH E. None F. Other G. Other H. Other		Keys: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Etcare 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other 10. Other		Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Etcare 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other 10. Other		Matrix Key: SO - Soil W - Water T - Tissue SE - Sediment SL - Sludge A - Air NL - NAPL/CLM SW - Sample Wipe Other - GW-Groundwater	
Project Name/Location (City, State) Prog SC OJ3.5 RW-21-ONCT-OMM/SPDES		Project # 30223092 OMMI3		PARAMETER ANALYSIS & METHOD													
Signature of Field Analyst <i>Patrick DeLaware</i>		Signature of Lab Analyst <i>Patrick DeLaware</i>		<i>1,4-Dioxane 8270D-SIM-CLE</i>													
Sample ID	Collection		Type (-)		Matrix											REMARKS	
	Date	Time	Comp	Grab													
B109-Influent	10/9/24	1100		X	GW	X											pH/Temp: 5.3/55.3°F
B109-Post-AOP	10/9/24	1055		X	GW	X											pH/Temp: 6.6/56.2°F
Special Instructions/Comments: SVOC extracted by EDD-ARCADIS EQUIS (EQUIS6-4 file)													<input type="checkbox"/> Special QA/QC Instructions (-)				
Lab Name Katahdin Analytical		Cooler Custody Seal (-) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact		Relinquished By Printed Name: <i>Patrick DeLaware</i> Signature: <i>Patrick DeLaware</i> Firm: <i>Arcadis</i> Date/Time: <i>10/9/24</i>		Received By Printed Name: <i>Evan Price</i> Signature: <i>Evan Price</i> Firm: <i>Katahdin</i> Date/Time: <i>10-10-24 0945</i>		Relinquished By Printed Name: _____ Signature: _____ Firm: _____ Date/Time: _____		Laboratory Received By Printed Name: _____ Signature: _____ Firm: _____ Date/Time: _____							
Specify Turnaround Requirements Normal TAT-10 business		Sample Receipt Condition/Cooler Temp: _____		Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis													

Katahdin Analytical Services SR5573 page 0000010 of 0000012

20170826 CatC AR Form 09 27 2015
 G:\APROJECT\Northrop Grumman Bethpage_Program Wide\04 Project Management\Contracts and POS\Lab\Katahdin Analytical\QU2 Navy Wells COC Master

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 10/09/24
Lab Sample ID: JD98109-2	Date Received: 10/09/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 624.1	
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1F13528.D	1	10/14/24 20:32	NW	n/a	n/a	V1F416
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.80	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	92%		80-128%
2037-26-5	Toluene-D8 (SUR)	97%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	92%		79-117%
1868-53-7	Dibromofluoromethane (S)	113%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 10/09/24
Lab Sample ID: JD98109-2	Date Received: 10/09/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	10/15/24	10/16/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	10/15/24	10/16/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA57093

(2) Prep QC Batch: MP49944

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 10/09/24
Lab Sample ID: JD98109-2	Date Received: 10/09/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By Method
Nitrogen, Nitrate + Nitrite	4.7	0.10	0.090	mg/l	1	10/14/24 18:00 JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	5.0	0.30	0.23	mg/l	1	10/15/24 18:54 SS	SM4500 A-11
Nitrogen, Total Kjeldahl	0.30	0.20	0.14	mg/l	1	10/15/24 18:54 SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 J = Indicates a result >= MDL but < RL

Report of Analytical Results

SDG: SR5574
Lab ID: SR5574-1
Client ID: OUTFALL 006
Matrix: AQ
Lab File ID: G0217.D

Sample Date: 09-OCT-24
Extract Date: 10-OCT-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG360509

Report Date: 17-OCT-24
Analysis Date: 15-OCT-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		7.7	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		74.0	%				

Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	10/09/24
Lab Sample ID:	JD98108-1	Date Received:	10/09/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	4A10666.D	1	10/15/24 12:42	NW	n/a	n/a	V4A308

Run #1	Purge Volume
Run #2	5.0 ml

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK) ^a	ND	10	2.7	ug/l	
106-99-0	1,3-Butadiene	ND	5.0	0.62	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	0.49	ug/l	
75-00-3	Chloroethane ^b	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone ^a	ND	5.0	4.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

MDL = Method Detection Limit

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 10/09/24
Lab Sample ID: JD98108-1	Date Received: 10/09/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride ^a	ND	1.0	0.52	ug/l	
75-68-3	1-chloro-1,1-difluoroethane	ND	5.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		80-120%
17060-07-0	1,2-Dichloroethane-D4	111%		80-120%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	109%		82-114%

- (a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- (b) Associated CCV outside of control limits low.

ND = Not detected	MDL = Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 10/09/24
Lab Sample ID: JD98108-1	Date Received: 10/09/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 608.3 EPA 608	
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2517257.D	1	10/18/24 03:38	CP	10/17/24 12:00	OP58612A	GXX8701
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	83%		10-156%
877-09-8	Tetrachloro-m-xylene	65%		10-156%
2051-24-3	Decachlorobiphenyl	31%		10-143%
2051-24-3	Decachlorobiphenyl	28%		10-143%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 10/09/24
Lab Sample ID: JD98108-1	Date Received: 10/09/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	365	100	ug/l	1	10/15/24	10/16/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	41.3	15	ug/l	1	10/15/24	10/16/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA57093

(2) Prep QC Batch: MP49944

RL = Reporting Limit

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 10/09/24
Lab Sample ID: JD98108-1	Date Received: 10/09/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.2	0.10	mg/l	1	10/14/24 17:59	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.4	0.30	mg/l	1	10/15/24 18:53	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	<0.20	0.20	mg/l	1	10/15/24 18:53	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Report of Analysis

Client Sample ID: OU3 POST-GAC Lab Sample ID: JD98108-3 Matrix: AQ - Ground Water Method: EPA 608.3 EPA 608 Project: Northrop Grumman, OU3.2 OMM, Program 4A	Date Sampled: 10/09/24 Date Received: 10/09/24 Percent Solids: n/a
---	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2517258.D	1	10/18/24 03:56	CP	10/17/24 12:00	OP58612A	GXX8701
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	72%		10-156%
877-09-8	Tetrachloro-m-xylene	64%		10-156%
2051-24-3	Decachlorobiphenyl	41%		10-143%
2051-24-3	Decachlorobiphenyl	41%		10-143%

ND = Not detected RL = Reporting Limit E = Indicates value exceeds calibration range	MDL = Method Detection Limit	J = Indicates an estimated value B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound
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Report of Analytical Results

SDG: SR5571
Lab ID: SR5571-1
Client ID: WSP-7
Matrix: AQ
Lab File ID: G0211.D

Sample Date: 09-OCT-24
Extract Date: 10-OCT-24
Extracted By: NEH
Extraction Method: SW846 3520C
Lab Prep Batch: WG360509

Report Date: 17-OCT-24
Analysis Date: 15-OCT-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.47	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		56.8	%				

November 2024 - OU2 SPDES

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

edward.hannon@ngc.com

ESH&M-033L-24
December 23, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

**Subject: Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A
Northrop Grumman Corporation - Bethpage, New York Facility**

Sarah Johnston:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of November 2024, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

edward.hannon@ngc.com

ESH&M-34L-24
December 23, 2024

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
November 1, 2024 – November 30, 2024.

Mr. Pelton:

Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – <0.24 ug/L
Outfall 5 – 4.2 ug/L
Outfall 6 – 12.0 ug/L

Sampling results for Outfall 1 for the following:

Ethylbenzene - <1.0
Toluene - <1.0
Benzene - <0.50
Xylene, Ortho - <1.0
Xylene, Meta - <1.0
Xylene, Para - <1.0

If you have any questions, please call me at 516-575-2333
Very truly yours,



Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if NAME)
 NORTHROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTHROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792	005- C
PERMIT NUMBER	DISCHARGE NUMBER
MM/DD/YYYY	MM/DD/YYYY
11/01/2024	11/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	SU	6.6	0	1/30 Monthly	Grab
0040010 Effluent Gross	*****	*****	*****	*****	SU	6.6	0	1/30 Monthly	Grab
pH	*****	*****	*****	*****	SU	5.45	0	1/30 Monthly	Grab
0040010 Intake from Well	*****	*****	*****	*****	SU	5.45	0	1/30 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	mg/L	3.2	0	1/30 Monthly	Grab
0060010 Effluent Gross	*****	*****	*****	*****	ug/L	10	0	1/30 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	ug/L	5	0	1/30 Monthly	Grab
3442310 Effluent Gross	*****	*****	*****	*****	ug/L	5	0	1/30 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	ug/L	5	0	1/30 Monthly	Grab
3447510 Effluent Gross	*****	*****	*****	*****	ug/L	5	0	1/30 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	ug/L	5	0	1/30 Monthly	Grab
3450110 Effluent Gross	*****	*****	*****	*****	ug/L	5	0	1/30 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	ug/L	5	0	1/30 Monthly	Grab
3450610 Effluent Gross	*****	*****	*****	*****	ug/L	5	0	1/30 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-575-2333	12/23/2024
TYPED OR PRINTED	AREA Code	MM/DD/YYYY
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	NUMBER	
<i>Edward J Hannon</i>	516-575-2333	

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if NAME):
 NORTHPRO GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTHPRO GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COFMAN

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

NY0096792
 PERMIT NUMBER
 005-C
 DISCHARGE NUMBER
 MONITORING PERIOD
 MM/DD/YYYY
 11/01/2024
 MM/DD/YYYY
 11/30/2024

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Vinyl chloride	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
3917510 Effluent Gross	*****	*****	5 DAILY MX	ug/L	0	1/30 Monthly	Grab
Trichloroethylene	*****	*****	*****	*****	0	1/30 Monthly	Grab
3918010 Effluent Gross	*****	*****	5 DAILY MX	ug/L	0	1/30 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	0	1/30 Monthly	Measured
5005010 Effluent Gross	*****	*****	*****	*****	0	1/30 Monthly	Measured
Calculated limit	*****	*****	*****	*****	0	1/30 Monthly	Calculated
7401310 Effluent Gross	*****	*****	*****	*****	0	1/30 Monthly	Calculated
cis-1,2-Dichloroethylene	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
7709310 Effluent Gross	*****	*****	5 DAILY MX	ug/L	0	1/30 Monthly	Grab
Trichlorotrifluoroethane	*****	*****	<2.0	ug/L	0	1/30 Monthly	Grab
8161110 Effluent Gross	*****	*****	5 DAILY MX	ug/L	0	1/30 Monthly	Grab
trans 1,2-Dichloroethylene	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
8581010 Effluent Gross	*****	*****	5 DAILY MX	ug/L	0	1/30 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER: **Edward J Hannon Corporate Manager ESHM**
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT: *Edward J Hannon*

TELEPHONE: _____ DATE: 12/23/2024

AREA Code: 516 NUMBER: 515-2333 MM/DD/YYYY: 12/23/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PFI OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if
 NAME: NORTTHROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BEHIPPAGE, NY 11714
 FACILITY: NORTTHROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BEHIPPAGE, NY 11714
 ATTN: JOHN COFFMAN

NY0096792
 PERMIT NUMBER
 MONITORING PERIOD
 MM/DD/YYYY
 11/01/2024

006- C
 DISCHARGE NUMBER
 MM/DD/YYYY
 11/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUIBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
pH	*****	*****	*****	*****	0	1/30 Monthly	Grab
0040010 Effluent Gross	*****	*****	6.1 Req. Mon. MINIMUM	SU	0	1/30 Monthly	Grab
pH	*****	*****	*****	*****	0	1/30 Monthly	Grab
0040010 Intake from Well	*****	*****	5.3 Req. Mon. MINIMUM	SU	0	1/30 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	0	1/30 Monthly	Grab
0060010 Effluent Gross	*****	*****	5.0 10 DAILY MX	mg/L	0	1/30 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	0	1/30 Monthly	Grab
3442310 Effluent Gross	*****	*****	41.0 5 DAILY MX	ug/L	0	1/30 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	0	1/30 Monthly	Grab
3447510 Effluent Gross	*****	*****	41.0 5 DAILY MX	ug/L	0	1/30 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	0	1/30 Monthly	Grab
3450110 Effluent Gross	*****	*****	41.0 5 DAILY MX	ug/L	0	1/30 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	0	1/30 Monthly	Grab
3450610 Effluent Gross	*****	*****	41.0 5 DAILY MX	ug/L	0	1/30 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE NUMBER
 516-515-2333

DATE
 11/23/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

EPA Form 3320-1 (Rev.01/06) Previous editions may be used.

10/19/2018 Page 1

PERMITTEE: NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTTHROP GRUUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714

FACILITY: NORTTHROP GRUUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714

ATTN: JOHN COFMAN

NY0096792
 PERMIT NUMBER

006- C
 DISCHARGE NUMBER

MONITORING PERIOD
 MM/DD/YYYY
 11/01/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)

NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
3917510 Effluent Gross	*****	*****	*****	5 DAILY MX	ug/L			Grab
Trichloroethylene	*****	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
3918010 Effluent Gross	*****	*****	*****	5 DAILY MX	ug/L			Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	*****	0	1/30 Monthly	Measured
5005010 Effluent Gross	*****	2.26	*****	4.25 DAILY MX	MGD	0	1/30 Monthly	Measured
Calculated limit	*****	*****	*****	*****	*****	0	1/30 Monthly	Calculated
7401310 Effluent Gross	*****	*****	*****	*****	*****	0	1/30 Monthly	Calculated
cis-1,2-Dichloroethylene	*****	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
7700310 Effluent Gross	*****	*****	*****	5 DAILY MX	ug/L			Grab
Trichlorotrifluoroethane	*****	*****	*****	<2.0	ug/L	0	1/30 Monthly	Grab
8161110 Effluent Gross	*****	*****	*****	5 DAILY MX	ug/L			Grab
trans-1,2-Dichloroethylene	*****	*****	*****	<1.0	ug/L	0	1/30 Monthly	Grab
8581010 Effluent Gross	*****	*****	*****	5 DAILY MX	ug/L			Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
 Edward J Hannan
 Corporate Manager ESHM
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT


TELEPHONE NUMBER
 516-575-2333

DATE
 12/23/2024

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA)-SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTTHROP GRUIMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BEHPHAGE, NY 11714
 FACILITY: NORTTHROP GRUIMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BEHPHAGE, NY 11714
 ATTN: JOHN COFMAN

NY0096792 PERMIT NUMBER	001-WSP-7 DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
11/01/2024	11/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUHR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
pH	*****	*****	*****	*****			
00400 1 0 Effluent Gross	*****	*****	6.8 Req. Mon. MINIMUM	SU SU	0	1/30 Monthly	Grab Grab
pH	*****	*****	*****	*****			
00400 1 0 Intake from Well	*****	*****	5.9 Req. Mon. MINIMUM	SU SU	0	1/30 Monthly	Grab Grab
Nitrogen, total [as N]	*****	*****	*****	*****			
00600 1 0 Effluent Gross	*****	*****	2.8 10 DAILY MX	mg/L mg/L	0	1/30 Monthly	Grab Grab
Methylene chloride	*****	*****	*****	*****			
34423 1 0 Effluent Gross	*****	*****	< 2.0 5 DAILY MX	ug/L ug/L	0	1/30 Monthly	Grab Grab
Tetrachloroethylene	*****	*****	*****	*****			
34475 1 0 Effluent Gross	*****	*****	< 1.0 5 DAILY MX	ug/L ug/L	0	1/30 Monthly	Grab Grab
1,1-Dichloroethylene	*****	*****	*****	*****			
34501 1 0 Effluent Gross	*****	*****	< 1.0 5 DAILY MX	ug/L ug/L	0	1/30 Monthly	Grab Grab
1,1-Trichloroethane	*****	*****	*****	*****			
34506 1 0 Effluent Gross	*****	*****	< 1.0 5 DAILY MX	ug/L ug/L	0	1/30 Monthly	Grab Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM TYPED OR PRINTED	56-575-7333 AREA CODE NUMBER	12/23/2024 MM/DD/YYYY
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		
		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA) SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

PERMIT THE NAME/ ADDRESS (include Facility Name/Location if
 NAME: NORTRHOP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 FACILITY: NORTRHOP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFFMAN

NY0096792 PERMIT NUMBER	001-WSP-1 DISCHARGE NUMBER
MM/DD/YYYY 11/01/2024	MONITORING PERIOD MM/DD/YYYY 11/30/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING		QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	VALUE	UNITS			
Vinyl chloride	PERMIT REQUIREMENT	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
39175 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab
Trichloroethylene	PERMIT REQUIREMENT	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
39180 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab
Flow, in conduit or thru treatment plant	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Measured
50050 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	0.36	*****	*****	*****	0	1/30 Monthly	Measured
Calculated limit	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Calculated
74013 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	0	1/30 Monthly	Calculated
cis- 1,2-Dichloroethylene	PERMIT REQUIREMENT	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
77093 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab
Trichlorotrifluoroethane	PERMIT REQUIREMENT	*****	*****	*****	*****	<5.0	0	1/30 Monthly	Grab
81611 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab
trans- 1,2 Dichloroethylene	PERMIT REQUIREMENT	*****	*****	*****	*****	<1.0	0	1/30 Monthly	Grab
85810 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	5 DAILY MX	0	1/30 Monthly	Grab

NAME/TITLE: PRINCIPAL EXECUTIVE OFFICER	TELEPHONE:	DATE:
Edward S Hannon Corporate Manager ESHM TYPED OR PRINTED	516-515-2333 AREA CODE NUMBER	12/23/2024 MM/DD/YYYY
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A



Monitoring Period:

November 2024

11/1/24 12:00 AM 11/30/24 12:00 AM

30 Days

OU2 South Basins: Outfall 005⁽⁸⁾

Combined OU2 Groundwater Remedy Tower 102 and Building 109 Advanced Oxidation Process (AOP) Treatment Systems - Tower 102 Treated Air Stripper Discharge, Building 109 AOP Treatment System Discharge, and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 005 11/12/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	6.26	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	6.56	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾ (Building 109)	--	5.0	NS	SU	Monthly (1/30) Days	Grab	--	--
Influent pH ⁽⁵⁾ (Tower 102)	--	5.9	NS	SU	Monthly (1/30) Days	Grab	--	--
Outfall 005 Effluent pH ⁽⁵⁾	--	6.6	Range: 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	3.2	10.0	mg/L	Monthly (1/30) Days	Grab	167.09	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	17.3	600	µg/L	Monthly (1/30) Days	Grab	0.90	lbs/day
Sum of Total Iron and Manganese ⁽⁶⁾	--	17.3	1,000	µg/L	Monthly (1/30) Days	Calculated	0.90	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	0.48 J	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,2-Trichloroethane	79-00-5	< 1.0	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2-Dichloroethane	107-06-2	< 1.0	0.6	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2-Dichloropropane	78-87-5	< 1.0	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Benzene	71-43-2	< 1.0	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane (Building 109 Influent) ⁽⁹⁾	123-91-1	20	Monitor	µg/L	Monthly (1/30) Days	Grab	NA	lbs/day
1,4-Dioxane (Building 109 Post AOP) ⁽⁹⁾	123-91-1	<0.23	Monitor	µg/L	Monthly (1/30) Days	Grab	na	lbs/day
1,4-Dioxane (Building 109 Effluent) ⁽⁹⁾	123-91-1	<0.24	Monitor	µg/L	Monthly (1/30) Days	Grab	NA	lbs/day
1,4-Dioxane (Outfall 005) ⁽¹⁰⁾	123-91-1	4.2	Monitor	µg/L	Monthly (1/30) Days	Grab	0.22	lbs/day

Notes and abbreviations on last page.

OU2 West Basins: Outfall 006

OU2 Groundwater Remedy Tower 96 Treatment System - Treated Air Stripper Discharge and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 006 11/12/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	2.18	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	2.26	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	5.3	NS	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.1	Range: 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	5.0	10.0	mg/L	Monthly (1/30) Days	Grab	94.12	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁶⁾	--	ND	1,000	µg/L	Monthly (1/30) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	12.0	Monitor	µg/L	Monthly (1/30) Days	Grab	0.23	lbs/day

Notes and abbreviations on last page.

OU3 Effluent: Outfall 001 (WSP-7)

OU3 Groundwater Remedy Treatment System - Treated Air Stripper and Soil Gas Containment Condensate Discharge to Nassau County Recharge Basins

Parameter ⁽¹⁾	CAS Number	OUTFALL 001 (WSP-7) 11/13/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ⁽⁴⁾	--	0.27	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ⁽⁴⁾	--	0.36	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	5.9	NS	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.8	Range: 5.0-8.5	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	--	2.8	10.0	mg/L	Monthly (1/30) Days	Grab	6.27	lbs/day
Total Iron	7439-89-6	411	600	µg/L	Monthly (1/30) Days	Grab	0.92	lbs/day
Total Manganese	7439-96-5	38.2	600	µg/L	Monthly (1/30) Days	Grab	0.09	lbs/day
Sum of Total Iron and Manganese	--	449.2	1,000	µg/L	Monthly (1/30) Days	Calculated	1.01	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 2.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2 (trans)-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2-(cis)-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 5.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Benzene	71-43-2	< 0.50	1.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Ethylbenzene	100-41-4	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Toluene	108-88-3	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
o-Xylene	95-47-6	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
m,p-Xylene	--	< 1.0	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1016	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1221	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1232	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1242	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1248	12672-29-6	0.10	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1254	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1260	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Aroclor 1016 (Post GAC)	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1221 (Post GAC)	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1232 (Post GAC)	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1242 (Post GAC)	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1248 (Post GAC)	12672-29-6	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1254 (Post GAC)	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
Aroclor 1260 (Post GAC)	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/30) Days	Grab	0.00	lbs/day
1,4-Dioxane	123-91-1	< 0.24	Monitor	µg/L	Monthly (1/30) Days	Grab	--	lbs/day

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A

Notes and Abbreviations:

XX	Bold value indicates the constituent was detected at or above its laboratory quantification limit		
<	Compound is not detected above laboratory quantification limit		
--	Not Applicable	CAS	Chemical Abstracts Service
µg/L	micrograms per liter	ND	Non Detect
lbs/day	pounds per day	NS	None Specified
lb/kg	pounds per kilogram	NYSDEC	New York State Department of Environmental Conservation
MGD	million gallons per day	SCADA	Supervisory Control and Data Acquisition
mg/L	milligrams per liter	SPDES	State Pollution Discharge Elimination System
min	minutes	TKN	Total Kjeldahl Nitrogen
SU	Standard Units		
B	Detected in method blank as reported by laboratory		
na	not available		
NA	Not Applicable		
COC	Chain of Custody		

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system; Polychlorinated Biphenyls (PCBs) using USEPA Method 608; 1,4-Dioxane using USEPA Method 8270D-SIM (CLLE); Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number: 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively; Total Iron and Manganese using USEPA Method 200.7.

2. Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023.

3. Mass Loading Calculation:

$$Mass\ Loading\ \left(\frac{lb}{day}\right) = Flow\ \left(\frac{gal}{min}\right) * 1440\ \left(\frac{min}{day}\right) * concentration\ \left(\frac{\mu g}{liter}\right) \div 10^9\ \left(\frac{\mu g}{kg}\right) * 3.785\ \left(\frac{liter}{gal}\right) * 2.2046\ \left(\frac{lb}{kg}\right)$$

4. Average and daily maximum flow calculated from SCADA reports for the month indicated.

5. Field measurement of pH taken by hand held meter on sample date.

6. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".

7. Average Mass Loading calculations are based on actual flow rates unless otherwise noted.

8. At the time of Outfall 005 SPDES sample collection on November 12, 2024, Building 109 AOP Treatment System remedial well flow for RW-20 was approximately 608 gpm, RW-21 was approximately 608 gpm and RW-22 was approximately 742 gpm. These were instantaneous readings taken at the time of sampling.

9. Building 109 AOP Treatment System Influent (corresponds to sample B109-INFLUENT on the COC), Post-AOP (corresponds to sample B109-POST-AOP on the COC) and Effluent (corresponds to sample OUTFALL 005-B109 on the COC) samples were collected and analyzed for 1,4-Dioxane as per footnote (1) of the SPDES permit equivalency for Outfall 005.

10. Outfall 005 combines discharge from Building 109 and Tower 102 treatment systems; however, Tower 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal.

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 11/12/24
Lab Sample ID: JE505-2	Date Received: 11/12/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 624.1	
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2N17501.D	1	11/14/24 16:02	NW	n/a	n/a	V2N416
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.71	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.42	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.96	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.96	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.80	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.41	ug/l	
79-01-6	Trichloroethene	0.48	1.0	0.43	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	112%		80-128%
2037-26-5	Toluene-D8 (SUR)	99%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	99%		79-117%
1868-53-7	Dibromofluoromethane (S)	107%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 11/12/24
Lab Sample ID: JE505-2	Date Received: 11/12/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	11/14/24	11/15/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	17.3	15	ug/l	1	11/14/24	11/15/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA57321

(2) Prep QC Batch: MP50830

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 005	Date Sampled: 11/12/24
Lab Sample ID: JE505-2	Date Received: 11/12/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	3.2	0.10	mg/l	1	11/18/24 17:38	SS	EPA 353.2/LACHAT
Nitrogen, Total ^a	3.2	0.30	mg/l	1	11/18/24 17:38	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	11/14/24 20:45	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

GW
TB

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

PREM-MM-11524-96

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE SHEET)												Matrix Codes
Company Name Arcadis		Project Name: Prog 5C OU3.5 RW-21-ONCT-OMM/SPDES		FED-EX Tracking # _____ Bottle Order Control # _____ Account Quote # _____ Accounting Job # JES05												DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SC - Sludge SED - Sediment LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe EB - Equipment Blank RB - Rinse Blank TB - Tap Blank
Street Address 2 Huntington Quad, Suite 1S10		Street Bethpage NY		Billing Information (If different from Report to) Company Name Arcadis, U.S., Inc. Street Address 630 Plaza Drive, Suite 600 City State Zip Highlands Ranch, CO 80129												
City State Zip Malville NY 11747		City State Zip Bethpage NY		Project # 30223092.OMMI3 Client Purchase Order # NY001496_2015.10.30 Work Authorization # NY001496_2015.10.30												V6242NGSSPDS+Chloroform (40 mL Clear Glass VOA's) XTMIT - EPA 353.2 & EPA 351.2 w/Total N Calc (250 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic)
Project Contact Kevin Czarwinski, Kevin.Czarwinski@arcadis.com		Project Contact Kevin Czarwinski, Kevin.Czarwinski@arcadis.com		Attention: Carlo San Giovanni Accounts Payable												
Phone # 631-245-0710		Phone # 631-245-0710		Number of preserved Bottles ME242NGSSPDS + Chloroform + Benzene + 1,1,2-TCB + 1,1-DCA + 1,2-DCA + 1,2-DCPANE 40 mL Clear Glass VOA's V6242NGSSPDS+Chloroform (40 mL Clear Glass VOA's) XTMIT - EPA 353.2 & EPA 351.2 w/Total N Calc (250 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic)												
Sampler(s) Name(s) Peaches DeLavee (631) 301-2591		Project Manager Carlo San Giovanni		Matrix TB 2 2 GW 5 3 1 1 GW 5 3 1 1 GW 5 3 1 1												LAB USE ONLY
Collection		Collection		Date 11/2/14 11/30 10/31												
Field ID / Point of Collection		MECH/OI Vol #		Date 11/2/14 11/30 10/31												
1 TB-11124-80-1				Date 11/2/14 11/30 10/31												
2 Outfall 005				Date 11/2/14 11/30 10/31												
3 Outfall 005-B109				Date 11/2/14 11/30 10/31												
4 Outfall 005-T102				Date 11/2/14 11/30 10/31												
Turnaround Time (Business days)		Approved By (Account PM): / Date:		Data Deliverable Information Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B FULLT1 (Level 3+4) <input type="checkbox"/> State Forms NJ Reduced <input checked="" type="checkbox"/> EDO Format-EQUIS 6 Commercial "C" <input checked="" type="checkbox"/> Other COMMC+ Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data												Comments / Special Instructions
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink																
Sample Custody must be documented below each time samples change possession, including courier delivery.																
Relinquished by Sampler: 1 Peaches DeLavee		Date Time: 11/2/14		Received By: 1 Carlo San Giovanni		Date Time: 11/2/14		Relinquished By: 2 Carlo San Giovanni		Date Time: 11/2/14		Received By: 2 Carlo San Giovanni				
Relinquished by Sampler: 3		Date Time: 11/2/14		Received By: 3		Date Time: 11/2/14		Relinquished By: 4		Date Time: 11/2/14		Received By: 4				
Relinquished by Sampler: 5		Date Time: 11/2/14		Received By: 5		Date Time: 11/2/14		Relinquished By: 6		Date Time: 11/2/14		Received By: 6				
								Custody Seal # _____ <input type="checkbox"/> Intact <input type="checkbox"/> Not intact		On box _____ Cool Temp _____						

GI\PROJECT\Nortrop Gunman Bethpage\OU2.2 ONCT\06 Notes and Data\System Sampling\February (DJM)\COCs_SGS\PAR_002_COCs_IsrPNs_62233_62235_RevDec2017

Initial Assessment: **AR3B**
Label Verification: _____

5.2
5

Report of Analytical Results

SDG: SR6265
Lab ID: SR6265-1
Client ID: OUTFALL 005
Matrix: AQ
Lab File ID: G0551.D

Sample Date: 12-NOV-24
Extract Date: 14-NOV-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG362157

Report Date: 26-NOV-24
Analysis Date: 20-NOV-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.2	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		108.	%				

Report of Analytical Results

SDG: SR6265
Lab ID: SR6265-2
Client ID: OUTFALL 005-B109
Matrix: AQ
Lab File ID: G0552.D

Sample Date: 12-NOV-24
Extract Date: 14-NOV-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG362157

Report Date: 26-NOV-24
Analysis Date: 20-NOV-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		106.	%				

Report of Analytical Results

SDG: SR6264
Lab ID: SR6264-1DL
Client ID: B109-INFLUENT
Matrix: AQ
Lab File ID: G0578.D

Sample Date: 12-NOV-24
Extract Date: 14-NOV-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG362157

Report Date: 26-NOV-24
Analysis Date: 22-NOV-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		20	ug/L	10	.25	2.4	0.81
1,4-Dioxane-D8	D	0.00	%				

Report of Analytical Results

SDG: SR6264
Lab ID: SR6264-2
Client ID: B109-POST-AOP
Matrix: AQ
Lab File ID: G0550.D

Sample Date: 12-NOV-24
Extract Date: 14-NOV-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG362157

Report Date: 26-NOV-24
Analysis Date: 20-NOV-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.23	ug/L	1	.25	0.23	0.080
1,4-Dioxane-D8	*	132.	%				

Report of Analysis

Client Sample ID: OUTFALL 006 Lab Sample ID: JE506-2 Matrix: AQ - Ground Water Method: EPA 624.1 Project: Northrop Grumman, OU2.2 OMM, Program 3	Date Sampled: 11/12/24 Date Received: 11/12/24 Percent Solids: n/a
---	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2N17500.D	1	11/14/24 15:37	NW	n/a	n/a	V2N416
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.80	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	111%		80-128%
2037-26-5	Toluene-D8 (SUR)	99%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	97%		79-117%
1868-53-7	Dibromofluoromethane (S)	106%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 11/12/24
Lab Sample ID: JE506-2	Date Received: 11/12/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	11/14/24	11/15/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	11/14/24	11/15/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA57321

(2) Prep QC Batch: MP50830

RL = Reporting Limit

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 11/12/24
Lab Sample ID: JE506-2	Date Received: 11/12/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	5.0	0.10	0.090	mg/l	1	11/18/24 17:45 SS	EPA	353.2/LACHAT
Nitrogen, Total ^a	5.0	0.30	0.23	mg/l	1	11/18/24 17:45 SS	SM4500	A-11
Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14	mg/l	1	11/14/24 20:54 SS	EPA	351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 J = Indicates a result > = MDL but < RL

4.2
4

Report of Analytical Results

SDG: SR6263
Lab ID: SR6263-1
Client ID: OUTFALL 006
Matrix: AQ
Lab File ID: G0548.D

Sample Date: 12-NOV-24
Extract Date: 14-NOV-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG362157

Report Date: 26-NOV-24
Analysis Date: 20-NOV-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		12	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		111.	%				

Report of Analysis

Client Sample ID: WSP-7		Date Sampled: 11/13/24
Lab Sample ID: JE581-6		Date Received: 11/13/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260D		
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4A11820.D	1	11/18/24 13:35	NW	n/a	n/a	V4A336
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
106-99-0	1,3-Butadiene	ND	5.0	0.62	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	0.49	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WSP-7		Date Sampled: 11/13/24
Lab Sample ID: JE581-6		Date Received: 11/13/24
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260D		
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
75-68-3	1-chloro-1,1-difluoroethane	ND	5.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	106%		80-120%
460-00-4	4-Bromofluorobenzene	100%		82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	System artifact	1.23	15	ug/l	J
	Total TIC, Volatile		0	ug/l	

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 11/13/24
Lab Sample ID: JE581-6	Date Received: 11/13/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 608.3 EPA 608	
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G143449.D	1	11/23/24 14:50	KC	11/22/24 09:30	OP59600A	G3G5276
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	0.10	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	67%		10-156%
877-09-8	Tetrachloro-m-xylene	74%		10-156%
2051-24-3	Decachlorobiphenyl	108%		10-143%
2051-24-3	Decachlorobiphenyl	116%		10-143%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 11/13/24
Lab Sample ID: JE581-6	Date Received: 11/13/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	411	100	ug/l	1	11/18/24	11/18/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	38.2	15	ug/l	1	11/18/24	11/18/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA57334

(2) Prep QC Batch: MP50868

RL = Reporting Limit

Report of Analysis

Client Sample ID: WSP-7	Date Sampled: 11/13/24
Lab Sample ID: JE581-6	Date Received: 11/13/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.3	0.10	mg/l	1	11/18/24 18:21	SS	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.8	0.30	mg/l	1	11/19/24 15:12	SS	SM4500 A-11
Nitrogen, Total Kjeldahl	0.53	0.20	mg/l	1	11/19/24 15:12	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Report of Analysis

Client Sample ID: OU3 POST-GAC		
Lab Sample ID: JE581-9		Date Sampled: 11/13/24
Matrix: AQ - Ground Water		Date Received: 11/13/24
Method: EPA 608.3 EPA 608		Percent Solids: n/a
Project: Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G143450.D	1	11/23/24 15:06	KC	11/22/24 09:30	OP59600A	G3G5276
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	86%		10-156%
877-09-8	Tetrachloro-m-xylene	81%		10-156%
2051-24-3	Decachlorobiphenyl	105%		10-143%
2051-24-3	Decachlorobiphenyl	106%		10-143%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.9
4

GW
TB

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

FED-EX Tracking #
Accutest Quote #
Accutest Job #
Bottle Order Control #
JE581
PP571-HH-103024-211

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)		Matrix Codes	
Company Name Arcadis		Project Name AGMNYM62236 // OUS3 BPGWCS - GW		Requested Analysis		Matrix Codes	
Street Address 2 Huntington Quad, Suite 1S10		Street Northrop Grumman OUS3 Bethpage Groundwater Containment System		Bottle Order Control # PP571-HH-103024-211		Matrix Codes	
City State Zip Melville NY 11747		Billing Information (If different from Report to) Bethpage NY		Accutest Job # JE581		Matrix Codes	
Project Contact Armas Nemickas Email: Armas.Nemickas@arcadis.com		Company Name Arcadis, U.S., Inc.		Street Address 630 Plaza Drive, Suite 800		Matrix Codes	
Phone # 631-391-5212		Client Purchase Order # 30227172.OMM13		City State Zip Highlands Ranch, CO 80129		Matrix Codes	
Sampler(s) Name(s) Patrick Delbecqve (611) 339-2591		Project Manager Armas Nemickas		Attention: Accounts Payable		Matrix Codes	
Field ID / Point of Collection		Collection		Number of preserved Bottles		LAB USE ONLY	
Accutest Sample #	Field ID / Point of Collection	MECHID/ Vial #	Date	Time	Sampled by	Matrix	# of bottles
1	WSP-1		11/13/24	0846	PD	GW	3
2	WSP-2			0855		GW	3
3	WSP-3			0900		GW	3
4	WSP-4			0905		GW	3
5	WSP-5			0910		GW	3
6	WSP-7			0935		GW	6
7	TB- 111324-PD-1					TB	2
8	REP- 111324-PD-1					GW	3
9	OUS3 Post-GAC			0935		GW	2

GIAPROJECT\Northrop Grumman Bethpage_Program Wide\04 Project Management\Contracts and POs\Labs\SGS-Accutest\LAB_CODESandCOCs\Customized_TM_COCs\OUS3 GW COCs Revised 9.21.20



5.2
5

Report of Analytical Results

SDG: SR6300
Lab ID: SR6300-6
Client ID: WSP-7
Matrix: AQ
Lab File ID: G0562.D

Sample Date: 13-NOV-24
Extract Date: 18-NOV-24
Extracted By: NG
Extraction Method: SW846 3520C
Lab Prep Batch: WG362331

Report Date: 09-DEC-24
Analysis Date: 21-NOV-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		113.	%				

SR 6300



ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

Lab Work Order #
MSA 3601

Send Results to:	Contact & Company Name: Arnas Nemickas-Task Manager	Telephone: 631-391-5212 cell
	Address: Two Huntington Quad-Suite 1S10	Fax:
	City State Zip Melville NY 11747	E-mail Address: Arnas.Nemickas@arcadis.com

Preservative	E								
Filtered (✓)	-								
# of Containers	14								
Container Information	2								

Keys

Preservation Key:
 A. H₂SO₄
 B. HCL
 C. HNO₃
 D. NaOH
 E. None
 F. Other: _____
 G. Other: _____
 H. Other: _____

Container Information Key:
 1. 40 ml Vial
 2. 1 L Amber
 3. 250 ml Plastic
 4. 500 ml Plastic
 5. Encore
 6. 2 oz Glass
 7. 4 oz Glass
 8. 8 oz Glass
 9. Other: _____
 10. Other: _____

Matrix Key:
 SO - Soil SE - Sediment NL - NAPL/Oil
 W - Water SL - Sludge SW - Sample Wipe
 T - Tissue A - Air Other: EFF

PARAMETER ANALYSIS & METHOD

Project Name/Location (City, State): Program 3 - OU3 TS/SPDES (Bethpage, NY)	Project #: 30227172.OMMI2 Field
Sampler's Printed Name: <i>Patrick Dellecave</i>	Sampler's Signature: <i>Patrick Dellecave</i>

Sample ID	Collection		Type (✓)		Matrix	1,4-dioxane 8270D SIM													
	Date	Time	Comp	Grab															
WSP-1	11/13/24	0840		X	GW	X													pH/Temp: 6.2/61.7°F
WSP-2		0855		X	GW	X													pH/Temp: 6.0/62.4°F
WSP-3		0900		X	GW	X													pH/Temp: 6.5/60.6°F
WSP-4		0905		X	GW	X													pH/Temp: 5.8/59.7°F
WSP-5		0910		X	GW	X													pH/Temp: 6.1/61.0°F
WSP-7		0920		X	GW	X													pH/Temp: 7.1/60.1°F
REP-111324-PD-1				X	GW	X													
																			OU3 Post-GAC pH/Temp: 7.5/60.1°F

REMARKS

Special Instructions/Comments: SVOC extracted by CCLE Special QA/QC Instructions(✓):
 EDD-ARCADIS_EQUIS (EQUIS6-4 file format)

Laboratory Information and Receipt		Relinquished By		Received By		Relinquished By		Laboratory Received By	
Lab Name: Katahdin Analytical Labs	Cooler Custody Seal (✓) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Printed Name: <i>Patrick Dellecave</i>	Signature: <i>Patrick Dellecave</i>	Printed Name:	Signature:	Printed Name:	Signature:	Printed Name: <i>Evan Price</i>	Signature: <i>Evan Price</i>
Specify Turnaround Requirements: Normal TAT-10 business days	Sample Receipt:	Firm: <i>Arcadis</i>	Date/Time: 11/13/24	Firm/Courier:	Date/Time:	Firm/Courier:	Date/Time:	Firm: <i>SGS-Katahdin</i>	Date/Time: 11-14-24 0930
Shipping Tracking #:	Condition/Cooler Temp. _____								

Katahdin Analytical Services SR6300 page 0000015 of 0000017

me M

December 2024 - OU2 SPDES



Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

edward.hannon@ngc.com

ESH&M-002L-25
February 3, 2025

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

**Subject: Report for SPDES Permit Equivalent, NYSDEC Site No. 1-30-003A
Northrop Grumman Corporation - Bethpage, New York Facility**

Sarah Johnston:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of December 2024, as per additional condition requirements outlined in the SPDES Permit Equivalent (Northrop Grumman, NYSDEC No. 1-30-003A) dated July 30, 2018.

If you have any questions, please call me at 516-575-2333

Very truly yours,

Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

bcc: D. Stern (AG&M)



Northrop Grumman
925 South Oyster Bay Road
Bethpage, NY 11714

edward.hannon@ngc.com

ESH&M-003L-25
February 3, 2025

Sarah Johnston
N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: Additional Sampling Constituents for Report Period:
December 1, 2024 – December 31, 2024.

Mr. Pelton:

Below please find the 1,4 – Dioxane sampling results for Outfalls 1, 5 and 6 for this reporting period.

Outfall 1 – <0.74 ug/L
Outfall 5 – 3.0 ug/L
Outfall 6 – 5.5 ug/L

Sampling results for Outfall 1 for the following:

Ethylbenzene - <1.0
Toluene - <1.0
Benzene - <0.50
Xylene, Ortho - <1.0
Xylene, Meta - <1.0
Xylene, Para - <1.0

If you have any questions, please call me at 516-575-2333
Very truly yours,

Edward J. Hannon
Environmental, Safety, Health & Medical Corporate Manager
516-575-2333
M/S: 02/BP15

cc: Regional Water Engineer - Region 1
NYS Department of Environmental Conservation
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

bcc: D. Stern (AG&M)

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE: NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTHTROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTHTROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

NY0096792	005-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
12/01/2024	12/31/2024

ATTN: JOHN COFMAN

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	SU	*****	0	1/31 Monthly	Grab
0040010 Effluent Gross	*****	*****	6.3	*****	SU	*****	0	1/31 Monthly	Grab
pH	*****	*****	*****	*****	SU	*****	0	1/31 Monthly	Grab
0040010 Intake from Well	*****	*****	5.65	*****	SU	*****	0	1/31 Monthly	Grab
Nitrogen, total (as N)	*****	*****	*****	*****	mg/L	*****	0	1/31 Monthly	Grab
0060010 Effluent Gross	*****	*****	*****	*****	mg/L	*****	0	1/31 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	ug/L	*****	0	1/31 Monthly	Grab
3442310 Effluent Gross	*****	*****	*****	*****	ug/L	*****	0	1/31 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	ug/L	*****	0	1/31 Monthly	Grab
3447510 Effluent Gross	*****	*****	*****	*****	ug/L	*****	0	1/31 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	ug/L	*****	0	1/31 Monthly	Grab
3450110 Effluent Gross	*****	*****	*****	*****	ug/L	*****	0	1/31 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	ug/L	*****	0	1/31 Monthly	Grab
3450610 Effluent Gross	*****	*****	*****	*****	ug/L	*****	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-575-2333	02/03/2025
TYPED OR PRINTED	AREA Code	MM/DD/YYYY
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	NUMBER	
<i>Edward J Hannon</i>	516-575-2333	

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if NAME: NORTHROP GRUMMAN SYSTEMS CORP ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035 BETHPAGE, NY 11714 FACILITY: NORTHROP GRUMMAN SYSTEMS CORP LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035 BETHPAGE, NY 11714 ATTN: JOHN COFMAN

NY0096792	005- C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
12/01/2024	12/31/2024

DMR Mailing ZIP CODE: 11714
MINOR (SUBR 01)
NC COOLING & STORM WATER TO GW External Outfall

No Discharge

PARAMETER	QUANTITY OR LOADING		QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS			
Vinyl chloride	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
3917510 Effluent Gross	*****	*****	*****	<1.0	ug/L	0	1/31 Monthly	Grab
Trichloroethylene	*****	*****	*****	0.51	ug/L	0	1/31 Monthly	Grab
3918010 Effluent Gross	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
Flow, in conduit or thru treatment plant	*****	*****	*****	*****	*****	0	1/31 Monthly	Measured
5005010 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Measured
Calculated limit	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated
7401310 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated
cis-1,2-Dichloroethylene	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
7709310 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trichlorotrifluoroethane	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
8161110 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
trans-1,2-Dichloroethylene	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab
8581010 Effluent Gross	*****	*****	*****	*****	*****	0	1/31 Monthly	Grab

NAME/TITLE: PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-515-2333	02/03/2025
TYPED OR PRINTED	AREA Code	NUMBER
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
WHEN NATURAL GW HAS PII OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT P11 COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (include Facility Name/Location if NAME: NORTHTROP GRUMAN SYSTEMS CORP
ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
BETHPAGE, NY 11714
FACILITY: NORTHTROP GRUMAN SYSTEMS CORP
LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
BETHPAGE, NY 11714
ATTN: JOHN COFMAN

NY0096792	00G-C
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
12 01 2024	12 31 2024

DMR Mailing ZIP CODE: 11714
MINOR (SUBR 01)
NC COOLING & STORM WATER TO GW
External Outfall
No Discharge

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	*****	*****	*****	*****	SU	6.7	0	1/31 Monthly	Grab
0040010 Effluent Gross	*****	*****	*****	*****	SU	6.7	0	1/31 Monthly	Grab
pH	*****	*****	*****	*****	SU	6.1	0	1/31 Monthly	Grab
0040010 Intake from Well	*****	*****	*****	*****	SU	6.1	0	1/31 Monthly	Grab
Nitrogen, total [as N]	*****	*****	*****	*****	mg/L	4.8	0	1/31 Monthly	Grab
0060010 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
Methylene chloride	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
3442310 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
Tetrachloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
3447510 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
1,1-Dichloroethylene	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
3450110 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
1,1,1-Trichloroethane	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab
3450610 Effluent Gross	*****	*****	*****	*****	ug/L	<1.0	0	1/31 Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
Edward J Hannon Corporate Manager ESHM	516-515-2333	02/03/2025
TYPED OR PRINTED	AREA Code	NUMBER
	516-515-2333	02/03/2025
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (include Facility Name/Location if
 NAME: NORTROP GRUMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714

DMR Mailing ZIP CODE: 11714
 MINOR (SUBR 01)

FACILITY: NORTROP GRUMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714
 ATTN: JOHN COFFMAN

006- C
 DISCHARGE NUMBER
 MONITORING PERIOD
 MM/DD/YYYY
 12/31/2024

NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	UNITS				
Vinyl chloride	SAMPLE MEASUREMENT	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
3917510 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	DAILY MX	0	1/31 Monthly	Grab
3918010 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	DAILY MX	0	1/31 Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	0	1/31 Monthly	Measured
5005010 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/31 Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated
7401310 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	0	1/31 Monthly	Calculated
cis-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
7709310 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
Trichlorotrifluoroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
8161110 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab
8581010 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	ug/L	0	1/31 Monthly	Grab

NAME/TITLE: PRINCIPAL EXECUTIVE OFFICER
 Signature: *Edward J Hannon*
 Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

TELEPHONE: 516-575-2333
 AREA Code: 516-575-2333
 NUMBER: 02/03/2025
 MM/DD/YYYY

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WHEN NATURAL GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTS) SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (YES/NO) IN CALCULATED LIMIT AREA. SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS & REQUIREMENTS

DISCHARGE MONITORING REPORT (DMR)

OMR No. 2010-0001

PERMITTEE NAME/ADDRESS (include facility name/location if
 NAME: NORTHIKOP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714

FACILITY: NORTHIKOP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16- 035
 BETHPAGE, NY 11714

ATTN: JOHN COFFMAN

NY0096792
 PERMIT NUMBER

001-WSP-7
 DISCHARGE NUMBER

MONITORING PERIOD
 MM/DD/YYYY
 12/01/2024
 MM/DD/YYYY
 12/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUJR 01)

NC COOLING & STORM WATER TO GW
 External Outfall

No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	VALUE	UNITS	VALUE			
pH	PERMIT REQUIREMENT	*****	*****	*****	*****	*****				
0040010 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	6.9	Req. Mon. MINIMUM	*****	SU	1/31	Monthly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. MAXIMUM	*****	SU			Grab
pH	SAMPLE MEASUREMENT	*****	*****	6.1	Req. Mon. MINIMUM	*****	SU	1/31	Monthly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. MAXIMUM	*****	SU			Grab
0040010 Nitrogen, total [as N]	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	mg/L	1/31	Monthly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	10 mg/L			Grab
0040010 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	1/31	Monthly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX			Grab
Methylene chloride	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	1/31	Monthly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX			Grab
3447510 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	1/31	Monthly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX			Grab
Tetrachloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	1/31	Monthly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX			Grab
3447510 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	1/31	Monthly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX			Grab
1,1,1-Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	1/31	Monthly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX			Grab
3450110 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	1/31	Monthly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX			Grab
1,1,1-Trichloroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	1/31	Monthly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX			Grab
3450610 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	ug/L	1/31	Monthly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	5 DAILY MX			Grab

NAME/TITLE: PRINCIPAL EXECUTIVE OFFICER

Edward J Hannon
 Corporate Manager ESHM
 TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE

DATE

AREA Code: 516-515-7333 NUMBER: 02/03/2025 MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (reference all attachments here)

WHEN NAIURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY REPORT PH COMPLIANT STATUS (YES/NO) IN CALCULATED LIMIT AREA). SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME: ADDRESS (Include Facility Name/Location if
 NAME: NORTROP GRUMMAN SYSTEMS CORP
 ADDRESS: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 FACILITY: NORTROP GRUMMAN SYSTEMS CORP
 LOCATION: 925 SO. OYSTER BAY RD M/S- W16-035
 BETHPAGE, NY 11714
 ATTN: JOHN COPMAN

NY0096792
 PERMIT NUMBER
 MM/DD/YYYY
 12/01/2024

001-WSP-7
 DISCHARGE NUMBER
 MONITORING PERIOD
 MM/DD/YYYY
 12/31/2024

DMR Mailing ZIP CODE: 11714
 MINOR (SUHR 01)
 NC COOLING & STORM WATER TO GW
 External Outfall
 No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING		QUALITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	UNITS			
Vinyl chloride	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
39175 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
39180 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	*****	*****	*****	*****	0	1/31 Monthly	Measured
50050 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	*****	*****	*****	*****	0	1/31 Monthly	Calculated
74013 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Calculated
cis-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
77093 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trichlorotrifluoroethane	SAMPLE MEASUREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
81611 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
Trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab
85810 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	0	1/31 Monthly	Grab

NAME/TITLE: PRINCIPAL EXECUTIVE OFFICER
 Signature: *Edward S Hannon*
 TITLE OR PRINTED: Corporate Manager ESHM

TELEPHONE: 516-575-2333
 DATE: 02/03/2025

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 WHEN NATURAL GW HAS PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORT SUPPLY WELL & OUTFALL PH MONTHLY & REPORT PH COMPLIANCE STATUS (Y/N/NO) IN CALCULATED LIMIT AREA-SEE PERMIT FOR ADDITIONAL NOTES, COMMENTS AND REQUIREMENTS.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A



Monitoring Period:

December 2024

12/1/24 12:00 AM 12/31/24 12:00 AM

31 Days

OU2 South Basins: Outfall 005⁽⁶⁾

Combined OU2 Groundwater Remedy Tower 102 and Building 109 Advanced Oxidation Process (AOP) Treatment Systems - Tower 102 Treated Air Stripper Discharge, Building 109 AOP Treatment System Discharge, and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 005 12/10/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ^(4, 12)	--	6.16	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ^(4, 12)	--	6.57	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾ (Building 109)	--	5.2	NS	SU	Monthly (1/31) Days	Grab	--	--
Influent pH ⁽⁵⁾ (Tower 102)	--	6.1	NS	SU	Monthly (1/31) Days	Grab	--	--
Outfall 005 Effluent pH ⁽⁵⁾	--	6.3	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	3.9	10.0	mg/L	Monthly (1/31) Days	Grab	200.36	lbs/day
Total Iron	7439-89-6	807 ⁽¹³⁾	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	79.6	600	µg/L	Monthly (1/31) Days	Grab	4.09	lbs/day
Sum of Total Iron and Manganese ⁽⁸⁾	--	886.6	1,000	µg/L	Monthly (1/31) Days	Calculated	45.55	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	0.51 J	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,2-Trichloroethane	79-00-5	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-Dichloroethane	107-06-2	< 1.0	0.6	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-Dichloropropane	78-87-5	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Benzene	71-43-2	< 1.0	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,4-Dioxane (Building 109 Influent) ⁽⁹⁾	123-91-1	15	Monitor	µg/L	Monthly (1/31) Days	Grab	NA	lbs/day
1,4-Dioxane (Building 109 Post AOP) ⁽⁹⁾	123-91-1	<0.24	Monitor	µg/L	Monthly (1/31) Days	Grab	na	lbs/day
1,4-Dioxane (Building 109 Effluent) ⁽⁹⁾	123-91-1	<0.24	Monitor	µg/L	Monthly (1/31) Days	Grab	NA	lbs/day
1,4-Dioxane (Outfall 005) ⁽¹⁰⁾	123-91-1	3.0	Monitor	µg/L	Monthly (1/31) Days	Grab	0.15	lbs/day

Notes and abbreviations on last page.

OU2 West Basins: Outfall 006

OU2 Groundwater Remedy Tower 96 Treatment System - Treated Air Stripper Discharge and Storm Water Runoff

Parameter ⁽¹⁾	CAS Number	OUTFALL 006 12/10/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ^(4, 12)	--	2.14	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ^(4, 12)	--	2.21	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	6.1	NS	SU	Monthly (1/31) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.7	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	4.8	10.0	mg/L	Monthly (1/31) Days	Grab	88.33	lbs/day
Total Iron	7439-89-6	< 100	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Total Manganese	7439-96-5	< 15	600	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Sum of Total Iron and Manganese ⁽⁶⁾	--	ND	1,000	µg/L	Monthly (1/31) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	5.5	Monitor	µg/L	Monthly (1/31) Days	Grab	0.10	lbs/day

Notes and abbreviations on last page.

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A



OU3 Effluent: Outfall 001 (WSP-7)

OU3 Groundwater Remedy Treatment System - Treated Air Stripper and Soil Gas Containment Condensate Discharge to Nassau County Recharge Basins

Parameter ⁽¹⁾	CAS Number	OUTFALL 001 (WSP-7) 12/10/2024	Discharge Limit ⁽²⁾	Units	Monitoring Frequency	Sample Type	Average Mass Loading ^(3,7)	Units
Daily Average Flow ^(4, 11)	--	0.33	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow ^(4, 11)	--	0.34	Monitor	MGD	Continuous	SCADA	--	--
Influent pH ⁽⁵⁾	--	6.1	NS	SU	Monthly (1/31) Days	Grab	--	--
Effluent pH ⁽⁵⁾	--	6.9	Range: 5.0-8.5	SU	Monthly (1/31) Days	Grab	--	--
Total Nitrogen (as N)	--	2.6	10.0	mg/L	Monthly (1/31) Days	Grab	7.05	lbs/day
Total Iron	7439-89-6	283	600	µg/L	Monthly (1/31) Days	Grab	0.77	lbs/day
Total Manganese	7439-96-5	40.4	600	µg/L	Monthly (1/31) Days	Grab	0.11	lbs/day
Sum of Total Iron and Manganese	--	323.4	1,000	µg/L	Monthly (1/31) Days	Calculated	0.88	lbs/day
1,1-Dichloroethylene	75-35-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	< 2.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	< 1.0	2.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2 (trans)-Dichloroethylene	156-60-5	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,2-(cis)-Dichloroethylene	156-59-2	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Chloroform	67-66-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	< 5.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Benzene	71-43-2	< 0.50	1.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
1,1,-Dichloroethane	75-34-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Ethylbenzene	100-41-4	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Toluene	108-88-3	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
o-Xylene	95-47-6	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
m,p-Xylene	--	< 1.0	5.0	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1016	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1221	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1232	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1242	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1248	12672-29-6	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1254	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1260	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	--	lbs/day
Aroclor 1016 (Post GAC)	12674-11-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1221 (Post GAC)	11104-28-2	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1232 (Post GAC)	11141-16-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1242 (Post GAC)	53469-21-9	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1248 (Post GAC)	12672-29-6	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1254 (Post GAC)	11097-69-1	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
Aroclor 1260 (Post GAC)	11096-82-5	< 0.050	0.095	µg/L	Monthly (1/31) Days	Grab	0.00	lbs/day
1,4-Dioxane	123-91-1	0.74	Monitor	µg/L	Monthly (1/31) Days	Grab	2.01E-03	lbs/day

Table 1
SPDES Permit Equivalency Monthly Report
OU2 and OU3 On-Site Containment Systems
Northrop Grumman Bethpage Facility Site
NYSDEC Site No. 130003A



Notes and Abbreviations:

XX	Bold value indicates the constituent was detected at or above its laboratory quantification limit		
<	Compound is not detected above laboratory quantification limit		
–	Not Applicable		
µg/L	micrograms per liter	CAS	Chemical Abstracts Service
lbs/day	pounds per day	ND	Non Detect
lb/kg	pounds per kilogram	NS	None Specified
MGD	million gallons per day	NYSDEC	New York State Department of Environmental Conservation
mg/L	milligrams per liter	SCADA	Supervisory Control and Data Acquisition
min	minutes	SPDES	State Pollution Discharge Elimination System
SU	Standard Units	TKN	Total Kjeldahl Nitrogen
B	Detected in method blank as reported by laboratory		
na	not available		
NA	Not Applicable		
COC	Chain of Custody		

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624 at OU2 system, and USEPA Method 8260 at OU3 system, Polychlorinated Biphenyls (PCBs) using USEPA Method 608, 1,4-Dioxane using USEPA Method 8270D-SIM (CLLE); Total Nitrogen is calculated as the sum of Nitrogen, (Nitrate+Nitrite) and Total Kjeldahl Nitrogen (TKN), (CAS number: 14797-55-8, 14797-65-0, and 7727-37-9, respectively) by USEPA Methods 353.2 and 351.2, respectively; Total Iron and Manganese using USEPA Method 200.7.

2. Discharge limits are per the SPDES permit equivalency, dated October 12, 2017, amended on March 23, 2023 and transmitted by the NYSDEC to Northrop Grumman on April 18, 2023.

3. Mass Loading Calculation:

$$Mass\ Loading\ \left(\frac{lb}{day}\right) = Flow\ \left(\frac{gal}{min}\right) * 1440\ \left(\frac{min}{day}\right) * concentration\ \left(\frac{\mu g}{liter}\right) + 10^9\ \left(\frac{\mu g}{kg}\right) * 3.785\ \left(\frac{liter}{gal}\right) * 2.2046\ \left(\frac{lb}{kg}\right)$$

4. Average and daily maximum flow calculated from SCADA reports for the month indicated.

5. Field measurement of pH taken by hand held meter on sample date.

6. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".

7. Average Mass Loading calculations are based on actual flow rates unless otherwise noted.

8. At the time of Outfall 005 SPDES sample collection on December 10, 2024, Building 109 AOP Treatment System remedial well flow for RW-20 was approximately 565 gpm, RW-21 was approximately 577 gpm and RW-22 was approximately 744 gpm. These were instantaneous readings taken at the time of sampling.

9. Building 109 AOP Treatment System Influent (corresponds to sample B109-INFLUENT on the COC), Post-AOP (corresponds to sample B109-POST-AOP on the COC) and Effluent (corresponds to sample OUTFALL 005-B109 on the COC) samples were collected and analyzed for 1,4-Dioxane as per footnote (1) of the SPDES permit equivalency for Outfall 005.

10. Outfall 005 combines discharge from Building 109 and Tower 102 treatment systems; however, Tower 102 has not yet been upgraded for 1,4-D treatment. Although sample Outfall 005-T102 is included on the COC for the SPDES sampling report, analytical results have not been included in this report since this sample was collected for internal monitoring and analytical data associated with Outfall 005-T102 will be included in a separate EDD submittal.

11. The average was recorded by using the data taken from the Fulcrum website to calculate the flow from 12/10/24 through 12/31/25, which were both recorded by a Grumman employee.

12. From 12/30/24 to 12/31/24, the data that was used to calculate the average and maximum flow was created by taking the average from 12/1/24 to 12/29/24.

13. This total iron analytical result for Outfall 005 is considered anomalous, based on non-detect total iron results obtained for separate samples collected from the treated discharge from the OU2 ONCT system and the OU3 RW-21 system, which are combined to form the Outfall 005 discharge. This situation will continue to be monitored closely in the future.

Report of Analysis

Client Sample ID:	OUTFALL 005	
Lab Sample ID:	JE2953-2	Date Sampled: 12/10/24
Matrix:	AQ - Ground Water	Date Received: 12/16/24
Method:	EPA 624.1	Percent Solids: n/a
Project:	Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1N18402.D	1	12/20/24 19:15	NW	n/a	n/a	V1N440
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.71	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.42	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.96	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.96	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.80	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.41	ug/l	
79-01-6	Trichloroethene	0.51	1.0	0.43	ug/l	J
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	94%		80-128%
2037-26-5	Toluene-D8 (SUR)	96%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	90%		79-117%
1868-53-7	Dibromofluoromethane (S)	92%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID:	OUTFALL 005	Date Sampled:	12/10/24
Lab Sample ID:	JE2953-2	Date Received:	12/16/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	807	100	ug/l	1	12/20/24	12/20/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	79.6	15	ug/l	1	12/20/24	12/20/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA57555

(2) Prep QC Batch: MP51785

RL = Reporting Limit

4.2
4

Report of Analysis

Client Sample ID:	OUTFALL 005	Date Sampled:	12/10/24
Lab Sample ID:	JE2953-2	Date Received:	12/16/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrup Grumman, OU3.5 RW-21 SPDES, Program 5C		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	3.9	0.10	mg/l	1	12/23/24 21:05	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	3.9	0.30	mg/l	1	12/23/24 21:05	JD	SM4500 A-11
Nitrogen, Total Kjeldahl	<0.20	0.20	mg/l	1	12/23/24 17:10	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.2
4

GW
TB

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE SHEET)										Matrix Codes									
Company Name Arcadis Site Address 2 Huntington Quad, Sullo 1910 City State Zip Mahville NY 11747 Project Contact Kevin Czarwinski, Kevin.Czarwinski@arcadis.com Phone # 831-245-0710 Sample(s) Name(s)		Project Name Prog 5C OU3.5 RW-21-ONCT-OMM/SPDES Billing Information (if different from Report to) Company Name: Arcadis, U.S., Inc. Project # 30223002.OMM13 Client Purchase Order # Work Authorization #: NY001406_2015.10.30 Project Manager Carlo San Giovanni Accounts Payable		Matrix Codes DW - Drinking Water GW - Ground Water WW - Wastewater SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIO - Other Liquid AIR - Air SOL - Other Solid WPF - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank										DW GW WW SW SO SL SED OI LIO AIR SOL WPF FB EB RB TB									
Sample #	Field ID / Point of Collection	MATRIX	Date	Time	Sampled by	Matrix	# of bottles	AS	MS	INCH	INCH	INCH	INCH	INCH	INCH	INCH	INCH	INCH	INCH	INCH	LAB USE ONLY		
1	TB- 121024-PD-3					TB	2														V 676		
2	Outfall 006		12/10/24	1140	PD	GW	5														A 40		
3	Outfall 006-B100			1100		GW	5														645		
4	Outfall 006-T102			1110		GW	5																
Turnaround Time (Business days) <input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush TA data available via LabLink		Approved By (Accutest PW) / Date: _____		Data Deliverable Information <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLTY (Level 3+4) <input type="checkbox"/> State Forms <input type="checkbox"/> NJ Reduced <input checked="" type="checkbox"/> EDD Permit-Check 6 <input type="checkbox"/> Commercial "C" <input checked="" type="checkbox"/> Other COMSPEC+ Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data										Comments / Special Instructions Initial Assessment 2RSD Label Verification									
Sample Custody must be documented below each time samples change possession, including courier delivery.																							
Subsampled by Sampler: 1 Patrick Bellavance		Date/Time: 12-10-24		Received By: Sample 100		Date/Time: 12/10/24		Subsampled by: Sample 100		Received By: JAMINGW		Date/Time: 		Subsampled by: 		Received By: 		Date/Time: 		Subsampled by: 		Received By: 	
Subsampled by: 3		Date/Time: 		Received By: 		Date/Time: 		Subsampled by: 		Received By: 		Date/Time: 		Subsampled by: 		Received By: 		Date/Time: 		Subsampled by: 		Received By: 	
Subsampled by: 6		Date/Time: 		Received By: 		Date/Time: 		Subsampled by: 		Received By: 		Date/Time: 		Subsampled by: 		Received By: 		Date/Time: 		Subsampled by: 		Received By: 	

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IR 50
CIP

Report of Analytical Results

SDG: SR6773
Lab ID: SR6773-1
Client ID: OUTFALL 005
Matrix: AQ
Lab File ID: G0682.D

Sample Date: 10-DEC-24
Extract Date: 11-DEC-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG363174

Report Date: 19-DEC-24
Analysis Date: 18-DEC-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		3.0	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		75.2	%				

Report of Analytical Results

SDG: SR6773
Lab ID: SR6773-2
Client ID: OUTFALL 005-B109
Matrix: AQ
Lab File ID: G0683.D

Sample Date: 10-DEC-24
Extract Date: 11-DEC-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG363174

Report Date: 19-DEC-24
Analysis Date: 18-DEC-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.083
1,4-Dioxane-D8		86.7	%				

SK 66-6773



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #
MSA 3601

Page ___ of ___

Contact & Company Name: Kevin Czerwinski - Task Manager Address: Two Huntington Quad-Suite 1S10 City: Melville NY 11747 State: NY 11747 Project Name/Location (City, State): Prog 5C OUI 5 RW-21-ONCT-OMM/SPDES Sample & Printed Name: Patrick DeLecave		Telephone: 631-245-0710 cell Fax: E-mail Address: Kevin.Czerwinski@arcadis.com Project #: 30223092.OMMI3 Sample Signature: 		Preservative: Filled (✓) # of Containers: Container Information: 2 PARAMETER ANALYSIS & METHOD 1,4-Dioxane 82700-SIM-CLE		Preservation Key: A - H ₂ O B - HCL C - HNO ₃ D - NaOH E - None F - Other: G - Other: H - Other: Matrix Key: SE - Sediment SW - Sample Wipe A - Air T - Tissue NL - NAPLON SW - Sample Wipe Other: GW-Groundwater		Keys: Container Information Key: 1. 40 ml Vial 2. 1L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encorb 6. 2 oz Glass 7. 4 oz Glass 8. 8 oz Glass 9. Other: 10. Other:	
Sample ID	Collection Date	Time	Type (✓)	Comp	Grab	Matrix	REMARKS		
Outfall 005	11/05/14	1140	X			GW	pH/Temp: 6.3 / 55.1°F		
Outfall 005-B109	↓	1000	X			GW	pH/Temp: 6.6 / 53.9°F		
Outfall 005-T102	↓	1110	X			GW	pH/Temp: 6.1 / 57.2°F		
							B102 Inf pH/Temp: 5.4 / 56.7°F		

Special QA/QC Instructions (✓):

Special Instructions/Comments:
 SVOC extracted by
 EDD-ARCADIS_EQUIS (EQUIS6-4 file)

Laboratory Information and Receipt		Relinquished By		Received By		Relinquished By	
Lab Name: Katahdin Analytical <input checked="" type="checkbox"/> Cooler packed with ice (✓)	Cooler Custody Seal (✓) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Printed Name: Patrick DeLecave	Signature: 	Printed Name: Evan Price	Signature: 	Printed Name: SGS-KAS	Signature:
Sample Turnaround Requirements: Normal TAT - 10 business	Sample Receipt: Condition/Cooler Temp. _____	Firm: ARCADIS	Date/Time: 12/10/14	Firm/Counter: SGS-KAS	Date/Time: 12-11-27 1015		
Shipping Tracking #							

2070626 Conf. AR Form 08.27.2015
 Distribution: WHITE - Laboratory returns with results
 YELLOW - Lab copy
 PINK - Retained by Arcadis

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Report of Analytical Results

SDG: SR6772
Lab ID: SR6772-1DL
Client ID: B109-INFLUENT
Matrix: AQ
Lab File ID: G0729.D

Sample Date: 10-DEC-24
Extract Date: 11-DEC-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG363174

Report Date: 23-DEC-24
Analysis Date: 19-DEC-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		15	ug/L	2	.25	0.50	0.17
1,4-Dioxane-D8		68.8	%				

Report of Analytical Results

SDG: SR6772
Lab ID: SR6772-2
Client ID: B109-POST-AOP
Matrix: AQ
Lab File ID: G0681.D

Sample Date: 10-DEC-24
Extract Date: 11-DEC-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG363174

Report Date: 23-DEC-24
Analysis Date: 18-DEC-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane	U	0.24	ug/L	1	.25	0.24	0.083
1,4-Dioxane-D8		77.7	%				

SR 6672 6772



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #
MSA 3601

Page ___ of ___

Contact & Company Name: Kevin Czerwinski -Task Manager 631-245-0710 cell 631-245-0710 cell		Project Name/Location (City, State): Two Huntington Quad-Suite 1S10 Melville NY 11747		Project #: 30223092.OMMI3		Sample ID	
City, State, Zip: Melville NY 11747		E-mail Address: Kevin.Czerwinski@arcadis.com		Sample Collection Date/Time: 11/10/15 10:15		Sample Type: X GW	
Company's Principal Name: Patrick Deleau		Signature: 		Collection Time: 10:10		Matrix: X GW	
Sample Description: B109-Influent		Collection Date/Time: 11/10/15 10:15		Collection Type: X GW		Matrix: X GW	
Sample Description: B109-Post-AOP		Collection Date/Time: 11/10/15 10:10		Collection Type: X GW		Matrix: X GW	
PARAMETER ANALYSIS & METHOD							
1,4-Dioxane 8270D-SIM-CLE							
REMARKS pH/Temp: 5.2 / 53.8°F pH/Temp: 6.7 / 53.9°F							

- Preservation Key:**
- A. H₂O₂
 - B. HCl
 - C. HNO₃
 - D. NaOH
 - E. None
 - F. Other: _____
 - G. Other: _____
 - H. Other: _____
- Container Information Key:**
- 1. 40 ml Vial
 - 2. 1 L Amber
 - 3. 250 ml Plastic
 - 4. 500 ml Plastic
 - 5. Encore
 - 6. 2 oz. Glass
 - 7. 4 oz. Glass
 - 8. 8 oz. Glass
 - 9. Other: _____
 - 10. Other: _____
- Matrix Key:**
- SE - Sediment
 - SO - Soil
 - W - Water
 - T - Tissue
 - SL - Sludge
 - A - Air
 - NL - NAPL/OL
 - SW - Sample Wipe
 - Other: GW-Groundwater

Special Instructions/Comments:
 SVOC extracted by
 EDD-ARCADIS_EQUIS (EQUIS6-4 file)

Special QA/QC Instructions (✓):

Laboratory Information and Receipt:

Lab Name: Katahdin Analytical
 Cooler Custody Seal (✓): Intact Not Intact
 Sample Receipt: Normal TAT-10 business
 Condition/Cooler Temp: _____

Relinquished By: Patrick Deleau
 Printed Name: Patrick Deleau
 Signature:
 Firm: Arcadis
 Date/Time: 11/10/15

Relinquished By: Eum Prick
 Printed Name: Eum Prick
 Signature:
 Firm: SGS-GAS
 Date/Time: 12-11-27 10:15

Report of Analysis

Client Sample ID:	OUTFALL 006	Date Sampled:	12/10/24
Lab Sample ID:	JE2954-2	Date Received:	12/10/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 624.1		
Project:	Northrop Grumman, OU2.2 OMM, Program 3		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1N18386.D	1	12/20/24 12:29	NW	n/a	n/a	V1N440
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.46	ug/l	
76-13-1	Freon 113	ND	2.0	0.87	ug/l	
75-09-2	Methylene chloride	ND	1.0	0.80	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.43	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.43	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	92%		80-128%
2037-26-5	Toluene-D8 (SUR)	97%		82-113%
460-00-4	4-Bromofluorobenzene (SUR)	92%		79-117%
1868-53-7	Dibromofluoromethane (S)	95%		84-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound



4.2
4

Report of Analysis

Client Sample ID: OUTFALL 006	Date Sampled: 12/10/24
Lab Sample ID: JE2954-2	Date Received: 12/10/24
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Northrop Grumman, OU2.2 OMM, Program 3	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	< 100	100	ug/l	1	12/21/24	12/23/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	< 15	15	ug/l	1	12/21/24	12/23/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA57572

(2) Prep QC Batch: MP51809

RL = Reporting Limit

4.2
4

Report of Analysis

Client Sample ID:	OUTFALL 006	Date Sampled:	12/10/24
Lab Sample ID:	JE2954-2	Date Received:	12/10/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrop Grumman, OU2.2 OMM, Program 3		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By Method
Nitrogen, Nitrate + Nitrite	4.8	0.10	0.090	mg/l	1	12/23/24 19:55 JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	4.8	0.30	0.23	mg/l	1	12/23/24 19:55 JD	SM4500 A-11
Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14	mg/l	1	12/23/24 17:08 SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

4.2
4

GW
TB

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE SHEET)		Matrix Codes																									
Company Name Arcadis Street Address 2 Huntington Quad, Suite 1S10 City Melville State NY Zip 11747 Project Contact Kevin Czarwinski, Kevin.Czarwinski@arcadis.com Phone # 831-245-0710 Sample(s) Name(s) Patrick Deluca (601) 349-2591		Project Name: AGMNYM62283 // OU2 System - GW Prog 3 OU2.2-ONCT-OMM/SPDES Street City Bothpage State NY Company Name Arcadis, U.S., Inc. Street Address 830 Plaza Drive, Suite 600 City Highlands Ranch, State CO Zip 80129 Client Purchase Order # 30218437.OMMI3 Work Authorization # NY001498_2015.10.30 Project Manager Carlo San Giovanni		Requested Analysis (see TEST CODE SHEET) M2242NGSPDS + Chloroform + Benzene + 1,1,2-TCA + 1,1-DCA + 1,2-DCA + 1,2-DCEPANE (40 mL Clear Glass VOA's) V6242NGSPDS+Chloroform (40 mL Clear Glass VOA's) XTNIT - EPA 353.2 & EPA 357.2 w/Total N Calc (250 mL Plastic) Iron + Manganese EPA 200.7 (500 mL Plastic)		Matrix Codes DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment CS - CS LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank																									
Sample #	Field ID / Point of Collection	MRBHQ#	Date	Time	Sampled by	Matrix	# of bottles	SC	HAZ	HAZ2	HAZ3	HAZ4	HAZ5	HAZ6	HAZ7	HAZ8	HAZ9	HAZ10	HAZ11	HAZ12	HAZ13	HAZ14	HAZ15	HAZ16	HAZ17	HAZ18	HAZ19	HAZ20	LAB USE ONLY		
1	TB-107034-PD-2					TB	2	2																					V676 A9 G145		
2	Outfall 008		11/10/24	0925	PD	GW	5	3	1	1																					
Turnaround Time (Business days) <input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 18 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush TIA data available VIA Lablink		Approved By (Accutest PI): / Date: _____		Data Deliverable Information <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 2+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data		<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDO Form-EOUS 6 <input checked="" type="checkbox"/> Other COMM-C+		Comments / Special Instructions Final Assessment 2830 Label Verification																							
Relinquished by: Patrick Deluca Date Time: 11/10/24		Received By: Sample 100 Date Time: 11/10/24 @ 1507		Relinquished by: [Signature] Date Time: 11/10/24 1815		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]	
Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]		Relinquished by: [Signature] Date Time: [Signature]		Received By: [Signature]	

Q:\PROJECT\Bothpage\OU2.2 ONCT\08 Notes and Data\System Sampling\Feb2017 (LJMYCOCs_SGSPAR_OU2_COCs_JobPNo_82233_82235_Rev Dec2017

Report of Analytical Results

SDG: SR6770
Lab ID: SR6770-1
Client ID: OUTFALL 006
Matrix: AQ
Lab File ID: G0678.D

Sample Date: 10-DEC-24
Extract Date: 11-DEC-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG363174

Report Date: 19-DEC-24
Analysis Date: 18-DEC-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		5.5	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		62.2	%				

Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	12/10/24
Lab Sample ID:	JE2950-1	Date Received:	12/16/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5A12922.D	1	12/20/24 16:14	NW	n/a	n/a	V5A364
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone ^a	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
106-99-0	1,3-Butadiene ^b	ND	5.0	0.62	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-45-6	Chlorodifluoromethane	ND	5.0	0.49	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	12/10/24
Lab Sample ID:	JE2950-1	Date Received:	12/16/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

VOA OU3 BPGWVS List

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
75-68-3	1-chloro-1,1-difluoroethane	ND	5.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	110%		80-120%
2037-26-5	Toluene-D8	108%		80-120%
460-00-4	4-Bromofluorobenzene	111%		82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	System artifact	1.23	23	ug/l	J
	Total TIC, Volatile		0	ug/l	

- (a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- (b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID:	WSP-7		Date Sampled:	12/10/24
Lab Sample ID:	JE2950-1		Date Received:	12/16/24
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	EPA 608.3 EPA 608			
Project:	Northrop Grumman, OU3.2 OMM, Program 4A			

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2520138.D	1	12/21/24 14:24	KC	12/20/24 10:00	OP60420A	GXX8792
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016 ^a	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260 ^a	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	109%		10-156%
877-09-8	Tetrachloro-m-xylene	122%		10-156%
2051-24-3	Decachlorobiphenyl	121%		10-143%
2051-24-3	Decachlorobiphenyl	119%		10-143%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	12/10/24
Lab Sample ID:	JE2950-1	Date Received:	12/16/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	283	100	ug/l	1	12/20/24	12/20/24 KP	EPA 200.7 ¹	EPA 200.7 ²
Manganese	40.4	15	ug/l	1	12/20/24	12/20/24 KP	EPA 200.7 ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA57555

(2) Prep QC Batch: MP51785

RL = Reporting Limit



4.1
4

Report of Analysis

Client Sample ID:	WSP-7	Date Sampled:	12/10/24
Lab Sample ID:	JE2950-1	Date Received:	12/16/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.4	0.10	mg/l	1	12/23/24 21:04	JD	EPA 353.2/LACHAT
Nitrogen, Total ^a	2.6	0.30	mg/l	1	12/23/24 21:04	JD	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	12/23/24 17:09	SS	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

4.1
4

Report of Analysis

Client Sample ID:	OU3 POST-GAC	Date Sampled:	12/10/24
Lab Sample ID:	JE2950-3	Date Received:	12/16/24
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 608.3 EPA 608		
Project:	Northrop Grumman, OU3.2 OMM, Program 4A		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2520139.D	1	12/21/24 14:42	KC	12/20/24 10:00	OP60420A	GXX8792
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016 ^a	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260 ^a	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	108%		10-156%
877-09-8	Tetrachloro-m-xylene	109%		10-156%
2051-24-3	Decachlorobiphenyl	132%		10-143%
2051-24-3	Decachlorobiphenyl	126%		10-143%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analytical Results

SDG: SR6771
Lab ID: SR6771-1
Client ID: WSP-7
Matrix: AQ
Lab File ID: G0679.D

Sample Date: 10-DEC-24
Extract Date: 11-DEC-24
Extracted By: NH
Extraction Method: SW846 3520C
Lab Prep Batch: WG363174

Report Date: 19-DEC-24
Analysis Date: 18-DEC-24
Analyst: DT
Analysis Method: SW846 8270D SIM
% Solids: N/A

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.74	ug/L	1	.25	0.25	0.084
1,4-Dioxane-D8		69.4	%				

5 ddYbXjI 'D'

**Groundwater Sampling Logs and
Chain of Custody Records**

Groundwater Sampling Logs

Location ID:	BPOW 1-2	Date(s):	2024-02-20	Work Order(s):	OU2 - Q1 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:33.06 °F, rH:44%, Clouds: 0%, Wind:8.05mph E-NE			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	274.00-314.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	27.39	Total Depth (ft-bmp):	335	Water Column(ft):	307.61	Liters in Well:	760.14
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	NA	Total Volume Purged (liters):	110	Sample ID:	BPOW 1-2	Sample Time:	10:50
Purge End Time:	10:45	Well Volumes Purged (total):	0.14	Replicate Type / Replicate ID:	MS/MSD / BPOW 1-2	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^e)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:15	0	1100	mL/min	27.39	3.02	0.179	1.29	0.05	11.2	191.6	Clear	No Odor
09:20	5	1100	mL/min	27.39	3.9	0.217	1.29	0.04	12.08	190.8	Clear	No Odor
09:25	10	1200	mL/min	27.57	4.01	0.223	645	0.04	12.12	173.4	Clear	No Odor
09:30	15	1200	mL/min	27.57	3.84	0.223	6.45	0.04	12.03	180.9	Clear	No Odor
09:35	20	1200	mL/min	27.57	3.81	0.223	6.45	0.04	11.95	186.2	Clear	No Odor
09:40	25	1200	mL/min	27.6	3.66	0.223	4.66	0.04	11.99	189	Clear	No Odor
09:45	30	1300	mL/min	27.6	3.74	0.223	4.66	0.04	12.13	192.3	Clear	No Odor
09:50	35	1300	mL/min	27.6	3.75	0.223	4.66	0.04	11.77	197	Clear	No Odor
09:55	40	1300	mL/min	27.58	3.8	0.222	2.84	0.03	11.77	193.8	Clear	No Odor
10:00	45	1300	mL/min	27.58	3.78	0.222	2.84	0.03	12.19	195.5	Clear	No Odor
10:05	50	1300	mL/min	27.58	3.76	0.222	2.84	0.03	12.08	197.8	Clear	No Odor
10:10	55	1300	mL/min	27.59	3.74	0.222	2.47	0.03	11.62	201	Clear	No Odor
10:15	60	1300	mL/min	27.59	3.73	0.222	2.47	0.03	11.71	202.7	Clear	No Odor
10:20	65	1300	mL/min	27.59	3.7	0.215	2.47	0.03	11.82	206.8	Clear	No Odor
10:25	70	1300	mL/min	27.59	3.7	0.215	2.47	0.03	11.85	207.2	Clear	No Odor
10:30	75	1300	mL/min	27.59	3.68	0.214	2.71	0.02	11.88	210.1	Clear	No Odor
10:35	80	450	mL/min	27.5	3.64	0.215	2.25	0.02	10.62	211	Clear	No Odor
10:40	85	450	mL/min	27.5	3.7	0.214	2.12	0.02	10.98	211.6	Clear	No Odor
10:45	90	450	mL/min	27.5	3.69	0.215	2.2	0.02	11.03	212.9	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (SW8260)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	BPOW 1-4	Date(s):	2024-02-21	Work Order(s):	OU2 - Q1 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:34.39 °F, rH:70%, Clouds: 40%, Wind:5.75mph E-NE			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	340.00-400.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	9.5	Total Depth (ft-bmp):	405	Water Column(ft):	395.5	Liters in Well:	977.33
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	NA	Total Volume Purged (liters):	159	Sample ID:	BPOW 1-4	Sample Time:	11:00
Purge End Time:	10:56	Well Volumes Purged (total):	0.16	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:04	0	1200	mL/min	9.5	3.77	0.174	0.69	15.5	7.87	211.6	Clear	No Odor
09:09	5	1200	mL/min	9.5	3.87	0.142	0.97	16.9	11.59	139.2	Clear	No Odor
09:14	10	1200	mL/min	9.5	3.91	0.142	0.97	17	11.43	146.1	Clear	No Odor
09:19	15	1200	mL/min	9.53	3.88	0.142	0.97	17.23	11.54	154.4	Clear	No Odor
09:24	20	1700	mL/min	9.53	3.92	0.142	0.31	16.36	11.36	162	Clear	No Odor
09:29	25	1000	mL/min	9.53	3.89	0.143	0.31	14	10.92	164.7	Clear	No Odor
09:34	30	1000	mL/min	9.53	3.91	0.142	0.31	3.45	11.44	204.4	Clear	No Odor
09:39	35	1000	mL/min	9.55	3.91	0.142	0.42	3.53	11.38	207.1	Clear	No Odor
09:44	40	1000	mL/min	9.55	3.92	0.14	0.42	3.14	11.46	208	Clear	No Odor
09:49	45	1800	mL/min	9.55	3.92	0.141	0.42	2.97	11.47	209.4	Clear	No Odor
09:54	50	1800	mL/min	9.6	3.92	0.141	4.79	2.91	11.45	210.8	Clear	No Odor
09:59	55	1900	mL/min	9.6	3.92	0.14	4.79	2.71	11.38	211.4	Clear	No Odor
10:04	60	1900	mL/min	9.5	3.91	0.141	4.79	2.79	11.35	211.9	Clear	No Odor
10:09	65	1900	mL/min	9.6	3.92	0.142	4.79	2.18	11.35	214.1	Clear	No Odor
10:14	70	1900	mL/min	9.6	3.9	0.14	1.01	1.7	11.31	214.4	Clear	No Odor
10:19	75	1900	mL/min	9.6	3.9	0.141	1.01	1.67	11.36	214.7	Clear	No Odor
10:24	80	1900	mL/min	9.6	3.9	0.141	1.01	1.44	11.22	215.4	Clear	No Odor
10:29	85	1900	mL/min	9.59	3.89	0.142	0.51	2.16	11.29	217.3	Clear	No Odor
10:34	90	1900	mL/min	9.59	3.9	0.141	0.51	2.15	11.32	217.5	Clear	No Odor
10:39	95	450	mL/min	9.59	3.9	0.144	0.91	1.59	9.44	212.4	Clear	No Odor
10:44	100	450	mL/min	9.53	3.87	0.142	0	1.28	8.83	205.5	Clear	No Odor
10:49	105	450	mL/min	9.53	3.88	0.143	0	1.25	8.94	204	Clear	No Odor
10:54	110	450	mL/min	9.53	3.87	0.143	0	1.25	8.85	199.9	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (SW8260)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Groundwater Sampling Log

Project No. 30191527.NAV12 Well ID BPOW1-5 Date 2/21/24
 Project Name/Location OU2 Q1 GW SAMPLING NAVY Weather 35°F, cloudy
 Measuring Pt. TOC Screen Interval (ft-bmp) 600-650 Casing Diameter (in.) 4" Well Material X PVC SS
 Static Water Level (ft-bmp) 10.70 Total Depth (ft-bmp) 655 Water Column/ Gallons in Well 644.3 ft / 418.8 gal
 MP Elevation --- Pump Intake (ft-bmp) 625 Purge Method: dedicated Sample Method WSV + TV + LF
 Pump On/Off 0910 / 1123 Volume Purged (gal) 128.5 Peristaltic Submersible bladder Other ---
 Sample Time: Label BPOW1-5 Replicate/ Start 1118 Code No. --- End 1123 Sampled by A.R. Hynes P. Quinlan

PID: 0.0 ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0910	0	1400	10.71	0	4.47	0.032	99.5	10.73	11.59	219.5	brown	none
0915	5	1400		7	4.21	0.026		10.51	11.55	236.7		
0920	10	1400	10.70	14	4.70	0.028	85.5	9.55	11.52	236.8		
0925	15	1400		21	4.75	0.025		8.21	11.51	236.9		
0930	20	1400	10.68	28	4.33	0.026	50.1	8.01	11.50	235.8		
0935	25	1200		34.5	4.33	0.026		7.77	11.49	234.1		
0940	30	1200	10.72	40.5	4.15	0.026	31.8	7.65	11.47	334.3	clear	
0945	35	1200		46.5	4.22	0.026		1.01	11.50	234.3		
0950	40	1200	10.73	52.5	3.95	0.026	31.95	0.98	11.48	235.5		
0955	45	1200		58.5	4.21	0.026		0.94	11.46	230.6		
1000	50	1200	10.75	64.5	4.53	0.026	17.6	0.88	11.45	226.1		
1005	55	1200		70.5	4.50	0.026		0.69	11.40	225.9		
1010	60	1200	10.76	76.5	4.50	0.026	14.7	0.69	11.41	225.2		
1015	65	1200		82.5	4.47	0.026		0.65	11.44	223.4		
1020	70	1200	10.76	88.5	4.45	0.026	15.9	0.61	11.42	222.8		
1025	75	1200		94.5	4.44	0.026		0.61	11.42	221.0		

Constituents Sampled	Container	Number	Preservative
<u>VOC Ba60</u>	<u>40 mL glass vial</u>	<u>3</u>	<u>HCl</u>
<u>1,4-Dioxane 522 SIM</u>	<u>250 mL amber</u>	<u>2</u>	<u>---</u>

Notes:
 WSV: $50' \times 0.65 \text{ gal/ft} = 32.5 \text{ gal} \times 3.785 \text{ L/gal} = 123 \text{ L}$
 TV: $625' - 10.7' = 614.3 \text{ ft} \times 0.0025 \text{ gal/ft} = 1.5 \text{ gal} \times 3.785 \text{ L/gal} = 5.6 \text{ L}$
128.6 L TO REMOVE

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2" = 0.16	2.5" = 0.26	3" = 0.37	3.5" = 0.50	4" = 0.65	6" = 1.47	3/8" = 0.006	1/2" = 0.01
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Well Information

Well Location: <u>Basin #19, Langdon Dr, Farmingdale NY</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>fair</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: <u>---</u>

Groundwater Sampling Log

Page 2 of 2

Project No. 30191527.NAV12 Well ID BPDWI-5 Date 2/21/24
 Project Name/Location 002 Q1 GW SAMPLING NAVY Weather 35°F, cloudy
 Measuring Pt. Description TOC Screen Interval (ft-bmp) 600-650 Casing Diameter (in.) 4" Well Material PVC SS
 Static Water Level (ft-bmp) 10.70 Total Depth (ft-bmp) 655 Water Column/ Gallons in Well 644.3 fl / 418.8 gal
 MP Elevation — Pump Intake (ft-bmp) 625 Purge Method: dedicated Sample Method WSV + TV + LF
 Pump On/Off 0910/1123 Volume Purged (gal) 126.5 Peristaltic Submersible bladder Other —
 Sample Time: Label BPDWI-5 Replicate/ Code No. — Sampled by A.R. Hynes
 Start 1118 End 1123 P. Quinlan
 PID: 0.0 ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1030	80	1200	10.75	100.5	4.42	0.025	15.5	0.61	11.39	219.9	clear	none
1035	85	1200		106.5	4.41	0.025		0.60	11.38	219.7		
1040	90	1200		112.5	4.42	0.025	13.7	0.60	11.39	214.8		
1045	95	400	10.72	114.5	4.38	0.025		0.56	11.28	210.4		
1050	100	400		116.5	4.39	0.025	10.8	0.55	11.26	200.7		
1055	105	400	10.72	118.5	4.39	0.025		0.48	11.20	198.6		
1100	110	400		120.5	4.39	0.025	10.01	0.44	11.11	170.4		
1105	115	400	10.72	122.5	4.39	0.025	9.71	0.39	11.11	168.7		
1110	120	400		124.5	4.38	0.025	9.45	0.38	11.11	168.8		
1115	125	400	10.72	126.5	4.38	0.025	9.02	0.38	11.11	168.6	↓	↓

Constituents Sampled	Container	Number	Preservative
<u>VOC 8260</u>	<u>40 mL vial</u>	<u>3</u>	<u>HCl</u>
<u>1,4-Dioxane 522 SIM</u>	<u>250 mL amber</u>	<u>2</u>	<u>—</u>

Notes:

See pg 1 for calculations

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2" = 0.26	3" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location:	<u>Basin #19, Langdon Dr, Farmingdale NY</u>	Well Locked at Arrival:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well:	<u>fair</u>	Well Locked at Departure:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion:	<u>Flush Mount</u> / <u>Stick Up</u>	Key Number To Well:	

Location ID:	BPOW 1-6	Date(s):	2024-02-21	Work Order(s):	OU2 - Q1 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:37.15 °F, rH:65%, Clouds: 100%, Wind:9.22mph E			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	700.00-750.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	10.62	Total Depth (ft-bmp):	755	Water Column(ft):	744.38	Liters in Well:	1839.45
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	NA	Total Volume Purged (liters):	132	Sample ID:	BPOW 1-6	Sample Time:	12:50
Purge End Time:	12:45	Well Volumes Purged (total):	0.07	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^e)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:18	0	1100	mL/min	10.62	4.56	0.07	0.06	0.81	5.23	186.3	Clear	No Odor
11:23	5	1500	mL/min	10.62	4.84	0.026	0.06	0.91	11.03	91.8	Clear	No Odor
11:28	10	1500	mL/min	10.62	4.86	0.025	0.06	0.89	11.1	92.7	Clear	No Odor
11:33	15	1650	mL/min	10.65	5.08	0.023	0	0.86	11.12	94.1	Clear	No Odor
11:38	20	1700	mL/min	10.65	5.18	0.023	0	0.83	11.2	102.2	Clear	No Odor
11:43	25	1700	mL/min	10.65	5.18	0.023	0	0.75	11.07	110.2	Clear	No Odor
11:48	30	1700	mL/min	10.65	5.17	0.023	0	0.7	10.97	118.5	Clear	No Odor
11:53	35	1700	mL/min	10.68	5.18	0.023	0	0.67	11.04	123.1	Clear	No Odor
11:58	40	1700	mL/min	10.68	5.19	0.023	0	0.62	11.13	128.5	Clear	No Odor
12:03	45	1700	mL/min	10.68	5.16	0.023	0	0.6	11.19	133.8	Clear	No Odor
12:08	50	1700	mL/min	10.68	5.19	0.023	0	0.57	11.33	140	Clear	No Odor
12:13	55	1700	mL/min	10.72	5.19	0.023	0	0.56	11.1	141.2	Clear	No Odor
12:18	60	1700	mL/min	10.72	5.2	0.023	0	0.38	11.24	146.5	Clear	No Odor
12:23	65	1700	mL/min	10.72	5.18	0.023	0	0.36	11.28	149.5	Clear	No Odor
12:28	70	1700	mL/min	10.72	5.17	0.023	0	0.36	11.36	153.8	Clear	No Odor
12:33	75	450	mL/min	10.65	5.2	0.023	0	0.34	10.4	154.3	Clear	No Odor
12:38	80	450	mL/min	10.65	5.2	0.023	0	0.31	9.7	159.1	Clear	No Odor
12:43	85	450	mL/min	10.65	5.21	0.023	0	0.3	9.8	160	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (SW8260)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

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Project No. 30191527 NAVI2 Well ID BPOW2-1

Date 2/28/24

Project Name/Location OU2 NAVY Groundwater Sampling

Weather 50°F, windy, light rain

Measuring Pt. Description TOC Screen Interval (ft-bmp) 360-400 Casing Diameter (in) 2

Well Material x PVC SS

Static Water Level (ft-bmp) 15.91 Total Depth (ft-bmp) 400 Water Column/ Gallons in Well 384.1 ft / 249.6 gal ^{61.5 ARH}

MP Elevation --- Pump Intake (ft-bmp) midscreen Purge Method: Dedicated Penistaltic Bladder Other ---

Sample Method 1 WSV+Lowflow+TV

Pump On/Off 1005/1100 Volume Purged (gal) 31.3

Sample Time: Label BPOW2-1 Replicate/ Code No MS/MSD taken
Start 1048
End 1100

Sampled by A.R. Hynes
P. Quintan

PID: 0.0 ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox (mV)	Appearance	
											Color	Odor
1005	0	1200	15.89	0	4.11	0.099	1.09	4.83	14.05	179.7	clear	odor
1010	5	1200		6	4.18	0.096		3.57	14.01	167.9		
1015	10	1200	15.88	12	4.23	0.097	12.6	2.62	13.91	156.8		
1020	15	1200		18	4.23	0.097		1.37	13.86	139.7		
1025	20	450	15.88	22.1	4.24	0.097	8.93	1.11	13.69	135.2		
1030	25	450		24.4	4.24	0.098	2.51	0.81	13.52	129.0		
1035	30	450	15.89	26.7	4.25	0.098	2.01	0.35	13.16	126.4		
1040	35	450	15.89	29	4.25	0.098	1.63	0.36	13.16	123.5		
1045	40	450	15.89	31.3	4.25	0.098	1.23	0.33	12.99	122.9	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs 524.2	40 mL vial	3	HCl
1,4-Dioxane 522 SIM	250 mL glass amber	2	NaHSO4

Notes:
Well Screen Volume (WSV): 40 foot screen x 0.16 gal/ft = 6.4 gal x 3.785 L/gal = 24.2 L WSV
Tubing Volume (TV): (400 ft - 15.91 static WL) x 0.0025 gal/ft = 0.96 gal x 3.785 L/gal = 3.6 L
27.8 L = Total min purge

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2" = 0.16	2.5" = 0.26	3" = 0.37	3.5" = 0.50	4" = 0.65	6" = 1.47	3/8" = 0.006
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Well Information

Well Location: <u>Gloria Rd & Harriet Rd</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>fair - tubing good, manhole has 0/2 bolts</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount / Stick Up</u>	Key Number To Well: _____

Groundwater Sampling Log

Page 1 of 1

Project No. 30191527 NAVI2 Well ID BPOW2-2

Date 2/28/24

Project Name/Location OU2 NAVY Groundwater Sampling

Weather 50°F, windy, light rain

Measuring Pt. Description TOC Screen Interval (ft-bmp) 455-495 Casing Diameter (in) 2

Well Material x PVC SS

Static Water Level (ft-bmp) 15.95 Total Depth (ft-bmp) 495 Water Column/ Gallons in Well 479.05 ft/

MP Elevation — Pump Intake (ft-bmp) midscreen Purge Method Dedicated

Sample Method 1 WSV+Lowflow+TV

Pump On/Off 0905/0955 Volume Purged (gal) 33.7 Peristaltic Bladder Other —

Sample Time: Label BPOW2-2 Replicate/ Code No. N/A
 Start 0948
 End 0955

Sampled by A.R. Hynes
P. Quinlan

PID: 0.0 ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0905	0	1200	15.99	0	4.40	0.068	1.71	2.16	14.29	219.4	clear	odor
0910	5	1350	16.00	6	4.42	0.068	—	0.94	14.25	216.0	↓	↓
0915	10	1350	—	12.75	4.40	0.067	1.12	0.82	14.11	205.7	↓	↓
0920	15	1350	16.00	19.5	4.43	0.067	—	1.14	13.95	188.8	↓	↓
0925	20	475	15.91	24.1	4.43	0.068	0.37	1.38	13.68	156.9	↓	↓
0930	25	475	15.91	26.5	4.42	0.068	0.36	0.58	13.67	146.16	↓	↓
0935	30	475	15.91	28.9	4.44	0.068	0.34	0.53	13.62	135.3	↓	↓
0940	35	475	15.91	31.3	4.43	0.068	0.31	0.51	13.64	133.7	↓	↓
0945	40	475	15.91	33.7	4.43	0.068	0.29	0.48	13.62	127.8	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs 524.2	40 mL vial	3	HCl
1,4-Dioxane 522 SIM	250 mL glass amber	2	NaHSO4

Notes:

Well Screen Volume (WSV): 40 foot screen x 0.16 gal/ft = 6.4 gal x 3.785 L/gal = 24.2 L WSV

Tubing Volume (TV): (495 ft - 15.95 static WL) x 0.0025 gal/ft = 1.2 gal x 3.785 L/gal = 4.53 L

TOTAL MIN PURGE = 28.7

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location:	<u>Gloria Rd & Harriet Rd</u>	Well Locked at Arrival:	<u>Yes</u> / No
Condition of Well:	<u>fair - 2/2 bolts (stripped), cut large kink out</u>	Well Locked at Departure:	<u>Yes</u> / No
Well Completion:	<u>Flush Mount / Stick Up of tubing</u>	Key Number To Well:	

Location ID:	BPOW 2-3	Date(s):	2024-02-28	Work Order(s):	OU2 - Q1 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	MIST, T:49.51 °F, rH:91%, Clouds: 100%, Wind:21mph S			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	564.00-594.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	15.09	Total Depth (ft-bmp):	599	Water Column(ft):	583.91	Liters in Well:	1442.91
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	NA	Total Volume Purged (liters):	80	Sample ID:	BPOW 2-3	Sample Time:	10:05
Purge End Time:	09:59	Well Volumes Purged (total):	0.06	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^e)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:59	0	900	mL/min	15.09	4.58	0.062	3.07	0.01	13.56	223.4	Clear	No Odor
09:04	5	1650	mL/min	15.09	5.05	0.064	3.07	2	13.58	59.7	Clear	No Odor
09:09	10	1650	mL/min	15.09	5.01	0.058	3.07	2.22	13.08	32.8	Clear	No Odor
09:14	15	1650	mL/min	15.2	5.02	0.057	0.49	4.13	13.82	55.6	Clear	No Odor
09:19	20	1650	mL/min	15.2	5.02	0.057	0.49	3.83	13.86	66.3	Clear	No Odor
09:24	25	1650	mL/min	15.2	5.02	0.058	0.49	3.1	13.84	77.2	Clear	No Odor
09:29	30	1650	mL/min	15.2	5.03	0.058	0.62	3.08	13.79	84	Clear	No Odor
09:34	35	1650	mL/min	15.2	5.02	0.058	0.62	3.1	13.81	87	Clear	No Odor
09:39	40	1650	mL/min	15.2	5.03	0.058	0.62	3.06	13.7	91	Clear	No Odor
09:44	45	400	mL/min	15.17	5.04	0.058	0.23	3.05	13.38	93.4	Clear	No Odor
09:49	50	400	mL/min	15.16	5.04	0.058	0.22	3.05	12.04	97.1	Clear	No Odor
09:54	55	400	mL/min	15.16	5.04	0.058	0.17	3.03	12.09	100	Clear	No Odor
09:59	60	400	mL/min	15.16	5.05	0.058	0.2	3.08	12.13	99.8	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (SW8260)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	BPOW 3-3	Date(s):	2024-02-19	Work Order(s):	OU2 - Q1 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:35.87 °F, rH:55%, Clouds: 0%, Wind:14mph N-NW			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	580.00-620.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	17.91	Total Depth (ft-bmp):	625	Water Column(ft):	607.09	Liters in Well:	1500.19
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	NA	Total Volume Purged (liters):	108	Sample ID:	BPOW 3-3	Sample Time:	10:15
Purge End Time:	10:13	Well Volumes Purged (total):	0.07	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^e)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:58	0	1000	mL/min	17.91	4.73	0.111	6.69	12.19	8.05	137	Clear	No Odor
09:03	5	1500	mL/min	17.91	4.77	0.093	6.63	9.95	9.25	11.3	Clear	No Odor
09:08	10	1500	mL/min	17.91	4.85	0.093	6.63	7.2	9.29	7.2	Clear	No Odor
09:13	15	1500	mL/min	17.95	4.82	0.094	3.56	5.08	10.53	3.2	Clear	No Odor
09:18	20	1500	mL/min	17.95	4.86	0.094	3.56	5.23	10.62	4.9	Clear	No Odor
09:23	25	1500	mL/min	17.95	4.79	0.094	3.56	4.45	10.81	16	Clear	No Odor
09:28	30	1500	mL/min	17.94	4.8	0.094	3.43	4.48	10.78	25.3	Clear	No Odor
09:33	35	1500	mL/min	17.94	4.78	0.094	3.43	3.91	11.22	38	Clear	No Odor
09:38	40	1650	mL/min	17.94	4.8	0.094	3.43	4.11	11.13	47.2	Clear	No Odor
09:43	45	1650	mL/min	17.95	4.76	0.094	2.99	3.84	11.09	53.2	Clear	No Odor
09:48	50	1650	mL/min	17.95	4.77	0.094	2.99	3.45	11.53	59.6	Clear	No Odor
09:53	55	1650	mL/min	17.95	4.78	0.093	2.99	3.19	11.21	67.5	Clear	No Odor
09:58	60	1650	mL/min	17.95	4.81	0.093	4.81	2.98	11.25	70.5	Clear	No Odor
10:03	65	450	mL/min	17.95	4.79	0.093	4.17	2.99	11.05	74.8	Clear	No Odor
10:08	70	450	mL/min	17.92	4.77	0.093	4	2.96	9.59	77.4	Clear	No Odor
10:13	75	450	mL/min	17.92	4.72	0.093	4.2	2.89	9.55	80.2	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (SW8260)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Date: 2/19/24
Weather: 30°F, sunny, windy

Project No. 30191527.NAVI2

Well ID BPCW3-4

Well Material PVC SS

Project Name/Location 2024 OU2 Q1 GW Sampling

Measuring Pt. Description TOC Screen Interval (ft-bmp) 640-690

Casing Diameter (in.) 4

Static Water Level (ft-bmp) 19.69 Total Depth (ft-bmp) 695

Water Column/ Gallons in Well 675.31 ft / 438.95 gal

MP Elevation --- Pump Intake (ft-bn) 665

Purge Method non-dedicated bladder
Peristaltic
Submersible
Other

Sample Method 1 WSV + LF

Pump On/Off 0919/1130 Volume Purged (gal) 141.59

Sampled by A.R. Hynes
P. Quinlan

Sample Time: Label BPCW3-4 Replicate/ Code No. REPO21924ARH
Start 1118
End 1130

PID: 0.3 ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0920	0	1200	19.74	0	4.84	0.066	4.91	12.28	13.55	175.2	clear	none
0925	5	1200		6	4.68	0.065	4.99	9.50	13.40	188.4	↓	↓
0930	10	1200		12	4.65	0.065		9.42	13.42	192.7		
0935	15	1200	19.74	18	4.63	0.065	5.12	9.31	13.44	198.8		
0940	20	1400		24.5	4.64	0.065		9.45	13.47	201.3		
0945	25	1400		31.5	4.64	0.065	5.38	9.67	13.50	206.0		
0950	30	1400	19.76	38.5	4.63	0.065		10.25	13.56	208.7		
0955	35	1400		45.5	4.64	0.065	5.07	10.20	13.55	210.4		
1000	40	1400		52.5	4.64	0.065		11.40	13.50	224.1		
1005	45	1400	19.78	59.5	4.65	0.066	4.98	11.65	13.48	226.8		
1010	50	1400		66.5	4.64	0.066		10.70	13.60	228.2		
1015	55	1500		74	4.64	0.066	4.01	9.97	13.81	228.5		
1020	60	1500	19.78	81.5	4.62	0.066	3.78	11.05	13.61	235.4		
1025	65	1500		89	4.64	0.066		9.85	13.64	235.4		
1030	70	1500		96.5	4.67	0.066	3.80	11.04	13.67	236.7		
1035	75	1600	19.76	104	4.65	0.066	3.88	11.08	13.60	237.7		

Constituents Sampled	Container	Number	Preservative
VOC's 8260 C	40ml Vial	3	HCL
1,4 Dioxane-8270 B SIM	250 mL Amber	2	None NaHSO4

Notes: High TD despite recalibration → see pg 2 for outcome
 TV: $695 \text{ ft} - 19.69 \text{ ft WL} = 675.31 \text{ ft} \times 0.006 \text{ gal/ft} = 4.05 \text{ gal} \times 3.785 \text{ L/gal} = 15.34 \text{ L}$
 WSV: $50 \text{ ft} \times 0.05 \text{ gal/ft} = 2.5 \text{ gal} \times 3.785 \text{ L/gal} = 9.46 \text{ L}$ 138 L Need to purge

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	3/8" = 0.006

Well Information

Well Location: <u>Nassau County Basin 210</u>	Well Locked at Arrival: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well: <u>fair - small leak in bonded tubing</u>	Well Locked at Departure: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion: <input checked="" type="checkbox"/> Flush Mount / <input type="checkbox"/> Stick Up	Key Number To Well: _____

Groundwater Sampling Log

Page 2 of 2

Project No. 30191527.NAVI2

Well ID BPOW3-4

Date 2/19/24

Project Name/Location 2024 OU2 Q1 GW Sampling

Weather 30°F, sunny, windy

Measuring Pt. Description TOC

Screen Interval (ft-bmp) 640-690

Casing Diameter (in.) 4

Well Material PVC SS

Static Water Level (ft-bmp) 19.69

Total Depth (ft-bmp) 695

Water Column/ Gallons in Well 1075.31 ft / 438.95 gal

MP Elevation

Pump Intake (ft-br) 665

Purge Method dedicated bladder

Sample Method 1 WSV + LF

Pump On/Off 0918 / 1130

Volume Purged (gal) 141.59

Peristaltic Submersible Other

Sample Time: Label BPOW3-4 Replicate/ Start 1118 Code No. End 1130

REPO21924 ARH

Sampled by A.P. Hynes P. Quinlan

PID: 0.3 ppm

112 (Rate increase)

Switched YSI →

Add 1 gal from leak in dedicated tubing during purge

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1040	80	1600	19.75	111.5	4.64	0.066	3.69	10.73	13.68	238.1	clear	none
1045	85	1600		120	4.63	0.066		10.17	13.61	240.6		
1050	90	1600		128	4.62	0.066	4.36	12.04	13.58	244.6		
1055	95	250	19.74	132.6	4.64	0.067		12.35	12.16	243.9		
1100	100	250		133.9	4.63	0.067	3.64	12.26	11.23	245.6		
1105	105	250	19.74	135.2	4.72	0.070	3.96	0.72	11.20	137.5		
1110	110	250		136.5	4.68	0.070	4.26	0.64	11.60	137.7		
1115	115	250	19.74	137.8	4.69	0.070	4.20	0.63	11.47	137.8		

Constituents Sampled	Container	Number	Preservative
VOC's 8260 C	40ml Vial	3	HCL
1,4 Dioxane 8270 D SIM	250 ml Amber	2	None - NaHSO4

Notes: Calculations on pg 1. 1020 - Informed Tom Darmon of high DO. 1105 - Switched YSI. Better DO reading.

141.59 L

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location:	<u>Nassau County Basin 210</u>	Well Locked at Arrival:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well:	<u> </u>	Well Locked at Departure:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion:	<u>Flush Mount / Stick Up</u>	Key Number To Well:	<u> </u>

Location ID:	BPOW 4-1R	Date(s):	2024-02-16	Work Order(s):	OU2 - Q1 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:36.59 °F, rH:45%, Clouds: 3%, Wind:21mph NW			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	652.00-692.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	19.47	Total Depth (ft-bmp):	697	Water Column(ft):	677.53	Liters in Well:	1674.26
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	NA	Total Volume Purged (liters):	110	Sample ID:	BPOW 4-1R	Sample Time:	10:25
Purge End Time:	10:22	Well Volumes Purged (total):	0.07	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^e)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:07	0	1200	mL/min	19.47	5.23	0.066	3.19	20.07	11.86	152.3	Clear	No Odor
09:12	5	1400	mL/min	19.51	5.12	0.059	3.19	19.45	13.12	194	Clear	No Odor
09:17	10	1400	mL/min	19.51	5.5	0.066	3.19	12.42	13.22	262.5	Clear	No Odor
09:22	15	1600	mL/min	19.51	5.38	0.059	5.86	7.64	13.23	261.6	Clear	No Odor
09:27	20	1600	mL/min	19.51	5.12	0.062	5.86	3.65	13.23	251.8	Clear	No Odor
09:32	25	1600	mL/min	19.51	5.17	0.062	5.86	1.2	12.94	253.6	Clear	No Odor
09:37	30	1600	mL/min	19.51	5.14	0.062	5.86	1.19	12.87	254.6	Clear	No Odor
09:42	35	1600	mL/min	19.55	4.98	0.063	2.55	1.06	12.72	258.5	Clear	No Odor
09:47	40	1600	mL/min	19.55	5	0.063	2.55	0.96	12.96	260.7	Clear	No Odor
09:52	45	1600	mL/min	19.55	5.01	0.063	2.55	0.94	12.9	260.7	Clear	No Odor
09:57	50	1600	mL/min	19.55	4.97	0.063	0.3	0.87	12.93	263	Clear	No Odor
10:02	55	1600	mL/min	19.55	5	0.063	0.3	1	12.89	264.9	Clear	No Odor
10:07	60	1600	mL/min	19.55	5	0.063	0.33	1.05	12.83	265.3	Clear	No Odor
10:12	65	500	mL/min	19.5	4.92	0.063	2.65	1.07	11.93	270.2	Clear	No Odor
10:17	70	500	mL/min	19.5	4.97	0.063	2.33	1.07	11.47	272	Clear	No Odor
10:22	75	500	mL/min	19.5	4.95	0.063	2.29	1.06	11.61	271.8	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (524.2)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 uS/cm = microSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter
 S.U = standard units
 mS/cm = milli

Location ID:	BPOW 4-2R	Date(s):	2024-02-16	Work Order(s):	OU2 - Q1 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	30's windy			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	725.00-765.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	21.34	Total Depth (ft-bmp):	770	Water Column(ft):	748.66	Liters in Well:	1850.03
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	10:52	Total Volume Purged (liters):	113	Sample ID:	BPOW4-2R	Sample Time:	12:20
Purge End Time:	12:19	Well Volumes Purged (total):	0.06	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^e)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:54	0	1400	mL/min	21.36	5.72	0.026	4.12	0.47	13.22	214.2	Clear	No Odor
10:59	5	1200	mL/min	21.36	5.14	0.028	4.12	0.47	13.57	221.8	Clear	No Odor
11:04	10	1800	mL/min	21.36	5.2	0.028	4.12	0.31	13.8	253.8	Clear	No Odor
11:09	15	1800	mL/min	21.36	5.11	0.039	4.23	0.22	13.71	254.6	Clear	No Odor
11:14	20	1800	mL/min	21.36	5.09	0.039	4.23	0.22	13.78	255.8	Clear	No Odor
11:19	25	1800	mL/min	21.36	5.06	0.038	4.23	0.23	13.71	256.9	Clear	No Odor
11:24	30	1400	mL/min	21.34	5.08	0.038	5.01	0.23	13.7	259.6	Clear	No Odor
11:29	35	1400	mL/min	21.34	5.09	0.039	5.01	0.25	13.69	262.7	Clear	No Odor
11:34	40	1400	mL/min	21.34	5.07	0.04	5.01	0.28	13.69	267.9	Clear	No Odor
11:39	45	1500	mL/min	21.36	5.03	0.04	5.1	0.31	13.61	272.9	Clear	No Odor
11:44	50	1500	mL/min	21.36	5.03	0.042	5.1	0.28	13.63	273	Clear	No Odor
11:49	55	1500	mL/min	21.36	5.03	0.042	5.1	0.24	13.59	276.6	Clear	No Odor
11:54	60	1500	mL/min	21.39	5.03	0.04	5.84	0.29	13.49	277.9	Clear	No Odor
11:59	65	1500	mL/min	21.39	5.04	0.04	5.84	0.31	13.49	279.6	Clear	No Odor
12:04	70	400	mL/min	21.44	4.95	0.044	2.86	0.3	11.94	281.9	Clear	No Odor
12:09	75	400	mL/min	21.44	4.96	0.044	3.25	0.38	12.06	281.3	Clear	No Odor
12:14	80	400	mL/min	21.46	4.97	0.044	0.98	0.38	12.15	281.9	Clear	No Odor
12:19	85	400	mL/min	21.46	4.97	0.044	3.76	0.36	12.19	282.9	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (524.2)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-21D2	Date(s):	2024-02-08	Work Order(s):	OU2 - Q1 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	40's sunny			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	516.00-526.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	46.75	Total Depth (ft-bmp):	531	Water Column(ft):	484.25	Liters in Well:	1196.64
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	11:12	Total Volume Purged (liters):	23	Sample ID:	GM-21D2	Sample Time:	12:05
Purge End Time:	12:10	Well Volumes Purged (total):	0.02	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^e)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:13	0	490	mL/min	46.85	5.67	0.156	6.84	6.36	12.42	163.3	Clear	No Odor
11:18	5	400	mL/min	46.85	5.67	0.158	6.84	5.77	12.7	163.3	Clear	No Odor
11:23	10	400	mL/min	46.85	5.66	0.148	6.84	4.78	12.86	160.8	Clear	No Odor
11:28	15	400	mL/min	46.85	5.72	0.154	20.5	7.25	12.8	152.4	Clear	No Odor
11:33	20	400	mL/min	46.85	5.69	0.156	20.5	7.87	12.89	151.5	Clear	No Odor
11:38	25	400	mL/min	46.85	5.7	0.156	20.5	8.11	13.12	152.6	Clear	No Odor
11:43	30	400	mL/min	46.85	5.68	0.156	15.6	8.12	13.05	154.6	Clear	No Odor
11:48	35	400	mL/min	46.85	5.64	0.156	15.6	8.16	12.91	155.9	Clear	No Odor
11:53	40	400	mL/min	46.85	5.67	0.156	11.3	8.18	12.99	158.2	Clear	No Odor
11:58	45	400	mL/min	46.85	5.66	0.156	10.2	8.17	13.1	159.3	Clear	No Odor
12:03	50	400	mL/min	46.86	5.66	0.156	9.55	8.15	13.21	161.4	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,2,4-Trichlorobenzene (VOCs)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	BPOW 1-1	Date(s):	2024-05-14	Work Order(s):	OU2 - Q2 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:62.26 °F, rH:77%, Clouds: 0%, Wind:11.5mph S			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	196.00-236.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	25.21	Total Depth (ft-bmp):	NA	Water Column(ft):	215.79	Liters in Well:	533.24
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	09:14	Total Volume Purged (liters):	109.1	Sample ID:	BPOW1-1	Sample Time:	10:55
Purge End Time:	10:53	Well Volumes Purged (total):	0.20	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q, YSI 556 MPS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:16	0	1300	mL/min	25.2	5.05	0.134	2.43	1.61	14.32	69.2	Clear	No Odor
09:21	5	1300	mL/min	25.2	4.73	0.163	2.43	1.69	14.2	74.6	Clear	No Odor
09:31	15	1300	mL/min	25.21	4.73	0.164	0.76	1.53	13.93	78.4	Clear	No Odor
09:36	20	1500	mL/min	25.25	4.74	0.163	0.76	1.59	13.88	80.3	Clear	No Odor
09:41	25	1300	mL/min	25.25	4.74	0.163	0.76	1.48	13.93	81.1	Clear	No Odor
09:46	30	1300	mL/min	25.21	4.74	0.165	0.46	1.38	14	81.6	Clear	No Odor
09:51	35	1300	mL/min	25.21	4.74	0.164	0.46	1.43	13.81	82.4	Clear	No Odor
09:56	40	1300	mL/min	25.21	4.76	0.163	0.46	1.41	13.77	82.5	Clear	No Odor
10:01	45	1300	mL/min	25.28	4.77	0.163	0.47	1.37	13.74	82.5	Clear	No Odor
10:06	50	1300	mL/min	25.28	4.77	0.162	0.47	1.4	13.77	82.4	Clear	No Odor
10:11	55	1300	mL/min	25.28	4.77	0.164	0.47	1.36	13.73	82.3	Clear	No Odor
10:16	60	1300	mL/min	25.22	4.78	0.165	0.41	1.34	13.75	83.3	Clear	No Odor
10:21	65	1300	mL/min	25.22	4.78	0.166	0.41	1.31	13.74	83.4	Clear	No Odor
10:26	70	1300	mL/min	25.28	4.78	0.166	0.56	1.33	13.76	83.5	Clear	No Odor
10:31	75	1300	mL/min	25.28	4.78	0.166	0.56	1.32	13.72	83.4	Clear	No Odor
10:36	80	400	mL/min	25.28	4.78	0.166	0.56	1.26	15.11	83	Clear	No Odor
10:41	85	400	mL/min	25.23	4.77	0.166	1.07	1.24	15.35	82.3	Clear	No Odor
10:46	90	400	mL/min	25.23	4.77	0.166	0.42	1.24	15.34	81.7	Clear	No Odor
10:51	95	400	mL/min	25.23	4.76	0.166	0.24	1.25	15.38	81.8	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (524.2)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	BPOW 1-2	Date(s):	2024-05-14	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:62.24 °F, rH:78%, Clouds: 0%, Wind:11.5mph S			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	274.00-314.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	28	Total Depth (ft-bmp):	335	Water Column(ft):	307	Liters in Well: 758.63
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	9:14	Total Volume Purged (liters):	120	Sample ID:	BPOW 1-2	Sample Time: 10:35
Purge End Time:	10:34	Well Volumes Purged (total):	0.16	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:14	0	1000	mL/min	28	8.46	1.55	2.73	0.38	15.86	128.2	Clear	No Odor
09:19	5	1500	mL/min	28	7.32	0.166	2.73	0.14	13.96	159	Clear	No Odor
09:24	10	1700	mL/min	28.29	7.32	0.166	3.79	0.13	14.11	161.7	Clear	No Odor
09:29	15	1700	mL/min	28.29	7.31	0.167	3.78	0.13	14.13	162.1	Clear	No Odor
09:34	20	1700	mL/min	28.29	7.31	0.166	3.79	0.13	14.17	163.8	Clear	No Odor
09:39	25	1700	mL/min	28.31	7.32	0.167	3.01	0.13	14	164.8	Clear	No Odor
09:44	30	1700	mL/min	28.31	7.31	0.166	3.01	0.13	14.04	165	Clear	No Odor
09:49	35	1700	mL/min	28.31	7.31	0.166	3.01	0.13	14.01	165.8	Clear	No Odor
09:54	40	1700	mL/min	28.3	7.3	0.166	1.71	0.13	14.14	166	Clear	No Odor
09:59	45	1700	mL/min	28.3	7.28	0.165	1.71	0.13	14.13	165.7	Clear	No Odor
10:04	50	1700	mL/min	28.3	7.29	0.164	1.71	0.13	14.18	165.8	Clear	No Odor
10:09	55	1700	mL/min	28.3	7.27	0.168	1.96	0.12	14.18	164.3	Clear	No Odor
10:14	60	500	mL/min	28.25	7.24	0.159	1.99	0.11	14.92	163.5	Clear	No Odor
10:19	65	500	mL/min	28.25	7.23	0.158	1.23	0.11	15.44	163.4	Clear	No Odor
10:24	70	500	mL/min	28.25	7.22	0.158	1.25	0.11	15.42	162.1	Clear	No Odor
10:29	75	500	mL/min	28.25	7.24	0.157	1.05	0.11	15.43	162.2	Clear	No Odor
10:34	80	500	mL/min	28.25	7.24	0.157	1.82	0.11	15.45	162.5	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (524.2)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: Yes

Is Well in Good Condition? Good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	BPOW 1-3	Date(s):	2024-05-14	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:65.53 °F, rH:74%, Clouds: 0%, Wind:7mph S			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	369.00-409.00	Casing Diameter (in):	2.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	28.45	Total Depth (ft-bmp):	419	Water Column(ft):	390.55	Liters in Well: 241.27
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	10:50	Total Volume Purged (liters):	45	Sample ID:	BPOW 1-3	Sample Time: 11:45
Purge End Time:	11:40	Well Volumes Purged (total):	0.19	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:50	0	660	mL/min	28.45	4.1	0.108	1.74	0.22	16.92	211.2	Clear	No Odor
10:55	5	1200	mL/min	28.45	3.59	0.104	1.74	0.01	15.1	78.3	Clear	No Odor
11:00	10	1200	mL/min	28.45	3.56	0.105	1.74	0.01	14.93	72.8	Clear	No Odor
11:05	15	1200	mL/min	28.52	3.25	0.141	0.82	0.01	14.62	39.3	Clear	No Odor
11:10	20	1200	mL/min	28.52	3.23	0.143	0.82	0.01	14.44	30.4	Clear	No Odor
11:15	25	1200	mL/min	28.52	3.23	0.143	0.82	0.01	14.25	30.1	Clear	No Odor
11:20	30	350	mL/min	28.48	3.22	0.144	2.25	0.01	15.7	26.2	Clear	No Odor
11:25	35	350	mL/min	28.48	3.23	0.143	2.25	0.01	15.86	15.9	Clear	No Odor
11:30	40	350	mL/min	28.47	3.22	0.143	1.49	0.01	15.84	14.6	Clear	No Odor
11:35	45	350	mL/min	28.47	3.22	0.143	1	0.01	15.86	13.4	Clear	No Odor
11:40	50	350	mL/min	28.48	3.22	0.143	0.97	0.01	15.89	12.7	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (524.2)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: Yes

Is Well in Good Condition? Good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	BPOW 1-4	Date(s):	2024-05-16	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	MIST, T:58.39 °F, rH:93%, Clouds: 100%, Wind:17.27mph N-NE			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	340.00-400.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	7.58	Total Depth (ft-bmp):	NA	Water Column(ft):	397.42	Liters in Well: 982.07
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Dedicated Bladder
Purge Start Time:	08:39	Total Volume Purged (liters):	165	Sample ID:	BPOW 1-4	Sample Time: 12:05
Purge End Time:	12:04	Well Volumes Purged (total):	0.17	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q,YSI ProPlus / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:41	0	500	mL/min	7.59	3.99	0.178	0.81	14.1	13.1	185.1	Clear	No Odor
08:46	5	400	mL/min	7.59	3.84	0.178	0.81	10.91	12.3	87.3	Clear	No Odor
08:51	10	600	mL/min	7.59	3.78	0.19	0.81	7.41	12.1	80.3	Clear	No Odor
08:56	15	600	mL/min	7.6	3.77	0.19	0.88	6.85	12.3	81.3	Clear	Moderate
09:01	20	600	mL/min	7.59	3.89	0.18	0.88	7.05	12.4	96.6	Clear	No Odor
09:06	25	600	mL/min	7.59	3.96	0.182	0.88	5.45	13.5	92.6	Clear	No Odor
09:11	30	600	mL/min	7.6	3.97	0.184	2.08	5.21	12.5	85.4	Clear	Moderate
09:16	35	700	mL/min	7.61	3.99	0.178	2.08	4.88	12.2	84	Clear	Moderate
09:21	40	700	mL/min	7.61	3.96	0.171	2.08	4.78	12.6	82.2	Clear	Moderate
09:26	45	700	mL/min	7.69	3.95	0.169	9.02	5.32	12.4	84.3	Clear	No Odor
09:31	50	700	mL/min	7.69	3.99	0.168	9.02	5.07	13	86	Clear	Moderate
09:36	55	700	mL/min	7.69	4.02	0.166	9.02	5.03	12.3	80.3	Clear	Moderate
09:41	60	700	mL/min	7.63	4	0.163	1.67	5.7	12.2	83.6	Clear	Moderate
09:51	70	700	mL/min	7.63	4.02	0.161	1.67	6.71	12.2	88	Clear	Moderate
09:56	75	700	mL/min	7.64	4.04	0.161	1.87	6.39	12.5	90.1	Clear	Moderate
10:01	80	700	mL/min	7.63	4.03	0.16	1.87	5.27	12.2	82.9	Clear	No Odor
10:06	85	700	mL/min	7.63	4.03	0.159	1.87	4.73	12.2	78.5	Clear	No Odor
10:11	90	700	mL/min	7.69	4.03	0.159	0.85	4.65	12.2	77	Clear	Moderate
10:21	100	700	mL/min	7.69	4.05	0.158	0.85	3.93	12.1	70.7	Clear	Moderate
10:26	105	700	mL/min	7.68	4.05	0.157	2.75	4.04	12.2	71	Clear	Moderate
10:31	110	700	mL/min	7.68	4.06	0.157	2.75	4.07	12.1	71.3	Clear	Moderate
10:36	115	800	mL/min	7.68	4.08	0.157	2.75	4.73	12.2	76.5	Clear	Moderate
10:41	120	800	mL/min	7.78	4.08	0.157	1.23	4.46	12.3	72.9	Clear	Moderate
10:46	125	800	mL/min	7.68	4.08	0.157	1.23	4.57	12.1	73.3	Clear	Moderate
10:51	130	800	mL/min	7.68	4.09	0.158	1.23	4.34	12.2	72.8	Clear	No Odor
10:56	135	800	mL/min	7.68	4.1	0.156	3.65	3.87	12.2	69.9	Clear	Moderate
11:01	140	800	mL/min	7.71	4.11	0.157	3.65	3.65	12.2	67.9	Clear	Moderate
11:06	145	1700	mL/min	7.71	4.07	0.156	3.65	6.07	11.9	83.9	Clear	Moderate
11:11	150	1700	mL/min	7.69	4.04	0.153	0.64	7.33	11.8	90.9	Clear	Moderate
11:16	155	1700	mL/min	7.69	4.03	0.153	0.64	7.45	11.7	93.4	Clear	Moderate
11:21	160	1700	mL/min	7.69	4.05	0.152	0.64	7.71	11.8	93	Clear	Moderate
11:26	165	1700	mL/min	7.69	4.05	0.153	6.86	7.87	11.8	94.7	Clear	Moderate
11:31	170	1700	mL/min	7.71	4.07	0.154	6.98	7.92	11.7	94.4	Clear	Moderate
11:36	175	500	mL/min	7.71	4.14	0.151	1.06	7.66	12.8	95.6	Clear	Moderate
11:41	180	500	mL/min	7.71	4.17	0.151	1.49	4.26	12.8	80.1	Clear	Moderate
11:46	185	500	mL/min	7.7	4.17	0.152	0.3	3.72	12.8	75.5	Clear	Moderate
11:51	190	500	mL/min	7.7	4.16	0.152	0.57	3.27	12.9	69.7	Clear	Moderate
11:56	195	500	mL/min	7.7	4.17	0.152	0.51	3.21	12.8	68.1	Clear	No Odor
12:01	200	500	mL/min	7.69	4.18	0.151	1.24	3.11	12.8	65	Clear	--

Constituent Sampled	Container	Number	Preservative
VOCs (524.2)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30224425 Well ID BPDW1-5 Page 1 of 2
 Date 5/16/24
 Project Name/Location OU2 Q2 Groundwater Sampling 2024 Weather 59°F / Rainy
 Measuring Pt. Top of Casing Screen Interval (ft-bmp) 600-650 Casing Diameter (in.) 4" Well Material x PVC
 Description Top of Casing Interval (ft-bmp) 600-650 Diameter (in.) 4" SS
 Static Water Level (ft-bmp) 8.42 Total Depth (ft-bmp) 650 Water Column/ Gallons in Well (641.58 ft) / 417.0 gal
 MP Elevation --- Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated Sample Method NSW+LF
 Pump On/Off 1054 / 1250 Volume Purged (gal) 150 L Peristaltic --- Submersible --- Other ---
 Sample Time: Label BPDW1-5 Replicate/ Code No. N/A Start 1245 End 1250 Sampled by SH, KK

PID: 0.0 ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1055	0	700	8.43 8.43	0	4.34	0.030	17.1	-27.43	12.0	148.3	clear	none
1100	5	1000	8.43 8.43	3.5	4.48	0.027		-57.81	12.2	196.4	"	"
1105	10	1500		8.5	4.21	0.028	15.2	74.98	12.2	208.9		
1110	15	1500	8.43 8.43	16	4.42	0.028		79.32	12.2	194.1		
1115	20	1500	8.43 8.43	29.5	4.50	0.027		85.99	12.0	175.7		
1120	25	1500	8.43 8.43	31.0	4.49	0.027	12.5	86.16	12.0	174.5		
1125	30	1500		38.5	4.49	0.027		85.77	12.1	172.7		
1130	35	1500		46	4.53	0.028	12.7	84.15	12.5	170.8		
1135	40	1500	8.43	53.5	4.50	0.027		84.47	12.3	171.7		
1140	45	1500		61	4.51	0.027	7.8	86.00	12.1	170.7		
1145	50	1500		68.5	4.51	0.028		86.03	12.2	170.8		
1150	55	1500	8.43	76	4.51	0.028	7.1	85.97	12.3	170.8		
1155	60	1500		83.5	4.51	0.028		85.97	12.3	170.8		
1200	65	1500		91	4.52	0.028	10.5	85.96	12.2	170.7		
1205	70	1500	8.43	98.5	4.52	0.028		85.83	12.2	170.6		
1210	75	1500		106	4.53	0.028	9.19	85.79	12.3	170.6	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs 524.2	40 mL glass vial	3	HCl
1,4-Dioxane 522 SIM	250 mL amber bottle	2	NaHSO4

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)
 NSW = $650 \text{ ft} - 600 \text{ ft} = 50 \text{ ft} \times 0.65 \text{ gal/ft} = 32.5 \text{ gal} \times 3.785 = 123 \text{ L}$
 TV = $650 \text{ ft} \times 8.42 = 641.58 \text{ ft} \times 0.0025 \text{ gal/ft} = 1.60 \text{ gal} \times 3.785 = 6 \text{ L}$
 129 L Total

*Field Blank Required
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

1" = 0.04	1.5" = 0.09	2" = 0.16	2.5" = 0.26	3" = 0.37	3.5" = 0.50	4" = 0.65	6" = 1.47	3/8" = 0.006
1.25" = 0.06							1/2" = 0.01	

Well Information

Well Location:	<u>Langdon Basin (TOB Basin #19)</u>	Well Locked at Arrival:	<u>Yes</u> / No
Condition of Well:	<u>good</u>	Well Locked at Departure:	<u>Yes</u> / No
Well Completion:	<u>Flush Mount / Stick Up</u>	Key Number To Well:	<u>BSIM19 key</u>

Groundwater Sampling Log

Project No. 30224425 Well ID BPDW1-5 Page 2 of 2
 Date 5/16/24
 Project Name/Location OU2 Q2 Groundwater Sampling 2024 Weather 59°F / Rainy
 Measuring Pt. Screen Casing Diameter (in.) 4" Well Material x PVC
 Description Top of Casing Interval (ft-bmp) 600-650 SS
 Static Water Level (ft-bmp) 8.42 Total Depth (ft-bmp) 650 Water Column/ Gallons in Well 41.58ft / 417.0gal
 MP Elevation --- Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated Sample Method NSV 1LF
Peristaltic
Submersible
Other
 Pump On/Off 1054/1250 Volume Purged (gal) 150L
 Sample Time: Label BPDW1-5 Replicate/ Code No. N/A Sampled by SH, KK
 Start 1245
 End 1250

PID: 0.0ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1215	80	1500	8.43	113.5	4.54	0.028	7.18	85.92	12.3	170.5	clear	none
1220	85	1500		121	4.55	0.028		86.05	12.3	170.2	"	"
1225	90	1500	8.44	128.5	4.55	0.028	6.53	85.88	12.3	170.0	↓	↓
1230	95	1500	8.44	131	4.66	0.028	10.1	84.42	12.8	164.4	↓	↓
1235	100	500	8.44	133.5	4.69	0.028	8.73	84.23	12.8	163.6	↓	↓
1240	105	500	8.44	136	4.70	0.028	6.67	84.17	12.9	163.1	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs 524.2	40 mL glass vial	3	HCl
1,4- Dioxane 522 SIM	250 mL amber bottle	2	NaHSO4

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)

see page 1

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 percent for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	<u>4" = 0.65</u>	1/2" = 0.01	

Well Information

Well Location:	<u>TOB Basin # 19</u>	Well Locked at Arrival:	<u>Yes</u> / No
Condition of Well:	<u>good</u>	Well Locked at Departure:	<u>Yes</u> / No
Well Completion:	<u>Flush Mount / Stick Up</u>	Key Number To Well:	<u>Basin 19 Key</u>

Groundwater Sampling Log

Project No. 30224425 NAVIZ Well ID BPOV 1-6

Date 5/11/24

Project Name/Location OU2 Q2 Navy GWS

Weather 60° Rain

Measuring Pt. Description Top of Casing Screen Interval (ft-bmp) 700-750 Casing Diameter (in.) 4

Well Material PVC SS

Static Water Level (ft-bmp) 8.90 Total Depth (ft-bmp) 750 Water Column/ Gallons in Well 712

MP Elevation _____ Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated Peristaltic Submersible Other _____

Sample Method 1 wst + TV + LF

Pump On/Off 1123 1305 Volume Purged (gal) 1407

Sample Time: Label BPOV 1-6 Replicate/ Code No. REPOS16245V1

Sampled by SU PQ SH KK

PID: 0-0 1300

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1125	0	1500	8.92	0	5.34	0.022	0.74	7.42	12.65	73.6	Clear	None
1130	5	1800		7.5	4.74	0.022		6.27	12.37	114.9	"	"
1135	10	1800	8.90	16.5	4.80	0.022	0.37	0.29	12.38	110.9	"	"
1140	15	1800		15.5	5.16	0.021		0.80	12.36	94.5	"	"
1145	20	1800	8.88	24.5	5.20	0.020	0.26	0.93	12.35	90	"	"
1150	25	1800		33.5	5.17	0.020		0.85	12.39	93.2	"	"
1155	30	1800	8.88	42.5	5.17	0.020	0.43	0.77	12.42	92.3	"	"
1200	35	1800		51.5	5.18	0.021		0.77	12.32	92.3	"	"
1205	40	1800	8.90	60.5	5.19	0.021	0.27	0.77	12.35	92.6	"	"
1210	45	1800		69.5	5.21	0.020		0.78	12.40	93.1	"	"
1215	50	1800	8.94	78.5	5.21	0.020	0.31	0.80	12.41	93.0	"	"
1220	55	1800		87.5	5.19	0.021		0.79	12.39	91.7	"	"
1225	60	1800	8.97	96.5	5.20	0.020	0.33	0.79	12.43	92.7	"	"
1230	65	1800		105	5.20	0.020		0.79	12.38	92.5	"	"
1235	70	1800	8.99	114	5.21	0.020	0.37	0.79	12.34	92.1	"	"
1240	75	1800		123	5.15	0.020		0.82	12.36	93.4	"	"

Constituents Sampled	Container	Number	Preservative
VOCs <u>8260</u> <u>524</u>	40 mL glass vial	3	HCl
1,4-Dioxane <u>8270</u> <u>522</u>	1L amber bottle <u>250mL</u>	2	<u>NaHSO4</u>

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)

$750 - 700 = 50 \times 0.65 = 32.5 = 12.5 \text{ L}$

$750 - 8.23 = 742 = 7 \text{ L}$

132 L total.

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>Mass. Basin 19</u>	Well Locked at Arrival: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well: <u>Good</u>	Well Locked at Departure: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion: <u>Flush Mount</u> / <input type="checkbox"/> Stick Up	Key Number To Well: _____

Groundwater Sampling Log

Page 1 of 1

Project No. 30224425 NAVIZ Well ID BPOW-2-1

Date 5/16/24

Project Name/Location Ouz Navy Q2 2024

Weather 60° Rain

Measuring Pt. Description Top of Casing Screen Interval (ft-bmp) 360-400 Casing Diameter (in.) 2

Well Material x PVC SS

Static Water Level (ft-bmp) 15.78 Total Depth (ft-bmp) 400 Water Column/ Gallons in Well 385'

MP Elevation 0847 Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated Peristaltic Submersible Other Ded.

Sample Method lwsu + TV + LF

Pump On/Off 0848 0935 Volume Purged (gal) 42L

Sampled by SV

Sample Time: Label BPOW-2-1 Replicate/ Code No. NA

PID: 0.0 0930

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0850	0	1600	15.79	0	3.93	0.114	4.83	6.60	14.96	15.0	Clear	None
0855	5	1600		8	4.07	0.108		1.17	14.8	14.7	"	"
0900	10	1600	15.80	16	4.19	0.117	2.93	0.62	14.62	14.54	"	"
0905	15	1600		24	4.14	0.134		0.41	14.6	14.79	"	"
0910	20	400	15.79	32	4.11	0.147	2.39	0.28	14.6	14.9	"	"
0915	25	400	15.86	34	4.11	0.149	2.46	0.26	14.7	14.91	"	"
0920	30	400	15.86	36	4.11	0.147	2.11	0.25	14.6	14.87	"	"
0925	35	400	15.81	38	4.10	0.147	1.98	0.24	14.7	14.85	"	"

Constituents Sampled	Container	Number	Preservative
VOCs 0200 <u>524</u>	40 mL glass vial	3	HCl
1,4-Dioxane 5270 SIM <u>522</u>	amber bottle <u>250 mL</u>	2	None <u>NaHSO₂</u>

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)

$400 - 360 = 40 \times 0.16 = 6.4 \text{ gal} = 25 \text{ L}$

$TV = 400 - 15.78 = 385 = 4 \text{ L}$

30 L total

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>Gloria Rd</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: <u> </u>

Groundwater Sampling Log

Project No. 30224425 Well ID BPOW2-2 Page 1 of 1
 Project Name/Location 022 Narv GWS 02 Date 5/16/24
 Measuring Pt. Description Top of Casing Screen Interval (ft-bmp) 455-495 Casing Diameter (in.) 2 Weather 60° Rain
 Static Water Level (ft-bmp) 18.59 Total Depth (ft-bmp) 495 Water Column/ Gallons in Well 477' Well Material x PVC
 MP Elevation _____ Pump Intake (ft-bmp) Midscreen Purge Method: Dedicated Peristaltic Submersible Def. Sample Method 1WSV/TV/LS
 Pump On/Off 0913 Volume Purged (gal) 426 Other _____
 Sample Time: Label BPOW2-2 Replicate/ Code No. N/A Start 0955 End 1000 Sampled by SV
 PID: 0.0 0955

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0915	0	1800	18.61	0	4.09	0.075	4.39	8.25	14.9	139.1	clear	None
0920	5	1600		8	4.37	0.074		0.96	14.8	136.8	"	"
0925	10	1600	18.59	16	4.35	0.074	5.44	0.91	14.7	136.3	"	"
0930	15	1600		24	4.37	0.074		0.34	14.6	135.1	"	"
0935	20	1600	18.58	32	4.37	0.071	3.89	0.21	14.5	135.6	"	"
0940	25	400	18.56	34	4.37	0.072	2.99	0.20	14.5	135.4	"	"
0945	30	400	18.57	36	4.37	0.072	2.39	0.19	14.5	135.0	"	"
0950	35	400	18.57	38	4.37	0.072	1.88	0.18	14.5	135.3	"	"

Constituents Sampled	Container	Number	Preservative
VOC <u>524</u>	40 mL glass vial	3	HCl
1,4-Dioxane <u>522</u>	40 mL amber bottle 250 mL	2	None <u>N₂H₂SO₄</u> HCl

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)
 $495 - 455 = 40 \times 0.16 = 6.4 \text{ gal} = 25 \text{ L}$
 $495 - 18.59 = 477 = 5 \text{ L}$
30 L total

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>Glory Rd</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: _____

Groundwater Sampling Log

Project No. 30224425 NAVIL Well ID BROWZ-3 Page 1 of 1
 Project Name/Location 02 JAWY GLWS Q2 2024 Date 5/16/24
 Measuring Pt. Description Top of Casing Screen Interval (ft-bmp) 564-594 Casing Diameter (in.) 4 Weather 60° Rain
 Static Water Level (ft-bmp) 18.17 Total Depth (ft-bmp) 594 Water Column/ Gallons in Well 575.83 Well Material x PVC
 MP Elevation _____ Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated Sample Method Insv+TV+LF
 Pump On/Off 0948 / 1100 Volume Purged (gal) 90L Peristaltic Submersible Det. Other _____
 Sample Time: Label BROWZ-3 Replicate/ Code No. NA Other _____
 Start 1055 End 1100 Sampled by SV
 PID: 020 1055

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0950	0	1800	18.15	0	4.60	0.051	4.89	8.87	14.74	120.7	Clear	None
0955	5	1800		9	4.76	0.061		3.09	14.70	112.5	"	"
1000	10	1800	18.17	18	4.94	0.060	4.27	0.30	14.6	103.1	"	"
1005	15	1800		27	5.00	0.059		0.23	14.8	103.1	"	"
1010	20	1800	18.18	36	5.01	0.061	3.76	0.12	14.9	102.48	"	"
1015	25	1800		45	5.01	0.061		0.12	14.9	102.6	"	"
1020	30	1800	18.15	54	4.97	0.061	1.23	0.43	14.7	104.5	"	"
1025	35	1800		63	4.94	0.060		0.26	14.6	106.1	"	"
1030	40	1800	18.16	72	4.93	0.060	1.18	0.17	14.5	106.6	"	"
1035	45	400	18.14	81	4.94	0.060	1.11	0.14	14.5	106.7	"	"
1040	50	400	18.13	83	4.94	0.060	0.77	0.15	14.6	106.0	"	"
1045	55	400	18.14	85	4.92	0.060	0.71	0.14	14.7	107.0	"	"
1050	60	400	18.14	87	4.93	0.059	0.53	0.15	14.6	106.8	"	"

Constituents Sampled	Container	Number	Preservative
VOCs 2250 <u>524</u>	40 mL glass vial	3	HCl
1,4-Dioxane 8270-SM <u>522</u>	40 mL amber bottle <u>250 mL</u>	2	None <u>NaHSO4</u>

Notes:
 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)
 $594 - 564 = 30 \times 0.65 = 20 \text{ gal} = 75 \text{ L}$
 $594 - 18.17 = 575.83 \times 0.65 = 374 \text{ gal} = 1410 \text{ L}$
 *Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: Gloria Rd Well Locked at Arrival: Yes / No
 Condition of Well: Good Well Locked at Departure: Yes / No
 Well Completion: Flush Mount / Stick Up Key Number To Well: _____

Location ID:	BPOW 3-1	Date(s):	2024-05-20	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLOUDS, T:61.27 °F, rH:76%, Clouds: 100%, Wind:6.91mph N			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	436.50-476.50	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	19.75	Total Depth (ft-bmp):	516	Water Column(ft):	496.25	Liters in Well: 1226.29
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	9:50	Total Volume Purged (liters):	120	Sample ID:	BPOW 3-1	Sample Time: 11:05
Purge End Time:	11:00	Well Volumes Purged (total):	0.10	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:50	0	2000	mL/min	19.75	2.92	0.237	4.99	1.23	15.7	64	Clear	No Odor
09:55	5	2000	mL/min	19.75	3.03	0.228	4.99	0.42	15.35	52.3	Clear	No Odor
10:00	10	2000	mL/min	19.75	3.02	0.228	4.99	0.25	15.47	52.8	Clear	No Odor
10:05	15	2000	mL/min	20.2	3	0.228	12.4	0.18	15.58	51.5	Clear	No Odor
10:10	20	2000	mL/min	20.2	3.01	0.228	12.4	0.16	15.77	51	Clear	No Odor
10:15	25	2000	mL/min	20.2	3.03	0.228	12.4	0.13	15.64	50.1	Clear	No Odor
10:20	30	2000	mL/min	20.22	2.99	0.228	6	0.1	15.57	48.7	Clear	No Odor
10:25	35	2000	mL/min	20.22	3.11	0.228	6	0.06	15.7	50.4	Clear	No Odor
10:30	40	2000	mL/min	20.22	3	0.228	6	0.06	15.81	49.8	Clear	No Odor
10:35	45	2000	mL/min	20.22	2.7	0.227	4.43	0.04	15.85	47.4	Clear	No Odor
10:40	50	2000	mL/min	20.22	2.7	0.227	4.43	0.4	15.83	47	Clear	No Odor
10:45	55	400	mL/min	20.05	2.68	0.227	4.04	0.22	16.6	44.4	Clear	No Odor
10:50	60	400	mL/min	20.05	2.46	0.227	4.01	0.24	18.56	46.2	Clear	No Odor
10:55	65	400	mL/min	20.05	2.44	0.227	2.68	0.25	18.98	48.2	Clear	No Odor
11:00	70	400	mL/min	20.05	2.44	0.227	2.3	0.25	19.43	48.8	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (524.2)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: No

Is Well in Good Condition? fair

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	BPOW 3-2	Date(s):	2024-05-20	Work Order(s):	OU2 - Q2 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:61.32 °F, rH:76%, Clouds: 100%, Wind:6.91mph N			Field Technician:	Kyra Kraus		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	604.50-644.50	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	20.73	Total Depth (ft-bmp):	647	Water Column(ft):	626.27	Liters in Well:	1547.59
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	09:50	Total Volume Purged (liters):	125	Sample ID:	BPOW3-2	Sample Time:	11:00
Purge End Time:	10:57	Well Volumes Purged (total):	0.08	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	/ NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (µS/cm ^e)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:50	0	2000	mL/min	20.74	5.85	0.173	4.26	7.46	16.28	148.5	Clear	No Odor
09:55	5	2000	mL/min	20.74	3.18	0.169	4.53	0.15	14.94	2	Clear	No Odor
10:00	10	2000	mL/min	20.74	4.24	0.154	7.2	0.13	14.95	-51	Clear	No Odor
10:05	15	2000	mL/min	20.75	3.34	0.151	5.67	0.12	15.11	-50.6	Clear	No Odor
10:10	20	2000	mL/min	20.74	3.31	0.152	4.2	0.11	15.11	-50.9	Clear	No Odor
10:15	25	2000	mL/min	20.74	3.26	0.15	10.6	0.08	15.08	-56.7	Clear	No Odor
10:20	30	2000	mL/min	20.75	3.25	0.15	5.87	0.08	15.07	-57.3	Clear	No Odor
10:25	35	2000	mL/min	2.74	3.24	0.148	6.8	0.05	15.04	-66.1	Clear	No Odor
10:30	40	2000	mL/min	20.74	3.23	0.148	3.21	0.05	15.18	-66.05	Clear	No Odor
10:35	45	2000	mL/min	20.75	3.22	0.148	4.23	0.05	15.13	-67.3	Clear	No Odor
10:40	50	2000	mL/min	20.76	3.25	0.148	4.6	0.05	15.18	-69.8	Clear	No Odor
10:45	55	2000	mL/min	20.78	3.26	0.148	5.7	0.04	15.16	-71.5	Clear	No Odor
10:47	57	400	mL/min	20.73	3.22	0.147	6.52	0.05	15.98	-70.3	Clear	No Odor
10:52	62	400	mL/min	20.73	3.22	0.147	5.14	0.04	16.02	-69.6	Clear	No Odor
10:57	67	400	mL/min	20.73	3.21	0.147	4.6	0.05	16.13	-69	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (524.2)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 uS/cm = microSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter
 S.U = standard units
 mS/cm = milli

Location ID:	BPOW 3-3	Date(s):	2024-05-20	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLOUDS, T:59.79 °F, rH:80%, Clouds: 100%, Wind:6.91mph N			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	580.00-620.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	17.81	Total Depth (ft-bmp):	NA	Water Column(ft):	607.19	Liters in Well: 1500.44
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Volumetric	Purging Equipment: Dedicated Bladder
Purge Start Time:	09:23	Total Volume Purged (liters):	112	Sample ID:	BPOW 3-3	Sample Time: 11:20
Purge End Time:	11:20	Well Volumes Purged (total):	0.07	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI ProPlus / NA
Scope of work completed?	Yes					

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^o)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:25	0	750	mL/min	17.84	6.19	0.116	1.15	16.9	14.5	-9.6	Clear	Strong
09:30	5	1200	mL/min	17.84	5.38	0.116	1.15	7.91	14.4	-92	Clear	Strong
09:35	10	1200	mL/min	17.84	4.96	0.11	1.15	7.72	14.3	-60.4	Clear	Strong
09:40	15	1200	mL/min	17.85	5.14	0.11	0.88	5.89	14.2	-45.9	Clear	Moderate
09:45	20	900	mL/min	17.85	5.3	0.104	0.88	8	14.4	5.3	Clear	Strong
09:50	25	900	mL/min	17.85	4.87	0.106	0.88	4.73	14.5	13.5	Clear	Strong
09:55	30	1000	mL/min	17.86	4.83	0.107	0.58	4.83	14.3	16.9	Clear	Strong
10:00	35	1200	mL/min	17.86	4.85	0.107	0.58	4.96	14.3	20.5	Clear	Strong
10:05	40	1200	mL/min	17.86	4.82	0.106	0.58	4.75	14.4	22.2	Clear	Strong
10:10	45	1200	mL/min	17.86	4.8	0.106	1.8	3.26	14.4	17.4	Clear	Moderate
10:15	50	1200	mL/min	17.86	4.77	0.105	1.8	2.86	14.4	17.5	Clear	Strong
10:20	55	1200	mL/min	17.86	4.78	0.105	1.8	2.73	14.4	13.1	Clear	Strong
10:25	60	1200	mL/min	17.86	4.77	0.105	0.72	2.66	14.3	14.2	Clear	Strong
10:30	65	1200	mL/min	17.86	4.78	0.105	0.72	2.6	14.4	14.2	Clear	Strong
10:35	70	1200	mL/min	17.86	4.71	0.105	0.72	2.54	14.4	17.5	Clear	Strong
10:40	75	1200	mL/min	17.86	4.77	0.105	0.39	2.48	14.4	16.5	Clear	Strong
10:45	80	1200	mL/min	17.97	4.69	0.104	0.39	2.46	14.4	16.4	Clear	Strong
10:50	85	1200	mL/min	17.97	4.73	0.104	0.39	2.43	14.3	17.3	Clear	Strong
10:55	90	1200	mL/min	17.97	4.71	0.102	0.39	2.41	14.3	17.3	Clear	Strong
11:00	95	250	mL/min	18.07	4.75	0.102	0.34	2.24	15.3	19.5	Clear	Strong
11:05	100	250	mL/min	18.08	4.78	0.102	0.6	2.21	15.5	20.1	Clear	Strong
11:10	105	250	mL/min	18.08	4.76	0.102	1.71	1.99	15.5	19.2	Clear	Strong
11:15	110	250	mL/min	18.08	4.79	0.102	0.83	1.89	15.6	19.1	Clear	Strong
11:20	115	250	mL/min	18.07	4.77	0.102	0.34	1.88	15.7	18.6	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (524.2)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 uS/cm = microSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter
 S.U = standard units
 mS/cm = milli

Groundwater Sampling Log

Project No. 30224425 NAVI2 Well ID BPOW 3-4 Page 1 of 2
 Date 5/10/24
 Project Name/Location 2023 OUI 2 GW Sampling OU2 NAVY GWS 2024 Weather SP Sunny
 Measuring Pt. Description TOC Screen Interval (ft-bmp) 640-690 Casing Diameter (in.) 4 Well Material X PVC SS
 Static Water Level (ft-bmp) 19.59 Total Depth (ft-bmp) 695 Water Column/ Gallons in Well 675
 MP Elevation _____ Pump Intake (ft-br) mid screen Purge Method non-dedicated Ded Sample Method 1WSV+TV+LF
 Pump On/Off 0921 1115 Volume Purged (gal) 165L Peristaltic red flow LF
 Sample Time: Label BPOWS-4 Replicate/ Code No. NA 1110 Other _____
 Start 11 10 End 11 15 Sampled by SV SH
 PID: 0.0 * +3gal +5gal from leaking tubing

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0925	0	2400	19.61	0	5.96	0.010	3.56	104.5	14.9	127.4	Clear	None
0930	5	1800		12	4.69	0.152		165.3	14.8	143.3	"	"
0935	10	1600	19.67	20	4.57	0.151	1.41	170.4	14.7	165.3	"	"
0940	15	1600		28	4.54	0.150		173.6	14.6	177.7	"	"
0945	20	1600	19.68	36	4.55	0.150	1.44	173.6	14.7	180.1	"	"
0950	25	1600		44	4.54	0.150		174.1	14.7	185.3	"	"
0955	30	1600	19.69	52	4.55	0.150	1.76	174.6	14.7	189.9	"	"
1000	35	1600		60	4.55	0.150		174.0	14.7	194.4	"	"
1005	40	1600	19.68	68	4.55	0.151	1.68	174.8	14.7	201.9	"	"
1010	45	1600		76	4.55	0.152		174.7	14.8	205.3	"	"
1015	50	1600	19.70	84	4.55	0.152	1.61	174.9	14.8	208.6	"	"
1020	55	1600		92	4.55	0.153		174.9	14.8	212.2	"	"
1025	60	1600	19.69	100	4.55	0.153	1.47	174.7	14.8	215.3	"	"
1030	65	1600		120	4.55	0.155		174.6	14.8	219.3	"	"
1035	70	1600	19.68	128	4.55	0.154	1.27	174.5	14.8	223.7	"	"
1040	75	1600	19.69	136	4.55	0.154	1.17	174.0	14.9	226.3	"	"

Constituents Sampled	Container	Number	Preservative
VOC's 8220 <u>524</u>	40ml Vial	3	HCL
<u>1,4 D 522</u>	<u>250 mL Amber</u>	<u>2</u>	<u>NaHSO4</u>

Notes:

$1WSV = 690 - 640 = 50' \cdot 0.65 = 32.5 \text{ gal} = 125.5 \text{ L}$
 $TV = 695 - 19.59 = 675 - 5 = 4 \text{ gal} = 15 \text{ L}$
140L total

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: Basin 210
 Condition of Well: Good
 Well Completion: Flush Mount Stick Up
 Well Locked at Arrival: Yes / No
 Well Locked at Departure: Yes / No
 Key Number To Well: 555 key to Basin

Groundwater Sampling Log

Project No. 30224425 Well ID BPOW3-4 Date _____
~~30160020.P0812~~ 002 Navy GWS 2024 Weather _____
 Project Name/Location OU3 Post-Startup Groundwater Monitoring Well Material PVC _____
 SS _____
 Measuring Pt. Screen Interval (ft-bis) 716 - 726 Casing Diameter (in.) 4
 Description Top of Casing Water Column/ Gallons in Well _____
 Static Water Level (ft-bmp) _____ Total Depth (ft-bis) 731
 MP Elevation NM Pump Intake (ft-bis) Midscreen Purge Method: Non-dedicated Bladder Pump
 Peristaltic
 Submersible
 Other _____
 Pump On/Off _____ Volume Purged (gal) _____ Sample Method Micropurge/Low-flow + tubing volume
 Sample Time: Label _____ Replicate/ Code No. _____ Sampled by _____
 Start _____
 End _____

See page 1

11 10

PID: _____

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1045	80	400	19.63	138	4.42	0.163	1.83	166.3	16.3	233.5	1 kar	None
1050	85	400	19.65	140	4.57	0.154	1.76	163.4	15.0	236.4	"	"
1055	90	400	19.66	142	4.57	0.154	1.32	166.1	15.3	237.1	"	"
1100	95	400	19.65	144	4.56	0.154	1.13	165.8	15.2	236.9	"	"
1105	100	400	19.64	146	4.56	0.154	1.02	165.7	15.3	236.7	"	"

Constituents Sampled	Container	Number	Preservative
VOCs 8260C	40 mL glass vial	3	HCl
1,4- Dioxane 8270D SIM	1 L glass amber bottle	2	None

See page 1

Notes:
 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing size conversion factor (gal/ft)

*Field Blank Required
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location:	<u>73 Broadway (southside of property), Bethpage, NY</u>	Well Locked at Arrival:	Yes / No
Condition of Well:	<u>See Well Inspection Log</u>	Well Locked at Departure:	Yes / No
Well Completion:	<u>Flush Mount / Stick Up</u>	Key Number To Well:	

Location ID:	BPOW 4-1R	Date(s):	2024-05-13	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:54.41 °F, rH:81%, Clouds: 0%, Wind:10mph SW			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	652.00-692.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	17.88	Total Depth (ft-bmp):	697	Water Column(ft):	679.12	Liters in Well: 1678.19
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	9:00	Total Volume Purged (liters):	126	Sample ID:	BPOW 4-1R	Sample Time: 10:30
Purge End Time:	10:27	Well Volumes Purged (total):	0.08	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:02	0	800	mL/min	17.88	8	0.077	11.3	0.31	15.8	124.5	Clear	No Odor
09:07	5	1500	mL/min	17.88	6.6	0.043	11.3	0.07	14.6	127.4	Clear	No Odor
09:12	10	1500	mL/min	18.01	6.2	0.044	3.87	0.07	14.33	123.9	Clear	No Odor
09:17	15	1500	mL/min	18.01	6.73	0.046	3.87	0.09	14.3	205.3	Clear	No Odor
09:22	20	1500	mL/min	18.01	6.2	0.044	3.87	0.15	14.46	193.2	Clear	No Odor
09:27	25	1600	mL/min	18.01	6.14	0.045	3.98	0.15	14.58	174.4	Clear	No Odor
09:32	30	1600	mL/min	18.01	6.1	0.044	3.98	0.15	14.58	172	Clear	No Odor
09:37	35	1600	mL/min	18.01	6.09	0.044	3.98	0.15	14.36	168.5	Clear	No Odor
09:42	40	1600	mL/min	18.06	6.11	0.044	2.32	0.15	14.25	165.5	Clear	No Odor
09:47	45	1600	mL/min	18.06	6.07	0.043	2.32	0.15	14.24	163.5	Clear	No Odor
09:52	50	1600	mL/min	18.06	6.08	0.044	2.32	0.14	14.18	164	Clear	No Odor
09:57	55	1600	mL/min	18.1	6.08	0.044	1.16	0.14	14.13	164.4	Clear	No Odor
10:02	60	1600	mL/min	18.1	6.07	0.044	1.16	0.14	14.32	165.2	Clear	No Odor
10:07	65	1600	mL/min	18.1	6.1	0.044	1.16	0.14	14.22	164.8	Clear	No Odor
10:12	70	1600	mL/min	18.1	6.09	0.044	1.61	0.14	14.37	164.3	Clear	No Odor
10:17	75	450	mL/min	18.1	6.09	0.044	1.66	0.14	14.92	163.3	Clear	No Odor
10:22	80	450	mL/min	18.05	6.1	0.044	1.6	0.14	14.73	162.1	Clear	No Odor
10:27	85	450	mL/min	18.05	6.09	0.044	0.99	0.11	15.3	162.4	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (524.2)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: Yes

Is Well in Good Condition? Good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Location ID:	BPOW 4-2R	Date(s):	2024-05-13	Work Order(s):	OU2 - Q2 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:57.92 °F, rh:76%, Clouds: 75%, Wind:9.22mph W-SW			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	725.00-765.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	19.84	Total Depth (ft-bmp):	770	Water Column(ft):	750.16	Liters in Well:	1853.74
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	10:48	Total Volume Purged (liters):	120.75	Sample ID:	BPOW4-2R	Sample Time:	12:35
Purge End Time:	12:34	Well Volumes Purged (total):	0.07	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q, YSI 556 MPS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:50	0	500	mL/min	19.89	6.3	0.031	1.34	0.15	15.95	180.1	Clear	No Odor
10:55	5	1050	mL/min	19.89	6.77	0.029	1.34	0.04	15.27	147.7	Clear	No Odor
11:00	10	1050	mL/min	19.89	6.14	0.031	1.34	0.07	15.28	171.2	Clear	No Odor
11:05	15	1050	mL/min	19.93	6.25	0.031	3.8	0.17	15.13	187.9	Clear	No Odor
11:10	20	1200	mL/min	19.93	6.04	0.031	3.8	0.18	15.23	182.1	Clear	No Odor
11:15	25	1200	mL/min	19.93	6	0.031	3.8	0.19	14.95	180.5	Clear	No Odor
11:20	30	1200	mL/min	19	5.92	0.031	1.05	0.17	14.99	174.4	Clear	No Odor
11:25	35	1200	mL/min	19.93	7.22	0.026	1.05	0.32	14.67	178.4	Clear	No Odor
11:30	40	1600	mL/min	19.94	6.42	0.028	1.05	0.39	14.59	183.9	Clear	No Odor
11:35	45	1600	mL/min	20.01	6.04	0.031	2.37	0.24	14.91	179	Clear	No Odor
11:40	50	1600	mL/min	20.01	5.95	0.031	2.37	0.17	15.07	170.2	Clear	No Odor
11:45	55	1600	mL/min	20.01	5.97	0.031	2.37	0.17	15.08	170.2	Clear	No Odor
11:50	60	1600	mL/min	20.04	5.95	0.031	0.91	0.17	15.19	171	Clear	No Odor
11:55	65	1600	mL/min	20.04	5.97	0.031	0.91	0.17	15.2	172.3	Clear	No Odor
12:00	70	1600	mL/min	20.04	5.95	0.031	0.91	0.17	15	172.9	Clear	No Odor
12:05	75	1600	mL/min	20.06	5.95	0.031	0.66	0.17	15.09	173.9	Clear	No Odor
12:10	80	1600	mL/min	20.06	5.97	0.031	0.66	0.17	15.04	173.5	Clear	No Odor
12:15	85	400	mL/min	20.08	5.97	0.031	1.06	0.16	15.67	172.8	Clear	No Odor
12:20	90	400	mL/min	20.08	5.97	0.031	0.78	0.14	15.97	170.9	Clear	No Odor
12:25	95	400	mL/min	20.08	5.96	0.031	0.8	0.14	15.63	170.6	Clear	No Odor
12:30	100	400	mL/min	20.1	5.96	0.031	0.8	0.14	15.66	171	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (524.2)	Clear Glass	3	
1,4-Dioxane (EPA 522)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Groundwater Sampling Log

Project No. 3022425 NAVI2 Well ID FW 03 Page 1 of 1
 Date 5/22/24
 Project Name/Location _____ Weather 6:70° Sun
 Measuring Pt. Screen 49-64 Casing Diameter (in.) 2 Well Material PVC SS
 Description Top of Casing Interval (ft-bmp) _____
 Static Water Level (ft-bmp) 51.02 Total Depth (ft-bmp) 64 Water Column/ Gallons in Well 12.98'
 MP Elevation _____ Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated 6 Gro Sub Sample Method 3 WV
 Pump On/Off 9:23-10:35 Volume Purged (gal) 36 Peristaltic _____ Submersible _____ Other _____
 Sample Time: Label FW03 Replicate/ Code No. N/A Sampled by SV
 Start 10:30 End 10:35 SH
 PID: 0.0 +2gal 1030

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
<u>09:25</u>	<u>0</u>	<u>400</u>	<u>51.02</u>	<u>0</u>	<u>5.96</u>	<u>1.137</u>	<u>436</u>	<u>10.14</u>	<u>18.4</u>	<u>90.1</u>	<u>Clear</u>	<u>None</u>
<u>I WV - 09:45</u>	<u>20</u>	<u>400</u>	<u>51.04</u>	<u>8</u>	<u>6.21</u>	<u>1.113</u>	<u>488</u>	<u>6.93</u>	<u>18.4</u>	<u>118.5</u>	<u>"</u>	<u>"</u>
<u>II WV - 10:05</u>	<u>40</u>	<u>400</u>	<u>51.04</u>	<u>16</u>	<u>6.20</u>	<u>1.089</u>	<u>204</u>	<u>6.91</u>	<u>18.7</u>	<u>144.3</u>	<u>"</u>	<u>"</u>
<u>III WV - 10:25</u>	<u>60</u>	<u>400</u>	<u>51.03</u>	<u>24</u>	<u>6.20</u>	<u>1.078</u>	<u>284</u>	<u>6.94</u>	<u>18.9</u>	<u>151.1</u>	<u>"</u>	<u>"</u>

Constituents Sampled	Container	Number	Preservative
VOCs 8260	40 mL glass vial	3	HCl
1,4- Dioxane 8270 SIM	1 L amber bottle	2	None

Notes: _____
 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)
64 - 51.02 = 12.98 x 0.16 = 2.1 gal = 8 L = 1 WV

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2" = 0.16	2.5" = 0.26	3" = 0.37	3.5" = 0.50	4" = 0.65	6" = 1.47	8" = 0.006	1/2" = 0.01
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Well Information

Well Location: <u>Steel Equities</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: _____

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Groundwater Sampling Log

Project No. 30214837

Well ID GM 13D

Page 1 of 1

Date 4/30/24

Project Name/Location Bethpage NY

Weather 60° overcast

Measuring Pt. Description TOC

Screen Interval (ft-bmp) 200-210

Casing Diameter (in.) 4

Well Material PVC SS

Static Water Level (ft-bmp) 40.53

Total Depth (ft-bm) 210

Water Column/ Gallons in Well ~170'

MP Elevation _____

Pump Intake (ft-br) Mid-Screen _____

Purge Method: GeoSub.

Sample Method MP+TV

Pump On/Off 1010 1107

Volume Purged (gal) 22L

Peristaltic Submersible _____
Other _____

Sample Time: Label GM 13D
Start 1102
End 1107

Duplicate/ Code No. N/A

Sampled by SV SH

PID: 0.8

1102

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1012	0	400	40.55	0	6.12	0.316	6.99	7.30	14.2	197.5	Clear	None
1017	5	400		2	6.06	0.295		0.63	15.4	184.8	"	"
1022	10	400	40.57	4	5.94	0.295	5.63	0.26	15.9	157.4	"	"
1027	15	400		6	5.93	0.291		0.22	15.9	135.9	"	"
1032	20	400	40.56	8	5.90	0.290	4.23	0.19	15.9	138.9	"	"
1037	25	400		10	5.87	0.291		0.18	15.9	141.4	"	"
1042	30	400	40.58	12	5.85	0.290	7.61	0.17	15.9	143.3	"	"
1047	35	400	40.59	14	5.84	0.291	6.43	0.17	15.9	143.8	"	"
1052	40	400	40.58	16	5.82	0.291	5.28	0.16	16.0	144.7	"	"
1057	45	400	40.58	18	5.82	0.291	4.76	0.15	15.9	143.5	"	"

Constituents Sampled	Container	Number	Preservative
<u>VOCS 8266</u>	<u>40 mL VOA</u>	<u>3</u>	<u>HCL</u>
<u>1,4 D. 8270</u>	<u>1 L Amber</u>	<u>2</u>	<u>None</u>

Notes: 210 - 40.53 = 170' * 0.006 = 1.1 gal = 5 L

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>Old Dominion loading area</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: _____

SE corner of building

Location ID:	GM-15D	Date(s):	2024-04-23	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:57.47 °F, rH:50%, Clouds: 0%, Wind:13.8mph S			Field Technician:	Kyra Kraus	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	332.00-342.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	41.56	Total Depth (ft-bmp):	342	Water Column(ft):	300.44	Liters in Well: 742.42
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	337	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	13:07	Total Volume Purged (liters):	30	Sample ID:	GM-15D	Sample Time: 13:57
Purge End Time:	13:52	Well Volumes Purged (total):	0.04	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI Pro DSS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
13:07	0	500	mL/min	41.59	6.31	0.278	2.39	6.51	18	103.9	Clear	No Odor
13:12	5	500	mL/min	41.59	4.86	0.27	1.49	6.72	16.4	137	Clear	No Odor
13:17	10	500	mL/min	41.59	4.74	0.289	4.32	8.64	16.2	149	Clear	No Odor
13:22	15	500	mL/min	41.59	4.72	0.293	10.2	8.71	16.3	157.7	Clear	No Odor
13:27	20	500	mL/min	41.59	4.72	0.294	1.56	8.87	16.3	166.8	Clear	No Odor
13:32	25	500	mL/min	41.59	4.72	0.292	1.83	8.91	16.4	172.9	Clear	No Odor
13:37	30	500	mL/min	41.59	4.71	0.292	1.72	8.91	16.5	174.5	Clear	No Odor
13:42	35	500	mL/min	41.56	4.72	0.291	1.95	8.91	16.4	174.2	Clear	No Odor
13:47	40	500	mL/min	41.56	4.71	0.291	1.64	8.97	16.4	175.9	Clear	No Odor
13:52	45	500	mL/min	1	4.71	0.29	1.94	8.99	16.5	178.5	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: TV= 337ft - 41.56ft =295.44ft x 0.006 gal/ft = 1.77gal x 3.785 = 6.7L

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437 Well ID GM15D2 Page 1 of 1
 Project Name/Location Rothpage NY Date 4/23/24
 Measuring Pt. TOC Screen Interval (ft-bmp) 536-556 Casing Diameter (in.) 4 Weather 50° Sunny
 Description TOC Static Water Level (ft-bmp) 44.23 Total Depth (ft-bmp) 556 Water Column/Gallons in Well MS11'
 MP Elevation 1158 Pump Intake (ft-br) 1300 Mid-Screen Purge Method: GeoSub Sample Method LF+TV
 Pump On/Off 1158 1300 Volume Purged (gal) 22L Peristaltic Submersible Other
 Sample Time: Label GM15D2 Replicate/Code No. NA Sampled by SU KR
 Start 1255 End 1300
 PID: 0.0 1255

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1200	0	400	44.25	0	5.12	0.1142	53.6	37.53	16.0	147.9	Clear	None
1205	5	400		2	5.01	0.1120	0.8	71.1	16.0	140.1	"	"
1210	10	400	44.28	4	5.18	0.1126		7.07	16.0	136.7	"	"
1215	15	400		6	5.10	0.1189		6.48	16.1	133.9	"	"
1220	20	400	44.26	8	5.08	0.1202	1.04	6.68	16.1	134.2	"	"
1225	25	400		10	5.07	0.1205		6.61	16.1	133.9	"	"
1230	30	400	44.25	12	5.00	0.1209	2.20	6.46	16.1	131.0	"	"
1235	35	400	44.21	14	5.05	0.1209	7.83	6.49	16.1	134.5	"	"
1240	40	400	44.25	16	5.06	0.1206	1.72	6.52	16.1	134.4	"	"
1245	45	400	44.26	18	5.05	0.1206	1.24	6.55	16.0	134.3	"	"
1250	50	400	44.25	20	5.05	0.1205	0.93	6.59	16.0	134.2		

Constituents Sampled	Container	Number	Preservative
VOCs 8260	840mL VOA	3	HCL
1,4 Dioxane	1L Ambers	2	None

Notes: $556 - 44.23 = 511.77 \cdot 0.006 = 3.1 \text{ gal} = 12 \text{ L}$

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.25" = 0.06	2" = 0.16	2.5" = 0.26	3" = 0.37	3.5" = 0.50	4" = 0.65	6" = 1.47	3/8" = 0.006	1/2" = 0.01
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Well Information

Well Location: <u>OPT in m Lot</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: _____

Location ID:	GM-151	Date(s):	2024-04-23	Work Order(s):	OU2 - Q2 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:58.03 °F, rH:44%, Clouds: 0%, Wind:8.05mph S-SW			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	95.00-105.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	38.7	Total Depth (ft-bmp):	105	Water Column(ft):	66.3	Liters in Well:	163.84
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	12:03	Total Volume Purged (liters):	23	Sample ID:	GM-151	Sample Time:	12:50
Purge End Time:	12:49	Well Volumes Purged (total):	0.14	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q, YSI 556 MPS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
12:04	0	400	mL/min	38.66	6.17	0.544	11.3	7.06	16.25	31.5	Clear	No Odor
12:09	5	400	mL/min	38.66	5.93	0.566	11.3	6.5	16.59	32.7	Clear	No Odor
12:14	10	400	mL/min	38.66	5.4	0.638	11.3	6.4	16.65	46.8	Clear	No Odor
12:19	15	400	mL/min	38.66	5.34	0.659	7.43	6.34	16.75	55.3	Clear	No Odor
12:24	20	500	mL/min	38.66	5.33	0.665	7.43	6.34	16.93	61.1	Clear	No Odor
12:29	25	500	mL/min	38.66	5.34	0.662	7.43	6.3	16.95	65.2	Clear	No Odor
12:34	30	500	mL/min	38.67	5.33	0.668	6.05	6.3	17.02	69.2	Clear	No Odor
12:39	35	500	mL/min	38.67	5.32	0.686	4.49	6.37	16.94	73	Clear	No Odor
12:44	40	500	mL/min	38.67	5.33	0.69	3.35	6.36	16.93	75.1	Clear	No Odor
12:49	45	500	mL/min	38.67	5.33	0.692	2.06	6.34	16.92	76.7	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: no

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-15SR	Date(s):	2024-04-23	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:55.94 °F, rH:51%, Clouds: 0%, Wind:10.36mph S-SW			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	70.00-80.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	38.99	Total Depth (ft-bmp):	80	Water Column(ft):	41.01	Liters in Well: 101.34
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Volumetric	Purging Equipment:
Purge Start Time:	11:00	Total Volume Purged (liters):	76	Sample ID:	GM-15SR	Sample Time: 11:40
Purge End Time:	11:37	Well Volumes Purged (total):	0.75	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI 556 MPS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:02	0	2000	mL/min	39.06	5.34	0.594	60.1	5.22	16.37	28.6	Cloudy	No Odor
11:12	10	2000	mL/min	39.07	5.25	0.62	16.5	4.77	16.39	38	Clear	No Odor
11:24	22	2000	mL/min	39.07	5.23	0.622	10.3	5.07	16.44	43.5	Clear	No Odor
11:37	35	2000	mL/min	39.06	5.22	0.634	12.6	5.1	16.44	47.2	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	
VOCs (SW8260)	Clear Glass	3	
Chromium, total (6010), Chromium, total dissolved (6010B), Cadmium	Plastic	2	

Comments: None

Well Information:

Well Labeled Properly: no

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30214837 Well ID GM17D Page 1 of 1
 Project Name/Location Bethpage NY Date 4/30/24
 Measuring Pt. TOC Screen Interval (ft-bmp) 278-298 Casing Diameter (in.) 4 Weather 60° OVL/CST
 Static Water Level (ft-bmp) 43.77 Total Depth (ft-bmp) 298 Water Column/Gallons in Well ~255' Well Material X PVC
 MP Elevation _____ Pump Intake (ft-br) _____ Mid-Screen _____ Purge Method Grco Sub. Sample Method LF + TV
 Pump On/Off 0837 0935 Volume Purged (gal) 20L Peristaltic _____ Other _____
 Sample Time: Label GM17D Duplicate/Code No. N/A Start 0936 End 0935 Sampled by SU SH
 PID: 0.8 0930

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0840	0	400	43.81	0	5.81	0.1752	2.07	47.40	12.7	165.7	Clear	None
0845	5	400		2	4.79	0.1559		14.10	13.0	167.0	"	"
0850	10	400	43.82	4	4.82	0.1560	1.81	13.1	13.1	158.7	"	"
0855	15	400		6	4.86	0.1555		9.00	13.1	153.5	"	"
0900	20	400	43.77	8	4.90	0.1541	1.91	8.71	13.1	150.8	"	"
0905	25	400		10	4.93	0.1538		8.61	13.1	149.3	"	"
0910	30	400	43.79	12	4.96	0.1518	1.36	8.55	13.2	147.9	"	"
0915	35	400	43.77	14	4.98	0.1516	1.24	8.51	13.2	146.8	"	"
0920	40	400	43.78	16	5.02	0.1512	1.11	8.50	13.3	145.7	"	"
0925	45	400	43.78	18	5.01	0.1515	1.03	8.49	13.2	146.1	"	"

Constituents Sampled	Container	Number	Preservative
<u>VOCs</u>	<u>40mL Vial</u>	<u>3</u>	<u>HCL</u>
<u>1,4 D</u>	<u>1L Amber</u>	<u>2</u>	<u>None</u>

Notes: $298 - 43.77 = 255' \cdot 0.006 = 1.53 \text{ gal} = 6L$

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>Btwn 2 basins off of S Broadway</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: _____

Location ID:	GM-171	Date(s):	2024-04-30	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	MIST, T:54.3 °F, rH:89%, Clouds: 100%, Wind:8.05mph E-NE			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	100.00-120.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	40.98	Total Depth (ft-bmp):	NA	Water Column(ft):	79.02	Liters in Well: 195.27
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	08:38	Total Volume Purged (liters):	28	Sample ID:	GM-171	Sample Time: 09:32
Purge End Time:	09:28	Well Volumes Purged (total):	0.14	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI Pro DSS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:41	0	800	mL/min	41	5.17	0.253	270	10.18	12.9	212.5	Clear	No Odor
08:46	5	600	mL/min	41	5.65	0.256	270	10.19	13.2	201.4	Clear	No Odor
08:51	10	600	mL/min	41	5.69	0.256	270	10.18	13.3	200.1	Clear	No Odor
08:56	15	500	mL/min	41	5.75	0.256	25.1	10.19	13.3	198.2	Clear	No Odor
09:01	20	500	mL/min	41	5.79	0.256	25.1	10.19	13.3	197.4	Clear	No Odor
09:06	25	500	mL/min	41	5.82	0.256	19.6	10.19	13.4	196.7	Clear	No Odor
09:11	30	500	mL/min	41	5.85	0.256	19.6	10.19	13.4	196.6	Clear	No Odor
09:16	35	500	mL/min	41	5.87	0.256	17.2	10.19	13.4	196.8	Clear	No Odor
09:21	40	500	mL/min	41	5.89	0.256	16.3	10.19	13.5	197.5	Clear	No Odor
09:26	45	500	mL/min	41	5.9	0.256	15.9	10.2	13.5	198	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-18D	Date(s):	2024-04-17	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLOUDS, T:50.49 °F, rH:72%, Clouds: 75%, Wind:9.22mph E-NE			Field Technician:	Kyra Kraus	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	290.00-300.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	39.29	Total Depth (ft-bmp):	300	Water Column(ft):	260.71	Liters in Well: 644.25
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	295	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	11:37	Total Volume Purged (liters):	30	Sample ID:	GM-18D	Sample Time: 12:30
Purge End Time:	12:27	Well Volumes Purged (total):	0.05	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI Pro DSS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:37	0	400	mL/min	39.41	5.37	37.1	3.15	8.56	14.3	188.8	Clear	No Odor
11:42	5	400	mL/min	39.41	4.79	37	2.17	8.56	15.3	177.9	Clear	No Odor
11:47	10	400	mL/min	39.44	4.88	37.2	2.12	7.87	15.2	164.9	Clear	No Odor
11:52	15	400	mL/min	39.44	4.88	37.2	1.17	7.98	15.2	157.6	Clear	No Odor
11:57	20	400	mL/min	39.45	4.88	37.3	1.12	8	15.3	156.7	Clear	No Odor
12:02	25	400	mL/min	39.46	4.88	37.3	1.2	8.01	15.3	155.4	Clear	No Odor
12:07	30	400	mL/min	39.49	4.88	37.4	0.93	8.01	15.1	155	Clear	No Odor
12:12	35	400	mL/min	39.5	4.88	37.3	0.76	8.01	14.9	149.7	Clear	No Odor
12:17	40	400	mL/min	39.55	4.88	37.4	0.68	8.01	15	147.1	Clear	No Odor
12:22	45	400	mL/min	39.56	4.89	37.4	0.61	8	15.3	148.8	Clear	No Odor
12:27	50	400	mL/min	39.56	4.89	37.4	0.34	8	15.4	151.1	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: TV= 295ft - 39.29ft = 255.71ft x 0.0025gal/ft = 0.64gal x 3.785 = 2.4 L

Well Information:

Well Labeled Properly: no

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 uS/cm = microSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter
 S.U = standard units
 mS/cm = milli

Groundwater Sampling Log

Project No. 30218437.GWMI2 Well ID GM-181 Page 1 of 1
 Date 4/17/24
 Project Name/Location OU2 Q2 Groundwater Sampling 2024 Weather 60 Sunny
 Measuring Pt. Screen 95-100 Casing Diameter (in.) 4 Well Material x PVC
 Description Top of Casing Interval (ft-bmp) 95-100 Diameter (in.) 4 SS
 Static Water Level (ft-bmp) 42.45 Total Depth (ft-bmp) 105 Water Column/ Gallons in Well 52.55'
 MP Elevation _____ Pump Intake (ft-bmp) Midscreen Purge Method: Dedicated Sample Method 3way
 Pump On/Off 1134 1240 Volume Purged (gal) 75L Peristaltic _____
 Sample Time: Label GM181 Replicate/ Code No. N/A Other _____
 Start 1235 End 1240 Sampled by SU
 PID: 0.0 1235 KK

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
<u>1135</u>	<u>0</u>	<u>1500</u>	<u>42.45</u>	<u>0</u>	<u>5.72</u>	<u>0.1768</u>	<u>3.81</u>	<u>23.61</u>	<u>15.4</u>	<u>141.1</u>	<u>Clear</u>	<u>None</u>
<u>I 1154</u>	<u>19</u>	<u>1500</u>	<u>42.45</u>	<u>28</u>	<u>5.57</u>	<u>0.1632</u>	<u>2.91</u>	<u>9.86</u>	<u>15.3</u>	<u>134.1</u>	<u>"</u>	<u>"</u>
<u>II 1213</u>	<u>38</u>	<u>1500</u>	<u>42.45</u>	<u>56</u>	<u>5.54</u>	<u>0.1636</u>	<u>1.42</u>	<u>9.22</u>	<u>16.2</u>	<u>136.7</u>	<u>"</u>	<u>"</u>
<u>III 1232</u>	<u>57</u>	<u>1500</u>	<u>42.45</u>	<u>74</u>	<u>5.55</u>	<u>0.1639</u>	<u>1.08</u>	<u>9.07</u>	<u>15.3</u>	<u>134.2</u>	<u>"</u>	<u>"</u>

Constituents Sampled	Container	Number	Preservative
<u>VOCs 524.2</u>	<u>40 mL glass vial</u>	<u>3</u>	<u>HCl</u>
<u>1,4- Dioxane 524.2 SIM 8270</u>	<u>250 mL amber bottle</u> <u>1 L Amber</u>	<u>2</u>	<u>None</u>

Notes:
 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)
94 - 42.45 = 52.55 * 0.43 = 22.6 + 25 = ~50 psi
105 - 94 = 11 * 0.65 = 7.15 gal = 28L = 1 WV bellow packer

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
Gallons/Foot	1.25" = 0.06	2" = 0.16	3" = 0.37	<u>4" = 0.65</u>	1/2" = 0.01	

Well Information

Well Location: <u>700 Broadway</u>	Well Locked at Arrival: <u>Yes</u> / <u>No</u>
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / <u>No</u>
Well Completion: <u>Flush Mount</u> / <u>Stick Up</u>	Key Number To Well: <u>1235</u>

Groundwater Sampling Log

Project No. 30218457

Well ID GM 20D

Date 4/18/24

Page 1 of 1

Project Name/Location Bethpage NY

Weather 50° Rain

Measuring Pt. TOC

Screen 216-226

Casing 4

Well Material PVC

SS

Description TOC

Interval (ft-bmp) 216-226

Diameter (in.) 4

Static Water Level (ft-bmp) 37.03

Total Depth (ft-bmp) 226

Water Column/ Gallons in Well 2477

MP Elevation _____

Pump Intake (ft-br) _____

Mid-Screen _____

Purge Method: Perist.

Sample Method 3WSU below

Packer

Pump On/Off 0935 1038

Volume Purged (gal) 76L

Peristaltic _____

Submersible _____

Other _____

Sampled by SV

Sample Time: Label GM 20D

Start 1033

Replicate/ Code No. N/A

End 1038

PID: 0.4 ppm

1033

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
<u>I - 0940</u>	<u>0</u>	<u>1500</u>	<u>37.04</u>	<u>0</u>	<u>4.94</u>	<u>56.6</u>	<u>3.63</u>	<u>8.36</u>	<u>9.8</u>	<u>106.9</u>	<u>Clear</u>	<u>None</u>
<u>II - 0957</u>	<u>17</u>	<u>1500</u>	<u>37.04</u>	<u>25</u>	<u>4.22</u>	<u>39.46</u>	<u>2.71</u>	<u>5.96</u>	<u>12.2</u>	<u>130.9</u>	<u>"</u>	<u>"</u>
<u>III - 1014</u>	<u>34</u>	<u>1500</u>	<u>37.05</u>	<u>50</u>	<u>4.17</u>	<u>40.20</u>	<u>2.26</u>	<u>6.16</u>	<u>12.1</u>	<u>143.3</u>	<u>"</u>	<u>"</u>
<u>1031</u>	<u>51</u>	<u>1500</u>	<u>37.05</u>	<u>75</u>	<u>4.09</u>	<u>41.08</u>	<u>1.76</u>	<u>6.27</u>	<u>12.3</u>	<u>153.2</u>	<u>"</u>	<u>"</u>

Constituents Sampled	Container	Number	Preservative
<u>VOCs 8260</u>	<u>40 ml VOA</u>	<u>3</u>	<u>ACL</u>
<u>1,4 D. 8270</u>	<u>1L Amber</u>	<u>2</u>	<u>None</u>

Notes:

$226 - 216 = 10 \times 0.65 = 6.5 \text{ gal} = 24.6 \text{ L} = 1 \text{ WSV } 6 \text{ Packer}$
 $8715 - 37.03 = 177.97 \times 0.43 = 75 + 25 \text{ psi} = 100 \text{ psi}$

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>Harrison Ave & N Butcher St</u>	Well Locked at Arrival: <u>Yes</u> / <u>No</u>
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / <u>No</u>
Well Completion: <u>Flush Mount</u> / <u>Stick Up</u>	Key Number To Well: _____

Groundwater Sampling Log

Project No. 30218457 Well ID GM 201 Page 1 of 1
 Project Name/Location Bethpage NY Date 4/18/20
 Measuring Pt. TOC Screen Interval (ft-bmp) 95-105 Casing Diameter (in.) 4 Weather 50° F in
 Static Water Level (ft-bmp) 29.98 Total Depth (ft-bmp) 105 Water Column/ Gallons in Well -75' Well Material PVC SS
 MP Elevation _____ Pump Intake (ft-br) Mid-Screen Purge Method: Deb. Sample Method 3 WV below packer
 Pump On/Off 1030/1140 Volume Purged (gal) 78L Peristaltic _____ Submersible _____ Other _____
 Sample Time: Label GM201 Replicate/ Code No. N/A Sampled by SU
 Start 1136 End 1140
 PID: 0.0 1136 053

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
I - 1040	0	1400	29.96	0	4.08	40.91	8.77	8.32	8.9	163.1	Clear	No.2
II - 1058	18	1400	29.96	25	6.47	61.86	6.33	9.68	10.6	170.6	"	"
III - 1116	36	1400	29.67	50	6.85	61.80	5.41	8.81	10.4	91.8	"	"
1134	54	1400	29.67	75	6.96	61.92	4.87	8.87	10.2	97.6	"	"

Constituents Sampled	Container	Number	Preservative
VOCs 8260	40 mL VOA	3	HCL
1,4 D 8270	1 L Amber	2	None

Notes:
 $94 - 29.98 = 64.02' \cdot 0.43 = 28.01 + 25 = \sim 55 \text{ psi}$
 $105 - 29.98 = 75.02' \cdot 0.006 = 0.5 \text{ gal} = 4 \text{ L}$
 $105 - 95 = 10$
 $10 \cdot 0.65 = 6.5 \text{ gal}$
 $25 \text{ L} = 1 \text{ WSV}$

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.85	1/2" = 0.01	

Well Information

Well Location: <u>Carrier Harrison</u>	Well Locked at Arrival: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well: <u>Good</u>	Well Locked at Departure: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion: <u>Flush Mount / Stick Up</u>	Key Number To Well: _____

Location ID:	GM-21D	Date(s):	2024-04-29	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:71.02 °F, rH:77%, Clouds: 0%, Wind:4.61mph N-NW			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	278.00-288.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	36.54	Total Depth (ft-bmp):	NA	Water Column(ft):	251.46	Liters in Well: 621.39
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Dedicated Bladder
Purge Start Time:	09:48	Total Volume Purged (liters):	20	Sample ID:	GM-21D	Sample Time: 10:38
Purge End Time:	10:37	Well Volumes Purged (total):	0.03	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI ProPlus / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:50	0	280	mL/min	36.57	4.5	0.127	0.12	25.2	14.8	112.7	Clear	No Odor
09:55	5	280	mL/min	36.57	4.4	0.119	0.12	9.88	18.2	129.9	Clear	No Odor
10:00	10	2	mL/min	56.57	4.51	0.118	0.12	7.93	18.9	125	Clear	No Odor
10:10	20	450	mL/min	36.57	4.6	0.119	1.45	6.96	16	122	Clear	No Odor
10:15	25	450	mL/min	36.53	4.53	0.118	1.45	6.16	17.2	131.2	Clear	No Odor
10:20	30	450	mL/min	36.57	4.55	0.117	1.45	6.07	17.2	129	Clear	No Odor
10:25	35	450	mL/min	36.58	4.58	0.118	1.51	6.01	17.1	128.4	Clear	No Odor
10:30	40	450	mL/min	36.58	4.6	0.119	0.87	6.12	16.9	128.8	Clear	No Odor
10:35	45	450	mL/min	36.59	4.61	0.118	1.19	6.09	17.2	130	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 uS/cm = microSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter
 S.U = standard units
 mS/cm = milli

Location ID:	GM-21D2	Date(s):	2024-04-29	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:71.02 °F, rH:77%, Clouds: 0%, Wind:4.61mph N-NW			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	516.00-526.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	43.3	Total Depth (ft-bmp):	531	Water Column(ft):	487.7	Liters in Well: 1205.17
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	9:40	Total Volume Purged (liters):	29	Sample ID:	GM-21D2	Sample Time: 10:35
Purge End Time:	10:31	Well Volumes Purged (total):	0.02	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:41	0	500	mL/min	43.3	5.08	0.14	8.17	5.05	16.4	92.4	Clear	No Odor
09:46	5	500	mL/min	43.3	4.97	0.145	8.17	3.68	16.41	93.4	Clear	No Odor
09:51	10	500	mL/min	43.3	5.38	0.135	8.17	3.98	16.68	90.6	Clear	No Odor
09:56	15	500	mL/min	43.39	5.52	0.142	19.3	7.22	16.35	89.9	Clear	No Odor
10:01	20	500	mL/min	43.39	5.52	0.133	19.3	7.3	16.31	90.2	Clear	No Odor
10:06	25	500	mL/min	43.39	5.52	0.131	19.3	7.7	16.64	89.9	Clear	No Odor
10:11	30	500	mL/min	43.4	5.49	0.134	16.9	7.8	16.7	92	Clear	No Odor
10:16	35	500	mL/min	43.4	5.5	0.134	16.4	7.9	16.44	92	Clear	No Odor
10:21	40	500	mL/min	43.4	5.5	0.133	13.4	7.89	16.55	93.2	Clear	No Odor
10:26	45	500	mL/min	43.4	5.52	0.134	12.1	7.86	16.67	93	Clear	No Odor
10:31	50	500	mL/min	43.4	5.57	0.134	11.5	7.85	16.8	93.2	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30214837 Well ID GM 21 I Page 1 of 1
 Project Name/Location Bathpage Date 4/29/24
 Measuring Pt. Description TOC Screen Interval (ft-bmp) 130-140 Casing Diameter (in.) 4 Weather 70° Sunny
 Static Water Level (ft-bmp) 29.46 Total Depth (ft-bmp) 140 Water Column/ Gallons in Well ~99' Well Material X PVC SS
 MP Elevation _____ Pump Intake (ft-br) Mid-Screen _____ Purge Method: Peristaltic Sample Method 3WV below screen
 Pump On/Off 052 1107 Volume Purged (gal) 85L Other _____ Peristaltic Submersible _____
 Sample Time: Label 4M21 Replicate/ Code No. N/A Other _____
 Start 1102 End 1107 Sampled by SU
 PID: 0.9 1102 SH, KK, PQ

I
II
III

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0954	0	1200	26.49	0	6.12	0.304	2.43	11.12	18.6	184.2	Clear	None
1015	21	1200	29.34	25.2	6.81	0.286	3.84	8.43	18.0	157.6	"	"
1036	42	1200	29.44	50.4	6.91	0.288	5.46	8.91	18.2	156.2	"	"
1057	63	1200	29.44	75.6	6.95	0.289	1.97	8.56	18.3	158.3	"	"

Constituents Sampled	Container	Number	Preservative
<u>VOCS</u> <u>260</u>	<u>40mL VOA</u>	<u>3</u>	<u>HCL</u>
<u>1,4D</u> <u>8270</u>	<u>1L Amieur</u>	<u>2</u>	<u>NOLC</u>

Notes:
 $140 - 130 = 10 \cdot 0.65 = 6.5 \text{ gal} = 25 \text{ L} = 1 \text{ wvbp}$
 $129 - 29.46 = 99.54 \cdot 0.43 + 25 = \sim 70 \text{ psi}$

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>N Butcher</u>	Well Locked at Arrival: <u>Yes</u> / <u>No</u>
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / <u>No</u>
Well Completion: <u>Flush Mount</u> / <u>Stick Up</u>	Key Number To Well: _____

Groundwater Sampling Log

 Page 1 of 1
Date 4/29/2024

 Project No. 30218437. GWM12 Well ID GM-215

 Weather 71°F clear

 Project Name/Location 2024 Q2 002 GW Sampling

 Well Material PVC
 SS

 Measuring Pt. Description Top of Casing Screen Interval (ft-bmp) 63-67 Casing Diameter (in.) 4

 Static Water Level (ft-bmp) 25.98 Total Depth (ft-bmp) 67 Water Column/ Gallons in Well 41.02ft / 25.34L

 MP Elevation — Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated
 Peristaltic
 Submersible
 Other
Sample Method 3WV

 Pump On/Off 0938/1155 Volume Purged (gal) 200L

 Sample Time: Label GM-215 Replicate/ Code No. MS/MSD Sampled by KK

 Start 1150
End 1155

 PID: 0.0ppm

 1WV
2WV
3WV

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0940	0	2000	25.98	0	12.14	0.141	850	19.85	15.26	65.8	Brown	None
1000	20	4000	25.85	25	12.08	0.151	597	14.85	14.85	0.9	"	"
1102	82	5400	25.89	150	8.1	0.152	421	11.88	14.99	49.4	↓	↓
1139	119	400	25.89	150	7.67	0.132	444	12.6	14.75	50.3	clear	" ↓ "
1146	126	400	25.89	180	7.58	0.147	54.7	12.65	14.87	51.2		

Constituents Sampled	Container	Number	Preservative
VOCs 8260	40 mL glass vial	3	HCl
1,4- Dioxane 8270 SIM	1 L amber bottle	2	None

Notes:

 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)
 $3WV = 67ft - 25.98ft = 41.02ft \times 0.16 gal/ft = 6.5gal \times 3.785 = 24.8L$
 * permission from TOMB. to sample w/ high turbidity $\times 3 = 74.5L$

 *Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location:	<u>151 Harrison Ave.</u>	Well Locked at Arrival:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well:	<u>good</u>	Well Locked at Departure:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion:	<u>Flush Mount / Stick Up</u>	Key Number To Well:	<u>N/A</u>

Groundwater Sampling Log

Project No. 30218437.GWM12 Well ID GM-33D2 Date 4/10/2024

Project Name/Location OU2 Q2 Groundwater Sampling 2024 Weather _____

Measuring Pt. Description Top of Casing Screen Interval (ft-bmp) 500-520 Casing Diameter (in.) 4" Well Material x PVC SS

Static Water Level (ft-bmp) 43.69 Total Depth (ft-bmp) 525 Water Column/ Gallons in Well 481.31ft / 312.8 gal

MP Elevation _____ Pump Intake (ft-bmp) Midscreen Purge Method Non-dedicated bladder Sample Method LF+TV
 Pump On/Off 1080 / 1135 Volume Purged (gal) 30 L Pori-static Submersible Other

Sample Time: Label GM-33D2 Replicate/ Code No. N/A Sampled by SV, KK
 Start 1125 End 1135

PID: 0.0 ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1082	0	400	43.72	0	6.58	31.8	104	6.85	16.4	123.0	cloudy	None
1087	5	" "		2.0	6.96	30.5		6.82	17.2	91.0	" "	" "
1042	10			4.0	6.97	30.7		6.91	17.2	92.7	↓	
1047	15		43.72	6.0	7.27	29.4	39.7	7.17	17.3	81.7	clear	
1052	20			8.0	7.06	29.1		7.24	17.5	75.9	" "	
1057	25			10.0	7.04	29.0		7.24	17.5	76.3		
1102	30		43.72	12.0	6.94	28.9	11.0	7.27	17.5	80.2		
1107	35		43.70	14.0	6.71	28.6		7.32	17.7	76.6		
1112	40		43.70	16.0	6.65	28.6	7.44	7.34	17.7	81.5		
1117	45		43.70	18.0	6.62	28.6	7.23	7.35	17.7	81.7		
1122	50	↓	43.70	20.0	6.60	28.5	7.15	7.35	17.8	84.3	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs 5242 <u>8260 C</u>	40 mL glass vial	3	HCl
1,4-Dioxane 522 SIM <u>8270 DSIM</u>	250 mL amber bottle <u>1L</u>	2	NaHSO4 <u>NONE</u>

Notes: _____
 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)
510 - 43.69 = 466.31 x 0.006 = 2.79 gal x 3.785 = 10.6 L

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>Median across from MTA parking Lot - Hicksville Rd.</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount / Stick Up</u>	Key Number To Well: <u>N/A</u>

Location ID:	GM-34D	Date(s):	2024-04-17	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:55.78 °F, rH:55%, Clouds: 0%, Wind:15.99mph E			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	309.00-319.00	Casing Diameter (in):	2.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	9.06	Total Depth (ft-bmp):	319	Water Column(ft):	309.94	Liters in Well: 191.47
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	12:02	Total Volume Purged (liters):	40	Sample ID:	GM-34D	Sample Time: 13:05
Purge End Time:	13:55	Well Volumes Purged (total):	0.21	Replicate Type / Replicate ID:	Duplicate / REP041724PQ1	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
12:03	0	500	mL/min	9.06	11.19	0.242	7.45	1.02	15.37	41.2	Clear	No Odor
12:08	5	500	mL/min	9.06	12.29	0.236	7.45	0.8	15.13	58.3	Clear	No Odor
12:13	10	500	mL/min	9.06	12.33	0.235	7.45	0.79	15.18	60.4	Clear	No Odor
12:18	15	500	mL/min	9.1	12.38	0.23	6.86	0.83	15.25	63.5	Clear	No Odor
12:23	20	500	mL/min	9.1	11.75	0.227	6.86	0.98	15.91	62.9	Clear	No Odor
12:28	25	500	mL/min	9.1	10.25	0.229	6.86	1.07	16.05	59.5	Clear	No Odor
12:33	30	500	mL/min	9.1	9.37	0.235	5.2	1.16	15.79	57.5	Clear	No Odor
12:38	35	500	mL/min	9.1	8.7	0.229	5.2	1.33	15.5	52.9	Clear	No Odor
12:43	40	500	mL/min	9.1	8.31	231	5.2	1.41	15.52	52	Clear	No Odor
12:48	45	500	mL/min	9.08	8.24	0.23	5.85	1.49	15.5	52.7	Clear	No Odor
12:53	50	500	mL/min	9.08	8.19	0.23	5.67	1.5	15.57	50.9	Clear	No Odor
12:58	55	500	mL/min	9.08	8.17	0.23	5.09	1.56	15.8	50.7	Clear	No Odor
13:03	60	500	mL/min	9.08	8.12	0.231	4.78	1.56	15.86	50.8	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-34D2	Date(s):	2024-04-17	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:55.56 °F, rH:57%, Clouds: 0%, Wind:14.97mph E-SE			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	510.00-520.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	11.4	Total Depth (ft-bmp):	520	Water Column(ft):	508.6	Liters in Well: 1256.81
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	10:30	Total Volume Purged (liters):	35	Sample ID:	GM-34D2	Sample Time: 11:30
Purge End Time:	11:25	Well Volumes Purged (total):	0.03	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600XLM V2, YSI 600 XLM Sonde 1.65 inch / NA
Scope of work completed?	Yes					

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:30	0	500	mL/min	11.4	8.8	0.147	61.8	10.44	14.8	9	Clear	No Odor
10:35	5	500	mL/min	11.4	9.88	0.145	61.8	0.49	15.08	38.4	Clear	No Odor
10:40	10	500	mL/min	11.4	10.95	0.135	61.8	0.17	14.94	55.9	Clear	No Odor
10:45	15	500	mL/min	11.42	7.39	0.152	39.8	2.12	15.01	21	Clear	No Odor
10:50	20	500	mL/min	11.42	7.3	0.153	39.8	2.2	15.03	20.1	Clear	No Odor
10:55	25	500	mL/min	11.42	7.09	0.155	39.8	2.42	15.15	16.8	Clear	No Odor
11:00	30	500	mL/min	11.4	6.97	0.156	25.7	2.58	15.07	13	Clear	No Odor
11:05	35	500	mL/min	11.4	6.97	0.156	25.7	2.57	15.26	12.7	Clear	No Odor
11:10	40	500	mL/min	11.4	6.95	0.157	19.3	2.63	15.42	11.9	Clear	No Odor
11:15	45	500	mL/min	12.4	6.94	0.156	18.8	2.64	15.06	11.4	Clear	No Odor
11:20	50	500	mL/min	11.4	6.93	0.157	15.3	2.63	15.17	10.9	Clear	No Odor
11:25	55	500	mL/min	11.41	6.92	0.157	12.2	2.64	15.33	10.3	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-35D2	Date(s):	2024-04-30	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLOUDS, T:57.06 °F, rH:83%, Clouds: 100%, Wind:8.05mph E			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	510.00-530.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	34.98	Total Depth (ft-bmp):	530	Water Column(ft):	495.02	Liters in Well: 1223.25
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	11:28	Total Volume Purged (liters):	35	Sample ID:	GM-35D2	Sample Time: 12:30
Purge End Time:	12:24	Well Volumes Purged (total):	0.03	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:29	0	500	mL/min	34.98	12.35	0.125	6.9	0.8	15.27	62.3	Clear	No Odor
11:34	5	500	mL/min	34.98	12.33	0.09	6.9	0.59	15.4	60.4	Clear	No Odor
11:39	10	500	mL/min	34.98	9.98	0.097	6.9	0.6	15.43	59	Clear	No Odor
11:44	15	500	mL/min	34.99	9.57	0.091	4.74	0.61	15.44	99.4	Clear	No Odor
11:49	20	500	mL/min	34.99	5.42	0.083	4.74	0.61	15.57	129.7	Clear	No Odor
11:54	25	500	mL/min	34.99	4.27	0.088	4.74	0.61	15.46	143.7	Clear	No Odor
11:59	30	500	mL/min	34.99	4.01	0.088	2.42	0.61	15.52	153.1	Clear	No Odor
12:04	35	500	mL/min	34.99	4.29	0.081	2.42	0.61	15.5	153.7	Clear	No Odor
12:09	40	500	mL/min	34.98	4.08	0.087	1.72	0.61	15.53	155.1	Clear	No Odor
12:14	45	500	mL/min	34.98	4.06	0.087	1.12	0.61	15.56	156.2	Clear	No Odor
12:19	50	500	mL/min	34.98	4.04	0.087	1.08	0.61	15.53	157.4	Clear	No Odor
12:24	55	500	mL/min	34.98	4	0.086	0.88	0.6	15.57	158.3	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-36D	Date(s):	2024-04-22	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:48.47 °F, rH:49%, Clouds: 0%, Wind:5.75mph N			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	204.00-214.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	29.09	Total Depth (ft-bmp):	214	Water Column(ft):	184.91	Liters in Well: 456.93
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	125	Purge Method:	Volumetric	Purging Equipment: Dedicated Bladder
Purge Start Time:	09:19	Total Volume Purged (liters):	88	Sample ID:	GM-36D	Sample Time: 10:16
Purge End Time:	10:15	Well Volumes Purged (total):	0.19	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI 556 MPS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:21	0	1300	mL/min	28.3	4.91	0.422	4.89	13.86	13.53	81.9	Clear	No Odor
09:42	21	1300	mL/min	27.71	4.51	0.447	2.39	14.34	13.95	80.8	Clear	No Odor
09:58	37	1700	mL/min	26.83	4.49	0.448	1.25	11.6	14.19	76.6	Clear	No Odor
10:14	53	1700	mL/min	25.92	4.48	0.447	0.86	11.63	14.25	75	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 uS/cm = microSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter
 S.U = standard units
 mS/cm = milli

Location ID:	GM-36D2	Date(s):	2024-04-22	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:50.99 °F, rH:42%, Clouds: 0%, Wind:5.99mph N-NW			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	520.00-540.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	33.06	Total Depth (ft-bmp):	540	Water Column(ft):	506.94	Liters in Well: 1252.71
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	10:38	Total Volume Purged (liters):	155	Sample ID:	GM-36D2	Sample Time: 11:55
Purge End Time:	11:54	Well Volumes Purged (total):	0.12	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA
Scope of work completed?	Yes					

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:39	0	2000	mL/min	29.4	7.53	0.111	2.77	11.43	12.36	25	Clear	No Odor
11:04	25	2000	mL/min	29.8	8.22	0.399	10.1	8.11	13.82	38.5	Clear	No Odor
11:29	50	2000	mL/min	29.84	5.96	0.085	3.15	7.87	13.95	42.7	Clear	No Odor
11:54	75	2000	mL/min	29.88	5.7	0.081	4.75	8.47	14.02	15.7	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-37D	Date(s):	2024-05-22	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:76.55 °F, rH:65%, Clouds: 0%, Wind:9.22mph SW			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	242.00-262.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	34.03	Total Depth (ft-bmp):	NA	Water Column(ft):	227.97	Liters in Well: 563.34
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	12:30	Total Volume Purged (liters):	20	Sample ID:	GM-37D	Sample Time: 13:30
Purge End Time:	13:26	Well Volumes Purged (total):	0.04	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI ProPlus / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
12:30	0	400	mL/min	34.06	5.76	0.244	138	9.64	18.4	115.5	Yellow	No Odor
12:35	5	400	mL/min	34.06	5.64	0.241	138	7.29	19.8	119.8	Yellow	No Odor
12:40	10	400	mL/min	34.06	5.27	0.241	14.5	5.48	19.1	127.8	Clear	No Odor
12:45	15	400	mL/min	34.06	4.3	0.264	800	5.2	19	155	Orange	No Odor
12:50	20	400	mL/min	34.06	4.32	0.304	127	5.41	19	149.8	Cloudy	No Odor
12:55	25	400	mL/min	34.08	4.45	0.302	127	5.44	19.3	143.7	Cloudy	No Odor
13:00	30	400	mL/min	34.08	4.53	0.302	4.04	5.47	18.9	137.6	Clear	No Odor
13:05	35	400	mL/min	34.08	4.56	0.294	1.88	5.38	18.9	136	Clear	No Odor
13:10	40	300	mL/min	34.08	4.61	0.281	3.23	5.07	19.4	123	Clear	No Odor
13:15	45	300	mL/min	34.05	4.67	0.276	1.58	5.14	18.8	119.8	Clear	No Odor
13:20	50	300	mL/min	34.05	4.66	0.273	2.48	4.95	18.9	121.5	Clear	No Odor
13:25	55	300	mL/min	34.05	4.66	0.27	1.44	4.9	18.9	122.1	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218475 Well ID GM 3702 Page 1 of 1
 Project Name/Location Bethpage NJ Date 4/22/24
 Measuring Pt. TOC Screen 370-390 Casing Diameter (in.) 4 Well Material PVC SS
 Description TOC Interval (ft-bmp) 370-390 Water Column/ Gallons in Well 355.2
 Static Water Level (ft-bmp) 34.81 Total Depth (ft-bmp) 390 Purge Method LF+TV
 MP Elevation _____ Pump Intake (ft-br) _____ Mid-Screen _____ Peristaltic Submersible 600 Sub. Other _____
 Pump On/Off 0916 120 Volume Purged (gal) 22L Sample Method LF+TV
 Sample Time: Label GM 3702 Replicate/ Code No. _____
 Start 1015 End 1020 Sampled by SU
 PID: 0.1 1015 KK

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0920	0	400	34.84	0	5.55	0.2417	8.86	21.34	15.0	182.7	Clear	None
0925	5	400		2	5.358	0.2104		7.73	15.1	141.7	"	"
0930	10	400	34.76	4	5.32	0.2042	67.0	6.67	15.0	139.2	"	"
0935	15	400		6	5.38	0.1981		6.04	15.0	143.4	"	"
0940	20	400	34.78	8	5.23	0.1947	34.0	5.62	15.1	147.2	"	"
0945	25	400	34.78	10	5.22	0.1991	28.1	5.32	15.1	148.2	"	"
0950	30	400	34.77	12	5.21	0.1896	26.7	5.57	15.1	147.7	"	"
0955	35	400	34.76	14	5.22	0.1892	24.4	4.99	15.1	146.6	"	"
1000	40	400	34.75	16	5.21	0.1889	24.6	4.94	15.1	146.8	"	"
1005	45	400	34.79	18	5.22	0.1853	20.6	4.98	15.2	145.7	"	"
1010	50	400	34.78	20	5.21	0.1852	19.6	4.89	15.1	144.9	"	"

Constituents Sampled	Container	Number	Preservative
VOCs	40 mL VOA	3	HCL
1,4D	1 L Amber	2	None

Notes: $390 - 34.81 = 355.20 \times 0.01 = 3.6 \text{ gal} = 13.5 \text{ L}$

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.013	

Well Information

Well Location: N Winhurst Well Locked at Arrival: Yes / No
 Condition of Well: Good Well Locked at Departure: Yes / No
 Well Completion: Flush Mount / Stick Up Key Number To Well: _____

Groundwater Sampling Log

Project No. 30218437 Well ID GM 38D Page 1 of 1
 Project Name/Location 802 Q2 Date 4/27/24
 Measuring Pt. Description TOC Screen Interval (ft-bmp) 320-340 Casing Diameter (in.) 4" Weather SS Sunny
 Static Water Level (ft-bmp) 33.44 Total Depth (ft-bm) 340 Water Column/ Gallons in Well ~300' Well Material PVC SS
 MP Elevation _____ Pump Intake (ft-br) Mid-Screen Purge Method: Dec Sample Method MP/LF
 Pump On/Off 1226 Volume Purged (gal) 22 L Peristaltic Submersible Other _____
 Sample Time: Label GM 38D Replicate/ Code No. REPO42224SV1 Sampled by SV
 Start 1325 End 1330 PID: 0.0 1325 KL PQ SH

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
12:30	0	400	33.48	0	5.85	0.2006	5.68	9.61	13.6	123.4	Clear	None
12:35	05	400		2	5.26	0.1583		3.39	15.3	125.4	"	"
12:40	10	400	33.46	4	4.84	0.1534	3.11	3.19	15.2	132.8	"	"
12:45	15	400	33.47	6	4.87	0.1624		3.05	18.2	131.5	"	"
12:50	20	400	33.46	8	4.89	0.1704	1.19	3.18	15.1	129.8	"	"
12:55	25	400	33.47	10	4.88	0.1734		3.17	15.2	131.7	"	"
13:00	30	400	33.46	12	4.92	0.1758	1.05	3.23	15.1	130.6	"	"
13:05	35	400	33.47	14	4.98	0.1763	1.22	3.21	15.2	129.8	"	"
13:10	40	400	33.46	16	4.96	0.1766	1.45	3.20	15.1	130.2	"	"
13:15	45	400	33.46	18	4.97	0.1771	1.41	3.22	15.1	129.8	"	"
13:20	50	400	33.47	20	4.98	0.1773	1.26	3.21	15.2	130.1	"	"

Constituents Sampled	Container	Number	Preservative
<u>VOCS</u>	<u>40 mL VOA</u>	<u>3</u>	<u>HCL</u>
<u>1,4D</u>	<u>1 L Amber</u>	<u>2</u>	<u>None</u>
<u>BWD split sample</u>	<u>40 mL VOA</u>	<u>2</u>	<u>HCL</u>

Notes:
 $340 - 33.44 = 306.56 \cdot 0.006 = 2 \text{ gal} = 7 \text{ L}$

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>Arthur Ave</u>	Well Locked at Arrival: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well: <u>Good</u>	Well Locked at Departure: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion: <input checked="" type="checkbox"/> Flush Mount / <input type="checkbox"/> Stick Up	Key Number To Well: _____

Location ID:	GM-38D2	Date(s):	2024-04-22	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:54.14 °F, rH:35%, Clouds: 0%, Wind:11.5mph N-NW			Field Technician:	Kyra Kraus	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	475.00-495.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	35.64	Total Depth (ft-bmp):	495	Water Column(ft):	459.36	Liters in Well: 1135.13
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	485	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	12:27	Total Volume Purged (liters):	30	Sample ID:	GM-38D2	Sample Time: 13:22
Purge End Time:	13:17	Well Volumes Purged (total):	0.03	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI ProPlus / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
12:27	0	500	mL/min	35.56	5.92	72.481	3.19	7.44	14.6	122.9	Clear	No Odor
12:32	5	500	mL/min	35.56	4.96	43.129	19.3	5.32	16.4	149	Clear	No Odor
12:37	10	500	mL/min	35.56	5.23	50.44	41.2	4.04	16.3	144.4	Clear	No Odor
12:42	15	500	mL/min	35.57	5.31	53.707	14.5	2.49	16.4	134.1	Clear	No Odor
12:47	20	500	mL/min	35.57	5.32	54.772	15	2.14	16.4	129.3	Clear	No Odor
12:52	25	500	mL/min	35.56	5.32	55.141	15.7	1.92	16.5	123.9	Clear	No Odor
12:57	30	500	mL/min	35.52	5.32	55.226	10.5	1.85	16.5	119.4	Clear	No Odor
13:02	35	500	mL/min	35.52	5.32	55.172	10.9	1.8	16.6	117.2	Clear	No Odor
13:07	40	500	mL/min	35.51	5.31	54.93	8.27	1.75	16.5	115.5	Clear	No Odor
13:12	45	500	mL/min	35.51	5.31	54.98	6.31	1.7	16.5	115.1	Clear	No Odor
13:17	50	500	mL/min	35.51	5.3	54.64	5.91	1.66	16.5	113.6	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: TV= 495ft - 35.64ft = 459.36ft x 0.006 = 2.76 gal x 3.785 = 10.4 L

Well Information:

Well Labeled Properly: no

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Page 1 of 1

Project No. 30218475

Well ID GM 39DA

Date 4/15

Project Name/Location Bathpage NY

Weather 50° Rain

Measuring Pt. TOC
Description TOC

Screen Interval (ft-bmp) 262-282
Casing Diameter (in.) 4

Well Material X PVC
SS

Static Water Level (ft-bmp) 32.73
Total Depth (ft-bm) 282

Water Column/ Gallons in Well ~250'

MP Elevation
Pump Intake (ft-br) Mid-Screen

Purge Method: Peristaltic
Submersible
Other

Sample Method TV + LF

Pump On/Off 0810 / 0905
Volume Purged (gal) 20L

Sample Time: Label GM 39DA
Start 0900 Replicate/ Code No. N/A
End 0905

Sampled by SV

PID: 0.0

0900

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0815	0	400	32.75	0	6.72	0.4019	3.44	23.72	10.9	157.8	Clear	None
0820	5	400		2	6.20	0.2591		9.33	13.7	46.9	"	"
0825	10	400	32.78	4	6.11	0.2696	2.89	6.34	13.6	31.4	"	"
0830	15	400		6	5.92	0.3087		5.66	13.6	45.5	"	"
0835	20	400	32.81	8	5.77	0.3358	2.22	5.61	13.4	56.1	"	"
0840	25	400		10	5.64	0.3501		5.66	13.4	58.6	"	"
0845	30	400	32.79	12	5.60	0.3528	1.98	5.60	13.3	57.2	"	"
0850	35	400	32.78	14	5.69	0.3529	1.94	5.58	13.4	56.7	"	"
0855	40	400	32.79	16	5.63	0.3559	1.47	5.56	13.4	56.1	"	"
0900	45	400	32.79	18	5.65	0.3542	1.22	5.57	13.4	55.8	"	"
			#		#			#				

Constituents Sampled	Container	Number	Preservative
VOCs 8260	40 mL VOA	3	NAL
1,4 D 8270	1L Amber	2	None

Notes: TV = 282 - 32.73 = 249.27 * 0.006 = 1.594 = 6L

Well Casing Volumes						
Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information	
Well Location: MJA Lot	Well Locked at Arrival: Yes / No
Condition of Well: Good	Well Locked at Departure: Yes / No
Well Completion: Flush Mount / Stick Up	Key Number To Well:

Groundwater Sampling Log

Project No. 30218457 Well ID GM 39DB Page 1 of 1
 Project Name/Location Bethpage NY Date 4/18/24
 Measuring Pt. TOC Screen Interval (ft-bmp) 410-420 Casing Diameter (in.) 4 Weather 50° Rain
 Description TOC Static Water Level (ft-bmp) 35.45 Total Depth (ft-bm) 420 Water Column/Gallons in Well ~385' Well Material X PVC SS
 MP Elevation _____ Pump Intake (ft-br) _____ Mid-Screen _____ Purge Method: Dedicated Sample Method TV + LF
 Pump On/Off 1810 0910 Volume Purged (gal) 24 Peristaltic _____ Submersible _____ Other _____
 Sample Time: Label GM 39DB Replicate/Code No. N/A Sampled by SU
 Start 0910 End 0920
 PID: 0.0 0910

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0815	0	400	34.46 34.46	0	5.18	155.1	8.1	3.48	13.3	160.5	Clear	None
0820	5	400		2	5.68	128.7		1.05	14.1	139.1	"	"
0825	10	400	34.49	4	4.66	136.4	6.88	3.54	14.1	160.8	"	"
0830	15	400		6	4.56	132.28		3.92	13.9	155.5	"	"
0835	20	400	34.51	8	4.56	132.18	6.27	4.01	13.8	152.0	"	"
0840	25	400		10	4.58	132.44		4.05	13.9	146.8	"	"
0845	30	400	34.53	12	4.59	132.77	6.11	4.06	13.6	145.0	"	"
0850	35	400	34.52	14	4.61	133.62	6.01	4.07	13.8	139.3	"	"
0855	40	400	34.51	16	4.62	133.98	5.22	3.99	13.8	140.8	"	"
0900	45	400	34.52	18	4.63	134.21	4.81	3.96	13.7	140.7	"	"
0905	50	400	34.52	20	4.64	134.51	4.63	3.71	13.7	140.6	"	"
0910	55	400	34.51	22	4.64	134.36	4.59	3.89	13.7	141.1	"	"

Constituents Sampled	Container	Number	Preservative
VOGs 8260	40 ml VOA	3	HCL
1,4D 8270	1L Amber	2	None

Notes: $420 - 35.45 = 384.55 \cdot 0.006 = 2.5 \text{ gal} = 10.2$

Well Casing Volumes

Gallons/foot	1" = 0.04	1.25" = 0.06	1.5" = 0.09	2" = 0.16	2.5" = 0.26	3" = 0.37	3.5" = 0.50	4" = 0.65	6" = 1.47	8" = 2.45	10" = 3.35	12" = 4.05	15" = 5.40	18" = 6.75	24" = 9.45	30" = 12.15	36" = 14.85	48" = 19.80	60" = 24.75	72" = 29.70	96" = 39.60
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Well Information

Well Location: <u>MTA lot</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: _____

Location ID:	GM-71D2	Date(s):	2024-04-22	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:51.82 °F, rH:39%, Clouds: 0%, Wind:7mph N			Field Technician:	Kyra Kraus	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	444.00-464.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	36.96	Total Depth (ft-bmp):	464	Water Column(ft):	427.04	Liters in Well: 1055.27
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	454	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	10:50	Total Volume Purged (liters):	30	Sample ID:	GM-71D2	Sample Time: 11:45
Purge End Time:	11:40	Well Volumes Purged (total):	0.03	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI ProPlus / 50534, 212543

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:50	0	500	mL/min	37.01	5.84	0.164	7.51	9.99	12.9	129.8	Clear	No Odor
10:55	5	500	mL/min	37.01	5.17	0.163	2.45	3.78	14.8	127.2	Clear	No Odor
11:00	10	500	mL/min	37.02	5.25	0.164	73	2.52	15	121.8	Yellow	No Odor
11:05	15	500	mL/min	37.03	5.28	0.164	197	2.43	15.1	119.1	Yellow	No Odor
11:10	20	500	mL/min	37.03	5.08	0.175	56.4	2.49	14.9	121.3	Clear	No Odor
11:15	25	500	mL/min	37.04	5.05	0.175	18.8	2.49	15.2	122.6	Clear	No Odor
11:20	30	500	mL/min	37.04	4.99	0.176	10.2	2.6	14.9	124.7	Clear	No Odor
11:25	35	500	mL/min	37.04	4.98	0.176	8.58	2.56	15.2	125.6	Clear	No Odor
11:30	40	500	mL/min	37.04	4.94	0.176	4.61	2.61	15.2	126.9	Clear	No Odor
11:35	45	500	mL/min	37.04	4.91	0.176	3.71	2.61	15.3	128.3	Clear	No Odor
11:40	50	500	mL/min	37.04	4.93	0.176	2.44	2.65	15.3	128.6	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: no

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437.GWMI2 Well ID GM-13D Page 1 of 1
 Date 4/15/24
 Project Name/Location DUZ 02 Groundwater sampling 2024 Weather 74°F / sunny
 Measuring Pt. Screen Casing Well Material X PVC
 Description TOC Interval (ft-bmp) 401-411 Diameter (in.) 4" SS
 Static Water Level (ft-bmp) 40.13 Total Depth (ft-bm) 411 Water Column/ Gallons in Well 376.27 ft / 244.6 gal
 MP Elevation Pump Intake (ft-br) Mid-Screen Purge Method: Sample Method TV+LF
 Pump On/Off 1155 / 1255 Volume Purged (gal) 27.5 Peristaltic GeoSub Submersible Other
 Sample Time: Label GM-13D Replicate/ Code No. N/A Sampled by KK,SV
 Start 1252 End 1255
 PID: 0.0ppm 1252

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1157	0	500	40.73	0	5.62	0.211	3.54	18.18	20.3	103.3	clear	None
1202	5	" "		2.5	5.54	0.225		17.24	14.7	102.9	"	"
1207	10			5.0	5.38	0.187		14.49	14.6	121.1	"	"
1212	15		40.73	7.5	5.16	0.206	2.98	14.25	14.5	133.3	"	"
1217	20			10.0	5.11	0.219		14.86	14.8	139.1	"	"
1222	25		40.73	12.5	5.09	0.223	1.02	14.96	14.8	139.8	"	"
1227	30			15.0	5.08	0.225		15.62	15.1	140.1	"	"
1232	35		40.73	17.5	5.07	0.227	3.02	13.99	14.7	141.1	"	"
1237	40		40.73	20.0	5.07	0.227	2.94	12.99	14.7	142.0	"	"
1242	45		40.73	22.5	5.08	0.226	0.58	12.32	14.9	142.7	"	"
1247	50		40.73	25	5.08	0.226		12.31	14.7	142.8	"	"

Constituents Sampled	Container	Number	Preservative
VOCs 8260	40 mL glass vial	3	HCl
1,4-Dioxane 8270	1 L Amber bottle	2	None

Notes:

$406-40.73 = 365.27 \text{ ft} \times 0.006 = 2.19 \text{ gal} \times 3.785 = 8.29 \text{ L}$

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>South Basin</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: <u>N/A</u>

Location ID:	GM-73D2	Date(s):	2024-04-15	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:73.98 °F, rH:40%, Clouds: 0%, Wind:13.8mph W			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	532.00-552.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	37.83	Total Depth (ft-bmp):	552	Water Column(ft):	514.17	Liters in Well: 1270.58
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	12:00	Total Volume Purged (liters):	30	Sample ID:	GM-73D2	Sample Time: 12:55
Purge End Time:	12:50	Well Volumes Purged (total):	0.02	Replicate Type / Replicate ID:	Duplicate / REP041524PQ1	Water Quality Meter/ ID: YSI Pro DSS / NA
Scope of work completed?	Yes					

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
12:00	0	400	mL/min	38.83	5.54	0.371	2.33	6.45	13.9	128.6	Clear	No Odor
12:05	5	400	mL/min	38.83	4.62	0.356	2.33	5.89	16.2	159.2	Clear	No Odor
12:10	10	400	mL/min	38.83	4.32	0.36	2.33	7.15	15.6	169.9	Clear	No Odor
12:15	15	400	mL/min	38.9	4.24	0.373	11.1	7.63	15.8	174.6	Clear	No Odor
12:20	20	400	mL/min	38.9	4.16	0.38	11.1	7.85	16.5	177.5	Clear	No Odor
12:25	25	400	mL/min	38.9	4.15	0.384	11.1	7.9	16.6	178.6	Clear	No Odor
12:30	30	400	mL/min	38.9	4.13	0.394	4.3	7.2	16	181.9	Clear	No Odor
12:35	35	400	mL/min	38.9	4.23	0.404	4.3	7.02	16.1	183.3	Clear	No Odor
12:40	40	400	mL/min	38.9	4.12	0.404	4.6	7.05	15.9	183.1	Clear	No Odor
12:45	45	400	mL/min	38.9	4.12	0.403	5.72	7.02	16.5	184	Clear	No Odor
12:50	50	400	mL/min	38.9	4.12	0.404	9.62	7.04	16.3	183.8	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437-GNM12 Well ID GM-73D3 Date 6/25/2024
 Project Name/Location 2024 D2 Duz Etn Sampling Weather 75°F / Clear
 Measuring Pt. Screen Interval (ft-bmp) 635-650 Casing Diameter (in.) 4 Well Material PVC SS
 Description Top of Casing
 Static Water Level (ft-bmp) 40.59 Total Depth (ft-bmp) 650 Water Column/ Gallons in Well 609.41 ft / 396.1 gal
 MP Elevation — Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated Peristaltic Submersible Other
 Sample Method TV + LF
 Pump On/Off 0848 / 1000 Volume Purged (gal) 35L
 Sample Time: Label GM-73D3 Replicate/ Code No. N/A Sampled by KK, PD
 Start 0955 End 1000

PID: 0.0ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0850	0	500	40.60	0	6.27	0.035	8.21	8.69	16.65	206.6	Clear	None
0855	5	500		2.5	6.29	0.035		8.55	18.24	204.8	"	"
0900	10	500		5.0	5.84	0.025		6.83	19.80	200.1		
0905	15	500	40.60	7.5	5.70	0.024	6.25	6.91	20.66	192.2		
0910	20	500		10.0	5.70	0.024		6.95	20.64	191.9		
0915	25	500		12.5	5.72	0.024		7.93	20.58	190.6		
0920	30	500	40.60	15.0	5.73	0.023	10.7	8.49	20.57	190.1		
0925	35	500		17.5	5.73	0.023		9.20	20.54	190.2		
0930	40	500		20.0	5.70	0.023		10.70	20.77	192.4		
0935	45	500	40.60	22.5	5.68	0.023	8.23	11.68	20.92	193.0		
0940	50	500	40.60	25.0	5.69	0.023	8.58	10.70	20.92	193.5		
0945	55	500	40.60	27.5	5.69	0.023	7.01	10.65	21.16	193.9		
0950	60	500	40.60	30.0	5.70	0.023	5.3	10.65	21.22	193.9	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs 8260	40 mL glass vial	3	HCl
1,4-Dioxane 8270 SIM	1 L amber bottle	2	None

Notes:
 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)
TV = 642.5 ft - 40.59 ft = 601.91 ft x 0.037 gal/ft = 22.27 L

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1.25" = 0.01	

Well Information

Well Location:	<u>B.109 parking lot</u>	Well Locked at Arrival:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well:	<u>good</u>	Well Locked at Departure:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion:	<u>Flush Mount / Stick Up</u>	Key Number To Well:	

Groundwater Sampling Log

Page 1 of 1

Project No. 30218437.GWMI2 Well ID GM-74D

Date 4/15/24
 Weather 65°F / sunny

Project Name/Location O2 Q2 Groundwater Sampling 2024

Measuring Pt. Top of Casing Screen Interval (ft-bmp) 295-305 Casing Diameter (in.) 4"

Well Material PVC SS

Static Water Level (ft-bmp) 39.44 Total Depth (ft-bmp) 305 Water Column/ Gallons in Well 265.56 ft / 172.6 gal

MP Elevation — Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated Peristaltic Submersible Other

Sample Method TV + LF

Pump On/Off 0947/1113 Volume Purged (gal) 40.0L
 Sample Time: Label GM-74D Replicate/
 Start 1103 Code No. N/A
 End 1113

Sampled by KK, SV

PID: 0.0 ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0948	0	500	39.45	0	6.56	0.189	3.43	5.65	12.2	146.4	Clear	None
0953	5	" "		2.5	4.44	0.101		5.38	13.0	198.2	"	"
0958	10			5.0	4.36	0.100		4.91	13.0	197.8		
1003	15		39.45	7.5	4.44	0.101	4.24	4.47	13.0	191.5		
1008	20			10.0	4.51	0.103		3.98	13.0	182.5		
1013	25			12.5	4.54	0.104		5.31	13.1	177.4		
1018	30		39.45	15.0	4.57	0.105	2.63	3.95	13.0	173.0		
1023	35			17.5	4.61	0.112		4.22	13.1	168.5		
1028	40		39.45	20.0	4.65	0.118	1.41	4.23	13.2	166.4		
1033	45		39.45	22.5	4.75	0.126	0.91	4.65	13.2	163.8		
1038	50		39.45	25.0	4.83	0.132	0.86	4.85	13.3	161.3		
1043	55		39.45	27.5	4.85	0.135	0.81	5.41	13.2	160.6		
1048	60		39.45	30.0	4.88	0.137	1.16	5.99	13.3	159.4		
1053	65		39.45	32.5	4.89	0.138	0.85	6.47	13.5	158.9		
1058	70	↓	39.45	35.0	4.90	0.141	0.81	6.51	13.3	158.4	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs 50 8260	40 mL glass vial	3	HCl
1,4-Dioxane 50 SIM 8270	1 L 250 mL amber bottle	2	NATRO

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)

$TV = 300 - 39.44 = 260.56 \text{ ft} \times 0.006 = 1.56 \text{ gal} \times 3.785 = 5.9 \text{ L}$

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>South Basin</u>	Well Locked at Arrival: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well: <u>good</u>	Well Locked at Departure: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion: <u>Flush Mount / Stick Up</u>	Key Number To Well: <u>N/A</u>

Location ID:	GM-74D2	Date(s):	2024-04-15	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:65.97 °F, rH:70%, Clouds: 0%, Wind:8.05mph W			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	542.00-562.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	47.69	Total Depth (ft-bmp):	562	Water Column(ft):	514.31	Liters in Well: 1270.92
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	09:46	Total Volume Purged (liters):	28	Sample ID:	GM-74D2	Sample Time: 10:50
Purge End Time:	10:49	Well Volumes Purged (total):	0.02	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 556 MPS,Hach 2100-Q / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:48	0	500	mL/min	47.74	6.61	0.318	5.59	0	14.7	127.6	Clear	No Odor
09:53	5	500	mL/min	47.74	6.32	1.751	5.59	9.76	14.83	119.9	Clear	No Odor
09:58	10	500	mL/min	47.74	6.69	1.648	5.59	8.96	14.87	113.5	Clear	No Odor
10:03	15	400	mL/min	47.72	6.92	1.569	19.4	10.06	15.69	110.7	Clear	No Odor
10:13	25	500	mL/min	47.74	6.64	1.688	19	13.74	14.95	122.1	Clear	No Odor
10:18	30	500	mL/min	47.74	6.37	1.669	19	15.06	15.02	135.1	Clear	No Odor
10:23	35	500	mL/min	47.74	6.16	1.715	16.9	15.75	15.01	140.2	Clear	No Odor
10:28	40	500	mL/min	47.75	6	1.753	16.9	16.38	15.1	146.5	Clear	No Odor
10:33	45	500	mL/min	47.75	5.9	1.772	16.9	17.05	15.28	149.9	Clear	No Odor
10:38	50	500	mL/min	47.75	5.87	1.779	13.8	17.35	15.27	151	Clear	No Odor
10:43	55	500	mL/min	47.76	5.86	1.79	12.6	17.6	15.23	151.7	Clear	No Odor
10:48	60	500	mL/min	47.76	5.83	1.79	12.9	17.73	15.38	152	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-74D3	Date(s):	2024-04-15	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:65.97 °F, rH:70%, Clouds: 0%, Wind:8.05mph W			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	625.00-645.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	44.95	Total Depth (ft-bmp):	650	Water Column(ft):	605.05	Liters in Well: 1495.15
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	9:49	Total Volume Purged (liters):	35	Sample ID:	GM-74D3	Sample Time: 10:45
Purge End Time:	10:44	Well Volumes Purged (total):	0.02	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:49	0	500	mL/min	44.95	5.36	0.066	23.1	13.1	12.67	172.4	Clear	No Odor
09:54	5	500	mL/min	44.95	5.12	0.045	23.1	4.02	13.88	162.7	Clear	No Odor
09:59	10	500	mL/min	44.95	4.74	0.036	23.1	3.6	13.83	138.6	Clear	No Odor
10:04	15	500	mL/min	45	4.68	0.036	13.1	3.57	13.83	134.7	Clear	No Odor
10:09	20	500	mL/min	45	4.6	0.035	13.1	3.89	13.82	130	Clear	No Odor
10:14	25	500	mL/min	45	4.69	0.037	13.1	4.97	14.06	122	Clear	No Odor
10:19	30	500	mL/min	45.01	4.74	0.039	47.2	5.67	14.15	117.4	Clear	No Odor
10:24	35	500	mL/min	45.01	4.72	0.039	50	6.08	14.14	115.9	Clear	No Odor
10:29	40	500	mL/min	45.01	4.71	0.039	49.4	6.5	14.29	113.9	Clear	No Odor
10:34	45	500	mL/min	45.01	4.71	0.039	47.7	6.51	14.25	113.8	Clear	No Odor
10:39	50	500	mL/min	45.02	4.7	0.039	41.4	6.6	14.39	113.4	Clear	No Odor
10:44	55	500	mL/min	45.02	4.69	0.039	36.4	6.56	14.37	113.4	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	
VOCs (SW8260)	Clear Glass	3	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437 Well ID GM 74I Date 4/15/24 Page 1 of 1
 Project Name/Location Bethpage NY Weather 60° Sunny
 Measuring Pt. TOC Screen Interval (ft-bmp) 94-114 Casing Diameter (in.) 4 Well Material PVC SS
 Static Water Level (ft-bmp) 31.52 Total Depth (ft-bm) 114 Water Column/ Gallons in Well 52'
 MP Elevation _____ Pump Intake (ft-br) _____ Mid-Screen _____ Purge Method: Geo Sub Sample Method LF + TV
 Pump On/Off 0948 1050 Volume Purged (gal) 22 L Peristaltic _____ Submersible _____ Other _____
 Sample Time: Label GM 74I Replicate/ Start 1045 Code No. N/A Other _____ Sampled by SV
 End 1050 1045 KK
 PID: S.2

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0950	0	400	31.61	0	6.23	0.149	113	10.73	12.0	181.7	Clear	None
0955	5	400		2	5.94	0.150	48.4	10.96	12.5	189.1	"	"
1000	10	400	31.63	4	5.88	0.149	23.6	10.98	12.5	174.0	"	"
1005	15	400	31.78	6	5.86	0.148	11.9	10.99	12.6	164.6	"	"
1010	20	400		8	5.86	0.148	11.3	10.99	12.6	156.8	"	"
1015	25	400	31.74	10	5.86	0.148	10.0	10.98	12.7	154.1	"	"
1020	30	400	31.76	12	5.86	0.148	10.2	10.99	12.8	150.2	"	"
1025	35	400	31.75	14	5.87	0.148	10.3	10.99	12.9	146.4	"	"
1030	40	400	31.73	16	5.89	0.147	10.1	11.00	13.2	141.9	"	"
1035	45	400	31.72	18	5.89	0.147	8.65	11.01	13.4	140.3	"	"
1040	50	400	31.70	20	5.89	0.147	8.65	11.00	13.5	138.5	"	"

Constituents Sampled	Container	Number	Preservative
82600	40 mL VOA Vial	3	HCL
8270DSIM	1L Amber	2	None

Notes: 114 - 31.52 = 82.48 = 0.825 gal = 3.13 L

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>South Basin</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: _____

Location ID:	GM-75D2	Date(s):	2024-04-16	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:59.16 °F, rH:44%, Clouds: 0%, Wind:10mph N-NW			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	505.00-525.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	30.41	Total Depth (ft-bmp):	NA	Water Column(ft):	531.59	Liters in Well: 1313.62
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	09:45	Total Volume Purged (liters):	20	Sample ID:	GM-75D2	Sample Time: 10:35
Purge End Time:	10:34	Well Volumes Purged (total):	0.02	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI 556 MPS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:46	0	600	mL/min	30.44	4.29	0.218	7.63	3.66	15.22	140.7	Clear	No Odor
09:51	5	400	mL/min	30.44	3.85	0.206	7.63	2.04	5.77	135.4	Clear	No Odor
09:56	10	400	mL/min	30.44	3.9	0.19	7.63	2.78	15.91	135.9	Clear	No Odor
10:01	15	400	mL/min	30.44	3.9	0.161	1.78	4.59	15.97	137.9	Clear	No Odor
10:06	20	400	mL/min	30.44	3.87	0.148	1.78	5.36	16.12	141.2	Clear	No Odor
10:11	25	400	mL/min	30.44	3.86	0.144	1.78	5.71	16.05	143.8	Clear	No Odor
10:16	30	400	mL/min	30.44	3.86	0.142	2.24	5.87	16.13	146.2	Clear	No Odor
10:21	35	400	mL/min	30.44	3.84	0.142	2.24	5.97	16.18	147.3	Clear	No Odor
10:26	40	400	mL/min	30.44	3.82	0.142	0.83	6.03	16.27	148.6	Clear	No Odor
10:31	45	400	mL/min	30.44	3.81	0.143	0.8	6.05	16.37	149.5	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-78D	Date(s):	2024-04-24	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLOUDS, T:51.33 °F, rH:74%, Clouds: 100%, Wind:6.91mph S-SW			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	354.00-364.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	37.48	Total Depth (ft-bmp):	369	Water Column(ft):	331.52	Liters in Well: 819.23
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	09:14	Total Volume Purged (liters):	25	Sample ID:	GM-78D	Sample Time: 10:05
Purge End Time:	10:03	Well Volumes Purged (total):	0.03	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI 556 MPS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:16	0	700	mL/min	37.52	6.56	0.256	2.08	0.11	15.26	176.1	Clear	No Odor
09:21	5	480	mL/min	37.52	5.49	0.233	2.08	0.1	15.1	193.8	Clear	No Odor
09:26	10	480	mL/min	37.52	5.3	0.235	2.08	0.23	15.22	178.8	Clear	No Odor
09:31	15	480	mL/min	37.51	5.29	0.236	2.16	0.24	15.24	174.9	Clear	No Odor
09:36	20	480	mL/min	37.51	5.28	0.236	2.16	0.25	15.18	171.4	Clear	No Odor
09:41	25	480	mL/min	37.51	5.25	0.237	2.16	0.25	15.18	169.4	Clear	No Odor
09:46	30	480	mL/min	37.52	5.24	0.238	1.55	0.25	15.22	177.2	Clear	No Odor
09:51	35	480	mL/min	37.52	5.24	0.239	0.99	0.25	15.27	177.9	Clear	No Odor
09:56	40	480	mL/min	37.51	5.22	0.238	0.89	0.24	15.26	178.6	Clear	No Odor
10:01	45	480	mL/min	37.51	5.22	0.238	1.05	0.24	15.43	179.4	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute
 uS/cm = microSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter
 S.U = standard units
 mS/cm = milli

Location ID:	GM-78D2	Date(s):	2024-04-24	Work Order(s):	OU2 - Q2 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:54.97 °F, rH:67%, Clouds: 100%, Wind:6.91mph SW			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	459.00-479.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	39.35	Total Depth (ft-bmp):	NA	Water Column(ft):	444.65	Liters in Well:	1098.78
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	10:44	Total Volume Purged (liters):	20	Sample ID:	GM-78D2	Sample Time:	11:40
Purge End Time:	11:39	Well Volumes Purged (total):	0.02	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q, YSI 556 MPS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:47	0	600	mL/min	39.37	6.91	0.105	1.19	0.22	15.87	144.7	Clear	No Odor
10:52	5	500	mL/min	39.37	6.73	0.104	1.19	0.23	15.69	143.3	Clear	No Odor
10:57	10	500	mL/min	39.37	6.33	0.104	1.19	0.23	15.95	146	Clear	No Odor
11:02	15	500	mL/min	39.38	5.89	0.105	1.31	0.24	16.08	150.7	Clear	No Odor
11:07	20	250	mL/min	39.38	5.73	0.106	1.31	0.24	16.13	151.9	Clear	No Odor
11:12	25	250	mL/min	39.38	5.53	0.105	1.19	0.25	15.9	152.5	Clear	No Odor
11:17	30	259	mL/min	39.37	5.45	0.105	1.43	0.25	15.93	152.9	Clear	No Odor
11:22	35	250	mL/min	39.37	5.43	0.106	1.43	0.25	15.99	153	Clear	No Odor
11:27	40	250	mL/min	39.37	5.31	0.106	1.43	0.25	16.21	153.5	Clear	No Odor
11:32	45	250	mL/min	39.37	5.29	0.106	0.74	0.25	16.32	153.7	Clear	No Odor
11:37	50	250	mL/min	39.87	5.23	0.106	0.74	0.25	16.38	153.5	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-781	Date(s):	2024-04-24	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLOUDS, T:50.97 °F, rH:77%, Clouds: 75%, Wind:9.22mph S-SW			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	90.00-110.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	35.23	Total Depth (ft-bmp):	110	Water Column(ft):	74.77	Liters in Well: 184.77
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	9:09	Total Volume Purged (liters):	28	Sample ID:	GM-781	Sample Time: 10:00
Purge End Time:	09:55	Well Volumes Purged (total):	0.15	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA
Scope of work completed?	Yes					

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:10	0	500	mL/min	35.23	6.6	0.408	6.98	8.38	15.16	116.3	Clear	No Odor
09:15	5	500	mL/min	35.23	6.03	1.159	6.98	7.97	15.43	144.8	Clear	No Odor
09:20	10	500	mL/min	35.23	6.03	1.181	6.98	7.88	15.56	149.6	Clear	No Odor
09:25	15	500	mL/min	35.25	6.04	1.183	2.02	7.85	15.69	151.8	Clear	No Odor
09:30	20	500	mL/min	35.25	6.05	1.18	2.02	7.87	15.78	150.9	Clear	No Odor
09:35	25	500	mL/min	35.25	6.06	1.183	2.02	7.9	15.73	150.6	Clear	No Odor
09:40	30	500	mL/min	35.25	6.06	1.188	0.9	7.98	15.74	150.5	Clear	No Odor
09:45	35	500	mL/min	35.25	6.06	1.183	0.51	7.9	15.76	150.9	Clear	No Odor
09:50	40	500	mL/min	35.25	6.06	1.183	0.42	7.98	15.76	150.8	Clear	No Odor
09:55	45	500	mL/min	35.25	6.05	1.183	0.32	7.98	15.77	150.9	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	
VOCs (SW8260)	Clear Glass	3	
Chromium, total (6010),Chromium, total dissolved (6010B),Cadmium	Plastic	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-78S	Date(s):	2024-04-24	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLOUDS, T:53.85 °F, rH:69%, Clouds: 100%, Wind:6.91mph SW			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	60.00-70.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	35	Total Depth (ft-bmp):	70	Water Column(ft):	35	Liters in Well: 86.49
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	10:25	Total Volume Purged (liters):	25	Sample ID:	GM-78S	Sample Time: 11:15
Purge End Time:	11:12	Well Volumes Purged (total):	0.29	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:27	0	400	mL/min	35	6.18	0.943	8.7	8.32	14.98	145	Clear	No Odor
10:32	5	400	mL/min	35	6.03	1.193	8.7	7.67	15.12	139.9	Clear	No Odor
10:37	10	400	mL/min	35	6.09	1.232	8.7	7.5	15.57	136.8	Clear	No Odor
10:42	15	400	mL/min	35.02	6.1	1.237	9.88	7.28	15.94	133.5	Clear	No Odor
10:47	20	400	mL/min	35.02	6.1	1.2	9.88	7.27	15.95	132.4	Clear	No Odor
10:52	25	400	mL/min	35.02	6.1	1.244	9.88	7.25	16	130.5	Clear	No Odor
10:57	30	400	mL/min	35.02	6.11	1.244	6.92	7.23	15.99	129.1	Clear	No Odor
11:02	35	400	mL/min	35.02	6.11	1.244	5.6	7.22	15.93	127.9	Clear	No Odor
11:07	40	400	mL/min	35.02	6.1	1.243	5.04	7.15	15.97	126.2	Clear	No Odor
11:12	45	400	mL/min	35.02	6.11	1.243	4.99	7.17	15.99	126.2	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	
VOCs (SW8260)	Clear Glass	3	
Chromium, total (6010),Chromium, total dissolved (6010B),Cadmium	Plastic	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218457 Well ID GM 79D Page 1 of 1
 Project Name/Location Bethpage NY Date 4/17/24
 Measuring Pt. Screen Well Material X PVC
 Description TOC Interval (ft-bmp) 280-290 Diameter (in.) 4 SS
 Static Water Level (ft-bmp) 36.20 Total Depth (ft-bm) 290 Water Column/ Gallons in Well 253.8
 MP Elevation Pump Intake (ft-br) Mid-Screen Purge Method: Sample Method LF+TV
 Pump On/Off 0925 1025 Volume Purged (gal) 22L Peristaltic 600Sub Submersible Other
 Sample Time: Label GM 79D Duplicate/ Code No. N/A Other Sampled by SU KK
 Start 1020 End 1025
 PID: 0.0 1020

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0927	0	400	36.19	0	6.76	0.13	22.2	80.51	13.4	162.1	Clear	None
0932	5	400		2	5.44	0.12		13.44	13.3	187.5	"	"
0937	10	400	36.24	4	5.25	0.12	80.0	7.21	13.4	189.8	"	"
0942	15	400		6	5.23	0.12		7.07	13.4	182.6	1-	Y
0947	20	400	36.25	8	5.21	0.1196	48.1	6.15	13.4	177.4	"	"
0952	25	400		10	5.20	0.1197		5.80	13.5	173.3	"	"
0957	30	400	36.27	12	5.19	0.1201	48.3	5.71	13.5	170.4	"	"
1002	35	400	36.26	14	5.18	0.1201	49.5	5.68	13.6	167.7	"	"
1007	40	400	36.26	16	5.18	0.1197	40.1	5.57	13.5	165.6	"	"
1012	45	400	36.27	18	5.16	0.1192	43.1	5.45	13.6	164.5	"	"
1017	50	400	36.26	20	5.16	0.1194	43.7	5.53	13.5	163.1	"	"
			#		#		#					

Constituents Sampled	Container	Number	Preservative
<u>VOCs 8260</u>	<u>40mL VOA</u>	<u>3</u>	<u>HCL</u>
<u>1,4D 8270</u>	<u>1L Amber</u>	<u>2</u>	<u>None</u>

Notes: $290 - 36.2 = 253.8 \times 0.006 = 1.5 \text{ gal} = 6L$

Well Casing Volumes	1" = 0.04	1.5" = 0.09	2" = 0.16	2.5" = 0.26	3" = 0.37	3.5" = 0.50	4" = 0.65	6" = 1.47	8" = 3.00
Gallons/Foot	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	6" = 1.47	8" = 3.00			

Well Information	Well Locked at Arrival:	Yes	/	No
Well Location: <u>Central Ave Basin</u>				
Condition of Well: <u>Good</u>	Well Locked at Departure:	Yes	/	No
Well Completion: <u>Flush Mount</u>	Key Number To Well:			

Groundwater Sampling Log

Project No. 30218437.GNM12 Well ID GM-191 Page 1 of 1
 Project Name/Location 00202 GWS 2024 Date 4/17/24 Weather 50°F Overcast
 Measuring Pt. Screen Casing Well Material X PVC
 Description TOC Interval (ft-bm) 170-180 Diameter (in.) 4" SS
 Static Water Level (ft-bmp) 34.69 Total Depth (ft-bm) 180 Water Column/ Gallons in Well 145.31ft / 94.4 gal
 MP Elevation Pump Intake (ft-br Mid-Screen) Purge Method: dedicated bladder Sample Method LF + TV
 Pump On/Off 0926 / 1030 Volume Purged (gal) 30.0L Peristaltic Submersible Other
 Sample Time: Label GM-191 Replicate/ Code No. N/A Sampled by KK.SV
 Start 1020
 End 1030

PID: 0.0ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0927	0	400	34.69	0	6.35	40.400	1.76	8.51	10.8	135.7	clear	none
0932	5	" "		2.0	4.81	40.9		7.57	12.5	168.7	"	"
0937	10			4.0	4.63	41.6		8.09	12.4	174.1		
0942	15		34.73	6.0	4.61	41.6	3.20	8.21	12.5	175.7		
0947	20			8.0	4.61	41.5		8.25	12.5	176.2		
0952	25			10.0	4.61	41.4		8.29	12.5	172.6		
0957	30		34.73	12.0	4.61	41.4	1.60	8.29	12.5	171.9		
1002	35			14.0	4.61	41.5		8.32	12.7	170.8		
1007	40		34.13	16.0	4.61	41.4	1.51	8.33	12.7	171.0		
1012	45		34.13	18.0	4.62	40.9	0.42	8.37	12.8	173.5		
1017	50		34.73	20.0	4.62	41.1		8.37	12.8	170.0		

Constituents Sampled	Container	Number	Preservative
<u>VOCs 8200C</u>	<u>40 mL glass vial</u>	<u>3</u>	<u>HCl</u>
<u>1,4-Dioxane 8270DSIM</u>	<u>1 L Amber bottle</u>	<u>2</u>	<u>none</u>

Notes:
TV = 175ft - 34.69ft = 140.31ft x 1.5L

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	1/4" =

Well Information

Well Location: <u>Central Ave Basin</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: <u>Central Ave Basin</u>

Location ID:	HN-241	Date(s):	2024-05-22	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:75.88 °F, rH:66%, Clouds: 0%, Wind:8.05mph S			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	148.00-158.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	47.58	Total Depth (ft-bmp):	NA	Water Column(ft):	110.42	Liters in Well: 272.86
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	10:55	Total Volume Purged (liters):	19	Sample ID:	HN-241	Sample Time: 11:45
Purge End Time:	11:42	Well Volumes Purged (total):	0.07	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI ProPlus / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:56	0	400	mL/min	47.69	5.91	0.317	10.3	18.74	17.5	129.7	Clear	No Odor
11:01	5	400	mL/min	47.69	5.56	0.322	10.3	9.5	16.9	143.9	Clear	No Odor
11:06	10	400	mL/min	47.69	5.29	0.322	10.3	7.92	16.8	155.2	Clear	No Odor
11:11	15	400	mL/min	47.69	5.28	0.317	30.8	6.91	16.7	150.5	Clear	No Odor
11:16	20	400	mL/min	47.69	5.28	0.315	30.8	6.91	16.9	149.9	Clear	No Odor
11:21	25	400	mL/min	47.69	5.28	0.311	30.8	6.75	17	147.8	Clear	No Odor
11:26	30	400	mL/min	47.68	5.31	0.31	16	6.63	17	145.6	Clear	No Odor
11:31	35	400	mL/min	47.68	5.32	0.31	11.8	6.56	16.9	144.6	Clear	No Odor
11:36	40	400	mL/min	47.68	5.34	0.308	10.4	6.6	17.2	143.3	Clear	No Odor
11:41	45	400	mL/min	47.68	5.34	0.307	9.26	6.82	17.1	142.7	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437 Well ID HN 401 Page 1 of 1
 Project Name/Location Bethpage NY Date 4/25/24
 Measuring Pt. TOC Screen Interval (ft-bmp) 108-118 Casing Diameter (in.) 4 Weather 55° Sun
 Static Water Level (ft-bmp) 43.52 Total Depth (ft-bm) 118.0 Water Column/ Gallons in Well ~75'
 MP Elevation Pump Intake (ft-br) Mid-Screen Purge Method: Geo Sub Well Material X PVC SS
 Pump On/Off 0946-1045 Volume Purged (gal) 11 L Peristaltic Submersible Other Sample Method LF + TV
 Sample Time: Label HN 401 Replicate/ Code No. NA Sampled by SV
 Start 1046 End 1045
 PID: 010 1040

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0950	0	200	43.53	0	5.94	0.315	8.36	10.71	13.9	86.8	clear	None
0955	5	200		1	4.97	0.330		9.94	14.8	110.6	"	"
1000	10	200	43.55	2	4.88	0.334	5.91	9.91	15.0	116.5	"	"
1005	15	200		3	4.85	0.333		9.80	15.7	123.9	"	"
1010	20	200	43.55	4	4.85	0.333	3.68	9.73	16.0	126.9	"	"
1015	25	200		5	4.85	0.332		9.66	16.2	129.5	"	"
1020	30	200	43.54	6	4.85	0.332	3.17	9.59	15.4	130.7	"	"
1025	35	200	43.54	7	4.86	0.332	2.97	9.51	15.4	132.2	"	"
1030	40	200	43.53	8	4.86	0.331	2.81	9.41	15.3	132.4	"	"
1035	45	200	43.53	9	4.85	0.331	2.13	9.50	15.2	132.7	"	"

Constituents Sampled	Container	Number	Preservative
<u>VOCs</u>	<u>240 ml VOA</u>	<u>3</u>	<u>HCL</u>
<u>7,4D</u>	<u>1L Amber</u>	<u>2</u>	<u>None</u>

Notes: 118 - 43.52 = 74.48 * 0.01 = 0.75 gal = ~3L

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location:	<u>7th St</u>	Well Locked at Arrival:	<u>Yes</u>	/	<u>No</u>
Condition of Well:	<u>Good</u>	Well Locked at Departure:	<u>Yes</u>	/	<u>No</u>
Well Completion:	<u>Flush Mount</u>	Stick Up			Key Number To Well:

Groundwater Sampling Log

Project No. 30218437 Well ID HN 40s
 Project Name/Location Bethpage NY
 Measuring Pt. EV Screen 50-60 Casing 4
 Description TOC Interval (ft-bmp) 49-59 Diameter (in.) 4
 Static Water Level (ft-bmp) 43.74 Total Depth (ft-bm) 59 Water Column/ Gallons in Well 16.26'
 MP Elevation 0850-0931 Pump Intake (ft-br) Mid-Screen Purge Method: Geo Sub
 Pump On/Off 0850-0931 Volume Purged (gal) 85 Peristaltic Submersible
 Sample Time: Label HN 42s Replicate/ Code No. N/A Other
 Start 0926
 End 0931
 PID: 0.0 0926

Date 4/25/24
 Weather 50°
 Well Material X PVC SS
 Sample Method 3 WSV
 Sampled by SU

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
<u>0851</u>	<u>0</u>	<u>2500</u>	<u>43.74</u>	<u>0</u>	<u>5.59</u>	<u>0.339</u>	<u>3.38</u>	<u>9.01</u>	<u>14.6</u>	<u>125.1</u>	<u>Clear</u>	<u>None</u>
<u>I-0901</u>	<u>10</u>	<u>2500</u>	<u>43.76</u>	<u>25</u>	<u>5.42</u>	<u>0.287</u>	<u>2.11</u>	<u>9.12</u>	<u>15.5</u>	<u>128.9</u>	<u>"</u>	<u>"</u>
<u>II-0911</u>	<u>20</u>	<u>2500</u>	<u>43.78</u>	<u>50</u>	<u>5.37</u>	<u>0.272</u>	<u>2.23</u>	<u>9.33</u>	<u>15.8</u>	<u>128.1</u>	<u>"</u>	<u>"</u>
<u>III-0921</u>	<u>30</u>	<u>2500</u>	<u>43.77</u>	<u>75</u>	<u>5.35</u>	<u>0.262</u>	<u>1.67</u>	<u>9.52</u>	<u>15.9</u>	<u>121.8</u>	<u>"</u>	<u>"</u>

Constituents Sampled	Container	Number	Preservative
<u>VOCs 8260</u>	<u>VOA 40 ml</u>	<u>5</u>	<u>HCL</u>
<u>1,4 D 8270</u>	<u>1 L Amber</u>	<u>2</u>	<u>None</u>

Notes: 59.44
~~60~~ - ~~50~~ = 10 * 0.65 = 6.5 gal * 3.785 = 25L

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>7th St.</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: <u> </u>

Location ID:	HN-421	Date(s):	2024-04-25	Work Order(s):	OU2 - Q2 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:43.88 °F, rH:48%, Clouds: 40%, Wind:12.66mph N			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	100.00-110.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	45.96	Total Depth (ft-bmp):	NA	Water Column(ft):	64.04	Liters in Well:	158.25
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	09:10	Total Volume Purged (liters):	29	Sample ID:	HN-421	Sample Time:	10:20
Purge End Time:	10:19	Well Volumes Purged (total):	0.18	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q, YSI 556 MPS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:12	0	400	mL/min	46.13	14	1.405	14.1	7.82	13.76	21.8	Clear	No Odor
09:17	5	400	mL/min	46.13	14	1.336	14.1	7.67	13.97	115.1	Clear	No Odor
09:22	10	400	mL/min	46.13	14	1.299	14.1	7.56	14.09	113.4	Clear	No Odor
09:27	15	400	mL/min	46.08	14	1.25	22.9	7.2	14.56	106.7	Clear	No Odor
09:32	20	400	mL/min	46.08	14	1.226	22.9	7.2	14.26	100.9	Clear	No Odor
09:37	25	400	mL/min	46.08	14	1.181	22.9	6.99	14.25	97.1	Clear	No Odor
09:42	30	400	mL/min	46.09	14	1.095	20	7.76	14.54	94.1	Clear	No Odor
09:47	35	400	mL/min	46.09	14	1.058	20	7.75	14.37	91.9	Clear	No Odor
09:52	40	400	mL/min	46.09	14	0.999	18.3	7.68	14.34	89.2	Clear	No Odor
09:57	45	400	mL/min	46.08	14	0.913	14	7.16	14.3	87.1	Clear	No Odor
10:02	50	400	mL/min	46.08	14	0.904	12.3	7.23	14.35	86.8	Clear	No Odor
10:07	55	400	mL/min	46.08	14	0.832	12	7.41	14.7	86.9	Clear	No Odor
10:12	60	400	mL/min	46.08	14	0.829	10.8	7.45	15.02	86.3	Clear	No Odor
10:17	65	400	mL/min	46.07	14	0.808	9.48	7.46	14.93	85.1	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	HN-42S	Date(s):	2024-04-25	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLOUDS, T:46.56 °F, rH:41%, Clouds: 75%, Wind:11.5mph N			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	50.00-60.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	46.6	Total Depth (ft-bmp):	60	Water Column(ft):	13.4	Liters in Well: 33.11
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	10:42	Total Volume Purged (liters):	85	Sample ID:	HM-42S	Sample Time: 11:25
Purge End Time:	11:22	Well Volumes Purged (total):	2.57	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA
Scope of work completed?	Yes					

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:43	0	2000	mL/min	46.6	10.8	0.526	6.18	10.26	13.66	118.7	Clear	No Odor
10:56	13	2000	mL/min	46.64	4.96	0.635	2.35	8.78	15.89	189.3	Clear	No Odor
11:09	26	2000	mL/min	46.64	4.9	0.638	0.99	9.37	15.83	175.7	Clear	No Odor
11:22	39	2000	mL/min	46.65	4.91	0.64	0.51	9.14	15.89	169.4	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: good

Is Well in Good Condition? yes

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437 Well ID MW 016F Page 1 of 1
 Project Name/Location Bethpage NY Date 4/24/24
 Measuring Pt. TOC Screen Interval (ft-bmp) 48-58 Casing Diameter (in.) 4" Weather 50° Rain
 Static Water Level (ft-bmp) 38.99 Total Depth (ft-bmp) 60 Water Column/ Gallons in Well _____
 MP Elevation _____ Pump Intake (ft-br) Mid-Screen Purge Method: Geo Sub Well Material X PVC SS
 Pump On/Off 0941-1011 Volume Purged (gal) 90L Peristaltic _____ Sample Method 3WSV
 Other _____
 Sample Time: Label MW 016F Replicate/ Code No. N/A Other _____
 Start 1006 End 1011 Sampled by SU
 PID: 0.0 1006

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
<u>I - 0943</u>	<u>0</u>	<u>4200</u>	<u>38.99</u>	<u>0</u>	<u>7.35</u>	<u>0.176</u>	<u>4.36</u>	<u>10.21</u>	<u>14.4</u>	<u>73.3</u>	<u>Clear</u>	<u>None</u>
<u>II - 0949</u>	<u>6</u>	<u>4200</u>	<u>38.89</u>	<u>25</u>	<u>5.34</u>	<u>0.116</u>	<u>3.11</u>	<u>10.38</u>	<u>15.1</u>	<u>120.2</u>	<u>"</u>	<u>"</u>
<u>III - 0955</u>	<u>12</u>	<u>4200</u>	<u>38.92</u>	<u>50</u>	<u>5.17</u>	<u>0.166</u>	<u>2.37</u>	<u>10.37</u>	<u>15.1</u>	<u>131.8</u>	<u>"</u>	<u>"</u>
<u>1001</u>	<u>18</u>	<u>4200</u>	<u>38.94</u>	<u>75</u>	<u>5.16</u>	<u>0.166</u>	<u>1.88</u>	<u>10.36</u>	<u>15.1</u>	<u>134.4</u>	<u>"</u>	<u>"</u>

Constituents Sampled	Container	Number	Preservative
<u>1,4 D 8270</u>	<u>1L Amber</u>	<u>2</u>	<u>None</u>
<u>CR 100 total / Diss.</u>	<u>250 mL Plastic</u>	<u>2</u>	<u>HNO3</u>

Notes: 58-48=10' * 0.65 = 6.5 gal = 25L = 1WSV

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: Krupp lot. Well Locked at Arrival: Yes / No

Condition of Well: Good Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: _____

Groundwater Sampling Log

Page 1 of 1

Project No. 30218437 Well ID MW-026F Date 4/24/24
 Project Name/Location Bethpage Weather 50° Rain
 Measuring Pt. 49-59 Screen Interval (ft-bmp) 4 Casing Diameter (in.) 4 Well Material X PVC SS
 Description TOC Static Water Level (ft-bmp) 38.20 Total Depth (ft-bm) 60 Water Column/ Gallons in Well 21.8'
 MP Elevation Pump Intake (ft-br Mid-Screen) Purge Method Geo Sub Sample Method MP/TV
 Pump On/Off 0833 0930 Volume Purged (gal) 22L Peristaltic Submersible Other
 Sample Time: Label MW 026F Replicate/ Code No. N/A Sampled by SV
 Start 0925 End 0930
 PID: 0.0 0925

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0835	0	400	38.22	0	6.65	0.614	36.3	9.45	14.2	1135	Clear	None
0840	5	400		2	6.51	0.747		9.96	15.4	112.4	"	"
0845	10	400	38.21	4	6.52	0.742	11.6	9.95	15.6	117.8	"	"
0850	15	400		6	6.54	0.732		9.93	15.8	117.1	"	"
0855	20	400	38.23	8	6.53	0.730	8.11	9.94	15.8	116.7	"	"
0900	25	400		10	6.55	0.731		9.93	15.8	116.1	"	"
0905	30	400	38.25	12	6.56	0.727	3.41	9.93	15.7	114.5	"	"
0910	35	400	38.25	14	6.57	0.725	3.03	9.91	16.0	113.3	"	"
0915	40	400	38.26	16	6.58	0.723	2.87	9.91	16.1	114.4	"	"
0920	45	400	38.26	18	6.58	0.721	1.97	9.91	16.0	114.1	"	"

Constituents Sampled	Container	Number	Preservative
<u>1,4 D.</u>	<u>1L Amber</u>	<u>2</u>	<u>None</u>
<u>CR, CD total / Diss</u>	<u>250 mL Plastic</u>	<u>2</u>	<u>HNO3</u>

Notes: 60 - 38.26 = 21.8' * 0.006 = 0.14 gal = 0.5 L = TV

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>Gold Coast Studio lot</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: <u> </u>

Groundwater Sampling Log

Page 1 of 1

Project No. 30218437.GWMI2

Well ID MW-026F

Date 6/3/24

Project Name/Location OU2 Q2 Groundwater Sampling 2024

Weather 72°F, sunny

Measuring Pt. Screen Interval (ft-bmp) 49-59 Casing Diameter (in.) 4

Well Material x PVC SS

Static Water Level (ft-bmp) 38.19 Total Depth (ft-bmp) 59 Water Column/ Gallons in Well 20.81 / 13.5 gal

MP Elevation — Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated Geosub w/ Sample Method MP/LF
Peristaltic Redi Fil attach
Submersible
Other

Pump On/Off 0934 / 1030 Volume Purged (gal) 23

Sample Time: Label MW-026F Replicate/
Start 1025 Code No. NIA
End 1030

Sampled by AH, SH

PID: 0.2 ppm

TV

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0937	0	500	38.20	0	7.20	0.405	4.35	11.55	17.44	175.1	clear	none
0942	5	500		2.5	7.24	0.411		10.67	17.54	148.7	clear	help
0947	10	500		5.0	7.27	0.405		10.50	17.61	134.3	clear	none
0952	15	500	38.20	7.5	7.27	0.405	6.85	10.45	17.72	118.1	tl	tl
0957	20	500		10.0	7.26	0.408		10.40	17.58	103.0	"	"
1002	25	500		12.5	7.25	0.413		10.35	17.67	86.7	"	"
1007	30	500	38.18	15.0	7.24	0.416	7.18	10.37	17.56	76.1	"	"
1012	35	500		17.5	7.24	0.419		10.33	17.54	74.1	"	"
1017	40	500	38.19	20.0	7.24	0.419	4.26	10.30	17.61	74.0	"	"
1022	45	500	38.19	22.5	7.24	0.420	3.03	10.26	17.57	71.1	"	"

Constituents Sampled	Container	Number	Preservative
<u>VOCs 524.2</u>	<u>40 mL glass vial</u>	<u>3</u>	<u>HCl</u>
<u>1,4-Dioxane 522-91M</u>	<u>250 mL amber bottle</u>	<u>2</u>	<u>NaHSO4</u>
<u>Total Dissolved Cr USEPA6010</u>	<u>250 mL Plastic</u>	<u>2</u>	<u>HNO3</u>

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)

TV: $54 - 38.19 = 15.81 \text{ ft} \times .0025 = .04 \text{ gal} \times 3.785 = 0.15 \text{ L Total}$

***Confirmation sampling of Metals**

*Field Blank Required *Cone off early or day before

3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006	1/4" = .0025
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01		

Well Information

Well Location:	<u>Gold Coast Studios Parking Lot</u>	Well Locked at Arrival:	<u>(Yes)</u> / No
Condition of Well:	<u>Good</u>	Well Locked at Departure:	<u>Yes</u> / No
Well Completion:	<u>Flush Mount / Stick Up</u>	Key Number To Well:	<u>NIA</u>

Location ID:	MW3-1	Date(s):	2024-04-30	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	MIST, T:54.54 °F, rH:89%, Clouds: 100%, Wind:10.36mph E-NE			Field Technician:	Kyra Kraus	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	476.00-496.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	55.53	Total Depth (ft-bmp):	501	Water Column(ft):	445.47	Liters in Well: 1100.81
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	09:10	Total Volume Purged (liters):	95	Sample ID:	MW3-1	Sample Time: 10:00
Purge End Time:	09:55	Well Volumes Purged (total):	0.09	Replicate Type / Replicate ID:	Duplicate / REP043024KK1	Water Quality Meter/ ID: Hach 2100-Q, YSI 556 MPS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:10	0	400	mL/min	55.54	6.14	0.148	48.5	1.01	13.12	40.3	Clear	No Odor
09:15	5	400	mL/min	55.54	4.39	0.139	20.3	0.27	13.39	23	Clear	No Odor
09:20	10	400	mL/min	55.54	4.73	0.135	19.2	0.23	13.44	17.6	Clear	No Odor
09:25	15	400	mL/min	55.54	4.29	0.132	14.4	0.22	13.49	29.7	Clear	No Odor
09:30	20	400	mL/min	55.54	4.14	0.132	13.4	0.23	13.59	36.1	Clear	No Odor
09:35	25	400	mL/min	55.61	3.9	0.133	5.17	0.23	13.56	49.5	Clear	No Odor
09:40	30	400	mL/min	55.63	3.8	0.133	4.76	0.24	13.58	65.1	Clear	No Odor
09:45	35	400	mL/min	55.65	3.74	0.133	7.15	0.26	13.57	69.2	Clear	No Odor
09:50	40	400	mL/min	55.65	3.73	0.134	7.12	0.27	13.61	70.1	Clear	No Odor
09:55	45	400	mL/min	55.67	3.71	0.135	6.67	0.28	13.65	72.7	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: no

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	N-10624	Date(s):	2024-04-16	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:63.43 °F, rH:35%, Clouds: 0%, Wind:9.22mph N-NW			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	190.00-194.00	Casing Diameter (in):	2.00	Well Casing Material: Stainless Steel
Static Water Level (ft-bmp):	22.93	Total Depth (ft-bmp):	194	Water Column(ft):	171.07	Liters in Well: 105.68
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	11:49	Total Volume Purged (liters):	27.5	Sample ID:	N-10624	Sample Time: 13:20
Purge End Time:	13:29	Well Volumes Purged (total):	0.26	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI 556 MPS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:50	0	500	mL/min	30.31	8.91	0.443	198	3.24	15.38	90	Brown	No Odor
11:55	5	500	mL/min	30.4	9.59	0.467	198	0.69	15.77	-32.3	Brown	No Odor
12:00	10	500	mL/min	30.6	10.13	0.462	800	0.51	16.08	-141.7	Black	No Odor
12:05	15	400	mL/min	30.61	10	0.466	800	0.47	16.01	-186.9	Brown	No Odor
12:10	20	400	mL/min	30.52	9.97	0.448	800	0.45	16.02	-190.4	Brown	No Odor
12:15	25	400	mL/min	30.63	10.07	0.42	968	0.42	16.05	-166	Brown	No Odor
12:20	30	400	mL/min	30.74	10.21	0.349	968	0.43	16.08	-122.3	Brown	No Odor
12:25	35	400	mL/min	30.82	10.29	0.291	968	1.21	16.13	-77.9	Brown	No Odor
12:30	40	400	mL/min	31.7	10.31	0.277	670	1.92	16.11	670	Brown	No Odor
12:59	69	400	mL/min	30.79	9.44	0.403	322	0.46	15.75	-9.9	Brown	No Odor
13:04	74	400	mL/min	30.93	9.67	0.422	322	0.44	16.34	-24	Brown	No Odor
13:09	79	400	mL/min	30.91	9.83	0.34	677	1.19	16.46	-13.3	Brown	No Odor
13:14	84	400	mL/min	30.87	9.89	0.313	828	1.23	16.5	-3.9	Brown	No Odor
13:19	89	400	mL/min	39	9.91	0.298	973	1.3	16.47	0.3	Brown	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: no

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	N-10627	Date(s):	2024-04-16	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:59.14 °F, rH:44%, Clouds: 0%, Wind:10mph N-NW			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	290.00-295.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	26.59	Total Depth (ft-bmp):	295	Water Column(ft):	268.41	Liters in Well: 663.27
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	9:44	Total Volume Purged (liters):	37	Sample ID:	N-10627	Sample Time: 11:00
Purge End Time:	10:54	Well Volumes Purged (total):	0.06	Replicate Type / Replicate ID:	MS/MSD / N-10627	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:44	0	400	mL/min	26.59	10.09	0.143	15	0.98	14.77	112.3	Clear	No Odor
09:49	5	400	mL/min	26.59	10.03	0.168	15	0.43	14.89	70.3	Clear	No Odor
09:54	10	400	mL/min	28	9.99	0.173	204	0.27	14.97	497	Clear	No Odor
09:59	15	400	mL/min	28	9.89	0.173	204	0.15	15.04	47.7	Clear	No Odor
10:04	20	400	mL/min	28	8.76	0.168	204	0.39	14.98	46.3	Clear	No Odor
10:09	25	400	mL/min	28	8.73	0.167	204	0.4	14.97	46.5	Clear	No Odor
10:14	30	400	mL/min	28	8.55	0.167	97.6	0.68	14.99	48.6	Clear	No Odor
10:19	35	400	mL/min	28.02	8.54	0.167	97.6	0.7	14.96	48.5	Clear	No Odor
10:24	40	400	mL/min	28.02	8.49	0.165	97.6	0.72	15.12	48.6	Clear	No Odor
10:29	45	400	mL/min	28.02	8.5	0.165	75.6	0.74	15.23	48.8	Clear	No Odor
10:34	50	400	mL/min	28.02	8.5	0.165	75.4	0.73	14.96	49	Clear	No Odor
10:39	55	400	mL/min	28.02	8.49	0.165	77.2	0.78	15.03	49.1	Clear	No Odor
10:44	60	400	mL/min	28	8.56	0.165	84.3	0.8	14.66	52.2	Clear	No Odor
10:49	65	400	mL/min	28	8.53	0.166	85.5	0.82	14.78	54.1	Clear	No Odor
10:54	70	400	mL/min	28	8.48	0.166	82.3	0.82	15	53.3	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
VOCs (EPA 8260)	Clear Glass	3	
1,4-Dioxane (8270C)	Amber Glass	2	

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437.GWMI2

Well ID N-10631R

Date 4/16/24

Project Name/Location OU2 Q2 Groundwater Sampling 2024

Weather 54°F Clear

Measuring Pt. Description Top of Casing Screen Interval (ft-bmp) 63-67

Casing Diameter (in.) 2"

Well Material PVC SS

Static Water Level (ft-bmp) 30.06 Total Depth (ft-bmp) 67

Water Column/ Gallons in Well 30.94 ft / 4.95 gal

MP Elevation Pump Intake (ft-bmp) Midscreen

Purge Method: Non-dedicated Sample Method 3WSV

Pump On/Off 0920 | 1009 Volume Purged (gal) 20.0L

Peristaltic Submersible Other

Sample Time: Label N-10631R Replicate/ Code No. N/A
Start 0959
End 1009

Sampled by SV, KK

PID: 0.0 ppm

1 WSV
2 WSV
3 WSV

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0924	0	500	36.13	0	7.30	68.713	131	5.79	16.2	131.7	cloudy	none
0929	5	500	36.12	2.5	5.49	121.299	814	4.09	17.1	49.0	"	"
0934	10	500	36.11	5.0	5.32	119.828	600	4.48	17.2	100.2	↓	↓
0939	15	500	36.11	7.5	5.21	120.267	327	4.64	17.3	119.8	↓	↓
0944	20	500	36.11	10.0	5.18	120.686	126	4.70	17.1	129.2	↓	↓
0949	25	500	36.11	12.5	5.18	120.016	62.1	4.74	17.1	135.9	↓	↓
0954	30	500	36.11	15.0	5.19	120.002	41.0	4.75	17.2	138.9	clear	↓

Constituents Sampled	Container	Number	Preservative
VOCs 5042 <u>8260</u>	40 mL glass vial	3	HCl
1,4-Dioxane 522-SIM <u>8270 DSIM</u>	250 mL amber bottle <u>1L</u>	2	NaHCO3 <u>None</u>

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft) 3WSV
 $WSV = 67 - 63 \text{ ft} = 4 \text{ ft} \times 0.10 = 0.4 \text{ gal} \times 3.785 = 2.4 \text{ L} \times 7.3 \text{ L Total}$

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location:	<u>Median btwn Dunkin & MTA Bldg. Hicksville</u>	Well Locked at Arrival:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well:	<u>good - new</u>	Well Locked at Departure:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion:	<u>Flush Mount / Stick Up</u>	Key Number To Well:	<u>N/A</u>

Groundwater Sampling Log

Project No. 30218437 Well ID PLT1-MW04 Page 1 of 1
 Project Name/Location Bethpage NJ Date 4/23/24
 Measuring Pt. TOC Screen 41.5-56.5 Casing 2" Weather 60° Sunny
 Description TOC Interval (ft-bmp) 41.5-56.5 Diameter (in.) 2" Well Material X PVC SS
 Static Water Level (ft-bmp) 38.01 Total Depth (ft-bm) 55.65 Water Column/Gallons in Well ~18'
 MP Elevation 1047 Pump Intake (ft-br) Mid-Screen Purge Method: GeoSub Sample Method 3WSV
 Pump On/Off 38.01 1045 Volume Purged (gal) 35L Peristaltic Submersible Other
 Sample Time: Label PLT1-MW04 Replicate/Start 1115 Code No. NA Sampled by SV
 End 1120 Other kh
 PID: 0.0 1115 0900

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:44	0	0.160	38.04	0	5.48	0.876	56.1	8.66	14.2	140.3	Clear	None
10:56	7	1600	38.11	11.2	6.33	0.904	4.33	8.43	14.1	136.3	"	"
11:03	14	1600	38.14	22.4	6.41	0.908	3.73	8.22	14.2	133.6	"	"
11:08	21	1600	38.11	33.6	6.39	0.911	2.11	8.43	14.3	134.3	"	"

Constituents Sampled	Container	Number	Preservative
CR CD Total/Diss.	250 mL Plastic	2	HNO3
1,4 Dioxane	1 L Amber	2	None

Notes: $56.5 - 41.5 = 15 \cdot 0.16 = 2.4 \text{ gal} \times 3.785 = 10L$

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	3/8" = 0.006

Well Information

Well Location:	<u>Steel Eq lots</u>	Well Locked at Arrival:	<u>Yes</u> / No
Condition of Well:	<u>Good</u>	Well Locked at Departure:	<u>Yes</u> / No
Well Completion:	<u>Flush Mount</u> / Stick Up	Key Number To Well:	<u></u>

Location ID:	PLT1MW-05	Date(s):	2024-04-23	Work Order(s):	OU2 - Q2 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:49.82 °F, rH:65%, Clouds: 0%, Wind:4.61mph SE			Field Technician:	Patrick Quinlan	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	38.00-58.00	Casing Diameter (in):	2.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	36.39	Total Depth (ft-bmp):	58	Water Column(ft):	21.61	Liters in Well: 13.35
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:
Purge Start Time:	9:14	Total Volume Purged (liters):	41	Sample ID:	PLTMW-05	Sample Time: 09:40
Purge End Time:	09:39	Well Volumes Purged (total):	3.07	Replicate Type / Replicate ID:	Duplicate / REP042324PQ1	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA
Scope of work completed?	Yes					

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:15	0	1500	mL/min	36.39	6.15	1.304	80.7	9.24	15.3	29.7	Clear	No Odor
09:23	8	1500	mL/min	36.37	6.41	1.333	44.4	8.76	16.08	47.5	Clear	No Odor
09:31	16	1500	mL/min	36.4	6.38	1.315	15.8	8.64	16.27	59.4	Clear	No Odor
09:39	24	1500	mL/min	36.4	6.38	1.31	9.47	8.65	16.27	63.5	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	
Chromium (EPA 6010)	Plastic	2	

Comments: None

Well Information:

Well Labeled Properly: no

Is Well in Good Condition? fair

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437.GWMI2

Well ID PLT1MW-05

Date 6/13/24

Project Name/Location OJ2 Q2 Groundwater Sampling 2024

Weather 72°F, sunny

Measuring Pt. Screen
Description Top of Casing Interval (ft-bmp) 38-58

Casing Diameter (in.) 2

Well Material PVC SS

Static Water Level (ft-bmp) 36.87 Total Depth (ft-bmp) 58

Water Column/ Gallons in Well 21.63ft / 3.46gal

MP Elevation --- Pump Intake (ft-bmp) Midscreen
Pump On/Off 1100/1124 Volume Purged (gal) 38L

Purge Method: Non-dedicated Geosub w/ Sample Method 3 WSV
Peristaltic RediFlo attachment
Submersible
Other

Sample Time: Label PLT1MW-05 Replicate/
Start 1120 Code No. NIA
End 1124

Sampled by AMH, SA

PID: 0.0ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1100	0	200	36.94	16.0	6.74	0.952	12.6	2.45	18.69	36.0	Clear	none
1107	4	200	36.94	16.1	6.67	0.935	10.4	0.0	17.07	35.9	"	"
1110	10	200	36.94	24.2	6.66	0.932	5.21	9.91	17.08	35.3	"	"
1116	16	200	36.94	3.3	6.66	0.936	2.31	9.79	17.01	34.6	"	"

Constituents Sampled	Container	Number	Preservative
VOCs 521.2	40 mL glass vial	3	HCl
1,4-Dioxane 522 SIM	250 mL amber bottle	2	NH4OH
Total & Dissolved Cr USEPA 6010	250 mL plastic	2	HNO3

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)

WSV: 58-38 = 20 ft x .16 = 3.2 gal x 3.785 = 12.1 L x 3 = 36.3L Total

*** Confirmation sampling of Metals**

*Field Blank Required *Cone off early or day before
3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006	
Gallons/Foot	1" = 0.04	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01

Well Information

Well Location:	<u>MTA Parking Lot (Outside Optimum)</u>	Well Locked at Arrival:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well:	<u>Good</u>	Well Locked at Departure:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion:	<u>Flush Mount / Stick Up</u>	Key Number To Well:	<u>NIA</u>

Groundwater Sampling Log

Project No. 30018437 Well ID PLT1-MW-06 Page 1 of 1
 Project Name/Location Bethpage NY Date 4/23/24
 Measuring Pt. Screen Interval (ft-bmp) 47-62 Casing Diameter (in.) 2" Weather 50° Sunny
 Description TOC Well Material X PVC
 Static Water Level (ft-bmp) 39.12 Total Depth (ft-bm) 62 Water Column/ Gallons in Well 22.88 Well Material SS
 MP Elevation _____ Pump Intake (ft-br) Mid-Screen _____ Purge Method: _____ Sample Method 3 WSV
 Pump On/Off 0834 Volume Purged (gal) 35L Peristaltic Submersible GeoSub Other _____
 Sample Time: Label PLT1-MW06 Replicate/ Start 0900 Code No. N/A Other _____
 End 0910 Sampled by SV KK
 PID: 0.0 0900

I
II
III

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0835	0	1600	39.14	0	5.34	0.732	51.0	10.23	12.7	193.1	Clear	None
0842	7	1600	39.16	11.2	5.58	0.903	10.7	9.02	14.0	174.9	"	"
0849	14	1600	39.13	22.4	5.70	0.900	4.44	8.97	13.9	161.8	"	"
0856	22	1600	39.16	33.6	5.77	0.903	2.89	8.96	13.9	154.7	"	"

Constituents Sampled	Container	Number	Preservative
<u>1,4 Dioxane 8270</u>	<u>1L Amber</u>	<u>2</u>	<u>None</u>
<u>Cr / Cd total and Diss</u>	<u>250ml Plastic</u>	<u>2</u>	<u>HNO3</u>

Notes:
 $62 - 39.12 = 22.88' \cdot 0.16 = 3.7 \text{ gal} = 14 \text{ L (WSV)}$
 $62 - 47 = 15' \cdot 0.16 = 2.4 \text{ gal} = 10 \text{ L (WSV)}$

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2" = 0.16	2.5" = 0.26	3" = 0.37	3.5" = 0.50	4" = 0.65	5" = 0.81	6" = 1.47	8" = 2.06
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Well Information

Well Location: <u>MTA lot by Gate to Optimum</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: _____

Groundwater Sampling Log

Project No. 30224425.NAVI 2 Well ID BPDW 1-1 Date 9/3/24 Page 1 of 2
 Project Name/Location OU2 Q3 2024 GW sampling Weather 63°F, sunny
 Measuring Pt. Screen Interval (ft-bmp) 196-236 Casing Diameter (in.) 4 Well Material PVC SS
 Description TOC
 Static Water Level (ft-bmp) 27.23 Total Depth (ft-bmp) 241 Water Column/ Gallons in Well 213.17ft / 138.56gal
 MP Elevation — Pump Intake (ft-bn) mid screen Purge Method: Dedicated Bladder Sample Method 1 @ WSV + LF
 Pump On/Off 0858/1035 Volume Purged (gal) 108 Peristaltic Submersible Other
 Sample Time: Label BPDW 1-1 Replicate/ Code No. N/A Sampled by SH, PQ
 Start 1030 End 1035

PID: 0.0ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0900	0	900	27.29	0	4.78	0.272	0.96	2.72	14.7	205.3	clear	None
0905	5	1600		6.25	4.46	0.269		1.77	13.9	224.9	"	"
0910	10	1600		14.25	4.40	0.270		1.48	13.9	233.7	"	"
0915	15	1600	27.25	22.25	4.40	0.270	0.59	1.45	13.9	234.6	"	"
0920	20	1600		30.25	4.41	0.269		1.44	14.0	236.2	"	"
0925	25	1600		38.25	4.42	0.271		1.43	14.0	237.2	"	"
0930	30	1600	27.19	46.25	4.43	0.270	0.65	1.40	13.9	238.1	"	"
0935	35	1600		54.25	4.43	0.273		1.39	13.9	239.3	"	"
0940	40	1600		62.25	4.43	0.272		1.39	13.9	239.3	"	"
0945	45	1600	27.16	70.25	4.44	0.272	0.47	1.41	13.9	239.6	"	"
0950	50	1600		78.25	4.45	0.272		1.40	13.9	239.8	"	"
0955	55	1600		86.25	4.45	0.271		1.40	13.9	239.8	"	"
1000	60	1600	27.23	94.25	4.47	0.274	0.21	1.36	14.0	134.9	"	"
1005	65	1600		102.25	4.47	0.272		1.38	13.9	149.3	"	"
LF 1010	70	400		104.25	4.47	0.275		1.38	15.7	161.3	"	"
1015	75	400	27.15	106.25	4.47	0.275	0.39	1.35	16.7	172.6	"	"

Constituents Sampled	Container	Number	Preservative
VOC's 8200 <u>524</u>	40ml Vial	3	HCL
1,4 Dioxane 8270 DSM <u>522</u>	250 mL PE Amber	2	None <u>NaHSO4</u>

Notes:
 WSV: $236 - 196 = 40ft \times .65 = 26gal \times 3.785 = 98.41 L$
 TV: $241 - 27.23 = 213.77ft \times .006 = 1.28gal \times 3.785 = 4.85L$ **103.3 L Total**

Well Casing Volumes					
Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	3/8" = 0.006
					1/2" = 0.01

Well Information	
Well Location: <u>20 Bruce Ln.</u>	Well Locked at Arrival: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well: <u>Good</u>	Well Locked at Departure: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion: <u>Push Mount</u> / <u>Stick Up</u>	Key Number To Well: <u>N/A</u>

Groundwater Sampling Log

Project No. _____ Well ID BPOW 1-1 Date 9/3/24

Project Name/Location _____ Weather _____

Measuring Pt. _____ Screen _____ Casing _____ Well Material PVC
 Description TOC Interval (ft-bmp) _____ Diameter (in.) _____ SS

Static Water _____ Water Column _____
 Level (ft-bmp) _____ Total Depth (ft-bmp) _____ Gallons in Well _____

MP Elevation _____ Pump Intake (ft-bn) _____ Purge Method: _____ Sample Method _____
 Pump On/Off _____ Volume Purged (gal) _____ Peristaltic _____
 Other _____ Submersible _____

Sample Time: Label BPOW 1-1 Replicate/ _____
 Start 1030 Code No. N/A
 End 1035 Sampled by _____

SEE PAGE # 1 FOR INFO

PID: _____

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1020	80	400	27.15	108.25	4.49	0.276	0.28	1.34	16.7	181.2	clear	None
1025	85	400	27.15	110.25	4.50	0.276	0.28	1.34	16.6	182.1		

Constituents Sampled	Container	Number	Preservative
VOC's 8260 C	40ml Vial	3	HCL
1,4 Dioxane 8270 DSIM	1 L Amber	2	None

Notes: SEE PAGE #1 FOR INFO

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: _____	Well Locked at Arrival: Yes / No
Condition of Well: _____	Well Locked at Departure: Yes / No
Well Completion: Flush Mount / Stick Up	Key Number To Well: _____

Groundwater Sampling Form



Location ID:	BPOW 1-2	Date(s):	2024-08-05	Work Order(s):	OU2 - Q3 2024 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:85.35 °F, rH:59%, Clouds: 0%, Wind:1.99mph S-SE			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	274.00-314.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	29.24	Total Depth (ft-bmp):	NA	Water Column(ft):	305.76	Liters in Well: 755.57
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Volumetric	Purging Equipment: Dedicated Bladder
Purge Start Time:	10:53	Total Volume Purged (liters):	116	Sample ID:	BPOW 1-2	Sample Time: 12:35
Purge End Time:	12:34	Well Volumes Purged (total):	0.15	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:55	0	900	mL/min	29.51	4.75	0.232	1.48	9.26	17.17	123.7	Clear	No Odor
11:00	5	1300	mL/min	29.51	3.16	0.219	1.48	3.8	15.69	117.9	Clear	No Odor
11:05	10	1300	mL/min	29.51	3.16	0.217	1.48	3.75	15.59	120	Clear	No Odor
11:10	15	1300	mL/min	29.53	3.18	0.217	1.23	3.59	15.62	113.4	Clear	No Odor
11:15	20	1300	mL/min	29.53	3.2	0.217	1.23	3.54	15.96	109.3	Clear	No Odor
11:20	25	1300	mL/min	29.53	3.32	0.217	1.23	3.53	15.67	107	Clear	No Odor
11:25	30	1300	mL/min	29.51	3.2	0.216	0.72	3.48	15.54	109.1	Clear	No Odor
11:30	35	1300	mL/min	29.51	3.27	0.216	0.72	3.41	15.6	104.8	Clear	No Odor
11:35	40	1300	mL/min	29.51	3.27	0.216	0.72	3.35	15.61	105.7	Clear	No Odor
11:40	45	1300	mL/min	29.48	3.26	0.216	0.77	3.27	15.58	101.2	Clear	No Odor
11:45	50	1300	mL/min	29.48	3.24	0.215	0.77	3.17	15.58	108.1	Clear	No Odor
11:50	55	1300	mL/min	29.48	3.23	0.212	0.77	2.86	15.6	127.7	Clear	No Odor
11:55	60	1300	mL/min	29.53	3.25	0.21	0.73	2.66	15.49	115.9	Clear	No Odor
12:00	65	1300	mL/min	29.53	3.25	0.207	0.73	2.38	15.41	107.7	Clear	No Odor
12:05	70	1300	mL/min	29.53	3.2	0.207	0.73	2.25	15.71	106.6	Clear	No Odor
12:10	75	1300	mL/min	29.52	3.2	0.205	0.68	2.07	15.72	106.6	Clear	No Odor
12:15	80	1300	mL/min	29.52	3.17	0.203	0.68	1.96	15.79	102.1	Clear	No Odor
12:18	83	500	mL/min	29.52	3.17	0.203	1.38	1.81	17.51	97.2	Clear	No Odor
12:23	88	500	mL/min	29.36	3.22	0.204	0.48	1.79	18.13	93.9	Clear	No Odor
12:28	93	500	mL/min	29.36	3.17	0.203	0.54	1.63	18.07	90.9	Clear	No Odor
12:33	98	500	mL/min	29.36	3.16	0.202	0.38	1.69	18.08	95.8	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Groundwater Sampling Log

Project No. 30220425, NAv12 Well ID BFlow 1-3 Date 9-3-24 Page 1 of 1

Project Name/Location 0v2 G3 2024 Additional Weather 70°F

Measuring Pt. Description TOC Screen Interval (ft-bmp) 369-409 Casing Diameter (in.) 2 Well Material PVC SS

Static Water Level (ft-bmp) 30.08 Total Depth (ft-bmp) 419 Water Column/ Gallons in Well 378.9 / 60 gal

MP Elevation _____ Pump Intake (ft-bn) mid/2024 Purge Method: Dedicated Sample Method 1WSV + TV + LF

Pump On/Off 09:00 / 09:55 Volume Purged (gal) _____ Peristaltic _____ Submersible Member Other _____

Sample Time: Label BFlow 1-3 Replicate/ Code No. nlc Start 09:50 End 09:55 Sampled by PG

PID: 0v0

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:02	0	1500	30.08	0	3.63	0.305	2.71	8.00	15.8	227.3	Clear	none
09:07	5	1500		7.5	3.45	0.291		1.27	15.2	166.8		
09:12	10			15	3.44	0.288		1.37	15.1	165.1		
09:17	15		30.01	22.5	3.39	0.257	1.08	0.80	15.0	184.3		
09:22	20			30	3.39	0.257		0.78	15.0	184.5		
09:27	25	450		38.25	3.41	0.253		0.83	16.2	189.4		
09:32	30	450	30.12	34.5	3.42	0.252	3.06	0.75	17.0	19.08		
09:37	35		30.12	36.75	3.42	0.250	2.98	0.74	17.0	192.2		
09:42	40			39	3.43	0.250	3.01	0.74	17.0	192.8		
09:47	45		30.10	41.25	3.43	0.250	2.75	0.73	16.9	193.5		

Constituents Sampled	Container	Number	Preservative
VOC's 8260 C	40ml Vial	3	HCL
1,4 Dioxane 8270 DSIM	1 L Amber	2	None

Notes:

$409 - 369 = 40 \times 0.16 = 6.4 + 2.785 = 29.21$ WSV

$409 - 30.08 = 378.9 \times 0.006 = 2.27 + 3.785 = 8.66$ TV

32.82 Total

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: _____ Well Locked at Arrival: Yes / No

Condition of Well: _____ Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: _____

Groundwater Sampling Log

Project No. 3022425, NANA Well ID BFlow 1-4 Date 8-6-24

Project Name/Location 02 Q3 Gw Sampling Weather 80°F

Measuring Pt. Description TOC Screen Interval (ft-bmp) 340-400 Casing Diameter (in.) 4 Well Material PVC SS

Static Water Level (ft-bmp) 11.55 Total Depth (ft-bmp) 405 Water Column/ Gallons in Well 388ft / 252gal

MP Elevation --- Pump Intake (ft-bmp) mid screen Purge Method: Dedicated Sample Method LWS + LF
 Pump On/Off 8:55 / 11:08 Volume Purged (gal) 172 Peristaltic --- Submersible Bladder Other ---

Sample Time: Label BFlow 1-4 Replicate/ Code No. nly Sampled by CT
 Start 11:03 End 11:08

PID: 0-0

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:57	0	1500	11.55	0	4.25	0.186	2.47	8.08	19.43	216.3	clear	none
09:02	5	1700		7.5	3.55	0.150		14.91	15.3	164.5	"	"
09:07	10	1700		16.0	3.78	0.151	0.75	9.49	14.35	159.2	"	"
09:12	15	1700	13.43	24.5	3.77	0.150		3.05	14.32	153.6	"	"
09:17	20	1700		33.0	3.82	0.150		2.95	14.06	146.5	"	"
09:22	25	1700		41.5	3.87	0.149	1.70	2.95	14.15	138.5	"	"
09:27	30	1700		50.0	3.93	0.150		2.90	14.00	132.8	"	"
09:32	35	1700	12.34	58.5	3.93	0.150		2.84	14.00	132.1	"	"
09:37	40	1700	12.34	67.0	3.96	0.149	4.02	2.73	14.11	128.6	"	"
09:42	45	1700		75.5	3.96	0.150		2.77	14.04	127.1	"	"
09:47	50	1700		84	3.96	0.149		2.72	14.14	120.9	"	"
09:52	55	1700		92.5	3.96	0.148		2.68	14.17	120.9	"	"
09:57	60	1700	12.38	100.5	4.03	0.148	5.69	2.70	14.10	120.8	"	"
10:02	65	1700		109	4.04	0.150		2.66	14.16	118.9	"	"
10:07	70	1700		117.5	4.02	0.144		2.69	15.81	119.8	"	"
10:12	75	1700		126	4.02	0.148		2.60	14.11	119.6	"	"

Constituents Sampled	Container	Number	Preservative
VOC's 8260 C	40ml Vial	3	HCL
1,4 Dioxane 8270 DSIM	1 L Amber	2	None

Notes:
 $400 - 340 = 60 \times 0.65 = 39 + 3.785 = 147.6 \text{ LWS}$
 $400 - 11.55 = 388.4 + 0.006 = 2.3 + 3.785 = 8.8 \text{ LTV}$
155.6 Total

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: _____	Well Locked at Arrival: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well: _____	Well Locked at Departure: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion: <u>Flush Mgmt</u> / Stick Up	Key Number To Well: _____

Groundwater Sampling Log

Project No. 30224425.NA-19 Well ID B POW 1-4 Date _____

Project Name/Location UW 03 Gw Sampling Weather _____

Measuring Pt. Description TOC Screen Interval (ft-bmp) _____ Casing Diameter (in.) _____ Well Material PVC SS

Static Water Level (ft-bmp) _____ Total Depth (ft-bmp) _____ Water Column/ Gallons in Well _____

MP Elevation _____ Pump Intake (ft-bn) _____ Purge Method: Peristaltic Submersible Other _____ Sample Method _____

Pump On/Off _____ Volume Purged (gal) _____

Sample Time: Label _____ Replicate/ Code No. _____ Sampled by _____

Start _____ End _____

PID: _____

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1017	80	1700	11.25	1345	4.06	0.148	1.87	2.01	14.13	116.7	Clear	None
1022	85	1700		143	4.06	0.148		2.61	14.18	115.9		
1027	90	1700		1515	4.07	0.148		2.58	14.12	115.8		
1032	95	300		159	4.06	0.149		2.60	14.6	118.9		
1037	100	300	11.15	160.5	4.06	0.148	0.77	2.28	16.34	121.4		
1042	105	300		168	4.08	0.148	0.93	2.17	16.53	119.6		
1047	110	300	11.19	164.5	4.06	0.149	0.39	1.39	16.81	116.3		
1052	115	300		166	4.06	0.149	0.74	1.12	16.75	115.1		
1057	120	300		167.5	4.06	0.148	0.87	1.04	16.34	113.3		

LF
LF

Constituents Sampled	Container	Number	Preservative
VOC's 8260 C	40ml Vial	3	HCL
1,4 Dioxane 8270 DSIM	1 L Amber	2	None

Notes: SEE PAGE 1

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: _____ Well Locked at Arrival: Yes / No

Condition of Well: _____ Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: _____

Location ID:	BPOW 1-5	Date(s):	2024-08-06	Work Order(s):	OU2 - Q3 2024 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLOUDS, T:85.01 °F, rH:76%, Clouds: 100%, Wind:5.75mph S-SW			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	600.00-650.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	12.95	Total Depth (ft-bmp):	NA	Water Column(ft):	642.05	Liters in Well: 1586.58
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Volumetric	Purging Equipment: Dedicated Bladder
Purge Start Time:	08:57	Total Volume Purged (liters):	149	Sample ID:	BPOW 1-5	Sample Time: 10:55
Purge End Time:	10:54	Well Volumes Purged (total):	0.09	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^e)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:58	0	1000	mL/min	12.93	6.73	0.058	13.8	7.01	16.58	317.8	Clear	No Odor
09:03	5	1400	mL/min	12.93	6.88	0.025	13.8	1.12	14.06	278.5	Clear	No Odor
09:08	10	1400	mL/min	12.93	6.55	0.025	13.8	0.43	14.18	225.6	Clear	No Odor
09:13	15	1500	mL/min	12.91	6.79	0.025	21.4	0.37	13.93	218.8	Clear	No Odor
09:18	20	1500	mL/min	12.91	6.53	0.024	21.4	0.32	13.86	210.5	Clear	No Odor
09:23	25	1500	mL/min	12.91	6.41	0.025	21.4	0.29	13.98	206.5	Clear	No Odor
09:28	30	1500	mL/min	12.91	6.24	0.026	21.4	0.26	13.88	209.6	Clear	No Odor
09:33	35	1500	mL/min	12.92	6.14	0.024	9.42	0.25	13.71	212.2	Clear	No Odor
09:38	40	1500	mL/min	12.92	6.11	0.024	9.42	0.23	13.58	211.7	Clear	No Odor
09:43	45	1500	mL/min	12.92	6.08	0.024	9.42	0.22	13.71	211.9	Clear	No Odor
09:48	50	1500	mL/min	12.92	6.1	0.024	18.3	0.21	13.64	210.1	Clear	No Odor
09:53	55	1500	mL/min	12.93	6.08	0.024	18.3	0.2	13.68	208.1	Clear	No Odor
09:58	60	1500	mL/min	12.93	6.05	0.024	18.3	0.19	13.64	203.1	Clear	No Odor
10:03	65	1500	mL/min	12.79	6.11	0.024	6.03	0.19	13.67	201.7	Clear	No Odor
10:08	70	1500	mL/min	12.79	6.02	0.024	6.03	0.18	13.66	203.7	Clear	No Odor
10:13	75	1500	mL/min	12.79	6.03	0.024	6.03	0.18	13.77	203	Clear	No Odor
10:18	80	1500	mL/min	12.77	6.06	0.024	5.27	0.17	13.59	201.9	Clear	No Odor
10:23	85	1500	mL/min	12.77	5.99	0.024	5.27	0.17	13.73	202.1	Clear	No Odor
10:28	90	1500	mL/min	12.78	5.95	0.024	5.27	0.16	13.64	203	Clear	No Odor
10:33	95	1500	mL/min	12.78	5.96	0.024	5.27	0.16	13.58	202.9	Clear	No Odor
10:36	98	300	mL/min	12.73	5.74	0.026	4.76	0.15	16.09	202.2	Clear	No Odor
10:41	103	300	mL/min	12.73	5.07	0.027	3.92	0.17	17.79	201.6	Clear	No Odor
10:46	108	300	mL/min	12.71	5.13	0.027	3.94	0.18	17.67	203.2	Clear	No Odor
10:51	113	300	mL/min	12.71	5.14	0.027	3.8	0.17	17.51	203.9	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Groundwater Sampling Form



Location ID:	BPOW 1-6	Date(s):	2024-08-06	Work Order(s):	OU2 - Q3 2024 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:84.83 °F, rH:77%, Clouds: 100%, Wind:7mph S-SE			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	700.00-750.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	13.23	Total Depth (ft-bmp):	755	Water Column(ft):	741.77	Liters in Well:	1833
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	NA	Total Volume Purged (liters):	145	Sample ID:	BPOW 1-6	Sample Time:	12:40
Purge End Time:	12:38	Well Volumes Purged (total):	0.08	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^o)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:12	0	1500	mL/min	13.23	7.77	0.02	1.96	3.42	16.33	106.7	Clear	No Odor
11:17	5	2000	mL/min	13.23	7.01	0.023	1.96	0.51	16.38	130.9	Clear	No Odor
11:22	10	2000	mL/min	13.23	6.87	0.022	1.96	0.41	16.05	180.9	Clear	No Odor
11:27	15	2000	mL/min	13.27	6.83	0.021	0.18	0.88	15.94	200.7	Clear	No Odor
11:32	20	2000	mL/min	13.27	6.84	0.021	0.18	0.75	15.73	203.7	Clear	No Odor
11:37	25	2000	mL/min	13.27	6.88	0.021	0.18	0.77	15.8	204.6	Clear	No Odor
11:42	30	2000	mL/min	13.27	6.94	0.021	0.24	0.75	15.58	206.7	Clear	No Odor
11:47	35	2000	mL/min	13.27	7.01	0.02	0.24	0.76	15.64	203.1	Clear	No Odor
11:52	40	2000	mL/min	13.27	6.97	0.025	0.24	0.76	15.67	208.3	Clear	No Odor
11:57	45	2000	mL/min	13.27	7.03	0.02	0.24	0.77	15.37	208.5	Clear	No Odor
12:02	50	2000	mL/min	13.26	7.08	0.025	0.22	0.76	15.28	208.6	Clear	No Odor
12:07	55	2000	mL/min	13.26	7	0.02	0.22	0.78	15.07	208.6	Clear	No Odor
12:12	60	2000	mL/min	13.26	7.03	0.02	0.22	0.75	15.08	208.5	Clear	No Odor
12:17	65	2000	mL/min	13.26	7.05	0.02	0.22	0.73	15.27	207.9	Clear	No Odor
12:22	70	500	mL/min	13.24	7.01	0.021	0.18	0.65	16.6	207.8	Clear	No Odor
12:27	75	500	mL/min	13.24	7.04	0.021	0.2	0.69	19.03	209.8	Clear	No Odor
12:32	80	500	mL/min	13.24	7.07	0.021	0.23	0.67	19.02	209.9	Clear	No Odor
12:37	85	500	mL/min	13.24	7.06	0.021	0.19	0.69	19.25	211.9	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	BPOW 2-1	Date(s):	2024-08-05	Work Order(s):	OU2 - Q3 2024 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:78.75 °F, rH:81%, Clouds: 0%, Wind:3.44mph W-NW			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	360.00-400.00	Casing Diameter (in):	2.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	19.2	Total Depth (ft-bmp):	400	Water Column(ft):	380.8	Liters in Well:	235.25
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	NA	Total Volume Purged (liters):	50	Sample ID:	BPOW 2-1	Sample Time:	09:55
Purge End Time:	09:53	Well Volumes Purged (total):	0.21	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^e)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:06	0	1500	mL/min	19.2	3	0.176	1.27	7.4	19.12	74.8	Clear	No Odor
09:11	5	1500	mL/min	19.2	5.56	0.145	1.27	0.96	16.53	10.2	Clear	No Odor
09:16	10	1500	mL/min	19.2	4.76	0.148	1.27	0.58	16.32	26.3	Clear	No Odor
09:21	15	1500	mL/min	19.41	4.44	0.148	1.38	0.51	16.2	14.2	Clear	No Odor
09:26	20	1500	mL/min	19.41	4.26	0.146	1.38	0.45	16.18	15.8	Clear	No Odor
09:31	25	450	mL/min	19.41	4.72	0.152	0.9	0.42	19.05	42.7	Clear	No Odor
09:36	30	450	mL/min	19.34	4.9	0.151	0.9	0.41	19.08	33.2	Clear	No Odor
09:41	35	450	mL/min	19.33	4.49	0.149	0.87	0.35	19.06	33.4	Clear	No Odor
09:46	40	450	mL/min	19.33	4.45	0.148	0.94	0.34	19.12	33.8	Clear	No Odor
09:51	45	450	mL/min	19.33	4.44	0.148	0.91	0.32	19.17	37.5	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	BPOW 2-2	Date(s):	2024-08-07	Work Order(s):	OU2 - Q3 2024 Groundwater Sampling
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States
Weather(°F):	CLOUDS, T:65.39 °F, rH:94%, Clouds: 100%, Wind:8.05mph NE			Field Technician:	Patrick Quinlan
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	455.00-495.00	Casing Diameter (in):	2.00
Static Water Level (ft-bmp):	18	Total Depth (ft-bmp):	495	Water Column(ft):	477
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow
Purge Start Time:	NA	Total Volume Purged (liters):	45	Sample ID:	BPOW 2-2
Purge End Time:	12:43	Well Volumes Purged (total):	0.15	Replicate Type / Replicate ID:	NA / NA
Scope of work completed?	Yes				
Area:	Default Site				
Well Casing Material:	PVC				
Liters in Well:	294.68				
Purging Equipment:	Dedicated Bladder				
Sample Time:	12:45				
Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA				

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^e)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:58	0	1500	mL/min	18	4.28	0.081	4.07	1.44	15.7	292.3	Clear	No Odor
12:03	5	1500	mL/min	18	4.3	0.08	4.07	0.87	15.5	269	Clear	No Odor
12:08	10	1500	mL/min	18	4.29	0.082	4.07	1.43	15.3	180	Clear	No Odor
12:13	15	1500	mL/min	18.03	4.26	0.083	0.9	1.2	15.3	109.8	Clear	No Odor
12:18	20	1500	mL/min	18.03	4.26	0.083	0.9	1.15	15.2	108.4	Clear	No Odor
12:23	25	450	mL/min	18.03	4.28	0.083	0.98	0.79	16.4	100.6	Clear	No Odor
12:28	30	450	mL/min	18.01	4.27	0.083	0.86	0.33	16.3	94.4	Clear	No Odor
12:33	35	450	mL/min	18.01	4.27	0.083	0.8	0.29	16.3	86.5	Clear	No Odor
12:38	40	450	mL/min	18.01	4.27	0.083	0.5	0.29	16.3	81.2	Clear	No Odor
12:43	45	450	mL/min	18.01	4.27	0.083	0.49	0.28	16.3	79.9	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	BPOW 2-3	Date(s):	2024-08-05	Work Order(s):	OU2 - Q3 2024 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:78.69 °F, rH:81%, Clouds: 0%, Wind:3.44mph W-NW			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	564.00-594.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	21.62	Total Depth (ft-bmp):	NA	Water Column(ft):	577.38	Liters in Well:	1426.78
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Volumetric	Purging Equipment:	Dedicated Bladder
Purge Start Time:	08:58	Total Volume Purged (liters):	97	Sample ID:	BPOW 2-3	Sample Time:	10:20
Purge End Time:	10:20	Well Volumes Purged (total):	0.07	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:59	0	1350	mL/min	19.64	2.14	0.07	1.37	1.68	16.6	185.6	Clear	Strong
09:04	5	1400	mL/min	19.64	2.05	0.07	1.37	0.63	15.78	-21	Clear	Strong
09:09	10	1400	mL/min	19.64	1.63	0.072	1.37	0.39	15.71	4.4	Clear	Strong
09:14	15	1410	mL/min	18.84	1.56	0.07	2.06	0.33	15.64	28.6	Clear	Strong
09:19	20	1400	mL/min	18.84	1.63	0.073	2.06	0.23	15.5	47.3	Clear	Strong
09:24	25	1400	mL/min	18.64	1.68	0.072	2.06	0.22	15.44	50.7	Clear	Strong
09:29	30	1400	mL/min	18.44	1.88	0.073	0.44	0.19	15.53	12.7	Clear	Strong
09:34	35	1400	mL/min	18.44	1.94	0.073	0.44	0.18	15.39	-30.9	Clear	Strong
09:39	40	1400	mL/min	18.44	2.05	0.073	0.44	0.17	15.36	-37.4	Clear	Strong
09:44	45	1400	mL/min	18.21	1.95	0.072	0.39	0.16	15.38	33.7	Clear	Strong
09:49	50	1400	mL/min	18.21	2.05	0.073	0.39	0.13	15.31	44.1	Clear	Strong
09:54	55	1400	mL/min	18.21	2.05	0.073	0.39	0.13	15.28	44.4	Clear	Strong
09:59	60	1400	mL/min	18.15	2.09	0.072	0.36	0.12	15.26	41.7	Clear	Strong
10:04	65	500	mL/min	18.03	2.34	0.073	0.73	0.13	16.66	37.4	Clear	Strong
10:09	70	500	mL/min	18.01	2.33	0.073	0.43	0.08	17.09	38.1	Clear	Strong
10:14	75	500	mL/min	18.01	2.38	0.073	0.26	0.09	17.06	36	Clear	Strong
10:19	80	500	mL/min	18.01	2.31	0.073	0.25	0.1	17.07	41.8	Clear	Strong

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Groundwater Sampling Log

Project No. 30224425.NAVI2 Well ID BPOW 3-2 Date 8/30/24 Page 1 of 1
 Project Name/Location OU2 Q3 2024 Groundwater Sampling Weather 69°F, mostly sunny
 Measuring Pt. Screen Casing
 Description TOC Interval (ft-bmp) 604.5-644.5 Diameter (in.) 4 Well Material X PVC SS
 Static Water Level (ft-bmp) 26.84 Total Depth (ft-bmp) 647 Water Column/ Gallons in Well 620.16ft / 403 gal
 MP Elevation --- Pump Intake (ft-bn) midscreen Purge Method: GeoSub Sample Method IWSV + LF
 Pump On/Off 1050 / 1210 Volume Purged (gal) 120 Peristaltic Submersible --- Other ---
 Sample Time: Label BPOW 3-2 Replicate/ Code No. N/A Sampled by SH PQ
 Start 1205 End 1210

PID: 0.0ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1050	0	2000	26.84	0	4.55	0.176	3.14	0.68	15.5	118.0	clear	None
1055	5	2000		10	4.40	0.240		0.38	15.3	130.0	"	"
1100	10	2000		20	4.13	0.318		0.25	15.3	163.3	"	"
1105	15	2000	26.83	30	4.13	0.318	17.4	0.22	15.2	173.3	"	"
1110	20	2000		40	4.14	0.318		0.19	15.2	187.3	"	"
1115	25	2000		50	4.15	0.316		0.16	15.2	197.7	"	"
1120	30	2000	26.78	60	4.15	0.315	20.0	0.15	15.1	203.7	"	"
1125	35	2000		70	4.16	0.312		0.14	15.1	221.7	"	"
1130	40	2000		80	4.16	0.309		0.14	15.1	230.9	"	"
1135	45	2000	26.71	90	4.16	0.304	14.9	0.13	15.2	240.0	"	"
1140	50	2000		100	4.17	0.289		0.12	15.1	248.2	"	"
1145	55	2000		110	4.18	0.269		0.12	15.1	251.8	"	"
LF 1147	50	500	26.65	111	4.19	0.262	11.1	0.13	15.9	251.3	"	"
1152	62	500	26.65	113.5	4.19	0.253	8.12	0.14	16.4	254.0	"	"
1157	67	500	26.61	116	4.20	0.246	7.50	0.14	16.4	251.0	"	"
1202	72	500	26.61	118.5	4.21	0.247	6.73	0.13	16.2	251.2	"	"

Constituents Sampled	Container	Number	Preservative
VOC's 82006 524	40ml Vial	3	HCL
1,4 Dioxane 8220 DSM 522 SIM	11 Amber 522 250 ML Amber	2	None NaHSO4

Notes:
 WSV: $644.5 - 604.5 = 40ft \times .65 = 26gal \times 3.785 = 98.41 L$
 TV: $647 - 26.84 = 620.16ft \times .006 = 3.72 gal \times 3.785 = 14.08 L$ 112.5L Total

Well Casing Volumes	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
Gallons/Foot	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information	Well Location:	Well Locked at Arrival:
Well Location:	<u>Red Maple Dr. E and Rib Ln.</u>	<u>Yes</u> / No
Condition of Well:	<u>GOOD</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion:	<u>Flush Mount</u> / Stick Up	Key Number To Well: <u>N/A</u>

Groundwater Sampling Form



Location ID:	BPOW 3-3	Date(s):	2024-08-08	Work Order(s):	OU2 - Q3 2024 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:65.64 °F, rH:94%, Clouds: 100%, Wind:6.91mph E-NE			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	580.00-620.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	19.89	Total Depth (ft-bmp):	NA	Water Column(ft):	605.11	Liters in Well:	1495.3
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	09:12	Total Volume Purged (liters):	120	Sample ID:	BPOW 3-3	Sample Time:	10:50
Purge End Time:	10:49	Well Volumes Purged (total):	0.08	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:13	0	1100	mL/min	19.91	4.6	0.096	1.5	6.13	15.9	20.3	Clear	No Odor
09:23	10	1300	mL/min	19.91	4.69	0.097	1.5	5.17	17	-19.7	Clear	No Odor
09:28	15	1600	mL/min	19.91	4.89	0.094	1.5	13.59	15.3	41.4	Clear	No Odor
09:33	20	1600	mL/min	19.95	4.66	0.095	0.69	8.61	15.6	74.2	Clear	No Odor
09:38	25	1500	mL/min	19.95	4.61	0.095	0.69	1.83	15.4	64.8	Clear	No Odor
09:43	30	1500	mL/min	19.95	4.61	0.095	0.69	2.16	15.5	56.5	Clear	No Odor
09:48	35	1500	mL/min	19.95	4.62	0.094	0.91	2.11	15.5	57.4	Clear	Strong
09:53	40	1500	mL/min	19.95	4.63	0.094	0.91	2.03	15.5	56.7	Clear	No Odor
09:58	45	1500	mL/min	19.95	4.62	0.095	0.91	1.91	15.5	57.7	Clear	No Odor
10:03	50	1500	mL/min	20.14	4.62	0.095	1.26	1.92	15.5	57.2	Clear	No Odor
10:08	55	1500	mL/min	20.14	4.63	0.095	1.26	1.81	15.5	53.9	Clear	Strong
10:13	60	1500	mL/min	20.14	4.63	0.096	1.26	1.87	15.5	51.1	Clear	No Odor
10:18	65	1500	mL/min	20.25	4.62	0.096	0.55	1.86	15.5	57.6	Clear	No Odor
10:23	70	1500	mL/min	20.25	4.63	0.096	0.55	1.95	15.4	58.2	Clear	Strong
10:28	75	1500	mL/min	20.25	4.64	0.096	0.55	1.92	15.4	58.3	Clear	Strong
10:33	80	300	mL/min	20.29	4.66	0.096	0.81	1.64	16.5	56.8	Clear	Strong
10:38	85	300	mL/min	20.33	4.66	0.096	0.68	1	17.6	56.3	Clear	Strong
10:43	90	300	mL/min	20.33	4.66	0.096	0.4	0.99	17.7	53.9	Clear	Strong
10:48	95	300	mL/min	20.33	4.66	0.096	0.65	0.96	17.8	48.2	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Groundwater Sampling Form



Location ID:	BPOW 3-4	Date(s):	2024-08-08	Work Order(s):	OU2 - Q3 2024 Groundwater Sampling			
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site	
Weather(°F):	CLOUDS, T:65.64 °F, rH:94%, Clouds: 100%, Wind:6.91mph E-NE			Field Technician:	Patrick Quinlan			
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	640.00-690.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC	
Static Water Level (ft-bmp):	21.7	Total Depth (ft-bmp):	695	Water Column(ft):	673.3	Liters in Well:	1663.81	
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow		Purging Equipment:	Dedicated Bladder
Purge Start Time:	NA	Total Volume Purged (liters):	148	Sample ID:	BPOW 3-4		Sample Time:	10:40
Purge End Time:	10:39	Well Volumes Purged (total):	0.09	Replicate Type / Replicate ID:	NA / NA		Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA
Scope of work completed?	Yes							

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^o)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:14	0	1600	mL/min	21.7	4.08	0.074	0.66	12.2	15.6	220.5	Clear	No Odor
09:19	5	2000	mL/min	21.7	4.06	0.074	0.66	8.47	15.5	220.1	Clear	No Odor
09:24	10	2000	mL/min	21.7	4.05	0.075	0.66	4.44	15.4	228	Clear	No Odor
09:29	15	2000	mL/min	21.8	4.06	0.075	3.56	2.3	15.4	134.6	Clear	No Odor
09:34	20	2000	mL/min	21.8	4.05	0.075	3.56	1.12	15.4	158.2	Clear	No Odor
09:39	25	2000	mL/min	21.8	4.05	0.075	3.56	0.89	15.5	175.5	Clear	No Odor
09:44	30	2000	mL/min	21.8	4.04	0.076	3.56	0.88	15.4	193.4	Clear	No Odor
09:49	35	2000	mL/min	21.83	4.05	0.076	3.47	0.88	15.4	194.1	Clear	No Odor
09:54	40	2000	mL/min	21.83	4.04	0.076	3.47	0.86	15.4	203.7	Clear	No Odor
09:59	45	2000	mL/min	21.83	4.04	0.076	3.47	0.89	15.4	204	Clear	No Odor
10:04	50	2000	mL/min	21.83	4.04	0.077	2.24	0.87	15.4	212.7	Clear	No Odor
10:09	55	2000	mL/min	21.83	4.04	0.077	2.24	0.88	15.3	214.4	Clear	No Odor
10:14	60	2000	mL/min	21.83	4.06	0.076	2.24	0.85	15.4	214	Clear	No Odor
10:19	65	2000	mL/min	21.85	4.05	0.077	2.65	0.84	15.4	171.4	Clear	No Odor
10:24	70	500	mL/min	21.83	4.06	0.077	2.55	0.83	16.8	178.9	Clear	No Odor
10:29	75	500	mL/min	21.83	4.06	0.077	1.37	0.82	17.1	179.9	Clear	No Odor
10:34	80	500	mL/min	21.79	4.06	0.077	1.46	0.88	16.6	180.2	Clear	No Odor
10:39	85	500	mL/min	21.79	4.06	0.077	1.55	0.88	16.7	184.3	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	BPOW 4-1R	Date(s):	2024-09-03	Work Order(s):	OU2 - Q3 2024 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather (°F):	CLEAR, T:69.35 °F, rH:41%, Clouds: 0%, Wind:13.8mph NE			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	652.00-692.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	25.53	Total Depth (ft-bmp):	NA	Water Column(ft):	671.47	Liters in Well: 1659.28
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Dedicated Bladder
Purge Start Time:	11:08	Total Volume Purged (liters):	121	Sample ID:	BPOW 4-1R	Sample Time: 12:45
Purge End Time:	12:43	Well Volumes Purged (total):	0.07	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^o)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:10	0	1350	mL/min	25.51	5.37	0.024	2.79	11.25	15.1	232.2	Clear	No Odor
11:15	5	1600	mL/min	25.51	5.29	0.02	2.79	9.51	15.1	276.7	Clear	No Odor
11:20	10	1600	mL/min	25.51	5.15	0.052	2.79	13.14	15.1	242.2	Clear	No Odor
11:25	15	1600	mL/min	25.72	5.14	0.051	8.55	13.16	15.1	240.1	Clear	No Odor
11:30	20	1600	mL/min	25.72	5.11	0.042	8.55	9.91	15	241.9	Clear	No Odor
11:35	25	1600	mL/min	25.72	5.17	0.033	8.55	9.68	15	244.4	Clear	No Odor
11:40	30	1600	mL/min	25.44	5.06	0.035	5.59	9.75	15	242.6	Clear	No Odor
11:45	35	1600	mL/min	25.44	5.1	0.04	5.59	9.73	15.1	243.1	Clear	No Odor
11:50	40	1600	mL/min	25.44	5.02	0.048	5.59	9.87	15	242.1	Clear	No Odor
11:55	45	1600	mL/min	25.49	5.1	0.047	2.93	9.82	14.9	244.5	Clear	No Odor
12:00	50	1600	mL/min	25.49	5.16	0.04	2.93	9.85	15	236.4	Clear	No Odor
12:05	55	1600	mL/min	25.49	5.13	0.04	2.93	0.038	14.9	237.4	Clear	No Odor
12:10	60	1600	mL/min	25.41	5.15	0.045	3.22	9.9	15.1	235.8	Clear	No Odor
12:15	65	1600	mL/min	25.41	5.18	0.043	3.22	10.02	14.8	236.6	Clear	No Odor
12:20	70	1600	mL/min	25.49	5.14	0.042	3.22	10	14.9	237.7	Clear	No Odor
12:25	75	300	mL/min	25.59	4.98	0.064	2.99	4.35	17.7	237.8	Clear	No Odor
12:30	80	300	mL/min	25.57	4.97	0.064	1.74	4.35	17.2	236.5	Clear	No Odor
12:35	85	300	mL/min	25.57	4.97	0.065	1.64	4.38	17.3	235.3	Clear	No Odor
12:40	90	300	mL/min	25.57	4.97	0.065	1.47	4.48	17.3	234.7	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Groundwater Sampling Form



Location ID:	BPOW 4-2R	Date(s):	2024-08-08	Work Order(s):	OU2 - Q3 2024 Groundwater Sampling	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	RAIN, T:68.59 °F, rH:89%, Clouds: 100%, Wind:9.22mph E-NE			Field Technician:	Shirley He	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	725.00-765.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	22.51	Total Depth (ft-bmp):	NA	Water Column(ft):	747.49	Liters in Well: 1847.14
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Dedicated Bladder
Purge Start Time:	11:47	Total Volume Purged (liters):	131	Sample ID:	BPOW 4-2R	Sample Time: 13:45
Purge End Time:	13:44	Well Volumes Purged (total):	0.07	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: YSI 600 XLM Sonde 1.65 inch / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:48	0	1200	mL/min	22.49	4.93	0.044	0.82	3.91	15.5	171.1	Clear	No Odor
11:53	5	1500	mL/min	22.49	5.28	0.027	0.83	8.17	14.9	189.1	Clear	No Odor
11:58	10	1500	mL/min	22.49	5.15	0.027	0.82	9.59	14.8	231.6	Clear	No Odor
12:03	15	1600	mL/min	22.48	4.83	0.031	1.63	9.96	14.7	225.8	Clear	No Odor
12:08	20	1600	mL/min	22.48	4.74	0.029	1.63	9.95	14.7	237.9	Clear	No Odor
12:13	25	1600	mL/min	22.48	4.73	0.035	1.63	9.89	14.6	239.5	Clear	No Odor
12:18	30	1600	mL/min	22.52	4.5	0.03	1.71	9.82	14.6	240.9	Clear	No Odor
12:23	35	1600	mL/min	22.52	4.65	0.03	1.71	9.83	14.7	241.9	Clear	No Odor
12:28	40	1600	mL/min	22.51	4.74	0.03	1.71	9.82	14.6	243.8	Clear	No Odor
12:33	45	1600	mL/min	22.51	4.71	0.029	1.04	9.94	14.6	245	Clear	No Odor
12:38	50	1600	mL/min	22.47	4.73	0.03	1.04	9.94	14.6	246.2	Clear	No Odor
12:43	55	1600	mL/min	22.47	4.52	0.044	1.04	12.97	15.9	252.1	Clear	No Odor
13:03	75	0	mL/min	22.41	4.55	0.044	1.85	10.7	15.1	244.9	Clear	No Odor
13:08	80	1650	mL/min	22.41	4.88	0.025	1.85	10.05	14.6	243.5	Clear	No Odor
13:13	85	1650	mL/min	22.41	4.89	0.026	1.85	10.05	14.6	246.1	Clear	No Odor
13:18	90	1600	mL/min	22.43	4.71	0.027	1.06	9.98	14.6	248.2	Clear	No Odor
13:23	95	1600	mL/min	22.43	4.84	0.03	1.06	10.29	14.5	249.3	Clear	No Odor
13:28	100	450	mL/min	22.39	4.57	0.045	1.04	6	16	254.3	Clear	No Odor
13:33	105	450	mL/min	22.39	4.58	0.045	0.51	5.97	16.1	252	Clear	No Odor
13:38	110	450	mL/min	22.39	4.61	0.045	0.88	5.94	16	251.1	Clear	No Odor
13:43	115	450	mL/min	22.39	4.62	0.045	0.82	5.9	16.1	250.9	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Groundwater Sampling Form



Location ID:	GM-21D2	Date(s):	2024-07-29	Work Order(s):	OU2 - Q3 2024 Groundwater Sampling		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:70.21 °F, rH:93%, Clouds: 98%, Wind:5.99mph S-SW			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	516.00-526.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	45.46	Total Depth (ft-bmp):	531	Water Column(ft):	485.54	Liters in Well:	1199.83
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	09:03	Total Volume Purged (liters):	35	Sample ID:	GM-21D2	Sample Time:	10:25
Purge End Time:	10:24	Well Volumes Purged (total):	0.03	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI 600 XLM Sonde 1.65 inch / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^c)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:04	0	400	mL/min	45.56	9.33	0.223	6.63	8.91	18.53	10.3	Clear	No Odor
09:09	5	400	mL/min	45.56	8.08	0.136	6.63	6.84	18.64	40.2	Clear	No Odor
09:14	10	400	mL/min	45.56	6.91	0.119	6.63	5.24	18.71	63.8	Clear	No Odor
09:19	15	400	mL/min	45.54	6.95	0.115	118	5.29	18.67	70.5	Cloudy	No Odor
09:24	20	400	mL/min	45.54	7.53	0.123	118	5.06	18.62	58.4	Cloudy	No Odor
09:29	25	400	mL/min	45.54	8.16	0.131	118	6.64	18.56	54	Cloudy	No Odor
09:34	30	400	mL/min	45.54	8.24	0.128	85.1	8.03	18.61	55.6	Cloudy	No Odor
09:39	35	400	mL/min	45.54	8.19	0.125	85.1	8.38	18.6	61.7	Cloudy	No Odor
09:44	40	400	mL/min	45.51	7.92	0.122	49.5	10.14	18.82	72.1	Clear	No Odor
09:49	45	400	mL/min	45.54	7.81	0.121	37.3	10.11	19.07	76.4	Clear	No Odor
09:54	50	400	mL/min	45.54	7.61	0.12	23.7	10.66	19.14	83.9	Clear	No Odor
09:59	55	400	mL/min	45.51	7.37	0.121	17.7	10.98	19.33	93.9	Clear	No Odor
10:04	60	400	mL/min	45.51	7.2	0.12	16.1	11.14	19.49	104.4	Clear	No Odor
10:09	65	400	mL/min	45.48	7.1	0.12	14.1	11.25	19.61	110.1	Clear	No Odor
10:14	70	400	mL/min	45.48	6.93	0.119	10.5	11.78	19.27	119.6	Clear	No Odor
10:19	75	400	mL/min	45.48	6.84	0.117	8.85	11.97	19.24	125.1	Clear	No Odor
10:24	80	400	mL/min	45.48	6.86	0.118	8.01	12.05	19.08	128.7	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Vinyl chloride (EPA 8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30224425 NAVI 2 Well ID BPOW 1-1 Page 1 of 2
 Date 11/06/24
 Project Name/Location OU2 Q4 2024 GW Sampling Weather Sunny 64°
 Measuring Pt. Description TOC Screen Interval (ft-bmp) 196-236 Casing Diameter (in.) 4" Well Material PVC SS
 Static Water Level (ft-bmp) 28.69 Total Depth (ft-bmp) 241 Water Column/ Gallons in Well 212.31 ft / 138 gal
 MP Elevation --- Pump Intake (ft-bn) mid-screen Purge Method non-dedicated Sample Method 1 WSV / LOW flow
 Pump On/Off 0908 / 1225 Volume Purged (gal) 110.5 L Peristaltic Bladder Submersible Geosub Other ---
 Sample Time: Label BPOW 1-1 Replicate/ Code No. REP110624BM1 Sampled by BM
 Start 1120 End 1125

PID: 0.0 ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0913	0	600	28.69	0	5.21	0.244	0.54	6.00	17.5	149.5	Clear	None
0918	5	600		3	4.75	0.278		2.73	16.1	265	"	"
0923	10	600		6	4.53	0.284		1.43	15.2	304	"	"
0928	15	800	28.70	9	4.53	0.282	0.49	1.45	15.2	320.9	"	"
0933	20	800		13	4.53	0.282		1.33	15.4	330.1	"	"
0938	25	800		17	4.53	0.282		1.30	15.2	336.9	"	"
0943	30	1100	28.70	21	4.54	0.281	0.22	1.31	15.0	340.6	"	"
0948	35	1100		26.5	4.53	0.280		1.40	14.5	347.5	"	"
0953	40	1100		32	4.54	0.280		1.31	14.9	349.2	"	"
0958	45	1100	28.70	37.5	4.54	0.280	0.31	1.27	14.9	351.2	"	"
1003	50	1100		43	4.54	0.280		1.35	14.9	352.6	"	"
1008	55	1100		48.5	4.54	0.281		1.33	14.9	354.4	"	"
1013	60	1100	28.69	54	4.54	0.281	0.35	1.27	14.9	357.1	"	"
1018	65	1100		59.5	4.54	0.282		1.34	14.6	359.2	"	"
1023	70	1100		65	4.54	0.283		1.32	14.6	360.5	"	"
1028	75	1100	28.69	70.5	4.54	0.283	1.12	1.28	14.9	361.5	"	"

Constituents Sampled	Container	Number	Preservative
VOCs 5242	40 mL vial	86	HCl
1,4-Dioxane 5825IM	250 mL Amber	84	NaHSO4

Notes:
~~241 - 28.69 = 212.31 x 0.65 = 138 gal~~
 WSV
 $236 - 196 = 40 \times 0.65 = 26 \text{ gal} \times 3.785 = 98.41 \text{ L}$
 $241 - 28.69 = 212.31 \times 0.06 = 1.27 \times 3.785 = 4.81 \text{ L}$
 103.22 L

Well Casing Volumes	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
Gallons/Foot	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information	Well Location:	Well Locked at Arrival:
Well Location:	<u>20 Bruce Ln</u>	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well:	<u>Good</u>	Well Locked at Departure: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion:	<u>Flush Mount / Stick Up</u>	Key Number To Well: <u>N/A</u>

Groundwater Sampling Log

Project No. 30218437_GWMI2 Well ID BPOW 1-1 Date _____

Project Name/Location OU2 Q4 2024 GW Sampling Weather _____

Measuring Pt. _____ Screen _____ Casing _____ Well Material PVC
 Description TOC Interval (ft-bmp) _____ Diameter (in.) _____ SS

Static Water _____ Total Depth (ft-bmp) _____ Water Column/ _____
 Level (ft-bmp) _____ Pump Intake (ft-bp) _____ Gallons in Well _____

MP Elevation _____ Pump Method Non-dedicated _____ Sample Method _____
 Pump On/Off _____ Volume Purged (gal) _____ Peristaltic _____ Submersible _____ Geosub _____ Other _____

Sample Time: Label _____ Replicate/ _____
 Start _____ Code No. _____
 End _____ Sampled by _____

PID: _____

Lowflow

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1033	80	1100		76	4.54	0.283		1.35	15.4	361.1		
1038	85	1100		81.5	4.54	0.285		1.26	15.0	361.6		
1043	90	1100	28.69	87	4.53	0.285	0.39	1.26	14.9	362.5		
1048	95	1100		92.5	4.54	0.284		1.27	15.3	363.1		
1053	100	1100		98	4.54	0.284		1.26	15.0	363.6		
1058	105	1100	28.69	103.5	4.54	0.284	0.17	1.27	15.1	366.1		
1100	107	350	28.69	105.25	4.54	0.284	0.11	1.32	16.4	364.5		
1105	112	350	28.69	107	4.56	0.286	0.42	1.20	16.8	363.0		
1110	117	350	28.69	108.75	4.56	0.286	0.33	1.14	16.9	362.2		
1115	122	350	28.69	110.5	4.56	0.286	0.36	1.13	16.9	362.0		

Constituents Sampled	Container	Number	Preservative
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Notes: SEE PAGE 1 FOR INFO

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: _____ Well Locked at Arrival: Yes / No

Condition of Well: _____ Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: _____

Location ID:	BPOW 1-2	Date(s):	2024-11-06	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:70.11 °F, rH:75%, Clouds: 0%, Wind:13.8mph SW			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	274.00-314.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	29.99	Total Depth (ft-bmp):	NA	Water Column(ft):	305.01	Liters in Well:	753.72
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	10:27	Total Volume Purged (liters):	120.2	Sample ID:	BPOW 1-2	Sample Time:	12:25
Purge End Time:	12:24	Well Volumes Purged (total):	0.16	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q,Horiba U-52 / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:28	0	700	mL/min	30.16	5.74	0.195	2.33	7.77	16.36	260	Clear	No Odor
10:33	5	900	mL/min	30.16	5.1	0.22	2.33	4.76	15.58	302	Clear	No Odor
10:38	10	900	mL/min	30.16	4.96	0.22	2.33	4.55	15.28	320	Clear	No Odor
10:43	15	1000	mL/min	30.25	4.95	0.223	2.47	4.51	15.44	331	Clear	No Odor
10:48	20	1100	mL/min	30.25	4.62	0.223	2.47	4.51	15.43	332	Clear	No Odor
10:53	25	1200	mL/min	30.25	4.96	0.222	2.47	4.53	15.46	340	Clear	No Odor
10:58	30	1200	mL/min	30.25	4.97	0.219	2.47	4.56	15.36	327	Clear	No Odor
11:03	35	1200	mL/min	30.16	4.98	0.22	2.21	4.57	15.51	337	Clear	No Odor
11:08	40	1200	mL/min	30.16	4.97	0.216	2.21	4.6	15.25	341	Clear	No Odor
11:13	45	1200	mL/min	30.16	4.95	0.215	2.21	4.61	15.43	347	Clear	No Odor
11:18	50	1200	mL/min	30.16	4.95	0.218	2.5	4.53	15.49	349	Clear	No Odor
11:23	55	1200	mL/min	30.16	4.97	0.215	2.5	4.55	15.35	344	Clear	No Odor
11:28	60	1200	mL/min	30.16	4.99	0.214	2.5	4.47	15.5	343	Clear	No Odor
11:33	65	1200	mL/min	30.21	4.93	0.212	2.18	4.56	15.45	346	Clear	No Odor
11:38	70	1200	mL/min	30.21	5.1	0.207	2.18	4.39	15.54	340	Clear	No Odor
11:43	75	1200	mL/min	30.21	4.99	0.204	2.18	4.45	15.24	333	Clear	No Odor
11:48	80	1200	mL/min	30.21	5.06	0.205	1.99	4.43	15.21	324	Clear	No Odor
11:53	85	1200	mL/min	30.21	5.05	0.203	1.99	4.43	15.42	325	Clear	No Odor
11:58	90	1200	mL/min	30.21	5.01	0.204	1.99	4.29	15.53	328	Clear	No Odor
12:03	95	1200	mL/min	30.21	5.07	0.201	2.38	4.36	15.46	341	Clear	No Odor
12:08	100	500	mL/min	30.17	5.04	0.2	1.47	4.2	15.86	318	Clear	No Odor
12:13	105	500	mL/min	30.17	4.99	0.198	1.72	4.17	15.53	313	Clear	No Odor
12:18	110	500	mL/min	30.17	5	0.197	2.16	4.13	15.61	311	Clear	No Odor
12:23	115	500	mL/min	30.17	5.03	0.195	2.28	4.12	15.56	308	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Groundwater Sampling Form



Location ID:	BPOW 1-3	Date(s):	2024-11-06	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:67.53 °F, rH:79%, Clouds: 0%, Wind:16.11mph SW			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	369.00-409.00	Casing Diameter (in):	2.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	30.23	Total Depth (ft-bmp):	NA	Water Column(ft):	388.77	Liters in Well:	240.17
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	09:08	Total Volume Purged (liters):	41.3	Sample ID:	BPOW 1-3	Sample Time:	10:08
Purge End Time:	10:06	Well Volumes Purged (total):	0.17	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q,Horiba U-52 / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:10	0	900	mL/min	20.2	3.87	0.056	2.87	5.85	15.92	277	Clear	No Odor
09:15	5	900	mL/min	20.2	3.87	0.055	2.87	7.45	15.51	199	Clear	No Odor
09:20	10	1000	mL/min	20.23	3.85	0.167	2.87	4.66	15.49	228	Clear	No Odor
09:25	15	1000	mL/min	18.43	3.85	0.168	3.06	3.9	15.05	240	Clear	No Odor
09:30	20	1000	mL/min	18.43	3.85	0.169	3.06	3.73	15.2	239	Clear	No Odor
09:35	25	1000	mL/min	18.43	3.88	0.168	3.06	3.61	15.35	237	Clear	No Odor
09:40	30	1000	mL/min	16.28	3.89	0.167	2.67	3.61	15.08	232	Clear	No Odor
09:45	35	1000	mL/min	16.23	3.86	0.169	2.67	3.63	15.21	233	Clear	No Odor
09:50	40	250	mL/min	16.23	3.92	0.168	1.2	3.65	16.61	234	Clear	No Odor
09:55	45	250	mL/min	16.23	3.92	0.168	1.88	3.64	16.77	231	Clear	No Odor
10:00	50	250	mL/min	16.11	3.92	0.168	2.19	3.65	16.76	231	Clear	No Odor
10:05	55	250	mL/min	15.82	3.92	0.167	1.44	3.65	16.78	230	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Location ID:	BPOW 1-4	Date(s):	2024-11-06	Work Order(s):	2024 4th Quarter Sampling Event	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:66.47 °F, rH:81%, Clouds: 0%, Wind:10.36mph SW			Field Technician:	Kyra Kraus	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	340.00-400.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	11.9	Total Depth (ft-bmp):	405	Water Column(ft):	393.1	Liters in Well: 971.4
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Dedicated Bladder
Purge Start Time:	08:51	Total Volume Purged (liters):	175	Sample ID:	BPOW1-4	Sample Time: 11:35
Purge End Time:	11:31	Well Volumes Purged (total):	0.18	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach 2100-Q, YSI 6920 V2 MPS / NA
Scope of work completed?	Yes					

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:51	0	1200	mL/min	11.9	3.63	0.159	0.45	7.7	13.95	251.9	Clear	No Odor
08:56	5	1200	mL/min	11.9	3.77	0.153	1.59	3.39	12.94	96	Clear	No Odor
09:01	10	1200	mL/min	11.9	3.76	0.16	2.34	3.17	12.93	110.4	Clear	No Odor
09:06	15	1200	mL/min	11.9	3.74	0.16	1.59	2.88	12.87	126.4	Clear	No Odor
09:11	20	1200	mL/min	11.9	3.71	0.119	2.6	12.86	12.63	150.3	Clear	No Odor
09:16	25	1200	mL/min	11.9	3.74	0.159	1.3	14.26	12.87	155	Clear	No Odor
09:21	30	1200	mL/min	11.92	3.74	0.121	1.29	5.02	12.88	130.7	Clear	No Odor
09:26	35	1200	mL/min	11.93	3.74	0.16	2.74	7.7	12.84	130	Clear	No Odor
09:31	40	900	mL/min	11.93	3.73	0.16	1.8	4.8	12.9	121.2	Clear	No Odor
09:36	45	900	mL/min	11.93	3.73	0.16	0.65	4.2	12.86	119.6	Clear	No Odor
09:41	50	900	mL/min	11.93	3.74	0.157	2.19	4.65	12.82	119.3	Clear	No Odor
09:46	55	900	mL/min	11.93	3.73	0.158	0.77	10.7	12.81	129.8	Clear	No Odor
09:51	60	900	mL/min	11.93	3.73	0.156	0.9	10.78	12.82	133.8	Clear	No Odor
10:01	70	1200	mL/min	11.93	3.76	0.156	1.8	14.73	12.46	138	Clear	No Odor
10:06	75	1350	mL/min	11.93	3.75	0.157	1.32	14.1	12.28	141.6	Clear	No Odor
10:11	80	1350	mL/min	11.93	3.74	0.156	0.75	14.11	12.32	143.2	Clear	No Odor
10:16	85	1350	mL/min	11.92	3.73	0.155	0.9	14.02	12.36	143.7	Clear	No Odor
10:21	90	1350	mL/min	11.93	3.72	0.152	2.78	13.64	12.39	147.7	Clear	No Odor
10:26	95	1350	mL/min	11.93	3.72	0.152	3.1	14.06	12.35	144.5	Clear	No Odor
10:31	100	1350	mL/min	11.92	3.72	0.154	2.76	13.93	12.36	147.6	Clear	No Odor
10:36	105	1350	mL/min	11.92	3.71	0.155	2.3	14.22	12.34	148	Clear	No Odor
10:41	110	1350	mL/min	11.92	3.71	0.156	0.64	14.33	12.42	150	Clear	No Odor
10:46	115	1350	mL/min	11.92	3.69	0.157	2.9	14.46	12.36	149.7	Clear	No Odor
10:51	120	1350	mL/min	11.92	3.69	0.155	1.2	14.64	12.37	151.4	Clear	No Odor
10:56	125	1350	mL/min	11.92	3.67	0.153	1.5	14.72	12.36	151.8	Clear	No Odor
11:01	130	350	mL/min	11.91	3.71	0.157	3.01	7.82	13.48	151.8	Clear	No Odor
11:06	135	350	mL/min	11.91	3.74	0.157	2.67	5.82	13.9	149.1	Clear	No Odor
11:11	140	350	mL/min	11.91	3.74	0.158	1.55	3.63	14.02	133.4	Clear	No Odor
11:16	145	350	mL/min	11.91	3.74	0.155	3.22	3.09	14	124.1	Clear	No Odor
11:21	150	350	mL/min	11.91	3.74	0.154	3.2	2.92	14.11	117.5	Clear	No Odor
11:26	155	350	mL/min	11.92	3.74	0.154	2.78	2.74	14.06	112.1	Clear	No Odor
11:31	160	350	mL/min	11.91	3.73	0.155	3.47	2.69	13.99	109.6	Clear	No Odor

Constituent Sampled	Container	Number	Volume	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	250 mL	NaHSO4
VOCs (SW8260)	Clear Glass	3	40 mL	HCL

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30A1522.MA.VB Well ID BPW1-5 Page 1 of 2
 Project Name/Location 02 AT GW Sampling Date 11/06/07
 Measuring Pt. Description Top of Casing Screen Interval (ft-bmp) 600-650 Casing Diameter (in.) 4 Weather 70°F, Sunny
 Static Water Level (ft-bmp) 13.24 Total Depth (ft-bmp) 655 Water Column/ Gallons in Well 641.76 gal / 417.14 gal Well Material PVC SS
 MP Elevation - Pump Intake (ft-bmp) Midscreen Purge Method: Non-Submersible Peristaltic Submersible Other dedicate Sample Method Volume
 Pump On/Off 0906/ Volume Purged (gal) 143L Sample Time: Label BPW1-5 Replicate/ Start 407 Code No. N/A End 412 Sampled by ANN
 PID: 0.1

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0908	0	1200		0	5.60	0.033		10.60	14.60	341	Clear	None
0913	5	1200	13.32	6.0	5.21	0.029	4.25	1.98	13.37	365	"	✓
0916	10	1200		12.0	4.89	0.029		1.76	12.99	380	"	✓
0923	15	1200	13.23	18.0	5.36	0.029		0.26	13.00	219	"	"
0925	20	1350		24.0	5.35	0.029	15.8	0.16	12.95	220	"	"
0933	25	1350		31.0	5.26	0.029		1.01	12.81	225	"	"
0938	30	1350	13.20	37.25	5.21	0.029		1.00	12.79	221	"	"
0943	35	1350		45.0	5.22	0.029	11.2	0.98	12.70	220	"	"
0948	40	1350		51.75	5.18	0.029		0.97	12.80	218	"	"
0953	45	1350	13.19	58.5	5.17	0.029		0.97	12.71	219	"	"
0958	50	1350		65.25	5.17	0.029	5.50	0.97	12.70	219	"	"
1003	55	1350		72	5.15	0.029		0.96	12.71	219	"	"
1008	60	1350	13.12	78.75	5.13	0.030		0.95	12.60	217	"	"
1013	65	1350		85.50	5.12	0.030	7.09	0.94	12.66	218	"	"
1018	70	1350		92.25	5.11	0.030		0.92	12.66	216	"	"
1023	75	1350	13.12	99.0	5.07	0.030		0.86	12.71	217	"	"

6.75

Constituents Sampled	Container	Number	Preservative
VOCs 8260 <u>C</u>	40 mL glass vial	3	HCl
1,4- Dioxane <u>52251M</u>	40 Amber bottle	2	None <u>NATSOL</u>

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)
 $5' \times 0.65 = 32.5 \text{ gal} \times 3.795 = 123.0 \text{ L} = 1.25 \text{ v}$
 $(625 - 13.24) \times 0.026 = 1.59 \times 3.795 = 6.01 + 123.01 = 129 \text{ L}$

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	8" = 0.066
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: Basin 19 Well Locked at Arrival: Yes / No
 Condition of Well: _____ Well Locked at Departure: Yes / No
 Well Completion: Flush Mount / Stick Up Key Number To Well: 555

Groundwater Sampling Log

Project No. 30191527.NAVIA Well ID BPM1-5 Page 2 of 2
 Date 11/06/24
 Project Name/Location _____ Weather _____
 Measuring Pt. Screen Casing _____
 Description Top of Casing Interval (ft-bmp) SEE PAGE Diameter (in.) _____
 Static Water Level (ft-bmp) _____ Total Depth (ft-bmp) _____ Water Column/ Gallons in Well _____
 MP Elevation _____ Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated Peristaltic Submersible Other _____
 Pump On/Off _____ Volume Purged (gal) _____ Sample Method _____
 Sample Time: Label 1107 Replicate/ Code No. _____
 Start 11/07 End 11/07 Sampled by _____
 PID: _____

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1025	80	1350	13.12	108.75	5.08	0.030	4.65	0.51	12.68	217	Clear	None
1033	85	1350		125.0	5.08	0.030		0.79	12.61	217	"	"
1038	90	1350		127.5	5.05	0.030		0.81	12.72	217	"	"
1043	95	1350	13.11	126.25	5.04	0.030	4.54	0.80	12.70	217	"	"
1049	100	1350		132.75	5.03	0.030		0.79	12.64	217	"	"
1050	105	450	13.14	135.0	5.14	0.030	3.96	1.71	13.68	211	"	"
1055	110	450	13.14	137.25	5.15	0.029	3.20	1.68	14.02	211	"	"
1100	115	450	13.20	139.75	5.12	0.030	3.62	1.65	14.11	212	"	"
1105	120	450	13.19	141.75	5.11	0.030	2.96	1.62	14.10	212	"	"

WSV+TV
2-25

Constituents Sampled	Container	Number	Preservative
VOCs 8260	40 mL glass vial	3	HCl
1,4- Dioxane 8270 SIM	1 L amber bottle	2	None

Notes: _____
 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)
TDAL

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1" = 0.04	3" = 0.37	4" = 0.65	1/2" = 0.01	
	1.25" = 0.06				

Well Information

Well Location: _____ Well Locked at Arrival: Yes / No
 Condition of Well: _____ Well Locked at Departure: Yes / No
 Well Completion: Flush Mount / Stick Up Key Number To Well: _____

Groundwater Sampling Log

Project No. 30191527, NAV12 Well ID Brow 1-6 Page 1 of 2
 Project Name/Location 0204GW Sampling Date 11/06/24
 Measuring Pt. Top of Casing Screen Interval (ft-bmp) 700-750 Casing Diameter (in.) 4 Well Material x PVC
 Description Top of Casing Interval (ft-bmp) 700-750 Diameter (in.) 4 SS
 Static Water Level (ft-bmp) 13.75 Total Depth (ft-bmp) 755 Water Column/ Gallons in Well 741.254 / 481.81 gal
 MP Elevation 1 Pump Intake (ft-bmp) Midscreen Purge Method: dedicated Sample Method Volume
 Pump On/Off 1123/1315 Volume Purged (gal) 138.5L Non-dedicated Peristaltic Submersible Other
 Sample Time: Label Brow 1-6 Replicate/ Code No. N/A Start 1310 End 1315 Sampled by AMH, RLS
 PID: 0.0

7.5

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1123	0	1200		0	5.44	0.023		2.85	16.65	241	clear	none
1128	5	1200	13.79	6.0	4.69	0.027	1.33	2.01	13.19	170	"	"
1133	10	1200		12.0	4.65	0.027		2.28	13.40	196	"	"
1138	15	1500		18.75	4.74	0.026	1.23	2.08	13.29	183	"	"
1143	20	1500	13.81	26.25	5.05	0.024		2.47	13.29	210	"	"
1148	25	1500		33.75	5.04	0.024		2.31	13.29	229	"	"
1153	30	1500	13.84	41.25	4.99	0.024	0.62	2.21	13.16	244	"	"
1158	35	1500		48.75	4.96	0.024		2.16	13.09	261	"	"
1203	40	1500		56.25	5.05	0.023		2.18	13.27	254	"	"
1208	45	1500	13.84	63.75	5.01	0.023	0.29	2.15	13.16	266	"	"
1213	50	1500		71.25	5.02	0.023		2.19	13.08	267	"	"
1218	55	1500		78.75	5.03	0.024		2.03	13.12	275	"	"
1223	60	1500	13.86	86.25	5.01	0.024	0.34	1.91	13.03	279	"	"
1228	65	1500		93.75	5.02	0.024		1.87	13.11	283	"	"
1233	70	1500		101.25	5.00	0.024		1.93	12.97	287	"	"
1238	75	1500	13.88	107.25	4.98	0.023	0.20	1.79	12.92	292	"	"

Constituents Sampled	Container	Number	Preservative
VOCs 8260 <u>C</u>	40 mL glass vial	3	HCl
1,4- Dioxane <u>522-51M</u>	1 L amber bottle	2	<u>None</u> <u>Nattisch</u>

Notes:
 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)
 $50' = 30.5 \text{ gal} = 123.01 \text{ L}$
 $Tv = 725 - 13.75 = 711.25 \times 0.026 = 18.49 \times 3.785 = 6.99 + 123.01 = 130$
 *Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: Basin 19 Well Locked at Arrival: Yes / No
 Condition of Well: Good Well Locked at Departure: Yes / No
 Well Completion: Flush Mount / Stick Up Key Number To Well: 5555

Groundwater Sampling Log

Project No. _____ Well ID BPOW 1-6 Date 11/06/24

Project Name/Location _____ Weather _____

Measuring Pt. Screen Casing Diameter (in.) _____ Well Material PVC
 Description Top of Casing Interval (ft-bmp) PAGE 1 _____ SS

Static Water Level (ft-bmp) _____ Total Depth (ft-bmp) _____ Water Column/ Gallons in Well _____

MP Elevation _____ Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated Peristaltic Submersible Other _____ Sample Method _____

Pump On/Off 1633/1315 Volume Purged (gal) _____

Sample Time: Label _____ Replicate/ Code No. _____ Sampled by _____

Start _____ End _____

PID: _____

SV+TV

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1243	80	1500	13.88	115.25	4.97	0.024		1.74	12.90	294	Clear	None
1248	85	1500		122.75	5.00	0.024		1.69	12.93	297	"	"
1253	90	1500	13.88	130.25	4.99	0.024	0.39	1.68	12.87	301	"	"
1257	96	450	13.85	132.50	5.06	0.024	0.31	1.91	14.12	298	"	"
1259	98	450	13.85	134.75	5.08	0.024	0.18	1.93	14.41	299	"	"
1304	101	450		135.0	5.11	0.023	0.81	1.96	14.87	302	"	"
1307	106	450	13.85	137.25	5.13	0.024	0.45	2.00	14.76	303	"	"

Constituents Sampled	Container	Number	Preservative
VOCs 8260	40 mL glass vial	3	HCl
1,4- Dioxane 8270 SIM	1 L amber bottle	2	None

Notes: _____

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)

13.81

*Field Blank Required *Cone off early or day before

3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: _____ Well Locked at Arrival: Yes / No

Condition of Well: _____ Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: _____

Location ID:	BPOW 2-1	Date(s):	2024-11-07	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:69.94 °F, rH:58%, Clouds: 0%, Wind:11.5mph W			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	360.00-400.00	Casing Diameter (in):	2.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	18.83	Total Depth (ft-bmp):	NA	Water Column(ft):	381.17	Liters in Well:	235.48
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	10:21	Total Volume Purged (liters):	45.4	Sample ID:	BPOW 2-1	Sample Time:	11:10
Purge End Time:	11:09	Well Volumes Purged (total):	0.19	Replicate Type / Replicate ID:	Duplicate / REP110724SH1	Water Quality Meter/ ID:	Hach 2100-Q,Horiba U-52 / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:23	0	1200	mL/min	18.95	4.19	0.166	5.4	10.74	16	262	Clear	No Odor
10:28	5	1200	mL/min	18.95	4.16	0.143	5.4	8.89	15.81	235	Clear	No Odor
10:33	10	1400	mL/min	18.95	4.17	0.14	5.4	6.9	15.59	231	Clear	No Odor
10:38	15	1400	mL/min	18.96	4.15	0.139	1.8	6.04	15.55	231	Clear	No Odor
10:43	20	1400	mL/min	18.96	4.11	0.139	1.8	5.77	15.42	220	Clear	No Odor
10:48	25	1400	mL/min	18.96	4.13	0.139	1.8	5.31	15.49	222	Clear	No Odor
10:53	30	450	mL/min	18.88	4.18	0.138	1.06	4.79	17	218	Clear	No Odor
10:58	35	450	mL/min	18.88	4.15	0.138	1	4.61	17.02	220	Clear	No Odor
11:03	40	450	mL/min	18.88	4.18	0.138	0.78	4.48	17.04	221	Clear	No Odor
11:08	45	450	mL/min	18.89	4.16	0.139	2.8	4.23	17.07	221	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	4	NaHSO4
VOCs (SW8260)	Clear Glass	6	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	BPOW 2-2	Date(s):	2024-11-07	Work Order(s):	2024 4th Quarter Sampling Event
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States
Weather(°F):	CLEAR, T:68.45 °F, rH:76%, Clouds: 0%, Wind:8.01mph W-NW			Field Technician:	Shirley He
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	455.00-495.00	Casing Diameter (in):	2.00
Static Water Level (ft-bmp):	18.97	Total Depth (ft-bmp):	NA	Water Column(ft):	476.03
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow
Purge Start Time:	08:53	Total Volume Purged (liters):	50	Sample ID:	BPOW 2-2
Purge End Time:	09:57	Well Volumes Purged (total):	0.17	Replicate Type / Replicate ID:	NA / NA
Scope of work completed?	Yes				

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:55	0	1200	mL/min	18.94	3.86	0.091	3.06	12.78	15.96	298	Clear	No Odor
09:00	5	1400	mL/min	18.94	4.39	0.09	3.06	12.26	15.49	260	Clear	No Odor
09:05	10	1400	mL/min	18.94	4.45	0.09	3.96	12.49	15.34	250	Clear	No Odor
09:10	15	1400	mL/min	19.03	4.23	0.089	2.51	12.67	15.33	256	Clear	No Odor
09:15	20	1400	mL/min	19.04	4.26	0.089	2.51	13.28	15.21	256	Clear	No Odor
09:20	25	1400	mL/min	19.04	4.22	0.088	2.51	13.34	15.23	252	Clear	No Odor
09:25	30	350	mL/min	19.04	4.35	0.094	1.42	10.71	16.51	233	Clear	No Odor
09:30	35	350	mL/min	19.03	4.26	0.094	1.26	8.29	16.52	220	Clear	No Odor
09:35	40	350	mL/min	19.03	4.26	0.094	1	7.94	16.47	218	Clear	No Odor
09:40	45	350	mL/min	19.03	4.28	0.094	1.04	7.04	16.4	216	Clear	No Odor
09:45	50	350	mL/min	19.03	4.31	0.094	1.42	6.18	16.42	218	Clear	No Odor
09:50	55	350	mL/min	19.02	4.3	0.094	1	6.03	16.35	214	Clear	No Odor
09:55	60	350	mL/min	19.02	4.33	0.093	0.8	5.68	16.31	210	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? poor

Data retrieval failed for the subreport, 'Subreport2', located at: 'E2E GW delay_defeciency_subreport'. Please check the log files for more

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	BPOW 2-3	Date(s):	2024-11-07	Work Order(s):	2024 4th Quarter Sampling Event
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States
Weather (°F):	CLEAR, T:68.25 °F, rH:76%, Clouds: 0%, Wind:8.01mph W-NW			Field Technician:	Brandon Monegro
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	564.00-594.00	Casing Diameter (in):	4.00
Static Water Level (ft-bmp):	18.2	Total Depth (ft-bmp):	NA	Water Column(ft):	580.8
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow
Purge Start Time:	08:52	Total Volume Purged (gallons):	24.2	Sample ID:	BPOW2-3
Purge End Time:	10:39	Well Volumes Purged (total):	0.06	Replicate Type / Replicate ID:	MS/MSD / BPOW2-3
Well Casing Material:	PVC				
Gallons in Well:	379.15				
Purging Equipment:	Dedicated Bladder				
Sample Time:	10:44				
Water Quality Meter/ ID:	YSI Pro DSS,Hach 2100-Q / NA				

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:54	0	600	mL/min	18.19	4.34	0.08	0.67	3.63	16.5	218.9	Clear	No Odor
08:59	5	600	mL/min	18.19	4.66	0.078	0.78	0.54	16.6	23.5	Clear	No Odor
09:04	10	1200	mL/min	18.19	4.66	0.078	0.72	0.44	17	-13.4	Clear	No Odor
09:09	15	1100	mL/min	18.19	4.64	0.078	0.87	0.35	16.2	-16.4	Clear	No Odor
09:14	20	1000	mL/min	18.19	4.62	0.078	0.77	0.32	15.8	4.8	Clear	No Odor
09:19	25	1000	mL/min	18.19	4.61	0.078	0.73	0.2	15.9	54.3	Clear	No Odor
09:24	30	1000	mL/min	18.19	4.62	0.078	0.39	0.21	15.7	77.7	Clear	No Odor
09:29	35	1000	mL/min	18.19	4.62	0.078	0.36	0.22	15.6	95.7	Clear	No Odor
09:34	40	1000	mL/min	18.19	4.62	0.078	0.41	0.24	15.6	106.2	Clear	No Odor
09:39	45	1000	mL/min	18.19	4.62	0.078	0.09	0.23	15.6	110.9	Clear	No Odor
09:44	50	1000	mL/min	18.19	4.63	0.078	0.17	0.22	15.6	116.2	Clear	No Odor
09:49	55	1000	mL/min	18.19	4.63	0.078	0.15	0.21	15.6	119.8	Clear	No Odor
09:54	60	1000	mL/min	18.19	4.63	0.078	0.69	0.21	15.5	123.7	Clear	No Odor
09:59	65	1000	mL/min	18.19	4.63	0.078	0.42	0.21	15.5	125.2	Clear	No Odor
10:04	70	1000	mL/min	18.19	4.64	0.078	0.55	0.21	15.4	129	Clear	No Odor
10:09	75	1000	mL/min	18.19	4.63	0.078	0.37	0.22	15.6	130.3	Clear	No Odor
10:14	80	1000	mL/min	18.19	4.63	0.078	0.26	0.21	15.3	131.9	Clear	No Odor
10:19	85	1000	mL/min	18.19	4.64	0.078	0.29	0.21	15.4	133.8	Clear	No Odor
10:24	90	300	mL/min	18.29	4.66	0.078	0.89	0.19	16.2	134.5	Clear	No Odor
10:29	95	300	mL/min	18.29	4.67	0.078	0.76	0.2	16.8	135.1	Clear	No Odor
10:34	100	300	mL/min	18.29	4.68	0.078	1.75	0.29	17.1	137.3	Clear	No Odor
10:39	105	300	mL/min	18.29	4.69	0.078	1.02	0.19	17.2	137.8	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Groundwater Sampling Form



Location ID:	BPOW 3-1	Date(s):	2024-11-05	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:58.95 °F, rH:89%, Clouds: 100%, Wind:8.05mph W-SW			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	436.50-476.50	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	24.32	Total Depth (ft-bmp):	NA	Water Column(ft):	491.68	Liters in Well:	1215
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	09:19	Total Volume Purged (liters):	119.5	Sample ID:	BPOW 3-1	Sample Time:	10:42
Purge End Time:	10:41	Well Volumes Purged (total):	0.10	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:20	0	2000	mL/min	24.77	3.66	0.295	4.37	5.17	15.6	110.2	Clear	No Odor
09:25	5	2000	mL/min	24.77	3.59	0.291	4.37	4.97	15.2	39.9	Clear	No Odor
09:30	10	2000	mL/min	24.77	3.58	0.286	4.37	4.66	15.3	18.6	Clear	No Odor
09:35	15	2000	mL/min	24.89	3.58	0.285	0.99	3.88	15.1	-11.7	Clear	No Odor
09:40	20	2000	mL/min	24.89	3.59	0.286	0.99	3.45	15.3	-33	Clear	No Odor
09:45	25	2000	mL/min	24.89	3.59	0.286	0.99	3.22	15.3	-36	Clear	No Odor
09:50	30	2000	mL/min	24.89	3.59	0.285	1.66	3.23	15.1	-49.4	Clear	No Odor
09:55	35	2000	mL/min	24.89	3.59	0.285	1.66	2.89	15.2	-56.5	Clear	No Odor
10:00	40	2000	mL/min	24.89	3.59	0.283	1.66	2.88	15.3	-72.3	Clear	No Odor
10:05	45	2000	mL/min	24.9	3.6	0.282	1.33	2.78	15.3	-79.6	Clear	No Odor
10:10	50	2000	mL/min	25.9	3.6	0.281	1.33	2.66	15.3	-85	Clear	No Odor
10:15	55	2000	mL/min	24.9	3.6	0.281	1.33	2.65	15.3	-93.2	Clear	No Odor
10:20	60	300	mL/min	24.44	3.61	0.279	1.52	2.65	18.2	-93.9	Clear	No Odor
10:25	65	300	mL/min	24.44	3.61	0.279	2.79	2.62	18.4	-79.3	Clear	No Odor
10:30	70	300	mL/min	24.43	3.61	0.279	0.58	2.56	18.4	-67.6	Clear	No Odor
10:35	75	300	mL/min	24.43	3.61	0.279	1.15	2.56	18.6	-68.5	Clear	No Odor
10:40	80	300	mL/min	24.42	3.61	0.279	2.21	2.54	18.7	-71	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. ~~30218427~~ 30214425-NAVI2 Well ID BPOW 3-2

Date 11/05/24

Project Name/Location O2 Q4 2024 GW Sampling

Weather Sunny 58°

Measuring Pt. Description TOC Screen Interval (ft-bmp) 604.5-644.5 Casing Diameter (in.) 4

Well Material PVC SS

Static Water Level (ft-bmp) 25.64 Total Depth (ft-bmp) 647 Water Column/ Gallons in Well 621.36 ft / 403.88 gal

MP Elevation — Pump Intake (ft-bn) midscreen Purge Method non-dedicated 1WSV/Low-Flow Sample Method WSV/LowFlow

Pump On/Off 0919/1042 Volume Purged (gal) 116.5 L Peristaltic Submersib Geosub Other

Sample Time: Label BPOW 3-2 Replicate/ Code No. — Start 1038 End 1042 Sampled by BM

PID: 0.0 ppm

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0920	0	1500	25.68	0	4.27	0.233	1.18	2.88	15.7	144.3	Clear	None
0925	5	1700		7.5	3.92	0.276		1.08	15.1	217.7	"	"
0930	10	1850		16	3.87	0.324		0.32	15.2	241.9	"	"
0935	15	2000	25.69	26	3.89	0.323	5.31	0.21	15.0	249.3	"	"
0940	20	2000		36	3.90	0.319		0.16	15.0	252.9	"	"
0945	25	2000		46	3.90	0.317		0.14	15.0	254.1	"	"
0950	30	2000	25.70	56	3.93	0.304	3.73	0.11	15.0	256.0	"	"
0955	35	2000		66	3.93	0.294		0.10	15.2	255.6	"	"
1000	40	2000		76	3.94	0.274		0.09	15.1	254.7	"	"
1005	45	2000	25.71	86	3.96	0.248	1.95	0.08	15.1	254.7	"	"
1010	50	2000		96	3.98	0.222		0.07	15.2	254.9	"	"
1015	55	2000		106	4.00	0.213		0.07	15.2	253.3	"	"
1018	58	300	25.67	112	4.01	0.209	1.57	0.09	15.8	254.1	"	"
1023	63	300	25.67	113.5	4.04	0.208	1.12	0.12	17.6	253.4	"	"
1028	68	300	25.67	115	4.06	0.205	0.83	0.13	17.8	253.4	"	"
1033	73	300	25.67	116.5	4.07	0.204	1.41	0.13	17.8	253.3	"	"

LowFlow

Constituents Sampled	Container	Number	Preservative
VOCs 524.2	40 mL vial	3	HCl
1,4-Dioxane 52251M	250 mL Amber	2	NaHSO4

Notes:
 $644.5 - 604.5 = 40 \times 0.65 = 26 \text{ gal} \times 3.785 = 98.41 \text{ L}$
 $647 - 25.64 = 621.36 \times 0.006 = 3.72 \text{ gal} \times 3.785 = 14.1 \text{ L}$
 $98.41 + 14.1 = 112.51 \text{ L}$
 * Cut out bladder *

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: SH 20 ~~8000~~ Red Maple Dr. E and Rib Ln Well Locked at Arrival: Yes / No

Condition of Well: Good Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: NIA

Groundwater Sampling Log

Project No. 3019/527.NAVIA Well ID BPAW 3-3 Page 1 of 2
 Date 1/05/24
 Project Name/Location Q2 Q4 2024 Gas sampling Weather 60°F, Sunny
 Measuring Pt. Screen 500-620 Casing 4 Well Material X PVC
 Description Top of Casing Interval (ft-bmp) 500-620 Diameter (in.) 4 SS
 Static Water Level (ft-bmp) 21.71 Total Depth (ft-bmp) 625 Water Column/ Gallons in Well 603.29 ft / 392.14 gal
 MP Elevation - Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated dedicated Sample Method Volumetric
 Pump On/Off 0916/1112 Volume Purged (gal) 120.25L Peristaltic Submersible Other Other
 Sample Time: Label BPAW33 Replicate/ Code No. N/A Start 1109 End 1112 Sampled by ANH
 PID: 0.0

65

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0916	0	1000	21.66	0	5.11	0.102		6.62	15.22	159.9	Clear	None
0923	5	1000	21.66	5.0	4.81	0.099	2.96	7.93	14.99	49.2	"	"
0928	10	1300	21.66	10.75	4.75	0.100		2.24	14.64	75.8	"	Sulfur
0933	15	1300		17.25	4.72	0.102	3.09	1.77	14.65	68.4	"	"
0938	20	1300		23.75	4.68	0.104	6.53	1.51	14.63	24.8	"	"
0943	25	1300	21.66	30.25	4.63	0.104	3.83	2.13	14.69	6.3	"	"
0948	30	1300		36.75	4.64	0.103		2.21	14.78	0.4	"	"
0953	35	1300	21.68	43.25	4.65	0.102		2.23	14.80	5.1	"	"
0958	40	1300		49.75	4.63	0.102	3.06	2.29	14.83	8.0	"	"
1003	45	1300	21.68	56.25	4.62	0.102		2.28	14.84	9.4	"	"
1008	50	1300		62.75	4.61	0.103		2.25	14.84	8.3	"	"
1013	55	1300	21.68	69.25	4.61	0.104	2.90	2.23	14.87	10.1	"	"
1018	60	1300		75.75	4.63	0.103		2.20	14.87	10.3	"	"
1023	65	1300	21.68	82.25	4.62	0.103		2.25	14.88	12.7	"	"
1028	70	1300		88.75	4.63	0.104	1.09	2.22	14.91	12.1	"	"
1033	75	1300		95.25	4.60	0.105		2.15	14.93	13.3	"	"

Constituents Sampled	Container	Number	Preservative
VOCs 8260 <u>C</u>	40 mL glass vial	3	HCl
1,4-Dioxane 8272 SIM <u>1,4-Dioxane 522 SIM</u>	40 amber bottle	2	None <u>NaHSO4</u>

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)
 $40 ft \times 0.15 = 26 gal$
 $13.785 \times 0.15 = 2.07$
 $26 + 2.07 = 28.07$
 $28.07 \times 3.785 = 107.16$

*Field Blank Required *Cone off early or day before
 3 consecutive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>491 Seamen's Neck Rd</u>	Well Locked at Arrival: <u>Yes</u> / No
Condition of Well: <u>Good</u>	Well Locked at Departure: <u>Yes</u> / No
Well Completion: <u>Flush Mount</u> / Stick Up	Key Number To Well: <u>55555</u>

Groundwater Sampling Log

Project No. _____ Well ID BPW 3-3 Page 2 of 2
 Date 11/05/24
 Project Name/Location SEE PAGE Weather _____
 Measuring Pt. Screen Casing _____
 Description Top of Casing Interval (ft-bmp) PAGE Diameter (in.) _____
 Well Material x PVC
 _____ SS
 Static Water Level (ft-bmp) _____ Total Depth (ft-bmp) _____ Water Column/ Gallons in Well _____
 MP Elevation _____ Pump Intake (ft-bmp) Midscreen Purge Method: Non-dedicated _____
 Peristaltic _____
 Submersible _____
 Other _____
 Sample Method _____
 Pump On/Off _____ Volume Purged (gal) _____
 Sample Time: Label _____ Replicate/ _____
 Start 1109 Code No. _____
 End 1112 _____
 Sampled by _____
 PID: _____

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
<u>1039</u>	<u>80</u>	<u>1300</u>	<u>21.69</u>	<u>10.75</u>	<u>4.59</u>	<u>0.105</u>		<u>2.16</u>	<u>14.58</u>	<u>12.6</u>	<u>Clear</u>	<u>Sulfur</u>
<u>1043</u>	<u>85</u>	<u>1300</u>		<u>10.825</u>	<u>4.57</u>	<u>0.105</u>	<u>1.37</u>	<u>2.12</u>	<u>14.93</u>	<u>12.5</u>	<u>"</u>	<u>"</u>
<u>1046</u>	<u>87</u>	<u>900</u>	<u>21.59</u>	<u>10.25</u>	<u>4.63</u>	<u>0.105</u>	<u>1.75</u>	<u>2.12</u>	<u>15.54</u>	<u>21.9</u>	<u>"</u>	<u>"</u>
<u>1051</u>	<u>93</u>	<u>400</u>	<u>21.59</u>	<u>12.25</u>	<u>4.62</u>	<u>0.105</u>	<u>0.85</u>	<u>2.15</u>	<u>16.25</u>	<u>25.7</u>	<u>"</u>	<u>"</u>
<u>1056</u>	<u>98</u>	<u>400</u>	<u>21.59</u>	<u>14.25</u>	<u>4.62</u>	<u>0.105</u>	<u>0.79</u>	<u>1.59</u>	<u>16.59</u>	<u>31.7</u>	<u>"</u>	<u>"</u>
<u>1101</u>	<u>103</u>	<u>400</u>	<u>21.59</u>	<u>16.25</u>	<u>4.62</u>	<u>0.105</u>	<u>0.68</u>	<u>1.57</u>	<u>16.67</u>	<u>31.7</u>	<u>"</u>	<u>"</u>
<u>1106</u>	<u>108</u>	<u>400</u>	<u>21.59</u>	<u>18.25</u>	<u>4.61</u>	<u>0.105</u>	<u>1.96</u>	<u>1.51</u>	<u>16.64</u>	<u>31.3</u>	<u>"</u>	<u>"</u>

Constituents Sampled	Container	Number	Preservative
VOCs 8260	40 mL glass vial	3	HCl
1,4- Dioxane 8270 SIM	1 L amber bottle	2	None

Notes: _____
 Tubing Volume Equation: Volume (gal)=(Midscreen depth - static water level depth) x tubing conversion factor (gal/ft)

*Field Blank Required *Cone off early or day before
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mV for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: _____	Well Locked at Arrival: Yes / No
Condition of Well: _____	Well Locked at Departure: Yes / No
Well Completion: <u>Flush Mount / Stick Up</u>	Key Number To Well: _____

Location ID:	BPOW 3-4	Date(s):	2024-11-05	Work Order(s):	2024 4th Quarter Sampling Event	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLOUDS, T:59.02 °F, rH:89%, Clouds: 100%, Wind:8.05mph W-SW			Field Technician:	Kyra Kraus	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	640.00-690.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	23.45	Total Depth (ft-bmp):	695	Water Column(ft):	671.55	Liters in Well: 1659.48
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Dedicated Bladder
Purge Start Time:	09:17	Total Volume Purged (liters):	152	Sample ID:	BPOW3-4	Sample Time: 11:10
Purge End Time:	11:07	Well Volumes Purged (total):	0.09	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (µS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:17	0	1200	mL/min	23.44	5.09	0.074	4.14	3.23	14.58	248	Clear	No Odor
09:22	5	1500	mL/min	23.44	4.77	0.072	3.88	0.49	14.2	285	Clear	No Odor
09:27	10	1500	mL/min	23.44	4.73	0.071	3.2	0.4	14.18	292	Clear	No Odor
09:32	15	1500	mL/min	23.44	4.56	0.071	5.54	0.17	14.22	306	Clear	No Odor
09:37	20	1500	mL/min	23.44	4.62	0.071	6.08	0.06	14.22	315	Clear	No Odor
09:42	25	1500	mL/min	23.44	4.56	0.071	4.67	0	14.23	316	Clear	No Odor
09:47	30	1500	mL/min	23.44	4.54	0.071	4.67	0	14.24	321	Clear	No Odor
09:52	35	1500	mL/min	23.44	4.51	0.071	7.61	0	14.22	322	Clear	No Odor
09:57	40	1500	mL/min	23.44	4.54	0.071	5.65	0	14.2	324	Clear	No Odor
10:02	45	1500	mL/min	23.44	4.54	0.071	3.4	0	14.19	325	Clear	No Odor
10:07	50	1500	mL/min	23.44	4.46	0.072	5.13	0	14.22	325	Clear	No Odor
10:12	55	1500	mL/min	23.44	4.46	0.072	3.21	0	14.2	327	Clear	No Odor
10:17	60	1500	mL/min	23.54	4.46	0.072	3.2	0	14.21	330	Clear	No Odor
10:22	65	1500	mL/min	23.44	4.46	0.072	3.26	0	14.23	330	Clear	No Odor
10:27	70	1500	mL/min	23.44	4.44	0.072	4.31	0	14.25	331	Clear	No Odor
10:32	75	1500	mL/min	23.44	4.46	0.072	2.89	0	14.24	333	Clear	No Odor
10:37	80	1500	mL/min	23.44	4.46	0.072	1.83	0	14.29	334	Clear	No Odor
10:42	85	1500	mL/min	23.44	4.42	0.072	1.37	0.02	14.28	336	Clear	No Odor
10:47	90	1500	mL/min	23.45	4.4	0.072	1.29	0.02	14.25	336	Clear	No Odor
10:52	95	500	mL/min	23.43	4.56	0.073	1.09	0.34	14.87	328	Clear	No Odor
10:57	100	500	mL/min	23.43	4.57	0.072	1.71	0.32	15.05	327	Clear	No Odor
11:02	105	500	mL/min	23.43	4.55	0.073	6.75	0.32	15.03	328	Clear	No Odor
11:07	110	500	mL/min	23.43	4.55	0.072	4.33	0.31	15.05	329	Clear	No Odor

Constituent Sampled	Container	Number	Volume	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	250 mL	NaHSO4
VOCs (SW8260)	Clear Glass	3	40 mL	HCL

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Groundwater Sampling Log

Project No. 30181527-N/A/02 Well ID BPCW 4-1R Page 1 of 2
 Project Name/Location Q2 Q4 2024 Gw Sampling Date 11/14/24
 Measuring Pt. Description TCC Screen Interval (ft-bls) 652-692 Casing Diameter (in.) 4 Weather 60°F, Sunny
 Static Water Level (ft-bmp) 24.96 Total Depth (ft-bls) 697 Water Column/Gallons in Well 647.08 / 420.69 gal Well Material X PVC SS
 MP Elevation - Pump Intake (ft-bls) Midscreen Purge Method: Non-dedicated Drilling Pump Sample Method Volumetric
 Pump On/Off 11287 Volume Purged (gal) 125.75 L Peristaltic - Submersible - Other -
 Sample Time: Label BPCW 4-1R Replicate/Code No. N/A Start 1300 End 1314 Sampled by AMM, BM
 PID: 0.0

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1130	0	500		0.0	4.02	0.058		12.79	15.52	395	Clear	None
1135	5	1800	24.91	16.2	4.81	0.059	3.77	14.91	12.56	198	"	"
1140	10	500		27.2	5.30	0.059		5.51	13.3	62.1	"	"
1145	15	300		21.75	5.32	0.059		5.22	13.2	332	"	"
1150	20	300	24.91	11.25	4.89		4.21	5.46	13.97	344	"	"
1155	25	300		17.75	4.80	0.057		6.62	13.47	335	"	"
1200	30	1300	24.91	31.25	5.04	0.057		6.69	13.5	327	"	"
1205	35	1300		60.75	4.42	0.059	4.66	8.74	13.29	291	"	"
1210	40	1300		67.25	4.43	0.058		5.61	13.35	304	"	"
1215	45	1300	24.59	73.75	4.74	0.058	2.60	4.99	13.55	321	"	"
1220	50	1300		80.25	4.87	0.058		5.32	13.50	321	"	"
1225	55	1300		86.75	4.73	0.058		4.64	13.46	327	"	"
1230	60	1300	24.59	93.25	4.83	0.057	2.55	4.71	13.22	338	"	"
1235	65	1100		99.75	4.77	0.058		6.36	13.39	347	"	"
1240	70	1100	24.56	105.25	4.74	0.057		6.26	13.19	347	"	"
1245	75	1100		112.5	4.71	0.057	2.05	6.01	13.23	336	"	"

Constituents Sampled	Container	Number	Preservative
VOC'S 8260 C	4 mL vial	3	HCl
1/4 DOCURE 5225M	Amberglass	2	NaOH

Notes:
 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing size conversion factor (gal/ft)
~~692 - 24.91 = 667.09 x 0.0052 = 3.47~~
~~672 - 24.92 = 647.08 x 0.0057 = 3.68~~
 *Field Blank Required
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp Cond., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature

Well Casing Volumes					
Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.63	3/8" = 0.006
				1/2" = 0.01	

Well Information

Well Location: Elmor. West / Eden Lane Well Locked at Arrival: Yes / No
 Condition of Well: See Well Inspection Log Well Locked at Departure: Yes / No
 Well Completion: Flush Mount / Stick Up Key Number To Well: N/A

Groundwater Sampling Log

Project No. BROW 4-1R Well ID _____

Project Name/Location _____ Date _____

Measuring Pt. _____ Weather _____

Description _____ Well Material PVC
 SS

Static Water Level (ft-bmp) _____ Screen Interval (ft-bis) _____ Casing Diameter (in) _____

MP Elevation _____ Total Depth (ft-bis) _____ Water Column/ Gallons in Well _____

Pump On/Off _____ Pump Intake (ft-bis) _____ Purge Method: Non-dedicated Bladder Pump
Peristaltic
Submersible
Other _____ Sample Method _____

Sample Time: Label _____ Replicate/ Code No. _____ Other _____

Start _____ End _____

PID: _____

Sampled by _____

SEE PAGE 1

Insu + EV
*Summer

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1250	80	1100	24.56	11.75	4.51	0.058	2.27	6.09	13.47	295	Clear	None
1251	81	300	27.41	15.25	4.50	0.058	2.27	7.03	13.33	316	"	"
1252	82	300	26.9	14.75	4.46	0.059	1.43	6.91	13.74	321	"	"
1301	91	700	24.91	12.75	4.49	0.059	1.39	6.89	13.75	326	"	"
1306	96	400	24.41	12.75	4.49	0.059	1.18	6.84	13.76	330	"	"

Constituents Sampled	Container	Number	Preservative

Notes: _____

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing size conversion factor (gal/ft)

*Field Blank Required

3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: _____

Condition of Well: See Well Inspection Log

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: _____

Location ID:	BPOW 4-2R	Date(s):	2024-11-04	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather (°F):	CLOUDS, T:55.76 °F, rH:62%, Clouds: 75%, Wind:11.01mph SE			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	725.00-765.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	25.27	Total Depth (ft-bmp):	NA	Water Column(ft):	744.73	Liters in Well:	1840.32
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Dedicated Bladder
Purge Start Time:	12:28	Total Volume Purged (liters):	125.1	Sample ID:	BPOW 4-2R	Sample Time:	14:10
Purge End Time:	14:07	Well Volumes Purged (total):	0.07	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q, YSI Pro DSS / NA

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm ^o)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
12:31	0	1200	mL/min	25.31	4.76	0.052	0.95	4.88	15.1	271.6	Clear	No Odor
12:36	5	1500	mL/min	25.31	4.76	0.011	0.95	11.17	14.6	293.2	Clear	No Odor
12:41	10	1500	mL/min	25.31	5.01	0.017	0.95	11.35	14.6	314.1	Clear	No Odor
12:46	15	1500	mL/min	25.29	4.78	0.016	8.44	11.52	14.6	310	Clear	No Odor
12:51	20	1500	mL/min	25.29	4.78	0.016	8.44	11.53	14.5	311.9	Clear	No Odor
12:56	25	1500	mL/min	25.29	4.77	0.015	8.44	11.54	14.5	319.6	Clear	No Odor
13:01	30	1500	mL/min	25.35	4.77	0.019	3.71	11.59	14.5	320.9	Clear	No Odor
13:06	35	1500	mL/min	25.35	4.78	0.018	3.71	11.58	14.4	326.2	Clear	No Odor
13:11	40	1500	mL/min	25.35	4.77	0.019	3.71	11.61	14.4	327.2	Clear	No Odor
13:16	45	1500	mL/min	25.35	4.78	0.019	4.14	11.62	14.4	330.1	Clear	No Odor
13:21	50	1500	mL/min	25.35	4.72	0.022	4.14	11.86	14.4	333.6	Clear	No Odor
13:26	55	1500	mL/min	25.35	4.73	0.019	4.14	11.69	14.4	336.2	Clear	No Odor
13:31	60	1500	mL/min	25.49	4.73	0.023	2.2	11.74	14.4	339.1	Clear	No Odor
13:36	65	1500	mL/min	25.49	4.72	0.024	2.2	11.68	14.4	339.3	Clear	No Odor
13:41	70	1500	mL/min	25.49	4.74	0.024	2.2	11.79	14.4	341	Clear	No Odor
13:46	75	1500	mL/min	25.49	4.72	0.02	1.55	11.69	14.4	343	Clear	No Odor
13:51	80	450	mL/min	25.53	4.61	0.049	2.58	6.34	14.9	339	Clear	No Odor
13:56	85	450	mL/min	25.53	4.55	0.049	0.66	6.27	15	339.2	Clear	No Odor
14:01	90	450	mL/min	25.53	4.54	0.049	1.04	6.07	14.9	340.7	Clear	No Odor
14:06	95	450	mL/min	25.53	4.55	0.049	0.87	5.76	15.2	341.1	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (EPA 522)	Amber Glass	2	NaHSO4
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Location ID:	GM-15D	Date(s):	2024-10-15	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:50.72 °F, rH:64%, Clouds: 0%, Wind:8.05mph W-NW			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	332.00-342.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	43.33	Total Depth (ft-bmp):	NA	Water Column(ft):	298.67	Liters in Well:	738.05
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	11:02	Total Volume Purged (liters):	26	Sample ID:	GM-15D	Sample Time:	11:55
Purge End Time:	11:54	Well Volumes Purged (total):	0.04	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:04	0	500	mL/min	43.36	4.96	0.249	3.09	3.26	16.2	147.9	Clear	No Odor
11:09	5	500	mL/min	43.36	4.77	0.301	3.09	6.17	16.3	168.2	Clear	No Odor
11:14	10	500	mL/min	43.36	4.76	0.302	3.09	6.98	16.4	179.8	Clear	No Odor
11:19	15	500	mL/min	43.36	4.75	0.301	4.05	7.35	16.4	184.6	Clear	No Odor
11:24	20	500	mL/min	43.36	4.75	0.301	4.05	7.62	16.4	188	Clear	No Odor
11:29	25	500	mL/min	43.36	4.75	0.3	2.94	7.66	16.4	191.3	Clear	No Odor
11:34	30	500	mL/min	43.36	4.74	0.3	1.98	7.77	16.4	194.1	Clear	No Odor
11:39	35	500	mL/min	43.36	4.74	0.3	1.89	7.85	16.3	195.8	Clear	No Odor
11:44	40	500	mL/min	43.36	4.74	0.299	1.56	7.84	16.4	198.6	Clear	No Odor
11:49	45	500	mL/min	43.36	4.74	0.299	1.3	7.8	16.6	199.7	Clear	No Odor
11:54	50	500	mL/min	43.36	4.74	0.299	1.62	7.85	16.6	201	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Vinyl chloride (EPA 8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-15D2	Date(s):	2024-10-15	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:54.43 °F, rH:54%, Clouds: 20%, Wind:9.22mph NW			Field Technician:	Kyra Kraus		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	536.00-556.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	46.09	Total Depth (ft-bmp):	556	Water Column(ft):	509.91	Liters in Well:	1260.05
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	10:55	Total Volume Purged (liters):	25	Sample ID:	GM-15D2	Sample Time:	11:40
Purge End Time:	11:37	Well Volumes Purged (total):	0.02	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (µS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:57	0	450	mL/min	46.09	5.31	0.117	1.04	1.62	16.7	178.5	Clear	No Odor
11:02	5	450	mL/min	46.09	4.78	0.117	1.42	7.08	17	213.6	Clear	No Odor
11:07	10	450	mL/min	46.08	4.75	0.117	1.2	7.18	17	215.8	Clear	No Odor
11:12	15	450	mL/min	46.08	4.69	0.117	4.44	7.36	17	226.9	Clear	No Odor
11:17	20	450	mL/min	46.09	4.67	0.117	6.64	7.38	17.1	236.8	Clear	No Odor
11:22	25	450	mL/min	46.08	4.65	0.117	3.58	7.41	16.9	241.9	Clear	No Odor
11:27	30	450	mL/min	46.09	4.64	0.116	3.75	7.41	16.9	244.8	Clear	No Odor
11:32	35	450	mL/min	46.09	4.64	0.116	3.34	7.43	17	247.5	Clear	No Odor
11:37	40	450	mL/min	46.08	4.64	0.116	3.98	7.44	17	250.7	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Vinyl chloride (EPA 8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437.0wml2 Well ID GM-151 Page 1 of 1
 Date 10/15/24
 Project Name/Location 002204 GW monitoring Weather 50° cloudy
 Measuring Pt. Description WC Screen Interval (ft-bis) 95-05 Casing Diameter (in.) 4 Well Material PVC / SS
 Static Water Level (ft-bmp) 40.25 Total Depth (ft-bis) 103.8 Water Column/ Gallons in Well 64.75 ft / 42.0 gal
 MP Elevation 1100 Pump Intake (ft-bis) midscreen Purge Method: Non-dedicated Bladder Pump / Peristaltic / Submersible / Other Sample Method TV+LF
 Pump On/Off 1100 Volume Purged (gal) 27L
 Sample Time: Label GM-151 Replicate/ Code No. n/a Sampled by Avit
 Start 1202 End 1207
 PID: 00

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1100	0	400	40.31	0	7.25	0.60	6.04	7.82	16.6	35.0	Clear	none
1105	5	400	40.31	2.0	6.62	0.573		7.56	17.0	41.2	"	"
1110	10	400	40.31	4.0	6.59	0.570		7.54	17.2	42.0	"	"
1115	15	400	40.30	6.0	6.55	0.571	2.73	7.49	17.4	56.1	"	"
1120	20	400	40.30	8.0	6.52	0.580		7.48	17.4	58.7	"	"
1125	25	400	40.30	10.0	6.45	0.608		7.51	17.4	59.2	"	"
1130	30	400	40.30	12.0	6.34	0.609	1.43	7.57	17.3	60.8	"	"
1135	35	400	40.29	14.0	6.28	0.609		7.62	17.2	63.3	"	"
1140	40	400	40.28	16.0	6.26	0.610		7.66	17.3	67.1	"	"
1145	45	400	40.28	18.0	6.26	0.610	1.51	7.67	17.2	72.0	"	"
1150	50	400	40.28	20.0	6.27	0.611	1.62	7.69	17.3	77.0	"	"
1155	55	400	40.28	22.0	6.27	0.612	1.48	7.70	17.3	79.2	"	"
1200	60	400	40.27	24.0	6.27	0.612	1.36	7.73	17.3	82.8	"	"

Constituents Sampled	Container	Number	Preservative
<u>8260C</u>	<u>VOA vials</u>	<u>3</u>	<u>HCl</u>
<u>82700 SIM</u>	<u>1L Amber</u>	<u>2</u>	<u>none</u>

Notes:
 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing size conversion factor (gal/ft)
105 - 40.25 = 64.75 x 0.01 = 0.6475 x 3.785 = 2.45L

*Field Blank Required
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: Great Well Locked at Arrival: Yes / No

Condition of Well: See Well Inspection Log Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: n/a

Groundwater Sampling Form



Location ID:	GM-15SR	Date(s):	2024-10-15	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:10.78 °C, rH:62%, Clouds: 0%, Wind:3.6m/s W-NW			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (m-bgs):	70.00-80.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (m-bmp):	40.53	Total Depth (m-bmp):	80	Water Column(m):	39.47	Liters in Well:	320
Depth to Product (m-bmp):	NA	Pump Intake Depth(m-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	
Purge Start Time:	NA	Total Volume Purged (liters):	79	Sample ID:	GM-15SR	Sample Time:	11:25
Purge End Time:	11:24	Well Volumes Purged (total):	0.25	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:08	0	1	gpm	40.53	5.97	0.847	29.4	7.53	16.6	162.8	Clear	No Odor
11:13	5	1.25	gpm	40.68	5.82	0.815	6.16	7.47	16.7	184.5	Clear	No Odor
11:18	10	1.25	gpm	40.65	5.8	0.792	4.26	7.43	16.7	199.9	Clear	No Odor
11:24	16	1.25	gpm	40.65	5.79	0.795	3.88	7.41	16.7	206.7	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Chromium (EPA 6010),Chromium, total dissolved (6010B) Cadmium VOCs (SW8260)	HDPE Plastic	2	HNO3
	Clear Glass	3	HCl

Comments: 80-70=10x=6.5x3.785=24.6x3=73.8Ltotal 3wsv

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	GM-17D	Date(s):	2024-10-17	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:49.57 °F, rH:65%, Clouds: 100%, Wind:7mph NE			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	278.00-298.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	45.83	Total Depth (ft-bmp):	NA	Water Column(ft):	252.17	Liters in Well:	623.14
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	10:20	Total Volume Purged (liters):	22.4	Sample ID:	GM-17D	Sample Time:	11:05
Purge End Time:	11:04	Well Volumes Purged (total):	0.04	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:24	0	600	mL/min	45.84	4.88	0.152	2.7	7.26	16.3	215	Clear	No Odor
10:29	5	500	mL/min	45.84	4.89	0.154	2.7	9.47	16.1	215.4	Clear	No Odor
10:34	10	500	mL/min	45.84	4.88	0.154	2.7	9.47	16.1	216.2	Clear	No Odor
10:39	15	500	mL/min	45.84	4.88	0.154	1.63	9.45	16.2	216.9	Clear	No Odor
10:44	20	500	mL/min	45.84	4.88	0.154	1.63	9.46	16.3	217.3	Clear	No Odor
10:49	25	500	mL/min	45.84	4.88	0.154	1.63	9.46	16.2	217.9	Clear	No Odor
10:54	30	500	mL/min	45.84	4.89	0.154	1.16	9.47	16.3	218.2	Clear	No Odor
10:59	35	500	mL/min	45.84	4.89	0.154	0.53	9.46	16.4	218.3	Clear	No Odor
11:04	40	500	mL/min	45.84	4.89	0.154	0.8	9.47	16.4	218.6	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Vinyl chloride (EPA 8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	GM-171	Date(s):	2024-10-17	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:45.95 °F, rH:73%, Clouds: 0%, Wind:8.05mph N			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	100.00-120.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	42.01	Total Depth (ft-bmp):	NA	Water Column(ft):	77.99	Liters in Well:	192.72
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	08:49	Total Volume Purged (liters):	16.3	Sample ID:	GM-171	Sample Time:	09:40
Purge End Time:	09:37	Well Volumes Purged (total):	0.08	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:52	0	600	mL/min	42.05	5.92	0.155	9.6	8.35	15.9	179.9	Clear	No Odor
08:57	5	500	mL/min	42.03	5.84	0.155	9.6	8.22	15.7	178.6	Clear	No Odor
09:02	10	300	mL/min	42.02	5.87	0.155	8.36	8.35	16.6	176.5	Clear	No Odor
09:07	15	300	mL/min	42.02	5.88	0.155	8.36	8.24	15.9	172.6	Clear	No Odor
09:12	20	300	mL/min	42.02	5.88	0.154	8.36	8.11	16.1	164.6	Clear	No Odor
09:17	25	300	mL/min	42.02	5.89	0.154	8.36	8.07	16.1	165.5	Clear	No Odor
09:22	30	300	mL/min	42.02	5.89	0.154	8.6	8.03	16.5	156.4	Clear	No Odor
09:27	35	300	mL/min	42.02	5.89	0.154	7.68	8.03	16.5	166.1	Clear	No Odor
09:32	40	300	mL/min	42.02	5.89	0.154	7.59	8.01	16.6	165.7	Clear	No Odor
09:37	45	300	mL/min	42.02	5.9	0.154	8.13	7.99	16.5	164.5	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Vinyl chloride (EPA 8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	GM-18D	Date(s):	2024-10-16	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:12.46 °C, rH:53%, Clouds: 20%, Wind:4.12m/s NW			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (m-bgs):	290.00-300.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (m-bmp):	42.63	Total Depth (m-bmp):	300	Water Column(m):	257.37	Liters in Well:	2086.59
Depth to Product (m-bmp):	NA	Pump Intake Depth(m-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	
Purge Start Time:	NA	Total Volume Purged (liters):	30	Sample ID:	GM-18D	Sample Time:	13:30
Purge End Time:	13:29	Well Volumes Purged (total):	0.01	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
12:44	0	650	mL/min	42.63	5.54	0.165	2.98	9.32	17.3	92	Clear	No Odor
12:49	5	650	mL/min	42.63	5.39	0.123	2.98	8.6	15.8	107.2	Clear	No Odor
12:54	10	650	mL/min	42.63	5.38	0.123	2.98	8.23	15.7	108.9	Clear	No Odor
12:59	15	400	mL/min	42.65	5.36	0.123	0.69	9.03	15.5	114.3	Clear	No Odor
13:04	20	400	mL/min	42.65	5.35	0.123	0.5	9.07	15.6	114.9	Clear	No Odor
13:09	25	400	mL/min	42.65	5.34	0.123	0.5	9.08	15.7	117	Clear	No Odor
13:14	30	400	mL/min	42.65	5.34	0.123	0.5	9.08	15.7	117.7	Clear	No Odor
13:19	35	400	mL/min	42.66	5.35	0.123	1.02	9.08	15.7	117.7	Clear	No Odor
13:24	40	400	mL/min	42.65	5.35	0.123	1	9.09	15.7	117.9	Clear	No Odor
13:29	45	400	mL/min	42.65	5.35	0.123	1.1	9.09	15.6	118.3	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
VOCs (SW8260)	Clear Glass	3	HCl

Comments: 300-42.63=257.3x.006=1.5x3.785=5.8LTV

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	GM-18I	Date(s):	2024-10-16	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:10.92 °C, rH:60%, Clouds: 0%, Wind:6.17m/s W-NW			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (m-bgs):	95.00-105.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (m-bmp):	38.55	Total Depth (m-bmp):	105	Water Column(m):	66.45	Liters in Well:	538.73
Depth to Product (m-bmp):	NA	Pump Intake Depth(m-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	
Purge Start Time:	NA	Total Volume Purged (liters):	90	Sample ID:	MW-18I	Sample Time:	12:20
Purge End Time:	12:19	Well Volumes Purged (total):	0.17	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:24	0	1500	mL/min	34.04	5.46	0.433	4.63	8.77	15.9	75.8	Clear	No Odor
11:42	18	1500	mL/min	34.1	5.48	0.392	3.92	8.7	15.9	86.6	Clear	No Odor
12:00	36	1500	mL/min	34.08	5.44	0.367	1.43	8.87	15.8	96.4	Clear	No Odor
12:18	54	1500	mL/min	34.08	5.43	0.37	2.31	8.9	15.9	101.6	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
VOCs (SW8260)	Clear Glass	3	HCl

Comments: 94-38.55=55.45x.43=23.8+50=73psi
105-94=11x.65=7.15galx3.785=27.11wy. 811 total:3wy

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437.GW/12 Well ID GM-2102 Date 20E, Sunny 11/2/14

Project Name/Location 2024 Ouz Q4 GW Sampling Weather 11/2/14

Measuring Pt. Description TWC Screen Interval (ft-bls) 516-526 Casing Diameter (in.) 4 Well Material PVC SS

Static Water Level (ft-bmp) 46.35 Total Depth (ft-bls) 531 Water Column/ Gallons in Well 474.65ft/308.8gal

MP Elevation - Pump Intake (ft-bls) Midscreen Purge Method: Non-dedicated Bladder Pump Peristaltic Submersible 6000 Other mp/LR Sample Method mp/LR

Pump On/Off 1233/1240 Volume Purged (gal) 33L

Sample Time: Label 6m2102 Replicate/ Code No. n/a Sampled by PA, AMI

Start 1235 End 1240

PID: 0.1

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1233	0	500		0	5.74	0.162	27.2	7.50	21.9	276.0	Clear	none
1238	5	500	46.43	2.5	5.77	0.146		7.21	18.5	266.3	"	"
1243	10	500		5.0	5.77	0.147		5.88	19.7	156.0	"	"
1248	15	500		7.5	5.92	0.146	15.4	3.79	20.0	130.1	"	"
1253	20	500	46.41	10.0	6.30	0.152		4.37	20.4	113.7	"	"
1258	25	500		12.5	6.57	0.154		6.18	20.2	111.1	"	"
1303	30			15.0	6.60	0.153	20.2	6.62	20.0	109.5	"	"
1308	35		46.41	17.5	6.54	0.152	15.2	6.47	20.1	108.6	"	"
1313	40		46.41	20.0	6.40	0.151	10.7	7.34	20.1	101.1	"	"
1318	45		46.41	22.5	6.38	0.151	73.0	7.37	20.4	113.0	"	"
1323	50		46.41	25.0	6.32	0.150	44.6	7.40	20.2	120.0	"	"
1328	55		46.41	27.5	6.34	0.150	41.3	7.43	20.2	124.1	"	"
1333	60		46.41	30.0	6.39	0.150	22.5					

TU

Constituents Sampled	Container	Number	Preservative
VOCs 8260	10mL vial	3	HCL
1,4 Dioxane 8270 DSM	1 L Amber	2	none

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing size / conversion factor (gal/ft)

$Tv = 521 - 46.35 = 474.65 \times 0.006 = 2.85 \times 3.785 = 10.7L$

*Field Blank Required

3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: 151 Main St Ave Well Locked at Arrival: Yes / No

Condition of Well: See Well Inspection Log Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up Key Number To Well: n/a

Location ID:	GM-33D2	Date(s):	2024-10-16	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:53.65 °F, rH:55%, Clouds: 20%, Wind:10mph N-NW			Field Technician:	Kyra Kraus		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	500.00-520.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	45.74	Total Depth (ft-bmp):	520	Water Column(ft):	474.26	Liters in Well:	1171.95
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	12:02	Total Volume Purged (liters):	35	Sample ID:	GM-33D2	Sample Time:	13:10
Purge End Time:	13:07	Well Volumes Purged (total):	0.03	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (µS/cm ²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
12:02	0	400	mL/min	45.79	7.79	0.155	21.5	7.65	17	98.6	Clear	No Odor
12:07	5	450	mL/min	45.78	6.71	0.149	17.8	8.14	17.3	131.3	Clear	No Odor
12:12	10	450	mL/min	45.78	5.92	0.148	17.4	8.14	17.1	153.8	Clear	No Odor
12:17	15	450	mL/min	45.78	5.8	0.148	16.6	8.12	17.2	157.7	Clear	No Odor
12:22	20	450	mL/min	45.78	5.56	0.148	17.2	8.13	17.2	156.77	Clear	No Odor
12:27	25	450	mL/min	45.78	5.42	0.148	14.1	8.07	17.5	185.5	Clear	No Odor
12:32	30	450	mL/min	45.78	5.37	0.148	9.06	8.04	17.3	188.8	Clear	No Odor
12:37	35	450	mL/min	45.78	5.35	0.148	9.55	8.04	17.4	192.5	Clear	No Odor
12:42	40	450	mL/min	45.78	5.33	0.148	9.95	8.05	17.5	193.9	Clear	No Odor
12:47	45	450	mL/min	45.78	5.28	0.148	9.95	8.04	17.5	197	Clear	No Odor
12:52	50	450	mL/min	45.77	5.19	0.148	9.94	8.01	17.5	155.81	Clear	No Odor
12:57	55	450	mL/min	45.77	5.17	0.148	9.93	8.01	17.5	204.3	Clear	No Odor
13:02	60	450	mL/min	45.78	5.17	0.148	13.8	7.99	17.5	205.7	Clear	No Odor
13:07	65	450	mL/min	45.79	5.17	0.148	6.87	8.01	17.5	206.5	Clear	No Odor

Constituent Sampled	Container	Number	Volume	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	1 L	None
Vinyl chloride (EPA 8260)	Clear Glass	3	40 mL	HCL

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437.6W/12 Well ID 6M-340 Page 1 of 1
 Date 10/17/24
 Project Name/Location 002-2 Q4 6w monitoring Weather 50°F cloudy
 Measuring Pt. Description TOL Screen Interval (ft-bls) 309-314 Casing Diameter (in.) 2 Well Material PVC SS
 Static Water Level (ft-bmp) 12.20 Total Depth (ft-bls) 314 Water Column/ Gallons in Well 301.8 ft / 148.288 gal
 MP Elevation — Pump Intake (ft-bls) midscreen Purge Method: Non-dedicated Bladder Pump Peristaltic Submersible Other Sample Method MP/LF
 Pump On/Off 10/1 Volume Purged (gal) 2.5L Sampled by Arnt
 Sample Time: Label 6M-340 Replicate/ Code No. n/a dedicated
 Start 1105
 End 1111
 PID: 0-0

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1016	0	500	12.25	0	6.81	0.241	3.7	6.47	12.9	198.0	Clear	None
1021	5	500	12.25	2.5	7.67	0.243		2.55	15.3	174.3	"	"
1026	10	500	12.25	5.0	8.54	0.241		1.58	15.7	134.0	"	"
1031	15	500	12.25	7.5	7.18	0.250	8.16	0.58	15.5	128.7	"	"
1036	20	500	12.20	10.0	7.15	0.252		1.09	15.5	123.8	"	"
1041	25	500	12.25	12.5	7.20	0.251		1.08	15.5	121.7	"	"
1046	30	500	12.25	15.0	6.67	0.251	6.77	1.48	15.5	120.1	"	"
1051	35	500	12.25	17.5	6.61	0.252	6.71	1.67	15.6	116.6	"	"
1056	40	500	12.25	20.0	6.58	0.251	5.04	1.67	15.6	113.8	"	"
1101	45	500	12.25	22.5	6.55	0.252	5.01	1.70	15.5	111.6	"	"

TV

Constituents Sampled	Container	Number	Preservative
8270D SIM	1L Amber	2	none
8260C	40ml vial	3	HCL

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing size conversion factor (gal/ft)
 $TV = 314 - 12.20 = 301.8 \text{ ft} \times 0.01 = 3.018 \times 3.785 = 11.42 \text{ L}$
 * Could not get a rate lower than 500 mL/min in LF.

*Field Blank Required

3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: <u>Levittown Fire House</u>	Well Locked at Arrival: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Condition of Well: <u>See Well Inspection Log</u>	Well Locked at Departure: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No
Well Completion: <u>Flush Mount / Stick Up</u>	Key Number To Well: _____

Groundwater Sampling Form



Location ID:	GM-34D2	Date(s):	2024-10-17	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:10.96 °C, rH:61%, Clouds: 0%, Wind:5.81m/s N-NW			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (m-bgs):	510.00-520.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (m-bmp):	15	Total Depth (m-bmp):	520	Water Column(m):	505	Liters in Well:	4094.21
Depth to Product (m-bmp):	NA	Pump Intake Depth(m-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	
Purge Start Time:	NA	Total Volume Purged (liters):	29	Sample ID:	GM-34D2	Sample Time:	11:50
Purge End Time:	11:47	Well Volumes Purged (total):	0.01	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:56	0	400	mL/min	15	7.62	0.143	5.92	1.1	15.6	2.5	Clear	No Odor
11:01	5	400	mL/min	15	7.85	0.142	5.92	0.55	15.6	112	Clear	No Odor
11:06	10	400	mL/min	15	6.55	0.139	5.92	2.2	15.8	70.6	Clear	No Odor
11:11	15	400	mL/min	15	6.52	0.139	23.6	2.22	15.7	69.3	Clear	No Odor
11:16	20	400	mL/min	15	6.48	0.138	23.6	2.27	15.7	68	Clear	No Odor
11:21	25	400	mL/min	15	6.37	0.14	23.6	2.5	15.7	65.5	Clear	No Odor
11:26	30	400	mL/min	15	6.35	0.14	15.7	2.6	16	67.2	Clear	No Odor
11:31	35	400	mL/min	15	6.34	0.14	15.7	2.62	16	68	Clear	No Odor
11:36	40	400	mL/min	15	6.35	0.14	13.3	2.66	16	69.6	Clear	No Odor
11:41	45	400	mL/min	15	6.34	0.14	9.98	2.68	16	69.8	Clear	No Odor
11:46	50	400	mL/min	15	6.33	0.141	14	2.71	16	69.3	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
VOCs (SW8260)	Clear Glass	3	HCl

Comments: 515-15=500x.006=3x3.785=11.3LTV

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Page 1 of 1

Project No. 80218737.6W/M/2 Well ID GM-3502 Date 10/22/24
 Project Name/Location 27th Over of GW Sampling Weather 70°F Sunny
 Measuring Pt. Description TOC Screen Interval (ft-blis) 510-530 Casing Diameter (in.) 4" Well Material PVC SS
 Static Water Level (ft-bmp) 38.49 Total Depth (ft-blis) 530 Water Column/ Gallons in Well 481.514 / 312.98 gal
 MP Elevation - Pump Intake (ft-blis) Midscreen Purge Method: Non-dedicated Peristaltic Submersible Other 6.6 sub Sample Method MTZLP
 Pump On/Off 11/20/127 Volume Purged (gal) 31L
 Sample Time: Label GM-3502 Replicate/ Code No. N/A Sampled by ANN
 Start 12:16 End 12:26 SPLIT sample VOC'S
 PID: 0.1

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:20	0	500	38.46	0	6.33	0.109		7.55	16.3	206.4	Clear	None
11:25	5		38.46	2.5	6.44	0.106	1.41	6.82	16.6	206.7	"	"
11:30	10			5.0	6.45	0.106		6.85	16.4	201.3	"	"
11:35	15			7.5	7.91	0.119		7.00	17.1	114.7	"	"
11:40	20		38.46	10.0	7.98	0.113	1.08	7.16	17.0	145.7	"	"
11:45	25			12.5	7.54	0.112		7.25	17.0	158.6	"	"
11:50	30		38.46	15.0	6.62	0.111		7.37	17.0	186.9	"	"
11:55	35			17.5	6.21	0.111	1.37	7.40	17.1	204.8	"	"
12:00	40		38.46	20.0	6.23	0.111	0.67	7.41	17.2	204.1	"	"
12:05	45			22.5	6.25	0.111	2.40	7.46	17.3	206.4	"	"
12:10	50		38.46	25.0	6.28	0.112	1.91	7.48	17.3	204.1	"	"
12:15	55			27.5	6.31	0.112	1.08	7.51	17.3	211.1	"	"

TV
Sample

Constituents Sampled	Container	Number	Preservative
VOC'S 8260C	40mL vial	3	NCL
1,4-Dioxane 82700 SIM	1L Amber	2	None
SPLIT sample VOC'S	40mL vial	2	NCL

Notes:
 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing size conversion factor (gal/ft)
530 - 38.49 = 491.51 x 0.006 = 2.989 x 3.765 = 10.935L

*Field Blank Required
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature

Well Casing Volumes	1" = 0.04	1.5" = 0.09	2" = 0.16	3" = 0.37	4" = 0.65	6" = 1.47	8" = 0.008
Gallons/foot	1.25" = 0.06					1/2" = 0.01	

Well Information

Well Location: Cepl St. Well Locked at Arrival: Yes / No
 Condition of Well: See Well Inspection Log Well Locked at Departure: Yes / No
 Well Completion: Flush Mount / Stick Up Key Number To Well: N/A

Location ID:	GM-38D	Date(s):	2024-10-22	Work Order(s):	2024 4th Quarter Sampling Event
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States
Area:	Default Site				
Weather(°F):	CLEAR, T:73.99 °F, rH:54%, Clouds: 0%, Wind:4mph SE			Field Technician:	Kyra Kraus
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	320.00-340.00	Casing Diameter (in):	4.00
Well Casing Material:	PVC				
Static Water Level (ft-bmp):	36.41	Total Depth (ft-bmp):	340	Water Column(ft):	303.59
Liters in Well:	750.21				
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow
Purging Equipment:	Submersible Pump				
Purge Start Time:	11:40	Total Volume Purged (liters):	22	Sample ID:	GM-38D
Sample Time:	12:25				
Purge End Time:	12:15	Well Volumes Purged (total):	0.03	Replicate Type / Replicate ID:	Duplicate / REP102224KK1
Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA				

Scope of work completed? Yes

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (µS/cm ^o)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:40	0	50	mL/min	36.41	6.64	0.2	4.08	1.73	14.8	157.73	Clear	No Odor
11:45	5	500	mL/min	36.41	5.34	0.201	4.08	2.4	17.8	217.3	Clear	No Odor
11:50	10	500	mL/min	36.41	5.32	0.202	3.9	2.42	17.9	157.75	Clear	No Odor
11:55	15	500	mL/min	36.41	5.14	0.203	2.32	2.56	16.9	219.1	Clear	No Odor
12:00	20	500	mL/min	36.41	4.89	0.218	3.2	2.73	16.8	224	Clear	No Odor
12:05	25	500	mL/min	36.41	4.79	0.224	1.32	2.79	16.8	224.9	Clear	No Odor
12:10	30	500	mL/min	36.41	4.75	0.225	1.32	2.81	16.9	224.6	Clear	No Odor
12:15	35	500	mL/min	36.41	4.74	0.226	0.8	2.81	17	224.2	Clear	No Odor

Constituent Sampled	Container	Number	Volume	Preservative
1,4-Dioxane (8270C)	Amber Glass	4	1 L	None
Vinyl chloride (EPA 8260)	Clear Glass	6	40 mL	HCL

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	GM-38D2	Date(s):	2024-10-22	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:75.79 °F, rH:52%, Clouds: 0%, Wind:5.01mph SE			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	475.00-495.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	38.86	Total Depth (ft-bmp):	NA	Water Column(ft):	456.14	Liters in Well:	1127.18
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	11:53	Total Volume Purged (liters):	25.5	Sample ID:	GM-38D2	Sample Time:	12:52
Purge End Time:	12:50	Well Volumes Purged (total):	0.02	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q, YSI 6920 V2 MPS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:55	0	1000	mL/min	38.82	4.36	0.114	3.31	9.29	14.25	111.2	Clear	No Odor
12:00	5	400	mL/min	38.83	5.34	0.113	3.31	2.14	15.29	164.9	Clear	No Odor
12:05	10	400	mL/min	38.83	5.35	0.112	3.31	1.5	15.4	191.2	Clear	No Odor
12:10	15	400	mL/min	38.83	5.25	0.112	20.9	1.32	15.42	220.2	Clear	No Odor
12:15	20	500	mL/min	38.81	5.28	0.107	20.9	1.28	15.36	232.6	Clear	No Odor
12:20	25	500	mL/min	38.81	4.15	0.112	20.9	1.21	15.47	260.6	Clear	No Odor
12:25	30	500	mL/min	38.82	4.14	0.112	14.4	1.2	15.46	265.5	Clear	No Odor
12:30	35	400	mL/min	38.82	4.12	0.115	14.4	1.17	15.49	282.2	Clear	No Odor
12:35	40	400	mL/min	38.82	4.17	0.116	14.4	1.1	15.85	298.1	Clear	No Odor
12:40	45	400	mL/min	38.82	4.14	0.116	9.44	1.1	15.82	301.2	Clear	No Odor
12:45	50	400	mL/min	38.82	4.18	0.116	9.22	1.08	15.79	307.4	Clear	No Odor
12:50	55	400	mL/min	38.82	4.18	0.114	6.54	1.03	15.56	308.6	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Vinyl chloride (EPA 8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? poor

Data retrieval failed for the subreport, 'Subreport2', located at: 'E2E GW delay_defeciancy_subreport'. Please check the log files for more

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Location ID:	GM-39DA	Date(s):	2024-10-17	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:7.17 °C, rH:77%, Clouds: 0%, Wind:4.47m/s N-NE			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (m-bgs):	262.00-282.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (m-bmp):	35.29	Total Depth (m-bmp):	282	Water Column(m):	246.71	Liters in Well:	2000.16
Depth to Product (m-bmp):	NA	Pump Intake Depth(m-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	
Purge Start Time:	NA	Total Volume Purged (liters):	18	Sample ID:	GM-39DA	Sample Time:	09:15
Purge End Time:	09:12	Well Volumes Purged (total):	0.01	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:26	0	400	mL/min	35.29	5.89	0.273	2.17	6.92	17	91.2	Clear	No Odor
08:31	5	300	mL/min	35.29	5.96	0.239	2.17	5.19	15.4	41.2	Clear	No Odor
08:36	10	300	mL/min	35.29	6.19	0.197	2.17	2.88	15	98.9	Clear	No Odor
08:41	15	300	mL/min	35.3	5.83	0.246	1.46	4.96	14.9	48.4	Clear	No Odor
08:46	20	300	mL/min	35.3	5.65	0.27	1.45	5.98	15	47.5	Clear	No Odor
08:51	25	300	mL/min	35.3	5.63	0.269	1.45	5.97	15	49.8	Clear	No Odor
08:56	30	300	mL/min	35.3	5.6	0.269	1.13	5.96	15.1	51	Clear	No Odor
09:06	40	300	mL/min	35.3	5.66	0.27	1.01	5.4	15.2	50.3	Clear	No Odor
09:11	45	300	mL/min	35.3	5.68	0.27	0.89	5.5	15.1	58.2	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8260)	Amber Glass	2	None
VOCs (SW8260)	Clear Glass	3	HCl

Comments: 272-35.29=236.7x.006=1.4x3.785=5.3LTV

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 50218437.GWmb Well ID 6m-39DB Date 10/17/14
 Project Name/Location OU2.2 Q4GW Monitoring Weather 75°F, Sunny
 Measuring Pt. TOC Screen Interval (ft-bis) 410-420 Casing Diameter (in.) 4 Well Material PVC SS
 Static Water Level (ft-bmp) 38.33 Total Depth (ft-bis) 420 Water Column/ Gallons in Well 376.64 / 244.79 gal
 MP Elevation — Pump Intake (ft-bis) Midscreen Purge Method: Non-dedicated Bladder Pump Peristaltic Submersible Other Sample Method LF
 Pump On/Off 0823 Volume Purged (gal) 21L Sampled by AMH
 Sample Time: Label 6m-39DB Replicate/ Code No. n/a Dedicated Other PID: 0.0

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox (mV)	Appearance	
											Color	Odor
0825	0	400	38.35	0	7.04	0.364	2.39	9.76	16.4	113.5	Clear	None
0830	5	400	38.35	2.0	5.79	0.379		8.61	15.3	132.2	"	"
0835	10	400	38.35	4.0	5.38	0.384		7.65	14.9	103.1	"	"
0840	15	400	38.35	6.0	5.32	0.386	6.45	7.93	15.0	166.2	"	"
0845	20	400	38.35	8.0	5.30	0.391		7.92	15.1	175.7	"	"
0850	25	400	38.35	10.0	5.30	0.391		7.92	15.1	176.3	"	"
0855	30	400	38.35	12.0	5.29	0.392	3.56	7.92	15.1	178.2	"	"
0900	35	400	38.35	14.0	5.29	0.393	4.88	7.96	15.2	182.2	"	"
0905	40	400	38.35	16.0	5.29	0.393	1.86	8.00	15.1	182.4	"	"
0910	45	400	38.35	18.0	5.28	0.394	1.25	7.98	15.2	183.0	"	"

Constituents Sampled	Container	Number	Preservative
8270 DSIM	1L Amber	2	None
8260 C	4mL vial	3	HCL

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing size conversion factor (gal/ft)
 $TV = 415 - 38.33 = 376.67 \times 0.006 = 2.26 \times 3.755 = 8.55$

*Field Blank Required

3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: MTA Parking Lot Well Locked at Arrival: Yes / No
 Condition of Well: See Well Inspection Log Well Locked at Departure: Yes / No
 Well Completion: Flush Mount / Stick Up Key Number To Well: n/a

Groundwater Sampling Form



Location ID:	GM-73D	Date(s):	2024-10-21	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:19.89 °C, rH:49%, Clouds: 0%, Wind:2.06m/s W-NW			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (m-bgs):	401.00-411.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (m-bmp):	43	Total Depth (m-bmp):	411	Water Column(m):	368	Liters in Well:	2983.51
Depth to Product (m-bmp):	NA	Pump Intake Depth(m-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	
Purge Start Time:	NA	Total Volume Purged (liters):	30	Sample ID:	GM-73D	Sample Time:	11:40
Purge End Time:	11:39	Well Volumes Purged (total):	0.01	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:43	0	400	mL/min	43	5.38	0.179	5.66	6.06	17.6	102.4	Clear	No Odor
10:48	5	400	mL/min	43	5.25	0.186	5.66	4.95	17.2	118.8	Clear	No Odor
10:53	10	400	mL/min	43	5.26	0.185	5.66	4.6	17.3	121.9	Clear	No Odor
10:58	15	400	mL/min	43.01	4.97	0.182	4	6.65	17.4	139	Clear	No Odor
11:03	20	400	mL/min	43.01	4.94	0.183	4	6.87	17.4	140	Clear	No Odor
11:08	25	400	mL/min	43.01	6.92	0.184	4	6.93	17.4	140.2	Clear	No Odor
11:13	30	400	mL/min	43.01	4.89	0.186	4	7.29	17.5	142	Clear	No Odor
11:18	35	400	mL/min	43.02	4.86	0.189	2.63	7.55	17.5	142.9	Clear	No Odor
11:23	40	400	mL/min	43.02	4.84	0.193	1.87	7.8	17.5	143.3	Clear	No Odor
11:28	45	400	mL/min	43.02	4.84	0.193	2.34	7.85	17.6	143.4	Clear	No Odor
11:33	50	400	mL/min	43.02	4.83	0.196	1.22	7.9	17.6	143.1	Clear	No Odor
11:38	55	400	mL/min	43.02	4.83	0.196	0.75	7.91	17.6	143.4	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
VOCs (SW8260)	Clear Glass	3	HCl

Comments: 411-43=368x.006=2.2x3.785=8.3L TV

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437.GW M12 Well ID GM-7302 Page 1 of 1
 Date 10/21/24
 Project Name/Location 2024 02 24 GW Monitoring Weather 100% sunny
 Measuring Pt. TOC Screen Interval (ft-bis) 532-552 Casing Diameter (in.) 4 Well Material PVC
 Description TOC Static Water Level (ft-bmp) 40.21 Total Depth (ft-bis) 552 Water Column/ Gallons in Well 50.79 ft / 326.16 gal Sample Method MP / LF
 MP Elevation 1040 Pump Intake (ft-bis) midscreen Purge Method Non-dedicated Bladder Pump
 Pump On/Off 1040 Volume Purged (gal) 33L Peristaltic Geotech
 Sample Time: Label GM-7302 Replicate/ Code No. REP 102124 AH1 Sampled by ANN
 Start 1138 End 1145
 PID: 0.1

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1040	0	500		0	5.30	0.507	6.67	3.45	16.5	236.3	Clear	none
1045	5	500	40.23	2.5	5.23	0.448		5.96	16.5	278.5	"	"
1050	10	500		5.0	5.10	0.482		7.20	17.3	313.6	"	"
1055	15	500		7.5	5.00	0.440	3.61	7.43	17.3	310.3	"	"
1100	20	500	40.21	10.0	4.99	0.448		7.23	17.4	315.5	"	"
1105	25	500		12.5	4.91	0.536		7.50	17.3	315.9	"	"
1110	30	500		15.0	4.86	0.560	14.8	7.50	17.4	321.3	"	"
1115	35		40.24	17.5	4.76	0.561		7.55	17.5	327.9	"	"
1120	40			20.0	4.73	0.563		7.58	17.5	331.1	"	"
1125	45		40.24	22.5	4.70	0.564	15.4	7.60	17.5	335.9	"	"
1130	50			25.0	4.69	0.565	14.2	7.61	17.8	338.9	"	"
1135	55		40.24	27.5	4.69	0.566	11.5	7.60	17.9	340.1	"	"

Constituents Sampled	Container	Number	Preservative
VOC'S 8260C	40 mL well	64	Hel
1,4 Dioxane 8270 DSM	1 L Amber		None

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing size conversion factor (gal/ft)

$542 - 40.21 = 501.79 \times 0.006 = 3.01 \times 3.785 = 1.140 \text{ gal}$

*Field Blank Required

3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location:	<u>B/A</u>	Well Locked at Arrival:	<u>Yes</u> / No
Condition of Well:	See Well Inspection Log	Well Locked at Departure:	<u>Yes</u> / No
Well Completion:	<u>Flush Mount</u> / Stick Up	Key Number To Well:	<u>0/1a</u>

Location ID:	GM-73D3	Date(s):	2024-10-21	Work Order(s):	2024 4th Quarter Sampling Event	
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area: Default Site
Weather(°F):	CLEAR, T:66.51 °F, rH:52%, Clouds: 0%, Wind:4.61mph W-NW			Field Technician:	Kyra Kraus	
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	635.00-650.00	Casing Diameter (in):	4.00	Well Casing Material: PVC
Static Water Level (ft-bmp):	42.38	Total Depth (ft-bmp):	655	Water Column(ft):	612.62	Liters in Well: 1513.86
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment: Submersible Pump
Purge Start Time:	10:37	Total Volume Purged (liters):	27	Sample ID:	GM-73D3	Sample Time: 11:40
Purge End Time:	11:38	Well Volumes Purged (total):	0.02	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID: Hach Z100-Q, YSI ProPlus, YSI Pro DSS / NA
Scope of work completed?	Yes					

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (µS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
10:38	0	500	mL/min	42.46	5.44	0.043	1.26	6.17	16.9	258.7	Clear	No Odor
10:43	5	400	mL/min	42.4	5.53	0.051	1.26	3.88	18.3	270.6	Clear	No Odor
10:48	10	400	mL/min	42.42	5.31	0.043	1.26	3.55	18.2	276.9	Clear	No Odor
10:53	15	400	mL/min	42.42	5.08	0.042	1.26	3.6	17.7	274.8	Clear	No Odor
10:58	20	400	mL/min	42.42	5.06	0.042	1.26	5.64	17.5	267.9	Clear	No Odor
11:03	25	400	mL/min	42.42	5.05	0.041	5.15	6.88	17.2	267	Clear	No Odor
11:08	30	400	mL/min	42.42	5.03	0.041	5.15	7.43	17	266	Clear	No Odor
11:13	35	400	mL/min	42.42	5.02	0.041	3.61	7.79	17.3	265.3	Clear	No Odor
11:18	40	400	mL/min	42.42	5.02	0.04	3.18	7.88	17.2	264.8	Clear	No Odor
11:23	45	400	mL/min	42.42	5.02	0.04	3.12	7.94	17.1	264.2	Clear	No Odor
11:28	50	400	mL/min	42.42	5.02	0.04	4.2	8.1	17.2	263.7	Clear	No Odor
11:33	55	400	mL/min	42.43	5	0.04	3.59	8.24	17.2	263.8	Clear	No Odor
11:38	60	400	mL/min	42.43	5	0.04	4.14	8.24	17.2	263.5	Clear	No Odor

Constituent Sampled	Container	Number	Volume	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	1 L	None
Vinyl chloride (EPA 8260)	Clear Glass	3	40 mL	HCL

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-74D	Date(s):	2024-10-21	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:57.88 °F, rH:73%, Clouds: 0%, Wind:5.75mph W			Field Technician:	Kyra Kraus		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	295.00-305.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	41.48	Total Depth (ft-bmp):	305	Water Column(ft):	263.52	Liters in Well:	651.19
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	08:48	Total Volume Purged (liters):	23	Sample ID:	GM-74D	Sample Time:	09:39
Purge End Time:	09:34	Well Volumes Purged (total):	0.04	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q, YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (µS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:49	0	400	mL/min	41.5	4.56	0.116	3.46	2.78	15.5	181.2	Clear	No Odor
08:54	5	400	mL/min	41.5	4.17	0.099	3.46	0.96	15.5	251.9	Clear	No Odor
08:59	10	400	mL/min	41.5	4.15	0.1	4.15	0.72	15.5	294.9	Clear	No Odor
09:04	15	400	mL/min	41.5	4.15	0.1	4.5	0.71	15.5	310	Clear	No Odor
09:09	20	400	mL/min	41.5	4.16	0.106	2.66	1.53	15.5	331.4	Clear	No Odor
09:14	25	400	mL/min	41.4	4.28	0.122	1.37	4.75	15.5	331	Clear	No Odor
09:19	30	400	mL/min	41.5	4.37	0.129	1.33	5.9	15.6	331	Clear	No Odor
09:24	35	400	mL/min	41.52	4.39	0.13	1.4	6.11	15.6	331	Clear	No Odor
09:29	40	400	mL/min	41.5	4.39	0.13	1.4	6.08	15.6	331	Clear	No Odor
09:34	45	400	mL/min	41.5	4.35	0.13	4.4	6.18	15.6	330.5	Clear	No Odor

Constituent Sampled	Container	Number	Volume	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	1 L	None
Vinyl chloride (EPA 8260)	Clear Glass	3	40 mL	HCL

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30218437. Gwmla Well ID GM-7402 Date 10/21/24
 Project Name/Location Q12 Q4 2024 Gw Sampling Weather 70°F Sunny
 Measuring Pt. Description Poc Screen Interval (ft-bls) 542-562 Casing Diameter (in.) 9 Well Material PVC SS
 Static Water Level (ft-bmp) 50.03 Total Depth (ft-bls) 562 Water Column/ Gallons in Well 501.97ft / 3.018Gal
 MP Elevation - Pump Intake (ft-bls) Midscreen Purge Method: Non-dedicated Bladder Pump Peristaltic Submersible CP-Sub Other - Sample Method MP/LE
 Pump On/Off 0846 Volume Purged (gal) 281
 Sample Time: Label GM-7402 Replicate/ Start 0947 Code No. n/a End 0946 Sampled by J. Nord
 PID: 0.0

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0844	0	500		0	6.95	0.168	14.1	6.37	15.9	164.4	Clear	None
0854	5	800	50.06	2.5	5.60	0.145		2.28	16.2	150.2	"	"
0859	10			5.0	5.99	0.145		2.41	16.4	175.3	"	"
0904	15			7.5	5.61	0.134	18.9	2.62	16.8	193.6	"	"
0909	20		50.08	10.0	5.39	0.139		4.03	17.0	217.7	"	"
0914	25			12.5	5.32	0.171		4.70	17.1	228.3	"	"
0919	30		50.08	15.0	5.23	0.145	10.5	4.86	17.3	239.9	"	"
0924	35			17.5	5.14	0.148		5.23	17.4	253.6	"	"
0929	40		50.08	20.0	5.11	0.149	7.33	5.31	17.6	256.1	"	"
0934	45		50.06	22.5	5.06	0.150	7.20	5.35	17.6	259.9	"	"
0939	50		50.06	25.0	5.04	0.150	5.78	5.39	17.8	263.3	"	"
0944	55											

TU
*Example

Constituents Sampled	Container	Number	Preservative
VOC's 8260 C	4amp well	3	HCL
1,4 Dioxane 8260 D51M	1L Amber	2	None

Notes:
 Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing size conversion factor (gal/ft)
 $552 - 50.03 = 501.97 \times 0.006 = 3.0118 \times 3.785 = 11.394$

*Field Blank Required
 3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature.

Well Casing Volumes	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
Gallons/Foot	1" = 0.04	2" = 0.16	3" = 0.37	4" = 0.65	1/2" = 0.01

Well Information

Well Location: Building 109 Sewer Basin Well Locked at Arrival: Yes / No
 Condition of Well: See Well Inspection Log Well Locked at Departure: Yes / No
 Well Completion: Flush Mount / Stick Up Key Number To Well: N/A

Groundwater Sampling Form



Location ID:	GM-74D3	Date(s):	2024-10-21	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:14.38 °C, rH:73%, Clouds: 0%, Wind:2.57m/s W			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (m-bgs):	625.00-645.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (m-bmp):	47.35	Total Depth (m-bmp):	650	Water Column(m):	602.65	Liters in Well:	4885.9
Depth to Product (m-bmp):	NA	Pump Intake Depth(m-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	
Purge Start Time:	NA	Total Volume Purged (liters):	32	Sample ID:	GM-74D3	Sample Time:	09:40
Purge End Time:	09:37	Well Volumes Purged (total):	0.01	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:46	0	500	mL/min	47.35	6.37	0.057	23.5	4.41	15.6	152.4	Clear	No Odor
08:51	5	500	mL/min	47.35	6.16	0.055	22.5	3.9	25.9	150.8	Clear	No Odor
08:56	10	500	mL/min	47.35	5.85	0.043	22.5	3.79	16.2	142.6	Clear	No Odor
09:01	15	500	mL/min	47.37	5.67	0.041	17.3	3.82	16.4	139.6	Clear	No Odor
09:06	20	500	mL/min	47.37	5.62	0.04	17.3	3.86	16.7	136	Clear	No Odor
09:11	25	500	mL/min	47.37	5.6	0.04	17.3	3.89	16.7	134.4	Clear	No Odor
09:16	30	500	mL/min	47.37	5.6	0.04	21.7	4.3	16.8	132.5	Clear	No Odor
09:21	35	500	mL/min	47.37	5.64	0.04	21.7	4.35	16.9	130.5	Clear	No Odor
09:26	40	500	mL/min	47.37	5.67	0.04	21.7	4.38	17	127.3	Clear	No Odor
09:31	45	500	mL/min	47.37	5.69	0.041	19.4	4.4	17	126	Clear	No Odor
09:36	50	500	mL/min	47.37	5.68	0.04	20.2	4.41	17.1	124.8	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
VOCs (SW8260)	Clear Glass	3	HCl

Comments: 645-47.35=597.6x.01=5.9x3.785=22.6L TV

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	GM-74I	Date(s):	2024-10-21	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:57.88 °F, rH:73%, Clouds: 0%, Wind:5.75mph W			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	94.00-114.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	32.07	Total Depth (ft-bmp):	NA	Water Column(ft):	81.93	Liters in Well:	202.46
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	08:53	Total Volume Purged (liters):	20.4	Sample ID:	GM-74I	Sample Time:	09:47
Purge End Time:	09:47	Well Volumes Purged (total):	0.10	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:09	0	400	mL/min	32.13	6.14	0.163	8.69	9.94	15.57	139.4	Clear	No Odor
09:14	5	400	mL/min	32.13	6.2	0.136	8.69	12.5	16.15	133.8	Clear	No Odor
09:19	10	400	mL/min	32.13	6.19	0.133	8.69	12.55	16.25	132.2	Clear	No Odor
09:24	15	400	mL/min	32.16	6.18	0.138	6.04	12.57	16.51	131.9	Clear	No Odor
09:29	20	400	mL/min	32.16	6.17	0.137	6.04	12.61	16.59	133.3	Clear	No Odor
09:34	25	400	mL/min	32.16	6.14	0.138	4.21	12.65	16.62	135.5	Clear	No Odor
09:39	30	400	mL/min	32.16	6.14	0.139	3.96	12.6	16.92	137.3	Clear	No Odor
09:44	35	400	mL/min	32.16	6.14	0.14	3.98	12.56	17.1	139	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Vinyl chloride (EPA 8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-75D2	Date(s):	2024-10-16	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:47.26 °F, rH:68%, Clouds: 4%, Wind:8.01mph W-NW			Field Technician:	Kyra Kraus		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	505.00-525.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	32.73	Total Depth (ft-bmp):	562	Water Column(ft):	529.27	Liters in Well:	1307.89
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	09:09	Total Volume Purged (liters):	22	Sample ID:	GM-75D2	Sample Time:	09:49
Purge End Time:	09:44	Well Volumes Purged (total):	0.02	Replicate Type / Replicate ID:	MS/MSD / GM-75D2	Water Quality Meter/ ID:	/ NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (µS/cm ²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:09	0	500	mL/min	32.77	5.27	0.161	1.47	3.5	14.9	178.8	Clear	No Odor
09:14	5	500	mL/min	32.77	4.54	0.156	1.47	0.73	15	228.8	Clear	No Odor
09:19	10	500	mL/min	32.77	4.6	0.169	2.65	7.06	15.1	229.7	Clear	No Odor
09:24	15	500	mL/min	32.77	4.61	0.166	1.8	7.14	15	230	Clear	No Odor
09:29	20	500	mL/min	32.77	4.61	0.166	1.37	7.15	15	230.2	Clear	No Odor
09:34	25	500	mL/min	32.77	4.61	0.165	2.4	7.16	15	230.2	Clear	No Odor
09:39	30	500	mL/min	32.79	4.6	0.166	0.97	7.18	15.1	229.7	Clear	No Odor
09:44	35	500	mL/min	32.8	4.61	0.167	0.95	7.17	15.1	229.7	Clear	No Odor

Constituent Sampled	Container	Number	Volume	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	1 L	None
Vinyl chloride (EPA 8260)	Clear Glass	3	40 mL	HCL

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Project No. 30219437.GWMI2 Well ID Gm-7802 Page 1 of 1
 Project Name/Location 2024 O&A Q4 GW Sampling Date 10/22/24
 Measuring Pt. Description TOL Screen Interval (ft-bis) 459-479 Casing Diameter (in.) 4 Weather 70°F, Sunny
 Static Water Level (ft-bmp) 42.82 Total Depth (ft-bis) 484 Water Column/ Gallons in Well 426.18 ft / 277.07 gal Well Material PVC SS
 MP Elevation - Pump Intake (ft-bis) Midscreen Purge Method: Non-dedicated Bladder Pump Peristaltic Submersible Geosub Other - Sample Method LR + TV
 Pump On/Off 0916/1023 Volume Purged (gal) 33L Sample Time: Label Gm-7802 Replicate/ Code No. N/A Start 1018 End 1023 Sampled by ANN
 PID: 0.2

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0916	0	500	41.60	0	6.48	0.136		8.08	12.0	174.0	Clear	none
0921	5	500		2.5	6.48	0.135	21.8	8.00	12.1	190.3	"	"
0926	10			5.0	5.63	0.136		8.09	15.0	212.6	"	"
0931	15		41.60	7.5	5.33	0.136		8.20	18.1	237.4	"	"
0936	20			10.0	5.22	0.136	4.03	8.26	18.3	247.8	"	"
0941	25		41.56	12.5	5.24	0.136		8.54	18.5	258.5	"	"
0946	30			15.0	5.18	0.136		8.74	18.0	269.6	"	"
0951	35			17.5	5.14	0.136	2.61	8.76	19.2	286.2	"	"
0956	40			20.0	5.09	0.137		8.81	19.6	276.8	"	"
1001	45		41.56	22.5	5.07	0.137	1.65	8.83	20.0	280.6	"	"
1006	50			25.0	5.04	0.137	1.45	8.86	20.1	284.1	"	"
1011	55		41.53	27.5	5.02	0.137	2.06	8.86	20.3	287.2	"	"
1016	60		41.53	30.0	5.01	0.137	1.48	8.86	20.3	291.5	"	"

TV

Constituents Sampled	Container	Number	Preservative
<u>DOC's & DOC</u>	<u>40 mL vial</u>	<u>3</u>	<u>HCL</u>
<u>1,4 Dithane & 200 S/m</u>	<u>1 L Amber</u>	<u>2</u>	<u>None</u>

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing size conversion factor (gal/ft)
 $484 - 42.82 = 426.18 \times 0.01 = 4.2618 \times 3.765 = 16.13L$

***Field Blank Required**

3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	4" = 0.66	4.5" = 0.82	5" = 1.00	6" = 1.47	8" = 0.006
	1.25" = 0.06	2" = 0.16	3" = 0.37					1/2" = 0.0	

Well Information

Well Location: <u>Martha Blvd</u>	Well Locked at Arrival: <u>Yes</u> / <u>No</u>
Condition of Well: <u>See Well Inspection Log</u>	Well Locked at Departure: <u>Yes</u> / <u>No</u>
Well Completion: <u>Flush Mount</u> / <u>Stick Up</u>	Key Number To Well: <u>N/A</u>

Groundwater Sampling Form



Location ID:	GM-79D	Date(s):	2024-10-22	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:65.8 °F, rH:70%, Clouds: 0%, Wind:1.01mph N-NW			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	280.00-290.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	38.62	Total Depth (ft-bmp):	NA	Water Column(ft):	251.38	Liters in Well:	621.19
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	09:21	Total Volume Purged (liters):	29.9	Sample ID:	GM-79D	Sample Time:	10:20
Purge End Time:	10:19	Well Volumes Purged (total):	0.05	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q, YSI 6920 V2 MPS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:23	0	1200	mL/min	38.67	4.9	0.113	165	0	14.22	230.9	Cloudy	No Odor
09:28	5	500	mL/min	38.67	4.85	0.093	165	5.67	14.53	242.1	Cloudy	No Odor
09:33	10	500	mL/min	38.67	4.93	0.093	165	5.61	14.45	247.8	Cloudy	No Odor
09:38	15	500	mL/min	38.6	4.92	0.094	86.8	5.62	14.53	249.4	Cloudy	No Odor
09:43	20	500	mL/min	38.6	4.9	0.094	86.8	5.66	14.47	252.3	Cloudy	No Odor
09:48	25	500	mL/min	38	4.88	0.166	86.8	5.53	14.65	260.6	Clear	No Odor
09:53	30	500	mL/min	38.6	4.88	0.116	54.3	5.55	14.64	263.3	Clear	No Odor
09:58	35	500	mL/min	38.6	4.87	0.094	54.3	5.54	14.77	268.9	Clear	No Odor
10:03	40	500	mL/min	38.6	4.83	0.093	41.8	5.58	14.66	272.6	Clear	No Odor
10:08	45	500	mL/min	38.6	4.83	0.093	39.3	5.61	14.62	276.3	Clear	No Odor
10:13	50	500	mL/min	38.6	4.81	0.093	36.4	5.58	14.67	278	Clear	No Odor
10:18	55	500	mL/min	38.6	4.81	0.094	33.7	5.58	14.79	281.1	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Vinyl chloride (EPA 8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	GM-79I	Date(s):	2024-10-22	Work Order(s):	2024 4th Quarter Sampling Event
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States
Weather(°F):	CLEAR, T:66.42 °F, rH:68%, Clouds: 0%, Wind:1.01mph NW			Field Technician:	Kyra Kraus
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	170.00-180.00	Casing Diameter (in):	4.00
Static Water Level (ft-bmp):	36.65	Total Depth (ft-bmp):	180	Water Column(ft):	143.35
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow
Purge Start Time:	09:18	Total Volume Purged (liters):	25	Sample ID:	GM-79I
Purge End Time:	10:05	Well Volumes Purged (total):	0.07	Replicate Type / Replicate ID:	MS/MSD / GM-79I
Scope of work completed?	Yes				
Area:	Default Site				
Well Casing Material:	PVC				
Liters in Well:	354.24				
Purging Equipment:	Dedicated Bladder				
Sample Time:	10:10				
Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA				

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (µS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:20	0	400	mL/min	36.69	5.25	0.234	0.95	9.6	17	186.4	Clear	No Odor
09:25	5	400	mL/min	36.69	4.97	0.147	0.95	8.93	15.4	211.4	Clear	No Odor
09:30	10	400	mL/min	36.6	5.01	0.144	1.2	9.12	15.5	233.9	Clear	No Odor
09:35	15	400	mL/min	36.69	5.01	0.143	1.7	9.15	15.5	243.1	Clear	No Odor
09:40	20	400	mL/min	36.4	5.01	0.143	1.79	9.11	15.4	244.8	Clear	No Odor
09:45	25	400	mL/min	36.41	5.02	0.142	0.86	9.13	15.5	245.8	Clear	No Odor
09:50	30	400	mL/min	36.42	5.02	0.143	4.59	9.14	15.7	247	Clear	No Odor
09:55	35	400	mL/min	36.43	5.02	0.143	4.59	9.15	15.6	247.2	Clear	No Odor
10:00	40	400	mL/min	36.43	5.01	0.143	3.2	9.19	15.9	246.8	Clear	No Odor
10:05	45	400	mL/min	36.42	5.01	0.144	4.17	9.25	15.8	246.1	Clear	No Odor

Constituent Sampled	Container	Number	Volume	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	1 L	None
VOCs (SW8260)	Clear Glass	3	40 mL	HCL

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	MW-1GF	Date(s):	2024-11-11	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:59.83 °F, rH:89%, Clouds: 100%, Wind:12.66mph SW			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	48.00-58.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	41.05	Total Depth (ft-bmp):	NA	Water Column(ft):	16.95	Liters in Well:	41.89
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	08:50	Total Volume Purged (liters):	76	Sample ID:	MW-01GF	Sample Time:	09:30
Purge End Time:	09:28	Well Volumes Purged (total):	1.81	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
08:53	0	2000	mL/min	41.08	5.54	0.153	4.87	11.3	16.2	170.7	Clear	No Odor
09:03	10	2000	mL/min	41.06	5.45	0.153	3.11	11.4	16.5	211.6	Clear	No Odor
09:15	22	2000	mL/min	41.05	5.49	0.155	1.35	11.39	16.5	239.7	Clear	No Odor
09:28	35	2000	mL/min	41.05	5.5	0.157	1.86	11.35	16.5	255.1	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Chromium, total (6010),Chromium, total dissolved (6010B) Cadmium	Plastic	2	HNO3

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	MW-2GF	Date(s):	2024-10-16	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:9.06 °C, rH:66%, Clouds: 0%, Wind:4.63m/s W-NW			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (m-bgs):	49.00-59.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (m-bmp):	40.68	Total Depth (m-bmp):	59	Water Column(m):	18.32	Liters in Well:	148.53
Depth to Product (m-bmp):	NA	Pump Intake Depth(m-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	
Purge Start Time:	NA	Total Volume Purged (liters):	22	Sample ID:	MW-02GG	Sample Time:	10:15
Purge End Time:	10:10	Well Volumes Purged (total):	0.15	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	/ NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:25	0	400	mL/min	40.68	7.7	0.239	14.7	10.8	14.7	42.8	Clear	No Odor
09:30	5	400	mL/min	40.68	7.33	0.234	14.7	10.23	15.6	10.2	Clear	No Odor
09:35	10	400	mL/min	40.68	7.51	0.204	14.7	9.88	15.5	39.6	Clear	No Odor
09:40	15	400	mL/min	40.69	7.45	0.201	10.5	9.79	15.3	37.3	Clear	No Odor
09:45	20	400	mL/min	40.69	7.3	0.2	10.5	9.8	15.3	44.5	Clear	No Odor
09:50	25	400	mL/min	40.69	7.28	0.2	10.5	9.77	15.6	47.1	Clear	No Odor
09:55	30	400	mL/min	40.69	7.32	0.2	9.43	9.42	15.6	49	Clear	No Odor
10:00	35	400	mL/min	40.69	7.34	0.2	7.7	9.8	15.8	50.2	Clear	No Odor
10:05	40	400	mL/min	40.69	7.35	0.2	7.34	9.84	15.8	51	Clear	No Odor
10:10	45	400	mL/min	40.69	7.33	0.2	6.89	9.82	15.9	51.2	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Chromium, total (6010), Chromium, total dissolved (6010B), Cadmium	HDPE Plastic	2	HNO3

Comments: 59-40.68=18.32x.0025=0.04x3.785=.17L TV

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Form



Location ID:	MW3-1	Date(s):	2024-10-21	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:74.61 °F, rH:40%, Clouds: 0%, Wind:3mph SE			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	476.00-496.00	Casing Diameter (in):	4.00	Well Casing Material:	PVC
Static Water Level (ft-bmp):	52.2	Total Depth (ft-bmp):	NA	Water Column(ft):	448.8	Liters in Well:	1109.04
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	Submersible Pump
Purge Start Time:	12:51	Total Volume Purged (liters):	28.2	Sample ID:	MW-3-1	Sample Time:	14:00
Purge End Time:	13:59	Well Volumes Purged (total):	0.03	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
12:54	0	400	mL/min	52.27	5.63	0.176	2	7.48	20.2	223	Clear	No Odor
12:59	5	400	mL/min	52.27	5.09	0.184	2	4.04	19.5	228.2	Clear	No Odor
13:04	10	400	mL/min	52.27	4.78	0.171	2	1.86	18.9	258.2	Clear	No Odor
13:09	15	400	mL/min	52.27	4.71	0.171	8.49	1.15	19.1	293.9	Clear	No Odor
13:14	20	400	mL/min	52.27	4.69	0.171	8.49	1.04	19.2	308.2	Clear	No Odor
13:19	25	400	mL/min	52.27	4.69	0.171	8.49	0.89	19.3	315	Clear	No Odor
13:24	30	400	mL/min	52.33	4.68	0.171	4.67	0.79	19.1	326.2	Clear	No Odor
13:29	35	400	mL/min	52.33	4.68	0.173	9.56	0.83	19.2	345.9	Clear	No Odor
13:34	40	400	mL/min	52.33	4.68	0.179	6.3	1.33	19.2	347.4	Clear	No Odor
13:39	45	500	mL/min	52.33	4.69	0.181	9.89	1.84	19.3	344	Clear	No Odor
13:44	50	500	mL/min	52.33	4.71	0.185	9.55	2.5	19.5	344.7	Clear	No Odor
13:49	55	400	mL/min	58.44	4.71	0.185	3.14	3.06	19.3	328.1	Clear	No Odor
13:54	60	400	mL/min	58.3	4.72	0.187	3.69	3.06	19.7	329.6	Clear	No Odor
13:59	65	400	mL/min	58.3	4.72	0.188	5.04	3.14	19.8	323.2	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Vinyl chloride (EPA 8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

- ft-bmp = feet below measuring point
- in = inches
- ft = feet
- mL/min = milliliters per minute
- uS/cm = microSiemens per centimeter
- NTU = Nephelometric Turbidity Unit
- mg/L = milligrams per liter
- S.U = standard units
- mS/cm = milli

Groundwater Sampling Form



Location ID:	N-10631	Date(s):	2024-10-16	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLEAR, T:51.19 °F, rH:60%, Clouds: 0%, Wind:13.8mph W-NW			Field Technician:	Shirley He		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	63.00-67.00	Casing Diameter (in):	2.00	Well Casing Material:	
Static Water Level (ft-bmp):	38.41	Total Depth (ft-bmp):	67	Water Column(ft):	28.59	Liters in Well:	17.66
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	NA	Purge Method:	Volumetric	Purging Equipment:	Submersible Pump
Purge Start Time:	11:08	Total Volume Purged (liters):	18.4	Sample ID:	N-10631R	Sample Time:	11:25
Purge End Time:	11:23	Well Volumes Purged (total):	1.04	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
11:09	0	4000	mL/min	38.46	5.58	0.282	1000	8.24	16.6	111	Yellow	No Odor
11:12	3	2000	mL/min		5.51	0.279	1000	8.46	16.6	121.7	Cloudy	No Odor
11:13	4	2000	mL/min	38.46	5.47	0.28	89.2	8.75	16.9	133.1	Clear	No Odor
11:16	7	800	mL/min	38.42	5.44	0.276	61.4	8.77	17.1	142.6	Clear	No Odor
11:21	12	800	mL/min	38.41	5.41	0.29	47.8	8.75	17.2	147.9	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Chromium, total (6010),Chromium, total dissolved (6010B), Cadmium	Plastic	2	HNO3
VOCs (SW8260)	Clear Glass	3	HCl

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Location ID:	PLT1MW-04	Date(s):	2024-10-15	Work Order(s):	2024 4th Quarter Sampling Event
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States
Area:	Default Site				
Weather(°F):	CLEAR, T:52.79 °F, rH:58%, Clouds: 0%, Wind:11.5mph NW			Field Technician:	Kyra Kraus
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (ft-bgs):	41.50-56.50	Casing Diameter (in):	2.00
Well Casing Material:	PVC				
Static Water Level (ft-bmp):	38.67	Total Depth (ft-bmp):	56.5	Water Column(ft):	17.83
Liters in Well:	11.02				
Depth to Product (ft-bmp):	NA	Pump Intake Depth(ft-bmp):	49	Purge Method:	Low Flow
Purging Equipment:	Submersible Pump				
Purge Start Time:	09:07	Total Volume Purged (liters):	38	Sample ID:	PLT1MW-04
Sample Time:	09:25				
Purge End Time:	09:23	Well Volumes Purged (total):	3.45	Replicate Type / Replicate ID:	NA / NA
Water Quality Meter/ ID:	Hach 2100-Q,YSI Pro DSS / NA				
Scope of work completed?	Yes				

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (µS/cm ²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:08	0	2000	mL/min	38.53	6	0.473	9.87	8.56	15.6	198.5	Clear	No Odor
09:13	5	2000	mL/min	38.71	5.8	0.472	2.36	8.8	15.8	153.71	Clear	No Odor
09:18	10	2000	mL/min	38.7	5.84	0.473	0.96	8.75	15.9	179.6	Clear	No Odor
09:23	15	2000	mL/min	38.7	5.84	0.472	0.92	8.8	15.9	176	Clear	No Odor

Constituent Sampled	Container	Number	Volume	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	1 L	None
Chromium (EPA 6010)	Plastic	2	250 mL	HNO3

Comments: None

Well Information:

Well Labeled Properly: yes

Is Well in Good Condition? good

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Groundwater Sampling Log

Page 1 of 1

Project No. 30218437.GWMI2 Well ID PLTMW-05

Date 10/15/17

Project Name/Location 02.204 GW Monitoring

Weather 50°F, Cloudy

Measuring Pt. Description TOC Screen Interval (ft-bis) 38ft-58ft Casing Diameter (in.) 2"

Well Material PVC SS

Static Water Level (ft-bmp) 38.89 Total Depth (ft-bis) 58ft Water Column/ Gallons in Well 20.11ft / 32.76gal

MP Elevation TOC Pump Intake (ft-bis) Midscreen Purge Method: Non-dedicated Bladder Pump Peristaltic Submersible 60Sub Other

Sample Method 3WSU

Pump On/Off 1003 Volume Purged (gal) _____

Sample Time: Label PLTMW-05 Replicate/ Code No. REP101524AH1

Start 1016 End 1022

Sampled by Amri, PQ

PID: 0-0

1
2
3
4

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Volume Purged (L)	pH (SU)	Cond. (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1003	0	3300	37.98	0	6.30	0.89	12.9	9.45	16.2	134.0	1.5	None
1007	4	3300	"	11	6.12	0.897	14.4	9.32	16.3	160.3	1.5	"
1011	8	3300	"	22	6.11	0.895	16.1	9.32	16.4	169.8	1.5	"
1015	12	3300	"	33	6.11	0.896	15.5	9.32	16.3	173.8		

Constituents Sampled	Container	Number	Preservative
Metals Metals <u>and</u>	<u>250mL HOPE</u>	<u>4</u>	<u>HNO3</u>
<u>1,4 D 82900</u>	<u>1L Amber</u>	<u>4</u>	

Notes:

Tubing Volume Equation: Volume (gal) = (Midscreen depth - static water level depth) x tubing size conversion factor (gal/ft)

***Field Blank Required**

3 successive readings should be within +/- 0.1 for pH, +/- 3 percent for Sp. Con., +/- 10 percent for DO, +/- 10 mv for ORP, +/- 10 percent for turbidity, and +/- 10 percent for temperature

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47	3/8" = 0.006
	1.25" = 0.06	2" = 0.18	3" = 0.37	4" = 0.65	1/2" = 0.01	

Well Information

Well Location: Post

Condition of Well: See Well Inspection Log

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: _____

Groundwater Sampling Form



Location ID:	PLT1MW-06	Date(s):	2024-10-15	Work Order(s):	2024 4th Quarter Sampling Event		
Client:	Northrop Grumman	Facility:	OU2	Facility Location:	Bethpage, NY, United States	Area:	Default Site
Weather(°F):	CLOUDS, T:9.43 °C, rH:68%, Clouds: 18%, Wind:3.58m/s W-NW			Field Technician:	Patrick Quinlan		
Measuring Pt. Description:	Top of Inner Casing	Screen Setting (m-bgs):	47.00-62.00	Casing Diameter (in):	2.00	Well Casing Material:	PVC
Static Water Level (m-bmp):	40.55	Total Depth (m-bmp):	62	Water Column(m):	21.45	Liters in Well:	43.48
Depth to Product (m-bmp):	NA	Pump Intake Depth(m-bmp):	NA	Purge Method:	Low Flow	Purging Equipment:	
Purge Start Time:	NA	Total Volume Purged (liters):	27	Sample ID:	PLT1MW-06	Sample Time:	09:35
Purge End Time:	09:28	Well Volumes Purged (total):	0.62	Replicate Type / Replicate ID:	NA / NA	Water Quality Meter/ ID:	YSI Pro DSS / NA
Scope of work completed?	Yes						

Time	Total Elapsed (min)	Flow Rate	Flow Rate Unit	Depth to Water (ft)	pH (S.U.)	Specific Conductivity (mS/cm²)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
09:04	0	1	gpm	40.55	6.54	0.892	11.6	9.15	17.2	84.3	Clear	No Odor
09:13	9	1	gpm	40.7	5.86	0.933	4.52	9	17.2	159.7	Clear	No Odor
09:22	18	1.5	gpm	40.7	5.9	0.918	4.89	9.02	17.2	175.2	Clear	No Odor
09:25	21	1.5	gpm	40.72	5.9	0.899	3.33	9.12	17.2	177.9	Clear	No Odor

Constituent Sampled	Container	Number	Preservative
1,4-Dioxane (8270C)	Amber Glass	2	None
Chromium, total (6010), Chromium, total dissolved (6010B), Cadmium	HDPE Plastic	2	HNO3

Comments: 62-47=15x.16=2.4x3.785=9x3=27Ltotal 3wsv

Well Information:

Well Labeled Properly: NA

Is Well in Good Condition? NA

Well Inspection Comments: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute
uS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
S.U = standard units
mS/cm = milli

Chain of Custody Logs

SR 2590

Program 1A or 1B

(circle 1 or both indicate which samples to which program below)



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order # **P1a & 1b OU2 NW**

ID#:

Page 1 of 1

Contact & Company Name: Thomas Darmon - Task Manager Address: 105 Maxess Road, Suite N108 City: Melville State: NY Zip: 11747 Telephone: 330-515-5713 wk Fax: Email Address: Thomas.darmon@arcadis.com		Preservative: Filtered (✓): NO # of Containers: 2 Container Information: 2	E: NO			
Project Name/Location (City, State): OU2 Navy Wells, Belhpage, NY Project #: 30491527.NAVI3 Sampler's Printed Name: Shirley He		PARAMETER ANALYSIS & METHOD 1,4-dioxane 8270D SIM				
Sample ID	Collection Date	Time	Type (✓)		Matrix	REMARKS
			Comp	Grab		
FBO207 24PQ1	2/1/24	0730		✓	W	
RE115 D1	2/1/24	1030		✓	GW	
RE115 D2	2/1/24	1025		✓	GW	
Special Instructions/Comments: 1,4-dioxane extracted by CCLE EDD-ARCADIS_EQUIS_EQuls-7 (4-File) file format)						
Lab Name: Katahdin Analytical Labs <input checked="" type="checkbox"/> Cooler packed with ice (✓)		Requisitioned By: Printed Name: Shirley He Signature: <i>[Signature]</i> Firm/Courier: Arcadis Date/Time: 2/1/24		Received By: Printed Name: Evon Price Signature: <i>[Signature]</i> Firm/Courier: FedEx Date/Time: 2-8-24 0900		Laboratory Received By: Printed Name: Signature: Firm: Date/Time:
Specify Turnaround Requirements: Normal TAT-10 business days Shipping Tracking #: FedEx Priority Overnight		Cooler Custody Seal (✓) <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact Sample Receipt Condition/Cooler Temp.		Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis		



ACCUTEST

GW

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

Program 2

PAGE 1 OF 1

FED-EX Tracking COC #5-NG Bottle Origin Control # 101323-96
Accutest Quote # Accutest Job # JD82149

Client / Reporting Information, Project Information, Requested Analysis, Matrix Codes, Accutest Sample #, Collection, Data Deliverable Information, Turnaround Time, Sample Custody, Relinquished by Sampler, Received By, Date Time, etc.

5.1 5

JD82149: Chain of Custody

Page 1 of 2





ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program 2

Lab Work Order #
P2 NG ONCT MW Part 1 and 2

Page 1 of 1

Contact & Company Name: Thomas Darmon - Task Manager	Telephone: 330-515-5713 wk	Preservative Filled (✓): None	E
Address: 105 Maxess Road, Suite N108	Fax:	# of Containers: 2	
City State Zip: Melville NY 11747	E-mail Address: Thomas.darmon@arcadis.com	Container Information:	
Project Name/Location (City, State): OU2-Northrop Grumman, Bethpage, NY	Project #: 30169301.GWMI3	PARAMETER ANALYSIS & METHOD	
Sampler's Printed Name: <i>Thomas Darmon</i>	Sampler's Signature: <i>[Signature]</i>	1,4-dioxane 8270D SIM	
Sample ID	Collection Date	Type (✓)	Matrix
GM-210A	2-24-05	Comp ✓	GW

Preservation Key:	Container Information Key:	Matrix Key:	REMARKS
A. H ₂ SO ₄	1. 40 ml Vial	SE - Sediment	Same FD as the other COC in the cooler
B. HCL	2. 1 L Amber	SL - Sludge	
C. HNO ₃	3. 250 ml Plastic	A - Air	
D. NaOH	4. 500 ml Plastic	NL - NAPL/Ctl	
E. None	5. Encore	SW - Sample Wipe	
F. Other	6. 2 oz. Glass	Other <u>GW</u>	
G. Other	7. 4 oz. Glass		
H. Other	8. 8 oz. Glass		
	9. Other		
	10. Other		

Special QA/QC Instructions(✓):

Laboratory Information and Receipt	Relinquished By	Received By	Laboratory Received By
Lab Name: Katahdin Analytical Labs <input checked="" type="checkbox"/> Cooler packed with ice (✓) Sample Turnaround Requirements: Normal TAT-10 business days Shipping Tracking #:	Printed Name: [Signature] Signature: [Signature] Firm/Courier:	Printed Name: Evan Price Signature: [Signature] Firm/Courier:	Printed Name: Signature: Firm: Date/Time:
<input type="checkbox"/> Irract <input type="checkbox"/> Not Intact Sample Receipt Condition/Cooler Temp:	Printed Name: [Signature] Signature: [Signature] Firm/Courier:	Printed Name: [Signature] Signature: [Signature] Firm/Courier:	Printed Name: Signature: Firm: Date/Time:

20730026 CoIC AR Form 06.27.2015

Distribution: **WHITE** - Laboratory returns with results **YELLOW** - Lab copy **PINK** - Retained by Arcadis



ACCUTEST

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

Program 1A or 1B
(circle 1 or both indicate which samples to which program below)

FED-EX Tracking: COC #4-Navy
Bottle Order Control #: MM 1024 23 24
Accutest Order #: JD82346

Client / Reporting Information: Arcadis
Project Information: AGMNYM72080 // OU2 Navy Outpost & Monitoring Wells
Requested Analysis: VC82602NG36GW+40+THF, V5242NG36OW+40+THF, V5522SIM14DIOX
Matrix Codes: DW - Drinking Water, GW - Ground Water, etc.

Turnaround Time (Business days)
Data Deliverable Information
Initial Assessment
Label Verification

Sample Custody must be documented below each time samples change possession, including courier delivery.
Relinquished by: [Signature] Date Time: 12-24/1400
Received By: [Signature] Date Time: 12-24/18:10

5.2
5





ACCUTEST

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
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Program 1A or 1B

PAGE 1 OF 1

MM-02124-193

GW
TB

FED-EX Tracking COC #4-Navy

Botle Order Control #

Accutest Quote #

Accutest Job #

JD 82473

Form containing Client/Reporting Information, Project Information, Requested Analysis, Matrix Codes, Collection table, Data Deliverable Information, and Sample Custody sections.

Initial Assessment Label Verification

5.2
5



CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
 2235 Route 130, Dayton, NJ 08810
 TEL: 732-329-0200 FAX: 732-329-3199/3180
 www.sgs.com

(circle 1 or both indicate which samples to which program below)

Client / Reporting Information Company Name: Arcadis Street Address: 105 Maxess Road Suite N108 City: Melville NY State: NY Zip: 11747 Project Contact: Thomas Darmon, Thomas.darmon@arcadis.com Phone #: 330-515-5713		Project Information Project Name: AGMNYM72080 // OU2 Navy Outpost & Monitoring Wells Street: Navy Wells OU2 -Bethpage, New York Billing Information (If different from Report to): Company Name: Arcadis, U.S., Inc. Project #: 30191827.NAVIS Client Purchase Order #: 630 Plaza Drive, Suite 600 Project Manager: Art Zahradnik Attention: Accounts Payable		Requested Analysis (see TEST CODE sheet) Matrix Codes: DW - Drinking Water, GW - Ground Water, WW - Waste Water, SW - Surface Water, SO - Soil, SL - Sludge, SED-Segment, OI - Oil, LIQ - Other Liquid, AIR - Air, SOL - Other Solid, WP - Wipe, FB-Field Blank, EB-Equipment Blank, RB- Rinse Blank, TB-Trip Blank LAB USE ONLY	
Field ID / Point of Collection 1 JD82604 2 BRW 5-5 3 BRW 5-4 4 BRW 5-7		Date: 2-15-14 Time: 10:15 12:00 13:00		Collection: 10, 15, 14, 15, 14, 15, 14 Sampled by: PG, GW, GW, GW # of bottles: 2, 1.5, 3, 3 Matrix: 10, 15, 14, 15, 14, 15, 14	
Turnaround Time (Business days) <input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY		Approved By (Accutest PMI): [Signature] Date: [Blank] Initial Assessment [Signature] Lab Verification [Signature]		Data Deliverable Information <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDD Format-EQUS 7 Arcadis <input checked="" type="checkbox"/> Other COMMC	
Relinquished by Sampler: [Signature] Date Time: [Blank]		Received By: [Signature] Date Time: [Blank]		Relinquished By: [Signature] Date Time: 2/15/14 18:45	
Relinquished by Sampler: [Signature] Date Time: [Blank]		Received By: [Signature] Date Time: [Blank]		Relinquished By: [Signature] Date Time: [Blank]	
Relinquished by Sampler: [Signature] Date Time: [Blank]		Received By: [Signature] Date Time: [Blank]		Relinquished By: [Signature] Date Time: [Blank]	

JD82604: Chain of Custody
 Page 1 of 2

SGS

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Program 1A or **B**

PAGE 1 OF 1

FED-EX Tracking **COC #441111** Bottle Order Control # **mm-02124-214**
Accutest Order # **JD82636**

Client / Reporting Information		Project Information				Requested Analysis (see TEST CODE sheet)												Matrix Codes
Company Name Arcadis		Project Name AGMNYM72080 // OU2 Navy Outpost & Monitoring Wells				V5242NG36GW+40+THF VC82602NG36GW+40+THF SB522SIM14DIOX												DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank
Street Address 105 Maxess Road Suite N108		Street Bethpage																
City State Zip Melville NY 11747		City State Bethpage NY																
Billing Information (if different from Report to) Company Name Arcadis, U.S., Inc.		Street Address 630 Plaza Drive, Suite 600																
Project Contact Thomas Darmon, Thomas.darmon@arcadis.com		Client Purchase Order # 30191827.NAVY				City State Zip Highlands Ranch, CO 80129				Attention Accounts Payable								
Phone # 330-515-5713		Project Manager Art Zahradnik				Number of preserved bottles												
Sample(s) Name(s) Bob O'Brien		Collection				MECHID: Val # _____ Date _____ Time _____ Sampled by _____ Matrix # of bottles _____ TSS _____ NH3-N _____ NH4-N _____ NO2-N _____ NO3-N _____ DIY-PAH _____ MCHL _____ ENDOREL _____ NITROSE												
Field ID / Point of Collection		MECHID: Val # _____ Date _____ Time _____				LAB USE ONLY												
1 TOU-4-1R		2/16/24 1:20 PM 70 2 2																
2 BOU-4-1R		1 10:25 80 5 3																
3 BOU-4-2R		1 12:20 80 5 3																

Turnaround Time (Business days)		Data Deliverable Information				Comments / Special Instructions											
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY		Approved By (Accutest PM) / Date: _____				<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> State Forms <input type="checkbox"/> NJ Reduced <input checked="" type="checkbox"/> EDD Format-EQuIS 7 Arcadis <input type="checkbox"/> Commercial "C" <input checked="" type="checkbox"/> Other COMMC+											
Emergency & Rush T/A data available VIA Lablink		Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced - Results + QC Summary + Partial Raw data															

Sample Custody must be documented below each time samples change possession, including courier delivery.											
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:	
1		2/16/24		Sean Curtis		12:30		2		1/16/24	
3				[Signature]				4			
5				IMPULSE 59				Custody Seal		<input type="checkbox"/> Intact Preserved where applicable <input type="checkbox"/> Not intact	

2/16/24 1:20 5:35

IR-40

JD82636: Chain of Custody
Page 1 of 2



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Program 1A or 1B
(circle 1 or both indicate which samples to which program below)

PAGE 1 OF 1

Form containing Client/Reporting Information, Project Information, Requested Analysis, Matrix Codes, and Sample Custody details. Includes handwritten entries for sample IDs, dates, and signatures.

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JD82864: Chain of Custody

Page 1 of 2



CHAIN OF CUSTODY

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Program 2

PAGE 1 OF 1

GW
 FB
 TB

Accutest Tracking # 0000000000
 Accutest Quote # 3086530
 Bottle Order Control # 020m-mm-04824-5
 Accutest Job # 3086530

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)												Matrix Codes	
Company Name Arcadis Street Address 105 Maxess Road Suite N108 City State Zip Melville NY 11747 Project Contact Thomas Darmon, thomas.darmon@arcadis.com Phone # 330-515-5713 Sampler(s) Name(s) Shirley He		Project Name OU2 Outpost & Monitoring Wells Northrop Grumman Wells OU2 -Bethpage, New York Street Billing Information (if different from Report to) Company Name Bethpage NY Arcadis, U.S., Inc. Project # 30218437.GWMI3 Street Address 630 Plaza Drive, Suite 600 Client/Purchase Order # Highlands Ranch, CO 80129 Project Manager Art Zahradnik Attention: Accounts Payable		VC82602NG36GW+40 Matrix Codes DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank												LAB USE ONLY	
Accutest Sample #	Field ID / Point of Collection	MEQHDI Viol #	Date	Time	Sampled by	Matrix	# of bottles	HC	NIOSH	INDOX	HRSDA	NOPE	DI Water	MESH	ENCORE	NHSDA	LAB USE ONLY
1	FB041524SV1		4/15/23		SV	SVTB	2										
2	FB041524PQ2		4/15/23		PQ	PQTB	2										
3	FB041524SV1		4/15/23	0730	SV	SVTB	2										
4	GM-74I		4/15/23	1045	SV	GW	3										
5	GM-74D		4/15/23	1103	KK	GW	3										
6	GM-74D2		4/15/23	1050	SH	GW	3										
7	GM-74D3		4/15/23	1045	PQ	GW	3										
8	GM-73D		4/15/23	1252	KK	GW	3										
9	GM-73D2		4/15/23	1255	PQ	GW	3										
10	REPD41524PQ1		4/15/23		PQ	GW	3										
Turnaround Time (Business days)		Approved By (Accutest PM) / Date:		Data Deliverable Information												Comments / Special Instructions	
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush TIA data available VIA Lablink				<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDD Format-EQuS 6 <input checked="" type="checkbox"/> Other COMM												Initial Assessment <u>3A</u> Label Verification	
Sample Custody must be documented below each time samples change possession, including courier delivery.																	
Relinquished by Sampler:		Date Time:		Received By:				Date Time:				Received By:				Date Time:	
1 Shirley He		4/15/23		Art Zahradnik 4/15/23 14:15				E. Zahradnik 4/15/24				17:22					
Relinquished by Sampler:		Date Time:		Received By:				Date Time:				Received By:				Date Time:	
3				4													
Relinquished by:		Date Time:		Received By:				Custody Seal #				<input type="checkbox"/> Intact <input type="checkbox"/> Not intact				<input type="checkbox"/> Preserved where applicable <input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp.	
5				5													

IR SO 2.1 / SGS Courier

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JD86530: Chain of Custody

Page 1 of 2





ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program 2

Lab Work Order #

P2 NG ONCT MW Part 1 and 2

Page 1 of 1

SR 1676

Contact & Company Name: Thomas Darmon - Task Manager
 Telephone: 330-515-5713 wk
 Address: 105 Maxess Road, Suite N108
 City: Melville State: NY Zip: 11747
 E-mail Address: Thomas.darmon@arcadis.com
 Project #: 30218437.GWMI3
 Sampler's Printed Name: Shirley He
 Sampler's Signature: *[Signature]*

Preservative Filtered (✓) E
 # of Containers 2
 Container Information 2
PARAMETER ANALYSIS & METHOD
 1,4-dioxane
 8270D SIM

Sample ID	Collection		Type (✓)		Matrix	REMARKS
	Date	Time	Comp	Grab		
FB041524SV1	4/15/23	0730	✓	✓	W	
GM-74I	4/15/23	1045	✓	✓	GW	
GM-74D	4/15/23	1103	✓	✓	GW	
GM-74D2	4/15/23	1050	✓	✓	GW	
GM-74D3	4/15/23	1045	✓	✓	GW	
GM-73D	4/15/23	1252	✓	✓	GW	
GM-73D2	4/15/23	1255	✓	✓	GW	
REP041524PQ1	4/15/23	---	✓	✓	GW	

Special Instructions/Comments: SVOC extracted by CCLE EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)

Laboratory Information and Receipt
 Lab Name: Katahdin Analytical Labs
 Cooler Custody Seal (✓) Intact Not Intact
 Sample Receipt Cooler packed with ice (✓)
 Normal TAT - 10 business days
 Shipping Tracking #: FedEx Priority Overnight

Relinquished By: Shirley He
 Printed Name: Shirley He
 Signature: *[Signature]*
 Firm: Arcadis
 Date/Time: 4/15/24

Relinquished By: Evan Price
 Printed Name: Evan Price
 Signature: *[Signature]*
 Firm/Counter: Katahdin
 Date/Time: 4-16-24 0935

Relinquished By: _____
 Printed Name: _____
 Signature: _____
 Firm: _____
 Date/Time: _____

Laboratory Received By: _____
 Printed Name: _____
 Signature: _____
 Firm: _____
 Date/Time: _____

Distribution: WHITE - Laboratory returns with results
 YELLOW - Lab copy
 PINK - Retained by Arcadis

SR 1700

Program 2

Lab Work Order #
P2 NG ONCT MW Part 1 and 2

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

ID#:



Pre-ervation Key:	Container Information Key:
A. H ₂ O	1. 40 ml Vial
B. HCL	2. 1 L Amber
C. HNO ₃	3. 250 ml Plastic
D. NaOH	4. 500 ml Plastic
E. None	5. En-chem
F. Other:	6. 2 oz Glass
G. Other:	7. 4 oz Glass
H. Other:	8. 8 oz Glass
	9. Other
	10. Other

Preservative (None)	# of Containers	Container Information
E	2	2

PARAMETER ANALYSIS & METHOD

1,4-dioxane 8270D SIM

Matrix Key: SE - Sediment, SW - Surface Water, A - Air, NI - NAPL/Oil, SW - Solids, Other: **GW**

Pre-ervation Key: A - H₂O, B - HCL, C - HNO₃, D - NaOH, E - None, F - Other, G - Other, H - Other

Sample ID	Collection		Type (✓)		Matrix	REMARKS
	Date	Time	Comp	Grab		
F8041624KK1	4/16/24	0745	✓	✓	W	
N-10631R	4/16/24	0959	✓	✓	GW	
N-10627	4/16/24	1100	✓	✓	GW	MS / MSD
GM-75D2	4/16/24	1035	✓	✓	GW	
N-10624	4/16/24	1320	✓	✓	GW	
GM-33D2	4/16/24	1125	✓	✓	GW	

Special QA/QC Instructions(✓):

Special Instructions/Comments:
SVOC extracted by CCLE
EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)

Laboratory Information and Receipt		Relinquished By		Received By		Laboratory Received By	
Lab Name: Katahdin Analytical Labs	Condition/Cooler Temp: Sample Receipt	Printed Name: Shirley He	Signature: <i>[Signature]</i>	Printed Name: Firm/Courier: Arcadis	Signature: <i>[Signature]</i>	Printed Name:	Signature:
Cooler packed with ice (✓)	Condition/Cooler Temp:	Date/Time: 4/16/24	Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: **WHITE** - Laboratory returns with results **YELLOW** - Lab copy **PINK** - Retained by Arcadis



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program 2

Lab Work Order # P2 NG ONCT MW Part 1 and 2

Page 1 of 1

ID#: SR1733

Contact & Company Name: Thomas Darmon - Task Manager Address: 105 Maxess Road, Suite N108 City: Melville NY 11747 State: NY Zip: 11747 E-mail Address: Thomas.darmon@arcadis.com Project #: 30218437.GWMI3 Sample ID Signature: Stephen Z		Telephone: 330-515-5713 wk Fax:
Send Results to:		
Preservative Filtered () # of Containers: Z Container Information: Z		
PARAMETER ANALYSIS & METHOD		
Matrix Key: SE - Sediment, SW - Surface Water, NI - NAPL/Oil, SO - Soil, W - Water, T - Tissue, A - Air, Other: GW		

Sample ID	Collection Date	Type	Comp	Grab	Matrix	REMARKS
FR041724KK1	4/17/24	OS00		✓	W	1,4-dioxane 8270D SIM
GM-79D	4/17/24	1020		✓	GW	
GM-79I	4/17/24	1020		✓	GW	
GM-34D	4/17/24	1305		✓	GW	
GM-34DZ	4/17/24	1130		✓	GW	
GM-18D	4/17/24	1230		✓	GW	
GM-18I	4/17/24	1235		✓	GW	
REPO41724PQ	4/17/24			✓	GW	

Special QA/QC Instructions(✓):

Special Instructions/Comments:
 SVOC extracted by CCLE
 EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)

Laboratory Information and Receipt Cooler Custody Seal (✓) <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact Sample Receipt Condition/Cooler Temp	Relinquished By Printed Name: Stephen Z Signature: [Signature] Firm: Arcadis Date/Time: 4/17/24	Received By Printed Name: Jacob Bruce Signature: [Signature] Firm/Courier: KAS Date/Time: 4-18-24 1000	Laboratory Received By Printed Name: Signature: Firm: Date/Time:
---	---	--	--

Lab Name: Katahdin Analytical Labs
 Cooler packed with ice (✓)
 Specify Turnaround Requirements:
 Normal TAT-10 business days
 Shipping Tracking #:

Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis

GW
TIS

CHAIN OF CUSTODY

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Program 2

PAGE 1 OF 1

FED-EX Tracking # **3086775** Bottle Order Control # **NM-02423-10**
Accutest Quote # _____ Accutest Job # **3086775**

Client / Reporting Information		Project Information				Requested Analysis (see TEST CODE sheet)												Matrix Codes	
Company Name Arcadis		Project Name OU2 Outpost & Monitoring Wells				VC92602NG36GW+40												DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Waste FD - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
Street Address 105 Maxess Road Suite N108		Street Bethpage NY																	
City State Zip Melville NY 11747		Billing Information (if different from Report to) Company Name Arcadis, U.S., Inc.																	
Project Contact Thomas Darmon, thomas.darmon@arcadis.com		Street Address 630 Plaza Drive, Suite 600																	
Phone # 330-515-5713		City State Zip Highlands Ranch, CO 80129																	
Sampler(s) Name(s) Art Zahradnik		Project Manager Art Zahradnik				Attention: Accounts Payable												LAB USE ONLY	
Accutest Sample #	Field ID / Point of Collection	MEQ/ID/Vial #	Date	Time	Sampled by	Matrix	# of bottles	NCI	NH3H	NH3DS	NH3CA	NH3E	DI Water	MEDH	ENCORE	NH3SC4			
1	T025122901		4-18-24		JV	TD	2										X		
2	GA-290A			09:00	JV	GW	3										X		
3	GA-290B			09:10	JV	GW	3										X		
4	GA-290C			10:33	JV	GW	3										X		
5	GA-290Z			11:36	JV	GW	3										X		

Turnaround Time (Business days)		Approved By (Accutest PM) / Date:		Data Deliverable Information				Comments / Special Instructions			
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <small>Emergency & Rush T/A data available via Lablink</small>				<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> State Forms <input type="checkbox"/> NJ Reduced <input checked="" type="checkbox"/> EDD Format-EQuS 6 <input type="checkbox"/> Commercial "C" <input checked="" type="checkbox"/> Other COMM+				Initial Assessment 2/2/24 Label Verification			
<small>Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data</small>											
<small>Sample Custody must be documented below each time samples change possession, including courier delivery.</small>											
Relinquished by Sampler:	Date Time:	Received By:	Received By:	Relinquished by:	Date Time:	Received By:	Received By:	Relinquished by:	Date Time:	Received By:	Received By:
1	4-18-24	Steve Caputo	Steve Caputo	2	4:22	Steve Caputo	Steve Caputo	3	4:18	Steve Caputo	Steve Caputo
3		Steve Caputo	Steve Caputo	4		Steve Caputo	Steve Caputo	5		Steve Caputo	Steve Caputo
5		IMPULSE 39	IMPULSE 39								

4:2



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ID#: SR1766

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program 2

Lab Work Order # P2 NG ONCT MW Part 1 and 2

Page 1 of 1

Contact & Company Name: Thomas Darmon - Task Manager Telephone: 330-515-5713 wk Address: 105 Maxess Road, Suite N108 City: Melville NY 11747 State: NY Zip: 11747 E-mail Address: Thomas.darmon@arcadis.com		Project #: 30218437.GWMI13 Project Name/Location (City, State): Ouz-Northrop Grumman, Bethpage, NY Sampler's Printed Name: <i>Bob Darmon</i> Sampler's Signature: <i>[Signature]</i>			
Sample ID	Collection Date	Time	Type (✓)		Matrix
			Comp	Grab	
FOOTPRINT	11/18/14	10:30	✓	✓	GW
GM-391A	4/6/24	09:05	✓	✓	GW
GM-390A	↓	09:10	✓	✓	GW
GM-20D	↓	10:33	✓	✓	GW
GM-20E	↓	11:36	✓	✓	GW

Preservation Key:
 A H₂O
 B HCL
 C HNO
 D NaOH
 E None
 F Other
 G Other
 H Other

Container Information Key:
 1 40 ml Vial
 2 1 L Amber
 3 250 ml Fluoride
 4 500 ml Plastic
 5 Encase
 6 2 oz Glass
 7 4 oz Glass
 8 8 oz Glass
 9 Other
 10 Other

Matrix Key:
 SO - Soil
 W - Water
 T - Tissue
 SE - Sediment
 SL - Sludge
 A - Air
 NI - NAPL/OLN
 SW - Surface Water
 Other: **GW**

REMARKS

1,4-dioxane
8270D SIM

Special QA/QC Instructions (✓):

Special Instructions/Comments:
 SVOC extracted by CCLE
 EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)

Laboratory Information and Receipt		Relinquished By		Received By		Laboratory Received By	
Lab Name: Katahdin Analytical Labs	Cooler Quality Seal (✓) <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Printed Name: <i>Bob Darmon</i>	Signature: <i>[Signature]</i>	Printed Name: <i>Bob Bruce</i>	Signature: <i>[Signature]</i>	Printed Name:	Signature:
Specify Turnaround Requirements: Normal TAT-10 business days	Sample Receipt: Condition/Cooler Temp:	Firm: Arcadis	Date/Time: 11-18-14	Firm/Courier: KAS	Date/Time: 4-19-24 0920	Date/Time:	Date/Time:
Shipping Tracking #:							

20730826 CatC AR Form 08.27.2015

Distribution: **WHITE - Laboratory returns with results** **YELLOW - Lab copy** **PINK - Retained by Arcadis**

CHAIN OF CUSTODY

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Program 2

PAGE 1 OF 1

GLD
 FB
 TB

FED-EX Tracking # **CCG 95-NO** Bottle Order Control # **mm-04824-6**
 Accutest Quote # **086994** Accutest Job # **086994**

Client / Reporting Information		Project Information				Requested Analysis (see TEST CODE sheet)												Matrix Codes																				
Company Name Arcadis		Project Name: OU2 Outpost & Monitoring Wells Northrop Grumman Wells OU2 -Bethpage, New York				<div style="display: flex; justify-content: space-between;"> VC82602NG36GW+40 LAB USE ONLY </div>												DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment QI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank EP-Equipment Blank RB- Rinse Blank TB-Trip Blank																				
Street Address 105 Maxess Road Suite N108		Street Bethpage NY		Billing Information (If different from Report to) Company Name Arcadis, U.S., Inc.																																		
City State Zip Melville NY 11747		City State Bethpage NY		Street Address 630 Plaza Drive, Suite 600																																		
Project Contact Thomas Darmon, thomas.darmon@arcadis.com		Project # 30218437.GWMI3		City State Zip Highlands Ranch, CO 80129																																		
Phone # 330-615-5713		Client/Purchase Order # 30218437.GWMI3		Attention: Accounts Payable																																		
Sampler(s) Name(s) Shirley He		Project Manager Art Zahradnik																																				
Field ID / Point of Collection		MECH/IDI Val #		Date															Time		Sampled by		Matrix		# of bottles		<input type="checkbox"/> HCl <input type="checkbox"/> NH ₃ <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> H ₂ CO ₃ <input type="checkbox"/> HNO ₂ <input type="checkbox"/> H ₂ O ₂ <input type="checkbox"/> DI Water <input type="checkbox"/> MESH <input type="checkbox"/> ENCORE <input type="checkbox"/> NANSON											
Turnaround Time (Business days)		Data Deliverable Information																	Comments / Special Instructions																			

Initial Assessment RE
 Label Verification RE

<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush TIA data available VIA Lablink	Approved By (Accutest P#): / Date: _____ _____	<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data	<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDD Format-EQuIS 6 <input checked="" type="checkbox"/> Other COMMAC+	TB042224KK1 with GM-31D2, GM-71D2, GM-38D, GM-38D2, and REPO42224SV1 TB042224PQ1 with GM-36D, GM-36D2
---	---	---	---	---

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1 Shirley He	Date Time: 4/22/24 / 1515	Received By: 1 [Signature]	Relinquished By: 2 [Signature]	Date Time: 3/15/24 [Signature]	Received By: 2 [Signature]
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	<input type="checkbox"/> Inert <input type="checkbox"/> No Inert	Preserved where applicable <input type="checkbox"/> On Ice Cooler Temp: 0 (15)

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JD86994: Chain of Custody

Page 1 of 2





CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program 2

Lab Work Order #
P2 NG ONCT MW Part 1 and 2

ID#: SR1802

Page 1 of 1

Contact & Company Name:
Thomas Darmon - Task Manager
 Telephone: 330-515-5713 wk
 Address: 105 Maxess Road, Suite N108
 City: Melville NY 11747
 State: NY Zip: 11747
 E-mail Address: Thomas.darmon@arcadis.com
 Project #: 30218437.GWMI3
 Sampler's Printed Name: Shirley He

Preservative Picked (-) **E**
 # of Containers **2**
 Container Information **2**

Keys

Preservation Key:
 A. H₂O
 B. HCl
 C. HNO₃
 D. NaOH
 E. None
 F. Other
 G. Other
 H. Other

Container Information Key:
 1. 40 ml Vial
 2. 1. Amber
 3. 250 ml Plastic
 4. 500 ml Plastic
 5. Endorse
 6. 7 oz Glass
 7. 1 oz Glass
 8. 8 oz Glass
 9. Other
 10. Other

Matrix Key
 SO - Soil
 W - Water
 T - Tissue

SE - Sediment NL - N₂ O₂ CO₂
 SL - Sludge SW - Sewer W/M
 A - Air Other: **GW**

PARAMETER ANALYSIS & METHOD

1,4-dioxane
8270D SIM

Sample ID	Collection		Type (✓)		Matrix	REMARKS
	Date	Time	Comp	Grat		
FB0422.24SV1	4/22/24	0730	✓		W	
GM-37D2	4/22/24	1015	✓		GW	
GM-36D	4/22/24	1016	✓		GW	
GM-36D2	4/22/24	1155	✓		GW	
GM-71D2	4/22/24	1145	✓		GW	
GM-38D	4/22/24	1325	✓		GW	
GM-38D2	4/22/24	1322	✓		GW	
REPO42224SV1	4/22/24	---	✓		GW	

Special QA/QC Instructions(✓):

Special Instructions/Comments:
 SVOC extracted by CCLE
 EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)

Lab Name: **Katahdin Analytical Labs**
 Cooler packed with ice (✓)
 Specify Turnaround Requirements:
 Normal TAT-10 business days
 Shipping Tracking #: **FedEx Priority Overnight**

Laboratory Information and Receipt
 Intact Not Intact
 Cooler Custody Seal (✓)
 Sample Receipt
 Condition/Cooler Temp: _____

Relinquished By: **Shirley He**
 Printed Name: Shirley He
 Signature: *Sh*
 Firm/Courier: **Arcadis**
 Date/Time: **4/22/24**

Received By: **Jacob Bruce**
 Printed Name: Jacob Bruce
 Signature: *Jacob Bruce*
 Firm/Courier: **KAS**
 Date/Time: **4-23-24 0920**

Laboratory Received by: _____
 Printed Name: _____
 Signature: _____
 Firm: _____
 Date/Time: _____

Distribution: **WHITE - Laboratory returns with results** **YELLOW - Lab copy** **PINK - Retained by Arcadis**

GW
FB
TB

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
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TEL: 732-329-0200 FAX: 732-329-3499/3480
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Program 2

PAGE 1 OF 1

PJ

FED-EX Tracking # 60075400 Bottle Order Control # 110h-mm-04824-5
Accutest Quote # 73287072

Client / Reporting Information		Project Information				Requested Analysis (see TEST CODE sheet)												Matrix Codes									
Company Name Arcadis Street Address 105 Maxess Road Suite N108 City State Zip Melville NY 11747 Project Contact Thomas Darmon, thomas.darmon@arcadis.com Phone # 330-515-5713 Sample(s) Name(s) Pot Chlorine		Project Name OU2 Outpost & Monitoring Wells Northrop Grumman Wells OU2 -Bethpage, New York Street Bethpage NY Billing Information (if different from Report to) Company Name Arcadis, U.S., Inc. Street Address 630 Plaza Drive, Suite 600 City State Zip Highlands Ranch, CO 80129 ClientPurchase Order # 30218437.GWMI3 Project Manager Art Zahradnik				Requested Analysis (see TEST CODE sheet) VC82602NG36GW+40 C.d, Cr (Total) 6010C C.d, Cr (Dissolved, Field Filtered) 6010C Cr (total) Cr (dissolved)												Matrix Codes DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment Cr - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Waste FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank									
Account Sample #	Field ID / Point of Collection	MECHDI Val #	Date	Time	Sampled by	Matrix	# of bottles	STP	NR03	NR04	NR05	NR06	NR07	NR08	NR09	NR10	NR11	NR12	NR13	NR14	NR15	NR16	NR17	NR18	NR19	NR20	LAB USE ONLY
1	TD04224801		4-23-24		PG	TD	2	2																			
2	TB04224801				SV	TD	2	2																			
3	FD04224801			0740	KK	FB	4	3	1																		
4F	PLT1M-06			0900	SV	GW	2	2																			
5F	PLT1M-05			0940	PG	GW	2	2																			
6F	PLT1M-04			1115	KK	GW	2	2																			
7F	GM-15SR			1140	SA	GW	5	3	2																		
8	GM-15D2			1255	SV	GW	3	3																			
9	GM-15I			1250	JH	GW	3	3																			
10F	RP04224801				PG	GW	2	2																			
11	GM-15D			1257	KK	GW	3	3																			
Turnaround Time (Business days)		Data Deliverable Information				Comments / Special Instructions																					
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink		Approved By (Accutest PM) / Date: _____				<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> COH/RT/FCI "C" <input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDD Format-EQUS 6 <input checked="" type="checkbox"/> Other Comments Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data																					
Requisitioned by Sampler: _____ Date Time: 4/23/24 / 14:30 Requisitioned by Sampler: _____ Date Time: _____ Requisitioned by Sampler: _____ Date Time: _____		Sample Custody must be documented below each time samples change possession, including courier delivery. Received By: _____ Date Time: 4/23/24 / 14:30 Received By: _____ Date Time: _____ Received By: _____ Date Time: _____				Received By: _____ Date Time: 4/24/24 / 18:05 Received By: _____ Date Time: _____ Received By: _____ Date Time: _____ Custody Seal # _____ Intact <input type="checkbox"/> Not Intact <input type="checkbox"/> Preserved where applicable <input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp. _____																					

IR SO 2.1 / SGS Courier

JD87072: Chain of Custody

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SK 1853

Program 2

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #
P2 NG ONCT MW Part 1 and 2

Page 1 of 1

ID#:



Contact & Company Name: Thomas Darmon - Task Manager Address: 105 Maxess Road, Suite N108 City: Melville NY 11747	Telephone: 330-515-5713 wk Fax:	Preservative: Filled (✓) # of Containers: 2 Container information: 2	Keys: Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encaps 6. 2oz Glass 7. 4 oz Glass 8. 1/2 Gallon 9. Other: 10. Other:
E-mail Address: Thomas.darmon@arcadis.com	Project #: 30218437.GWMI3	Matrix Key: SE - Sediment SL - Sludge A - Air NL - Naphthalene SW - Soluble Wipe Other: GW	
Project Name/Location (City, State): OU2-Northrop Grumman, Bethpage, NY	Sampler's Printed Name: Evan Price	Preservation Key: A. H ₂ O ₂ B. HCl C. HNO ₃ D. Ni(OH) E. None F. Other: G. Other: H. Other:	
Sampler's Signature: <i>Evan Price</i>	Collection Date Time: 4-23-24 07:40	Matrix Key: SO - Soil W - Water T - Tissue	

PARAMETER ANALYSIS & METHOD

1,4-dioxane
8270D SIM

REMARKS

Sample ID	Collection Date Time	Type (✓)		Matrix	REMARKS
		Comp.	Grab		
F0247324K61	4-23-24 07:40	✓	✓	W	X
PLT1M-06	09:00	✓	✓	GW	X
PLT1M-05	09:40	✓	✓	GW	X
PLT1M-04	11:15	✓	✓	GW	X
GM-15SR	11:40	✓	✓	GW	X
GM-15D2	12:55	✓	✓	GW	X
GM-15I	12:50	✓	✓	GW	X
REP04824P01	—	✓	✓	GW	X
GM-15D	13:57	✓	✓	GW	X

Special QA/QC Instructions (✓):

Special Instructions/Comments:
SVOC extracted by CCLE
EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)

Lab Name: Katahdin Analytical Labs <input checked="" type="checkbox"/> Cooler packed with ice (✓)	Requisitioned By: Printed Name: <i>Evan Price</i> Signature: <i>[Signature]</i> Firm/Courier: <i>FedEx</i> Date/Time: <i>4-24-24 08:20</i>	Received By: Printed Name: <i>Evan Price</i> Signature: <i>[Signature]</i> Firm/Courier: <i>FedEx</i> Date/Time: <i>4-24-24 08:20</i>	Laboratory Received By: Printed Name: Signature: Firm: Date/Time:
Laboratory Information and Receipt: <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact Cooler Custody Seal (✓) Sample Receipt Condition/Cooler: Temp	Shipping Tracking #:		

Distribution: **WHITE** - Laboratory returns with results **YELLOW** - Lab copy **PINK** - Retained by Arcadis



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program 2

Lab Work Order # P2 NG ONCT MW Part 1 and 2

ID#: SR1878

Page 1 of 1

Send Results to: **Thomas Darmon - Task Manager**
 Address: 105 Maxess Road, Suite N108
 City: Melville NY 11747
 State: NY Zip: 11747
 Telephone: 330-515-5713 wk
 Fax: _____
 E-mail Address: Thomas.darmon@arcadis.com
 Project #: 30218437.GWMM13
 Sampler's Printed Name: Shirley He
 Sampler's Signature: *[Signature]*

Sample ID	Collection		Type (%)		Matrix
	Date	Time	Comp	Grab	
FB042424SV1	4/24/24	0730	✓		W
MW-02GF	4/24/24	0925	✓		G-W
GM-78I	4/24/24	1000	✓		GW
MW-01GF	4/24/24	1006	✓		GW
GM-78D	4/24/24	1005	✓		GW
GM-78S	4/24/24	1115	✓		GW
GM-78D2	4/24/24	1140	✓		GW
GM-70D2	4/24/24	1212	✓		GW

PARAMETER ANALYSIS & METHOD

Preservative: E
 Filtered (-): -
 # of Containers: 2
 Container Information: 2

Container Information Key:
 1. 40 ml Vial
 2. 1 L Amber
 3. 250 ml Plastic
 4. 500 ml Plastic
 5. Ferroc
 6. 2 oz. Glass
 7. 4 oz. Glass
 8. 8 oz. Glass
 9. Other
 10. Other

SE - Sediment
 SL - Sludge
 A - Air

Matrix Key:
 SO - Soil
 W - Water
 T - Tissue

Container Information Key:
 NL - NAP
 SW - Swill
 Other - GW

REMARKS

1,4-dioxane 8270D SIM

Special QA/QC Instructions(✓):

Special Instructions/Comments:
 SVOC extracted by CCLE
 EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)

Lab Name: **Katahdin Analytical Labs**
 Cooler packed with ice (✓)
 Shipping Turnaround Requirements: Normal TAT-10 business days
 Shipping Tracking #: FedEx Priority Overnight

Relinquished By	Received By	Relinquished By	Received By
Printed Name: Shirley He	Printed Name: Jacob Bruce	Printed Name: Shirley He	Printed Name: Jacob Bruce
Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>
Firm: Arcadis	Firm: KAS	Firm: Arcadis	Firm: KAS
Date/Time: 4/24/24	Date/Time: 4-25-24	Date/Time: 4/24/24	Date/Time: 0910

Condition/Cooler Temp: _____
 Sample Receipt
 Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis



ACCUTEST

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 www.sgs.com

EW

Program 2

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mm-011824-10

PN

FED-EX Tracking COC #5-NG
 Accutest Quote #
 Bottle Order Control #
 Accutest Job # JD87263

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)												Matrix Codes
Company Name Arcadis		Project Name OU2 Outpost & Monitoring Wells		VC82602NG36GW+40 DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank												LAB USE ONLY V122
Street Address 105 Maxess Road Suite N108		Street Bethpage NY														
City State Zip Melville NY 11747		City State Bethpage NY														
Project Contact Thomas Darmon, thomas.darmon@arcadis.com		Company Name Arcadis, U.S., Inc.														
Phone # 330-515-5713		Billing Information (if different from Report to) 630 Plaza Drive, Suite 600														
Sampler(s) Name(s) Shirley He		Project # 30218437.GWMI3														
Phone # 516-675-6548		Street Address Highlands Ranch, CO 80129														
Turnaround Time (Business days)		Data Deliverable Information		Comments / Special Instructions												
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink		Approved By (Accutest PM) / Date: _____ _____ _____ _____ _____ _____		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> State Forms <input type="checkbox"/> NJ Reduced <input checked="" type="checkbox"/> EDD Format-EquiS 6 <input type="checkbox"/> Commercial "C" <input checked="" type="checkbox"/> Other COMMC+ Commercial "A" - Results Only Commercial "B" - Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data												Initial Assessment MB3B Label Verification _____
Sample Custody must be documented below each time samples change possession, including courier delivery.																
Relinquished by Sampler: 1 Shirley He		Date Time: 4/25/24		Received By: 1 Hanan Williams 14		Date Time: 4/25/24		Relinquished By: 2 [Signature]		Date Time: 4/25/24		Received By: 3 [Signature]		Date Time: 4/25/24		
Relinquished by Sampler: 3		Date Time:		Received By: 3		Date Time:		Relinquished By: 4		Date Time:		Received By: 4		Date Time:		
Relinquished by: 5		Date Time:		Received By: 5		Date Time:		Custody Seal #		<input type="checkbox"/> Intact Preserved where applicable <input type="checkbox"/> Not intact		<input checked="" type="checkbox"/> Cool Temp 5.1 1250				

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JD87263: Chain of Custody

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CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program 2

Lab Work Order #
P2 NG ONCT MW Part 1 and 2

Page 1 of 1

ID#:

Contact & Company Name: Thomas Darmon - Task Manager		Telephone: 330-515-5713 wk
Address: 105 Maxess Road, Suite N108		Fax:
City: Melville	State: NY	Zip: 11747
E-mail Address: Thomas.darmon@arcadis.com		
Project #: 30218437.GWMI3		
Sampler's Printed Name: Shirley HC		

Sample ID	Collection		Type (-)		Matrix
	Date	Time	Comp	Grab	
FB042524SV1	4/25/24	0730		✓	W
HN-40S	4/25/24	0926		✓	GW
HN-40I	4/25/24	1040		✓	GW
HN-42I	4/25/24	1020		✓	GW
HN-42S	4/25/24	1125		✓	GW

PARAMETER ANALYSIS & METHOD

1,4-dioxane
8270D SIM

REMARKS

Preservative Key:
 A H₂SO₄
 B HCl
 C HNO₃
 D NaOH
 E None
 F Other
 G Other
 H Other

Container Information Key:
 1 40 ml Vial
 2 1 L Amber
 3 250 ml Plastic
 4 500 ml Plastic
 5 En-cure
 6 20Z Glass
 7 4 oz Glass
 8 8 oz Glass
 9 Other
 10 Other

Matrix Key:
 SO - Soil
 W - Water
 T - Tissue

SE - Sediment
SL - Sludge
A - Air

NL - NPL/Oil
SW - SW/Slurry
Other - GW

Special QA/QC Instructions(✓):

Special Instructions/Comments:
 SVOC extracted by CCLE
 EDD-ARCADIS_EQUIS-7 (4-File) file format)

Laboratory Information and Receipt		Relinquished By		Received By		Relinquished By		Laboratory Received By	
Lab Name: Katahdin Analytical Labs	<input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Printed Name: Shirley HC	Signature: <i>[Signature]</i>	Printed Name: Evan Pice	Signature: <i>[Signature]</i>	Printed Name:	Signature:	Printed Name:	Signature:
<input checked="" type="checkbox"/> Cooler packed with ice (✓)	Sample Receipt: Normal TAT-10 business days	Firm: Arcadis	Date/Time: 4/25/24	Firm/Courier: Fedex	Date/Time: 4-26-24				
Shipping Tracking #: Fedex Priority Overnight	Condition/Cooler Temp								

207-30828 Co/C AR Form 05.27.2015

Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis

SR 1938

Program 2

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order # P2 NG ONCT MW Part 1 and 2

Page 1 of 1



ID#: []

Contact & Company Name: Thomas Darmon - Task Manager Address: 105 Maxess Road, Suite N108 Melville NY 11747 State Zip Project Name/Location (City, State): OUZ-Northrop Grumman, Bethpage, NY Sampler's Printed Name: <i>Bob Quisenberry</i>	Telephone: 330-515-5713 wk Fax: E-mail Address: Thomas.darmon@arcadis.com Project #: 30218437.GWMI13 Sampler's Signature: <i>Bob Quisenberry</i>
--	--

Sample ID	Collection		Type (✓)		Matrix
	Date	Time	Comp	Grab	
FD04294451	11-20-24	07:30	✓	✓	W
GM-2102	11:35		✓		GW
GM-210	11:38		✓		GW
GM-215	11:02		✓		GW
GM-215	11:50		✓		GW

PARAMETER ANALYSIS & METHOD

1,4-dioxane
8270D SIM

REMARKS

MS/MSD

Special QA/QC Instructions (✓):

Special Instructions/Comments:
 SVOC extracted by CCLE
 EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)

Lab Name: Katahdin Analytical Labs <input checked="" type="checkbox"/> Cooler packed with ice (✓) Specify Turnaround Requirements: Normal TAT-10 business days Shipping Tracking #:	Laboratory Information and Receipt Cooler Custody Seal (✓) <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact Sample Receipt Condition/Cooler Temp:	Relinquished By Printed Name: <i>Bob Quisenberry</i> Signature: <i>Bob Quisenberry</i> Firm: Arcadis Date/Time: 11/20/24	Received By Printed Name: <i>Evon Price</i> Signature: <i>Evon Price</i> Firm/Courier: FedEx Date/Time: 11-20-24 0930	Relinquished By Printed Name: Signature: Firm/Courier: Date/Time:	Laboratory Received By Printed Name: Signature: Firm: Date/Time:
--	---	--	---	---	--

Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis



ACCUTEST

FB
TB
GW

CHAIN OF CUSTODY

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Program 2

PAGE 1 OF 1

FED-EX Tracking	Bottle Order Control #
Accutest Quote #	Accutest Job # JD87599

Client / Reporting Information		Project Information				Requested Analysis (see TEST CODE sheet)												Matrix Codes																																																																																																																																																																									
Company Name Arcadis		Project Name OU2 Outpost & Monitoring Wells Northrop Grumman Wells OU2 -Bethpage, New York				VC82602NG36GW+40												DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank EB-Equipment Blank RB- Rinse Blank TB-Trip Blank																																																																																																																																																																									
Street Address 105 Maxess Road Suite N108		Street		Billing Information (if different from Report to)																																																																																																																																																																																							
City State Zip Melville NY 11747		City State Bethpage NY		Company Name Arcadis, U.S., Inc.																																																																																																																																																																																							
Project Contact Thomas Darmon, thomas.darmon@arcadis.com		Project # 30218437.GWMI3		Street Address 630 Plaza Drive, Suite 600																																																																																																																																																																																							
Phone # 330-515-5713		Client/Purchase Order #		City State Zip Highlands Ranch, CO 80129		<table border="1"> <tr> <th>Accutest Sample #</th> <th>Field ID / Point of Collection</th> <th>MECH/VI Vial #</th> <th>Date</th> <th>Time</th> <th>Sampled by</th> <th>Matrix</th> <th># of bottles</th> <th>HC</th> <th>NaOH</th> <th>HN03</th> <th>HSC04</th> <th>NO3E</th> <th>DI Water</th> <th>MECH</th> <th>ENCORE</th> <th>NH4SC4</th> </tr> <tr> <td>1</td> <td>FB043024KK1</td> <td></td> <td>4/30/24</td> <td>0745</td> <td>KK</td> <td>FB</td> <td>2</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>TB043024SV1</td> <td></td> <td>4/30/24</td> <td></td> <td>SV</td> <td>TB</td> <td>2</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>TB043024PA2</td> <td></td> <td>4/30/24</td> <td></td> <td>PQ</td> <td>TB</td> <td>2</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>GM-17D</td> <td></td> <td>4/30/24</td> <td>0930</td> <td>SV</td> <td>GW</td> <td>3</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>GM-17I</td> <td></td> <td>4/30/24</td> <td>0932</td> <td>SH</td> <td>GW</td> <td>3</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>MW-3-1</td> <td></td> <td>4/30/24</td> <td>1000</td> <td>KK</td> <td>GW</td> <td>3</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7</td> <td>REPO43024KK1</td> <td></td> <td>4/30/24</td> <td></td> <td>KK</td> <td>GW</td> <td>3</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td>GM-13D</td> <td></td> <td>4/30/24</td> <td>1102</td> <td>SV</td> <td>GW</td> <td>3</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9</td> <td>GM-35D2</td> <td></td> <td>4/30/24</td> <td>1230</td> <td>PQ</td> <td>GW</td> <td>3</td> <td><input checked="" type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>												Accutest Sample #	Field ID / Point of Collection	MECH/VI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HC	NaOH	HN03	HSC04	NO3E	DI Water	MECH	ENCORE	NH4SC4	1	FB043024KK1		4/30/24	0745	KK	FB	2	<input checked="" type="checkbox"/>									2	TB043024SV1		4/30/24		SV	TB	2	<input checked="" type="checkbox"/>									3	TB043024PA2		4/30/24		PQ	TB	2	<input checked="" type="checkbox"/>									4	GM-17D		4/30/24	0930	SV	GW	3	<input checked="" type="checkbox"/>									5	GM-17I		4/30/24	0932	SH	GW	3	<input checked="" type="checkbox"/>									6	MW-3-1		4/30/24	1000	KK	GW	3	<input checked="" type="checkbox"/>									7	REPO43024KK1		4/30/24		KK	GW	3	<input checked="" type="checkbox"/>									8	GM-13D		4/30/24	1102	SV	GW	3	<input checked="" type="checkbox"/>									9	GM-35D2		4/30/24	1230	PQ	GW	3	<input checked="" type="checkbox"/>								
Accutest Sample #	Field ID / Point of Collection	MECH/VI Vial #	Date	Time	Sampled by													Matrix	# of bottles	HC	NaOH	HN03	HSC04	NO3E	DI Water	MECH	ENCORE	NH4SC4																																																																																																																																																															
1	FB043024KK1		4/30/24	0745	KK	FB	2	<input checked="" type="checkbox"/>																																																																																																																																																																																			
2	TB043024SV1		4/30/24		SV	TB	2	<input checked="" type="checkbox"/>																																																																																																																																																																																			
3	TB043024PA2		4/30/24		PQ	TB	2	<input checked="" type="checkbox"/>																																																																																																																																																																																			
4	GM-17D		4/30/24	0930	SV	GW	3	<input checked="" type="checkbox"/>																																																																																																																																																																																			
5	GM-17I		4/30/24	0932	SH	GW	3	<input checked="" type="checkbox"/>																																																																																																																																																																																			
6	MW-3-1		4/30/24	1000	KK	GW	3	<input checked="" type="checkbox"/>																																																																																																																																																																																			
7	REPO43024KK1		4/30/24		KK	GW	3	<input checked="" type="checkbox"/>																																																																																																																																																																																			
8	GM-13D		4/30/24	1102	SV	GW	3	<input checked="" type="checkbox"/>																																																																																																																																																																																			
9	GM-35D2		4/30/24	1230	PQ	GW	3	<input checked="" type="checkbox"/>																																																																																																																																																																																			
Project Manager Art Zahradnik		Attention: Accounts Payable																																																																																																																																																																																									
Sampler(s) Name(s) Shirley He		Phone # 516-675-6548																																																																																																																																																																																									
Turnaround Time (Business days)		Data Deliverable Information				Comments / Special Instructions																																																																																																																																																																																					
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <small>Emergency & Rush T/A data available VIA Lablink</small>		Approved By (Accutest PM): / Date:				<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C"				<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDD Format-EquiS 6 <input checked="" type="checkbox"/> Other COMMS				TB043024SV1 with GM-17D, GM-17I, GM-13D TB043024PA2 with MW-3-1, REPO43024KK1 GM-35D2																																																																																																																																																																													
Sample Custody must be documented below each time samples change possession, including courier delivery.																																																																																																																																																																																											
Relinquished by Sampler: 1 Shirley He		Date Time: 4/30/24		Received By: 1 Sean Lyons				Date Time: 5/1/24				Received By: 2 [Signature]																																																																																																																																																																															
Relinquished by Sampler: 3		Date Time:		Received By: 3 [Signature]				Date Time:				Received By: 4 [Signature]																																																																																																																																																																															
Relinquished by:		Date Time:		Received By: 5 [Signature]				Date Time:				Received By:																																																																																																																																																																															
				Custody Seal #				<input type="checkbox"/> Intact <input type="checkbox"/> Not intact				Preserved where applicable <input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp.																																																																																																																																																																															

5.1
5

Initial Assessment **MB31B**
Label Verification

540
2.20
2.25

JD87599: Chain of Custody

Page 1 of 3





ID#: SR1968

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program 2

Lab Work Order # P2 NG ONCT MW Part 1 and 2

Page 1 of 1

Contact & Company Name:
 Thomas Darmon - Task Manager
 Telephone: 330-515-5713 wk
 Fax:
 Address:
 105 Maxess Road, Suite N108
 City: NY State Zip: 11747
 Melville NY 11747
 Email Address: Thomas.darmon@arcadis.com
 Project #: 30218437.GWMM13
 Project Name/Location (City, State): OU2-Northrop Grumman, Bethpage, NY
 Sampler's Printed Name: Shirley He
 Sampler's Signature: *Shirley He*

Preservative: E
 Filtered (✓):
 # of Containers: 2
 Container information: 2

Keys

Preservation Key
 A. H₂O
 B. HCL
 C. HNO
 D. NaOH
 E. None
 F. Other
 G. Other
 H. Other

Container Information Key:
 1. 40 ml Vial
 2. 1 L Amber
 3. 250 ml Plastic
 4. 500 ml Plastic
 5. Etc
 6. 2 oz. Glass
 7. 4 oz. Glass
 8. 8 oz. Glass
 9. Other
 10. Other

Matrix Key
 SE - Sediment
 EL - Sludge
 A - Air
 NL - NAPL Oil
 SW - Sludge/Water
 Other: GW

PARAMETER ANALYSIS & METHOD

Sample ID	Collection		Type (%)		Matrix	REMARKS
	Date	Time	Comp	Grab		
FB043024KK1	4/30/24	0745	✓	✓	GW	1,4-dioxane 8270D SIM
GM-17D	4/30/24	0930	✓	✓	GW	
GM-17I	4/30/24	0932	✓	✓	GW	
MW-3-4	4/30/24	1000	✓	✓	GW	
REPO43024KK1	4/30/24	---	✓	✓	GW	
GM-13D	4/30/24	1102	✓	✓	GW	
GM-35D2	4/30/24	1230	✓	✓	GW	

Special QA/QC Instructions(✓):

Special Instructions/Comments:
 SVOC extracted by CCLE
 EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)

Laboratory Information and Receipt

Lab Name: Katahdin Analytical Labs
 Cooler packed with ice (✓)
 Specify Turnaround Requirements:
 Normal TAT-10 business days
 Shipping Tracking #: FedEx Priority Overnight

Relinquished By
 Printed Name: Shirley He
 Signature: *Shirley He*
 Firm/Courier: Arcadis
 Date/Time: 4/30/24

Received By
 Printed Name: Jacob Bruce
 Signature: *Jacob Bruce*
 Firm/Courier: KAS
 Date/Time: 5-1-24 0925

Laboratory Received by
 Printed Name:
 Signature:
 Firm:
 Date/Time:

cooler Custody Seal (✓)
 Intact Not Intact
 Sample Receipt
 Condition/ Cooler Temp.

Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis



ACCUTEST

GW

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

Program 1A or 1B
(circle 1 or both indicate which samples to which program below)

mm-09123-187

PAGE 1 OF 1

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)		Matrix Codes	
Company Name Arcadis		Project Name AGMNYM72080 // OU2 Navy Outpost & Monitoring Wells		Requested Analysis		Matrix Codes	
Street Address 105 Maxess Road Suite N108		Street Navy Wells OU2 - Bethpage, New York		Billing Information (if different from Report to)		DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SD - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
City State Zip Melville NY 11747		City State Bethpage NY		Company Name Arcadis, U.S., Inc.			
Project Contact Thomas Darmon, Thomas.darmon@arcadis.com		Project # 30191527.NAVI3		Street Address 630 Plaza Drive, Suite 600			
Phone # 330-515-5713		Client Purchase Order #		City State Zip Highlands Ranch, CO 80129			
Sampler(s) Name(s) Kyra Kraus (681877-3820)		Project Manager Art Zahradnik		Attention: Accounts Payable			
Field ID / Point of Collection		Collection		Number of preserved Bottles			
Accutest Sample #	MECH/DI Val #	Date	Time	Sampled by	Matrix	# of bottles	
1		5/11/24		SV	W	2	
2		5/11/24		PG	W	2	
3		5/11/24	0745	KK	W	2	
4		5/11/24	1030	KK	GW	3	
5		5/11/24	1120	SV	GW	3	
6		5/11/24	1215	PQ	GW	3	
7		5/11/24	1055	PQ	GW	3	
8		5/11/24	1415	PQ	GW	3	
9		5/11/24	1820	KK	GW	3	
10		5/11/24	1250	SV	GW	3	
11		5/11/24		KK	GW	3	

540 2.2°C IR 50

JD87600: Chain of Custody

Page 1 of 2



5.1 5



ID#: SR2005

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program **X** | 13

Lab Work Order #
P2 NG ONCT MW Part 1 and 2

Page 1 of 1

Contact & Company Name: Thomas Darmon - Task Manager Telephone: 330-515-5713 wk Address: 105 Maxess Road, Suite N108 City: Melville NY 11747 State: NY Zip: 11747 E-mail Address: Thomas.darmon@arcadis.com		Preservation Filtered (✓) E # of Containers 2 Container Information 2				
Project Name/Location (City, State): NAVY OUZ - Northrop Grumman Belhague, NY Project #: 309157.NAVY3 30218497.GWMI3 Sampler's Printed Name: Kyra Kraus Sampler's Signature:		PARAMETER ANALYSIS & METHOD 1,4-dioxane 8270D SIM				
Sample ID	Collection Date	Time	Comp	Grab	Type (✓)	Matrix
FB050124KX1	5/11/24	0745			✓	W
RE115D1	5/11/24	1030			✓	GW
RE115D2	5/11/24	1120			✓	GW
RE100D1	5/11/24	1215			✓	GW
RE100D2	5/11/24	1055			✓	GW
RE100D3	5/11/24	1415			✓	GW
RE121D1	5/11/24	1320			✓	GW
RE121D2	5/11/24	1250			✓	GW
RE P050124KX1	5/11/24	---			✓	GW

Keys

Preservation Key:
 A. H₂O
 B. HCl
 C. HNO₃
 D. H₂SO₄
 E. None
 F. Other: _____

Container Information Key:
 1. 40 ml Vial
 2. 1 L Amber
 3. 250 ml Plastic
 4. 500 ml Plastic
 5. Erlenmeyer
 6. 2 oz. Glass
 7. 4 oz. Glass
 8. 5 oz. Glass
 9. Other: _____

Matrix Key:
 SE - Sediment
 SL - Sludge
 A - Air
 SO - Soil
 W - Water
 T - Tissue
 N - NAPL/DI
 SW - Spill
 Other: **GW**

REMARKS

Special QA/QC Instructions (✓):

Special Instructions/Comments:
 SVOC extracted by CCLE
 EDD-ARCADIS_EQUIS (4-File) file format

Lab Name: Katahdin Analytical Labs <input checked="" type="checkbox"/> Cooler packed with ice (✓) Specify Turnaround Requirements: Normal TAT-10 business days Shipping/Tracking #: FedEx Priority overnight	Requisitioned By: Printed Name: Kyra Kraus Signature: Firm/Courier: Arcadis Date/Time: 5/11/24	Requisitioned By: Printed Name: Even Price Signature: Firm/Courier: FedEx Date/Time: 5-2-24 0910	Laboratory Received By: Printed Name: _____ Signature: _____ Firm: _____ Date/Time: _____
---	---	---	---

Distribution: **WHITE - Laboratory returns with results** **YELLOW - Lab copy** **PINK - Retained by Arcadis**

20739826 Co/C AR Form 08.27.2015



ACCUTEST

FB
TB
GW

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

Program 1A or 1B
(circle 1 or both indicate which samples to which program below)

PAGE 1 OF 1

FED-EX Tracking # 7047M-mm-04824-5
Accutest Quote # JD87729

Client / Reporting Information		Project Information				Requested Analysis (see TEST CODE sheet)										Matrix Codes						
Company Name Arcadis		Project Name AGMNYM72080 // OU2 Navy Outpost & Monitoring Wells Navy Wells OU2 -Bethpage, New York				V52422NG360W+40 VC82602NG36GW+40 522S1M14DIOX										DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank						
Street Address 105 Maxess Road Suite N108		City Melville NY		State NY													Billing Information (if different from Report to) Company Name Arcadis, U.S., Inc.					
Project Contact Thomas Darmon, Thomas.darmon@arcadis.com		Project # 30224425 NAV13		Street Address 630 Plaza Drive, Suite 600													City Highlands Ranch, CO		State CO		Zip 80129	
Phone # 330-515-5713		Cell # 30491527		Client Purchase Order # NAV13													Attention: Accounts Payable					
Sampler(s) Name(s) S Vlavianos 56404660		Project Manager Art Zahradnik												LAB USE ONLY								
Accutest Sample #	Field ID / Point of Collection	MEQ-HDI Val #	Date	Time	Sampled by	Matrix	# of bottles	SW	LIQ	RUSH	HSO4	HSO4A	NONE	DI Water	MEQ	ENCORE	ENCORE					
1	FB050224SV1		5/2/24	0730	SV FB	Z	2	X														
2	TB050224SV1		5/2/24		SV TB	Z	2	X														
3	TB050224PQT		5/2/24		PG TB	Z	2	X														
4	RE124D1		5/2/24	1050	SV GW	Z	3	X														
5	RE124D2		5/2/24	1005	SV GW	Z	3	X														
6	RE12701		5/2/24	1220	PG GW	Z	3	X														
7	RE12702		5/2/24	1030	PG GW	Z	3	X														
8	RE12801		5/2/24	1250	SV GW	Z	3	X														
9	RE12802		5/2/24	1355	SV GW	Z	3	X														
Turnaround Time (Business days)		Approved By (Accutest PM) / Date:				Data Deliverable Information										Comments / Special Instructions						
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <small>Emergency & Rush T/A data available VIA Lablink</small>						<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLT (Level 3+4) <input type="checkbox"/> State Forms <input type="checkbox"/> NJ Reduced <input checked="" type="checkbox"/> EDD Format-EQuIS 7 Arcadis <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Other COMM+										TB050224SV1 w/ RE124D1 RE124D2 RE12801 RE12802 TB050224PQT w/ RE12701 RE12702						
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:						
1 S Vlavianos		5/2/24 550		[Signature]		5/2/24 1810		[Signature]		5/2/24 1810		[Signature]		5/2/24 1810		[Signature]						
3				3				4				4				4						
5				5				Custody Seal #		<input type="checkbox"/> Intact Preserved where applicable <input type="checkbox"/> Not Intact		On Ice		Cooler Temp: 2.5°C								

5.1
5

JD87729: Chain of Custody

Page 1 of 2



GW
TB
FB

CHAIN OF CUSTODY
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TEL: 732.329.0200 FAX: 732.329.3499/3480
www.sgs.com

Program 1A or **1B**

PAGE 1 OF 1

FED-EX Tracking # [Redacted] Bottle Count Control # **10242370**
Accutest Quote # [Redacted] Accutest Job # **JD88056**

Client / Reporting Information		Project Information										Requested Analysis (see TEST CODE sheet)										Matrix Codes										
Company Name Arcadis		Project Name AGMNYM72080 // OU2 Navy Outpost & Monitoring Wells										V5242NG36GW+40 VCB2602NG36GW+40 522SIM14DIOX										DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Fek Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank										
Street Address 105 Maxess Road Suite N108		Street Bethpage NY																														
City State Zip Melville NY 11747		Billing Information (if different from Report to) Company Name Arcadis, U.S., Inc.																														
Project Contact Thomas Darmon, Thomas.darmon@arcadis.com		Project # 30191527.NAVI3																														
Phone # Call # 330-515-5713		Client Purchase Order #																														
Sampler(s) Name(s) Phone # Kyra Krauss (631) 877-3820		Project Manager Art Zahradnik																														
Field ID / Point of Collection		MF OHDI Val #		Date		Time		Sampled by		Matrix		# of bottles		TCL		HACH		H2SO4		NONE		20 W/pt		HACH		ENCORE		MARGO		LAB USE ONLY		
1	TB050724SVI			5/17/24				SY	W	2																						
2	TB050724PBI			5/17/24				PB	W	2																						
3	FB050724KK1			5/17/24	0730			KK	W	2																						
4	RE130D1			5/17/24	0945			SV	GW	3																						
5	RE107D2			5/17/24	0957			KK	GW	3																						
6	RE107D1			5/17/24	1000			PQ	GW	3																						
7	RE130D2			5/17/24	0947			AH	GW	3																						
8	RE119D1			5/17/24	1130			SV	GW	3																						
9	RE107D3			5/17/24	1135			KK	GW	3																						
Turnaround Time (Business days)		Approved By (Accutest PM) / Date										Data Deliverable Information										Comments / Special Instructions										
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink												<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDD Format-EQUS 7 Arcadis <input checked="" type="checkbox"/> Other COMM-C										Initial Assessment ZBHR Label Verification										
Relinquished by Sampler Kyra Krauss		Date Time 5/17/24 1400		Received By <i>[Signature]</i>		Date Time 5/17/24 1400		Relinquished By <i>[Signature]</i>		Date Time 5/17/24 1400		Received By <i>[Signature]</i>		Date Time 5/17/24 1400		Relinquished By <i>[Signature]</i>		Date Time 5/17/24 1400		Received By <i>[Signature]</i>		Date Time 5/17/24 1400		Relinquished By <i>[Signature]</i>		Date Time 5/17/24 1400		Received By <i>[Signature]</i>		<input type="checkbox"/> Intact Preserved where applicable <input type="checkbox"/> Not Intact		
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		<input type="checkbox"/> On Ice 3-6 1:30		

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ID#: SR2191

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program 2 | B

Lab Work Order # P2 NG ONCT MW Part 1 and 2

Page 1 of 1

Contact & Company Name: Thomas Darmon - Task Manager Address: 105 Maxess Road, Suite N108 City: Melville State: NY Zip: 11747 E-mail Address: Thomas.darmon@arcadis.com Telephone: 330-515-5713 wk Fax:		Preservation Filtered (r) <u>E</u> # of Containers <u>2</u> Containment Information <u>2</u>		Key: Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Erlenmeyer 6. 2 oz Glass 7. 4 oz Glass 8. 8 oz Glass 9. Other 10. Other			
Project Name/Location (City, State): OUZ-Norfolk-Cowardin, Bethpage, NY NAVY		Matrix Key: SE - Sediment SW - Sludge A - Air NI - NAPL/OUH SV - Spill Other: GW		Matrix Key: SO - Soil W - Water T - Tissue			
Sampler's Printed Name: Kyra Kraus		Sampler's Signature:		REMARKS			
Sample ID	Collection Date	Time	Comp	Grab	Matrix	REMARKS	
FB050724KK1	5/17/24	07:30	✓		W	1,4-dioxane 8270D SIM X X X X X X	
RE130D1	5/17/24	09:45	✓		GW		
RE107D2	5/17/24	09:57	✓		GW		
RE107D1	5/17/24	10:00	✓		GW		
RE130D2	5/17/24	09:47	✓		GW		
RE119D1	5/17/24	11:30	✓		GW		
RE107D3	5/17/24	11:35	✓		GW		
Special Instructions/Comments: SVOC extracted by CCLE EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)							
Lab Name: Katahdin Analytical Labs		Requisitioned By: Printed Name: Kyra Kraus Signature: Firm/Courier: ARCADIS Date/Time: 5/17/24		Received By: Printed Name: Jacob Bruce Signature: Firm/Courier: KAS Date/Time: 5-09-24 1515		Laboratory Received By: Printed Name: Signature: Firm: Date/Time:	
Shipping Tracking #: FedEx Priority Overnight		Distribution: WHITE - Laboratory returns with results		Distribution: YELLOW - Lab copy		Distribution: PINK - Retained by Arcadis	

SR Z166

Program 2 IB



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

ID#:

Lab Work Order #
P2 NG ONCT MW Part 1 and 2

Page 1 of 1

Contact & Company Name Thomas Darmon - Task Manager		Telephone 330-515-5713 wk
Address 105 Maxcess Road, Suite N108		Fax
City Melville	State NY	Zip 11747
E-mail Address Thomas.darmon@arcadis.com		
Project Name/Location (City, State) OU2-Norfolk Program-Bellpage, NY NAVY		
Project # 20191521 - NAVY'S		
Sample's Printed Name Kyra Kraus		
Sample's Signature 		
Sample's Printed Name Kyra Kraus		
Sample's Signature 		

Sample ID	Collection		Type (✓)	Matrix	REMARKS
	Date	Time			
FB050824KKI	5/18/24	0745	✓	W	
RE109D1	5/18/24	1003	✓	GW	
RE179D1	5/18/24	1030	✓	GW	MS MSD
RE129D2	5/18/24	1027	✓	GW	
RE109D3	5/18/24	1043	✓	GW	
RE109D2	5/18/24	1143	✓	GW	
RE110D1	5/18/24	1240	✓	GW	
REP050824PQ1	5/18/24	---	✓	GW	

Special Instructions/Comments:
SVOC extracted by CCLE
EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)

Special QA/QC Instructions(✓):

Lab Name Katahdin Analytical Labs	Laboratory Information and Receipt Cooler Custody Seal (✓) <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Relinquished By Printed Name Kyra Kraus Signature 	Received By Printed Name Evan Price Signature 	Relinquished By Printed Name	Laboratory Received By Printed Name
Shipping Tracking # FedEx Priority Overnight	Sample Receipt Condition/Cooler Temp: _____	Firm/Courier Arcadis Date/Time 5/18/24	Firm/Courier Katahdin Date/Time 5-9-24 1050	Signature	Signature
Specify Turnaround Requirement: Normal TAT-10 business days		Firm	Firm/Courier	Signature	Signature
		Date/Time	Date/Time	Date/Time	Date/Time

Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

ID#: _____

Contact & Company Name:
Thomas Darmon - Task Manager
 Telephone: 330-515-5713 wk
 Address: 105 Maxess Road, Suite N108
 City: Melville NY 11747
 State: NY Zip: 11747
 E-mail/Address: Thomas.darmon@arcadis.com
 Project Name/Location (City, State): Ouz Navy Wells, Bethpage, NY
 Project #: 30229425 NAVIS
 Sample's Printed Name: S Vlavinos
 Sample's Signature: *S Vlavinos*

Sample ID	Collection		Type (✓)	Matrix
	Date	Time		
FB050924SU1	5/9/24	0730	✓	W
RE 133 DL	5/9/24	1050	✓	GW
RE 133 D2	5/9/24	1024	✓	GW
RE 118 D4	5/9/24	1045	✓	GW

Preservative: E NO
 Filtered (✓):
 # of Containers: 2
 Container Information: 2

PARAMETER ANALYSIS & METHOD

1,4-dioxane
8270D SIM

Keys

Container Information Key:
 1. 40 ml Vial
 2. 1 L Amber
 3. 250 ml Plastic
 4. 500 ml Plastic
 5. Encore
 6. 2 oz. Glass
 7. 4 oz. Glass
 8. 8 oz. Glass
 9. Other: _____
 10. Other: _____

Preservation Key:
 A. H₂SO₄
 B. HCL
 C. HNO₃
 D. NaOH
 E. None
 F. Other: _____
 G. Other: _____
 H. Other: _____

Matrix Key:
 SE - Sediment
 SO - Soil
 W - Water
 T - Tissue
 NL - NAPL/Oil
 SW - Sample Wipe
 Other: GW

REMARKS

Special Instructions/Comments:
 1,4-dioxane extracted by CCLE
 EDD-ARCADIS_EQUIS EQUIS-7 (4-File) file format

Laboratory Information and Receipt		Relinquished By		Received By		Relinquished By		Laboratory Received By	
Lab Name	Cooler Custody Seal (✓)	Printed Name	Signature	Printed Name	Signature	Printed Name	Signature	Printed Name	Signature
Katahdin Analytical Labs	<input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact	S Vlavinos	<i>S Vlavinos</i>	Even Price	<i>Even Price</i>				
Sample Receipt: Normal TAT-10 business days	Condition/Cooler Temp: _____	<i>S Vlavinos</i>	<i>S Vlavinos</i>	<i>Even Price</i>	<i>Even Price</i>				
Shipping Tracking #:		5/9/24	1200	Katahdin	<i>Katahdin</i>				
		5/9/24	1200	5-10-24	0950				

20730826 CoC AR Form 08.27.2015
 G:\PROJECT\Northrop Grumman Bethpage\Program Wide\04 Project Management\Contracts and POS\Lab\Katahdin Analytical\OU2 Navy Wells CoC Master

Distribution: WHITE - Laboratory returns with results
 YELLOW - Lab copy
 PINK - Retained by Arcadis

SR 2200

Program 1A or 1B
 (circle 1 or both indicate which samples to which program below)

Lab Work Order #
 P1a & 1b OU2 NW

Page ___ of ___



ACCUTEST

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

Program 1A or 1B
(circle 1 or both indicate which samples to which program below)

GW

FED-EX Tracking COC #4-Navy
Accutest Quote #
Bottle Order Control #
Accutest Job #

Table with columns: Client / Reporting Information, Project Information, Requested Analysis, Matrix Codes, Accutest Sample #, Field ID / Point of Collection, MEQ/MDI Vial #, Date, Time, Sampled by, Matrix, # of bottles, and various analysis codes.

Form section containing Turnaround Time (Business days), Data Deliverable Information, and Comments / Special Instructions.

Table for Sample Custody documentation, including columns for Relinquished By, Date/Time, Received By, Date/Time, and Custody Seal #.

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JD88494: Chain of Custody

Page 1 of 2





ID#: SR2467

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program 1A or 1B
Lab Work Order #
P1a & 1b OU2 NW

(circle 1 or both indicate which samples to which program below)

Page 1 of 1

Contact & Company Name: Thomas Darmon - Task Manager 330-515-5713 wk		Telephone:	330-515-5713 wk
Address: 105 Maxess Road, Suite N108		Fax:	
City	State	Zip	
Melville	NY	11747	
Project Name/Location (City, State): OU2 Navy Wells, Bathpage, NY		E-mail Address:	Thomas.darmon@arcadis.com
Project #: 302104376-04113		Sampler's Printed Name: Pat Quinn	
Sampler's Signature: <i>Pat Quinn</i>		Project #: 302104376-04113	

Sample ID	Collection Date	Time	Type (✓)		Matrix	REMARKS
			Comp	Grab		
F1052021134	5-22-24	0730	✓	✓	✓	1,4-dioxane 8270D SIM
Fw-03	↓	1030	✓	✓	GW	
HN-24I	↓	1145	✓	✓	GW	
GM-37D	↓	1300	✓	✓	GW	

Special Instructions/Comments:
1,4-dioxane extracted by CCLE
EDD-ARCADIS_EQUIS EQUIS-7 (4-File) file format

Special QA/QC Instructions (✓):

Lab Name:	Relinquished By		Received By		Relinquished By		Laboratory Received By	
	Printed Name:	Signature:	Printed Name:	Signature:	Printed Name:	Signature:	Printed Name:	Signature:
Katahdin Analytical Labs	<i>Pat Quinn</i>	<i>Pat Quinn</i>	Jacob Bruce	<i>Jacob Bruce</i>				
BB Cooler packed with ice (✓)	<input type="checkbox"/> Intact	<input type="checkbox"/> Not Intact	<i>Pat Quinn</i>	<i>Pat Quinn</i>				
Specify Turnaround Requirements: Normal TAT-10 business days	Sample Receipt		<i>Pat Quinn</i>	<i>Pat Quinn</i>				
Shipping Tracking #:	Condition/Cooler Temp.:		<i>Pat Quinn</i>	<i>Pat Quinn</i>				

207-30926 Co/C AR Form 08.27.2015
G:\PROJECT\Northrop Grumman Bathpage_Program Wide\04 Project Management\Contracts and POs\Lab\Katahdin Analytical\OU2 Navy Wells COC Master

Distribution: WHITE - Laboratory returns with results
YELLOW - Lab copy
PINK - Retained by Arcadis

25

TB
EW

CHAIN OF CUSTODY

Program 1A or 1B

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

FED-EX Tracking: **COC #4-Navy** Bottle ID: **PREM-mm-042424+19**
Account Code # **JD89133** Account Job #

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)										Matrix Codes
Company Name Arcadis		Project Name AGMNYM72080 // OU2 Navy Outpost & Monitoring Wells Navy Wells OU2 -Bethpage, New York												DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank
Street Address 105 Maxess Road Suite N108		Street												
City State Zip Melville NY 11747		City State Bethpage NY												
Project Contact Thomas Darmon, Thomas.darmon@arcadis.com		Project # 30214445												
Phone # 330-515-5713		Client Purchase Order # 30214445												
Samples Name(s) Pat O'Brien		Project Manager Art Zahradnik												
Field ID / Point of Collection 7065224861		Collection												
MECH/DI Vol #		Date		Time		Sampled by		Matrix		# of bottles		ENCLOSURE		LAB USE ONLY
		5-22-24		10:37		RW GW		2 5		X X		X X		VSJD ESL
Turnaround Time (Business days)		Data Deliverable Information												
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA iLink		Approved By (Accutest PM): / Date:		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> EDD Format-EQuS 7 Arcadis <input checked="" type="checkbox"/> Other COMMC+ Commercial "A" - Results Only Commercial "B" - Results + QC Summary NJ Reduced - Results + QC Summary + Partial Raw data										Initial Assessment LAB3B Lab Verification
Sample Custody must be documented below each time samples change possession, including courier delivery.														
Relinquished by Sampler: 1	Date Time: 5-22-24	Received By: Michelle Libbons	Date Time: 5/23/24	Relinquished by: 2	Date Time: 5/23/24	Received By: 3	Date Time: 5/23/24	Relinquished by: 4	Date Time: 5/23/24	Received By: 5	Date Time: 5/23/24	Custody Seal #	<input type="checkbox"/> Intact <input type="checkbox"/> Not intact	<input type="checkbox"/> Preserved where applicable <input type="checkbox"/> Cooler Temp.

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ID#: SR3990

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program 1A or 1B

(circle 1 or both indicate which samples to which program below)

Lab Work Order #

Page 1 of 1

P1a & 1b OU2 NW

Contact & Company Name: Thomas Darmon - Task Manager 330-515-5713 wk Address: 105 Maxess Road, Suite N108 City: Melville NY 11747 E-mail Address: Thomas.darmon@arcadis.com Project #: 30224525.NAVI3 Sampler's Printed Name: [Signature]		Preservative Filtered (✓) no # of Containers 2 Container Information	E no 2
PARAMETER ANALYSIS & METHOD 1,4-dioxane 8270D SIM			
Sample ID F007212101 RE107012	Collection Date: 7-29-24 Time: 07:30 12:30	Type (✓) Comp. Grab ↓ ↓	Matrix W GW
REMARKS			
Special Instructions/Comments: 1,4-dioxane extracted by CCLE EDD-ARCADIS_EQUIS EQUIS-7 (4-File) file format			
Laboratory Information and Receipt Lab Name: Katahdin Analytical Labs <input checked="" type="checkbox"/> Cooler packed with ice (✓) Sample Receipt: Normal TAT - 10 business days Shipping Tracking #:		Relinquished By Printed Name: [Signature] Signature: [Signature] Firm/Courier: KAS Date/Time: 7-29-24	Received By Printed Name: Jacob Bruce Signature: [Signature] Firm/Courier: KAS Date/Time: 7-30-24 10:30
Laboratory Received By Printed Name: Signature: Firm: Date/Time:		Relinquished By Printed Name: Signature: Firm/Courier: Date/Time:	

Special QA/QC Instructions (✓):



ACCUTEST

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

Program 1A or 1B
(circle 1 or both indicate which samples to which program below)

PAGE 1 OF 1

FED-EX Tracking: COC #4-Navy
Accutest Job #: MM-072324-1S4
JD93224

Client / Reporting Information, Project Information, Requested Analysis, Matrix Codes, LAB USE ONLY, Turnaround Time, Data Deliverable Information, Sample Custody

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Initial Assessment 3 APR
Label Verification

1500
CIP 1.2 1/250





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2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

Program 1A or 1B

(circle 1 or both indicate which samples to which program below)

PAGE 1 OF 1

FED-EX Tracking # COC #4-Navy
Accutest Quote #
Business Control #
Accutest Job #

Form containing Client/Reporting Information, Project Information, Requested Analysis, Matrix Codes, Collection table, Turnaround Time, Data Deliverable Information, and Sample Custody sections.

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SGS COURIER





TB
CW
ACCUTEST

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

Program 1A or 1B
(circle 1 or both indicate which samples to which program below)

PAGE 1 OF 1

35700011
R46111111-1111-05824100

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)												Matrix Codes						
Company Name Arcadis		Project Name AGMNYM72080 // OU2 Navy Outpost & Monitoring Wells Navy Wells OU2 -Bethpage, New York		Accutest Quote # Requested Analysis (see TEST CODE sheet) Matrix Codes DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank												LAB USE ONLY						
Street Address 105 Maxess Road Suite N108		Street																				
City State Zip Melville NY 11747		City State Bethpage NY																				
Project Contact Thomas Darmon, Thomas.darmon@arcadis.com		Project # 30224425.NAVIS																				
Billing Information (if different from Report to) Company Name Arcadis, U.S., Inc.		Street Address 630 Plaza Drive, Suite 600		V5242NG36GW+40 VC82602NG36GW+40 522SIM14DIOX																		
Phone # 330-515-5713		Client Purchase Order # Highlands Ranch, CO 80129																				
Sampler(s) Name(s) Pat Quinlan		Project Manager Art Zahradnik																				
Turnaround Time (Business days)		Data Deliverable Information																				
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State For <input checked="" type="checkbox"/> EDD Form 101S 7 Arcadis <input checked="" type="checkbox"/> Other COMMC+		Comments / Special Instructions Initial Assessment MS413 Label Verification																		
Emergency & Rush T/A data available VIA Lablink		Sample Custody must be documented below each time samples change possession, including courier delivery.																				
Relinquished by Sample 1		Date Time 8-22-11		Received By 1		Date Time 8-24		Received By 2														
Relinquished by Sample 3		Date Time		Received By 3		Date Time		Received By 4														
Relinquished by 5		Date Time		Received By 5		Date Time		Received By		Custody Seal # <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact Preserved where applicable <input type="checkbox"/> On Ice <input checked="" type="checkbox"/> Cooler Temp.												

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JD93847: Chain of Custody

Page 1 of 2



SR 5681

Program 2



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order # P2 NG ONCT MW Part 1 and 2

Page 1 of 1

Contact & Company Name: Thomas Darmon - Task Manager
 Telephone: 330-515-5713 wk
 Address: 105 Maxess Road, Suite N108
 City: Melville NY 11747
 State: NY Zip: 11747
 E-mail Address: Thomas.darmon@arcadis.com
 Project #: 30218437.GWMI3
 Project Name/Location (City, State): 02-Northrop Grumman, Bethpage, NY
 Sampler's Printed Name: [Signature]

Sample ID	Collection Date	Time	Type (✓)		Matrix	Preservative Filtered (✓)	# of Containers	Container Information	PARAMETER ANALYSIS & METHOD	REMARKS
			Comp	Grab						
FDW1521AH1	10-15-14	0730		✓	W					
P21 MW-04	0916			✓	GW					
P21 MW-05	1016			✓	GW					
P21 MW-06	0915			✓	GW					
GM-15D	1165			✓	GW					
GM-15D2	1140			✓	GW					
GM-15I	1202			✓	GW					
GM-15SR	1125			✓	GW					
REL1521AH1				✓	GW					

Special Instructions/Comments: SVOC extracted by CCLE EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)

Received By: [Signature] Printed Name: Evan Price
 Relinquished By: [Signature] Printed Name: [Signature]
 Firm/Courier: Katahdin
 Date/Time: 10-16-24 0917

Condition/Cooler Temp: [] Intact [] Not Intact

Sample Receipt: [] Intact [] Not Intact

Condition/Cooler Temp: []

20730626 Co/C AR Form 08.27.2015
 Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis



ACCUTEST

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

Program 2

PAGE 1 OF 1

PN

600

FED-EX Tracking: GOC #5-NG
Accutest Quote #:
Accutest Job #: JD98410

Form containing Client/Reporting Information, Project Information, Requested Analysis, Matrix Codes, Accutest Sample #, Collection data, Turnaround Time, and Chain of Custody table.

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JD98410: Chain of Custody

Page 1 of 4



SR 5752

Program 2

Lab Work Order #
P2 NG ONCT MW Part 1 and 2

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

ID#: _____ Page 1 of 1



Contact & Company Name: Thomas Darmon - Task Manager Address: 105 Maxess Road, Suite N108 City: Melville NY 11747 State: NY Zip: 11747	Telephone: 330-515-5713 wk Fax: E-mail Address: Thomas.darmon@arcadis.com	Project #: 30218437.GWMI3 Sampler's Printed Name: [Signature]	Preservative Filtered (✓): E # of Containers: 2 Container Information: 1
PARAMETER ANALYSIS & METHOD			
1,4-dioxane 8270D SIM			

Sample ID	Collection		Type (✓)		Matrix	REMARKS
	Date	Time	Comp	Grab		
FBI0178153	10-17-24	0735	✓	✓	W	
GM-39DA		0915	✓	✓	GW	
GM-39DB		0912	✓	✓	GW	
GM-17I		0910	✓	✓	GW	
GM-17D		1105	✓	✓	GW	
GM-34D2		1150	✓	✓	GW	
GM-34D		1105	✓	✓	GW	

Special QA/QC Instructions (✓):

Laboratory Information and Receipt		Reinquinshed By		Received By		Reinquinshed By		Laboratory Received By	
Lab Name: Katahdin Analytical Labs	Cooler Custody Seal (✓) <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Printed Name: [Signature]	Signature: [Signature]	Printed Name: Even Price	Signature: [Signature]	Printed Name:	Signature:	Printed Name:	Signature:
<input checked="" type="checkbox"/> Cooler packed with ice (✓)	Sample Receipt: Normal TAT-10 business days	Firm: Arcadis	Date/Time: 10-18-24 0935	Firm/Counter: Katahdin	Date/Time: 10-18-24 0935	Firm/Counter:	Date/Time:	Firm:	Date/Time:
Shipping Tracking #:	Condition/Cooler Temp: _____								

20730826 CoIC AR Form 08.27.2015
Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis



ACCUTEST

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com

Program 2

PAGE 2 OF 2

FED-EX Tracking	COC #5-NG	Bottle Order Control #
Accutest Quote #		Accutest Job # <i>JD98661</i>

Client / Reporting Information		Project Information				Requested Analysis (see TEST CODE sheet)												Matrix Codes		
Company Name: Arcadis		Project Name: OU2 Outpost & Monitoring Wells Northrop Grumman Wells OU2 -Bethpage, New York				VC82602NG36GW+40												DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SD - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank		
Street Address: 105 Maxess Road Suite N108		Street: Bethpage NY																		
City State Zip: Melville NY 11747		City State Zip: Bethpage NY																		
Project Contact: Thomas Darmon, thomas.darmon@arcadis.com		Billing Information (if different from Report to): Company Name: Arcadis, U.S., Inc.																		
Phone # Fax #: 330-515-5713		Street Address: 630 Plaza Drive, Suite 600																		
Sampler(s) Name(s) Phone #: <i>Paul D'Amico 609-694-2415</i>		Project #: 30218437.GWMI3				City State Zip: Highlands Ranch, CO 80129				Attention: Accounts Payable										
Accutest Sample #	Field ID / Point of Collection	MEQ/HD/Val #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NH ₄ H	NH ₄ D	HNO ₃	HNO ₃ A	HNO ₃ B	NONE	ED Water	ED/MSD	EN/MSD	NH/MSD	LAB USE ONLY	
13	REPU2019AH		10-21-24		Art	Env	3													

Turnaround Time (Business days)		Data Deliverable Information												Comments / Special Instructions				
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <small>Emergency & Rush T/A data available VIA Lablink</small>		Approved By (Accutest PM) / Date				<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> State Forms <input type="checkbox"/> NJ Reduced <input checked="" type="checkbox"/> EDD Format-EQUS 6 <input type="checkbox"/> Commercial "C" <input checked="" type="checkbox"/> Other COMMC+ <small>Commercial "A" = Results Only Commercial "B" = Results + Summary + Partial Raw data NJ Reduced = Results + Summary + Partial Raw data</small>												

Sample Custody must be documented below each time samples change possession, including on-site delivery.

Relinquished by Sampler: <i>[Signature]</i>	Date Time: <i>10/21/24</i>	Received By: <i>Paul D'Amico</i>	Received Date Time: <i>10/21/24</i>	Relinquished by: <i>[Signature]</i>	Date Time: <i>10/21/24</i>	Received By: <i>[Signature]</i>	Received Date Time: <i>10/21/24</i>
Relinquished by Sampler: <i>[Signature]</i>	Date Time: <i>10/21/24</i>	Received By: <i>[Signature]</i>	Received Date Time: <i>10/21/24</i>	Relinquished by: <i>[Signature]</i>	Date Time: <i>10/21/24</i>	Received By: <i>[Signature]</i>	Received Date Time: <i>10/21/24</i>
Relinquished by:	Date Time:	Received By:	Received Date Time:	Relinquished by:	Date Time:	Received By:	Received Date Time:

3.7°C IA50



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SR 5802

Program 2



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #
P2 NG ONCT MW Part. 1 and 2

Page 1 of 1

Send Results to: **Company Name** Thomas Darmon - Task Manager
Address 105 Maxess Road, Suite N108
 City Melville NY 11747
 State NY Zip 11747
Telephone 330-515-5713 wk
Fax
E-mail Address Thomas.darmon@arcadis.com

Project Name/Location (City, State) Ouz-Northrop Grumman, Bethpage, NY
 Project # 30218437.GWMI3
 Sampler's Printed Name: [Signature]

Sample ID	Collection		Type (✓)		Matrix
	Date	Time	Comp	Grab	
FD02081931	09/28/11	0730		J	W
GA-740		0939		J	GW
GA-740A		0941		J	GW
GA-740B		0946		J	GW
GA-741		0947		J	GW
GA-730		1140		J	GW
GA-730A		1138		J	GW
GA-730B		1140		J	GW
GA-210A		1335		J	GW
MA-3-1		1400		J	GW
REDACTED				J	GW

Sample ID	Collection Date	Time	Type (✓)	Matrix	Preservative Filtered (✓)	# of Containers	Container Information	PARAMETER ANALYSIS & METHOD		REMARKS
								1,4-dioxane	8270D SIM	
GA-740										
GA-740A										
GA-740B										
GA-741										
GA-730										
GA-730A										
GA-730B										
GA-210A										
MA-3-1										
REDACTED										

Special Instructions/Comments:
 SVOC extracted by CCLE
 EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)

Laboratory Information and Receipt

Lab Name: **Katahdin Analytical Labs**
 Cooler packed with ice (✓)
 Intact Not Intact
 Sample Receipt: Normal TAT-10 business days
 Shipping Tracking #

Relequished By: [Signature] Printed Name: [Name] Date/Time: [Date/Time]

Received By: **Evan Price** Printed Name: [Name] Signature: [Signature] Date/Time: 10-22-24 0940

Laboratory Received By: [Signature] Printed Name: [Name] Signature: [Signature] Date/Time: [Date/Time]

20730826 C/C AR Form 08.27.2015

Distribution: **WHITE** - Laboratory returns with results **YELLOW** - Lab copy **PINK** - Retained by Arcadis



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CHAIN OF CUSTODY
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TEL: 732-329-0200 FAX: 732-329-3499/3480
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Program 2

PREM-MM-10924-73

PAGE 1 OF 2

GW
TB
FB

Form containing client information, project details, collection data table, and signature blocks. Includes fields for Company Name (Arcadis), Project Name (OU2 Outpost & Monitoring Wells), and a table with 11 rows of sample data.

VC82602NG36GW-40

APR 17 2005
Assessment
tion

FRSD C.P

JD98702: Chain of Custody

Page 1 of 2

5.1
5



SR 5831

Program 2

Lab Work Order #
P2 NG ONCT MW Part 1 and 2

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

ID#:



Contact & Company Name: Thomas Darmon - Task Manager Address: 105 Maxess Road, Suite N108 Melville, NY 11747 Email Address: Thomas.darmon@arcadis.com		Telephone: 330-515-5713 wk Fax:	Project #: 30218437.GWMI3 Sample's Printed Name: <i>Rest Quins</i>	Sample's Signature: 	Preservation Key: A. H ₂ SO ₄ B. HCL C. HNO ₃ D. NaOH E. None F. Other: G. Other: H. Other:	Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encove 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: 10. Other:	Matrix Key: SE - Sediment SW - Sludge A - Air NL - NAPL/OIL SW - Sample Wipe Other: GW		
PARAMETER ANALYSIS & METHOD									
Sample ID F10224K1 GM-797 GM-790 GM-780 GM-7802 GM-3502 GM-380 GM-3802 REP10224	Collection Date 10/27/09 10/10 10/20 10/25 10/18 12/18 12/25 12/27 ---	Time 0730 	Type J J J J J J J J	Comp 	Grab 	Matrix W GW GW GW GW GW GW GW GW	Remarks Ms/MST 		
Special Instructions/Comments: SVOC extracted by CCLE EDD-ARCADIS_EQUIS (EQUIS-7 (4-File) file format)									
Laboratory Information and Receipt Lab Name: Katahdin Analytical Labs <input checked="" type="checkbox"/> Cooler packed with ice (✓) <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact Sample Receipt: Normal TAT-10 business days Shipping Tracking #:		Relinquished By Printed Name: <i>Rest Quins</i> Signature: Firm: Arcadis Date/Time: 10/27/09		Received By Printed Name: Evan Pyle Signature: Firm/Counter: Katahdin Date/Time: 10-23-09		Relinquished By Printed Name: Signature: Firm: Date/Time:		Laboratory Received By Printed Name: Signature: Firm: Date/Time:	
Distribution: WHITE - Laboratory returns with results YELLOW - Lab copy PINK - Retained by Arcadis		Special QA/QC Instructions (✓):							



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GW TB FB

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Program 1A or 1B

(circle 1 or both indicate which samples to which program below)

PAGE 1 OF 1

PIZem-mm-10924-73

Field-EX Tracking: COC #4-Navy
Accutest Quote #: JD98854
Bottle Order Control #

Client / Reporting Information: Arcadis
Project Name: AGMNYM72080 // OU2 Navy Outpost & Monitoring Wells
Requested Analysis: V5242NG36OW+40, VC82602NG36GW+40, 522SIM14DIOX
Matrix Codes: DW - Drinking Water, GW - Ground Water, etc.

Turnaround Time (Business days)
Data Deliverable Information
SGS COURIER

Sample Custody must be documented below each time samples change possession including order delivery
Relinquished by Sampler: Pat Quinlan
Received By: [Signature]

JD98854: Chain of Custody

Page 1 of 2



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3.0°C I#50

SR 5862

Program 1A or 1B

(circle 1 or both indicate which samples to which program below)



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #

Page 1 of 1

P1a & 1b OU2 NW

Contact & Company Name: Thomas Darmon - Task Manager Address: 105 Maxess Road, Suite N108 City: Melville NY 11747 State: NY Zip: 11747 E-mail Address: Thomas.darmon@arcadis.com		Telephone: 330-515-5713 wk Fax:	Preservative Filled (✓) NO # of Containers 2 Container Information:
Project Name/Location (City, State): OU2 Navy Wells, Bethpage, NY			
Project #: 30224525.NAV13 Sampler's Printed Name: <i>Pat Quinn</i> Sampler's Signature: <i>[Signature]</i>			

Sample ID	Collection		Type (✓)		Matrix	REMARKS
	Date	Time	Comp	Grab		
F3102324KX1	10-27-21	0730		✓	W	1,4-dioxane 8270D SIM
RE115D1		1025		✓	GW	
RE115D2		0950		✓	GW	
RE114D1		0945		✓	GW	
RE114D3		0950		✓	GW	
RE114D2		1140		✓	GW	
RE1A1DA		1208		✓	GW	
RE1A1D1		1205		✓	GW	
REP02324KX1			✓		GW	

Special Instructions/Comments:
 1,4-dioxane extracted by CCLE
 EDD-ARCADIS_EQUIS EQUIS-7 (4-File) file format

Laboratory Information and Receipt Lab Name: Katahdin Analytical Labs Cooler Custody Seal (✓) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact Sample Receipt: Condition/Cooler Temp: _____		Relinquished By Printed Name: <i>Pat Quinn</i> Signature: <i>[Signature]</i> Firm/Courier: Arcadis Date/Time: 10-27-21	Received By Printed Name: <i>Even Price</i> Signature: <i>[Signature]</i> Firm/Courier: Katahdin Date/Time: 10-24-21	Relinquished By Printed Name: Signature: Firm/Courier: Date/Time:	Laboratory Received By Printed Name: Signature: Firm: Date/Time:
--	--	--	--	---	--

Shipping Tracking #: _____

20730826 CoC AR Form 08.27.2015
 Distribution: WHITE - Laboratory returns with results
 YELLOW - Lab copy
 PINK - Retained by Arcadis

G:\PROJECT\Northrop Grumman Bethpage_Program Wide\04 Project Management\Contracts and POs\Lab\Katahdin Analytical\OU2 Navy Wells COC Master

Katahdin Analytical Services SR5862 page 000017 of 000020



G-W
FB
B3
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Program 1A or 1B

(circle 1 or both indicate which samples to which program below)

PAGE 1 OF 1

FLD-EX Tracker # **COC #4-Navy** Bottle Order/Quantity # **PREM-MM-10924-7B**
Accutest Quote # _____ Accutest Job # **JD98977**

Client / Reporting Information		Project Information				Requested Analysis (see TEST CODE sheet)												Matrix Codes						
Company Name Arcadis		Project Name AGMNYM72080 // OU2 Navy Outpost & Monitoring Wells Navy Wells OU2 -Bethpage, New York				V5242NG36OW+40 VC82602NG36GW+40 522SIM14DIOX												DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank						
Street Address 105 Maxess Road Suite N108		Street Bethpage NY																						
City State Zip Melville NY 11747		Billing Information (if different from Report to) Company Name Arcadis, U.S., Inc.																						
Project Contact Thomas Darmon, Thomas.darmon@arcadis.com		Street Address 630 Plaza Drive, Suite 600																						
Phone # Cell # 330-515-5713		Client Purchase Order # 30224425.NAV13				City State Zip Highlands Ranch, CO 80129												LAB USE ONLY						
Sampler(s) Name(s) Phone # Pat Quinlan 609-429-2485		Project Manager Art Zahradnik				Attention: Accounts Payable																		
Accutest Sample #		Field ID / Point of Collection		ME/OH/CI Vial #		Collection		Number of preserved Bottles																
						Date Time		Sampled by Matrix		# of bottles		HCl HNO3 HNO2 H2SO4 NONE DI Water MFCOH+ ENCODRE Non-HSCL												
1		T01024204H				10-21-24		SH FB		2 2														V547
2		T01024204H						AH TO		2 2														
3		F01024204H				0730		RG RP		2 2														
4		RE11801				0930		AH GW		3 3														
5		RE11801				1100		RG GW		9 9														
6		RE12401				0942		SH GW		3 3														
7		RE12402				1200		JU GW		3 3														
Turnaround Time (Business days)		Approved By (Accutest PM) / Date				Data Deliverable Information												Comments / Special Instructions						
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <small>Emergency & Rush T/A data available VIA Latlink</small>						<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> State Forms <input type="checkbox"/> NJ Reduced <input checked="" type="checkbox"/> EDD Format-EQUS 7 Arcadis <input type="checkbox"/> Commercial "C" <input checked="" type="checkbox"/> Other COMMC+ <small>Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data</small>												SGS COURIER						
Relinquished by Sampler		Date Time		Received By		Date Time		Relinquished By		Date Time		Received By												
1		10-21-24		Sean Curtis		156 10/21/24		Sean Curtis		7:10		JTB												
Relinquished by		Date Time		Received By		Date Time		Relinquished By		Date Time		Received By												
3				3				4				4												
Custody Seal #		Intact		Preserved where applicable		On Ice		Cooler Temp.																
														3.5° 3.8°C JASO										

Initial Assessment RAEC

JD98977: Chain of Custody

Page 1 of 3





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Program 1A or 1B

(circle 1 or both indicate which samples to which program below)

PAGE 1 OF 1

JD99114

GW

FED-EX Tracking # C0C #4-Navy
Bottle Order # 10924-73
Accutest Quote #

Form containing Client/Reporting Information, Project Information, Requested Analysis, Matrix Codes, Collection table, Turnaround Time, Data Deliverable Information, and Sample Custody sections.

Initial Assessment Label Verification



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SR 5960

Program 1A or 1B

(circle 1 or both indicate which samples to which program below)

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

ID#: _____



Lab Work Order #
P1a & 1b OU2 NW

Page 1 of 1

Contact & Company Name Thomas Darmon - Task Manager 330-515-5713 wk 105 Maxess Road, Suite N108 Melville NY 11747 Email Address: Thomas.darmon@arcadis.com Project # 30224525.NAVI3 Sampler's Printed Name: [Signature]		Preservative Filtered (✓) <input type="checkbox"/> NO # of Containers 2 Container Information: 2		Keys Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Envirob 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: _____ 10. Other: _____	
Send Results to: Project Name, location (City, State) OU2 Navy Wells, Bethpage, NY Matrix: _____		Matrix Key: SE - Sediment NL - NAPL/Oil SW - Water SL - Sludge W - Tissue A - Air T - Tissue Other: <u>GW</u>		REMARKS	

Sample ID	Collection Date	Time	Type (✓)		Matrix	REMARKS
			Comp	Grab		
FO10234901	10-26-29	0730		✓	W	
RE10002	10-26			✓	GW	
RE10701	10-15			✓	GW	
RE10702	10-24			✓	GW	
RE10703	10-28			✓	GW	
RE11901	10-25			✓	GW	
RE10234901				✓	GW	

Special Instructions/Comments:
 1,4-dioxane extracted by CCLE
 EDD-ARCADIS_EQUIS EQUIS-7 (4-File) file format)

Special QA/QC Instructions (✓):

Laboratory Information and Receipt		Received By		Relinquished By		Laboratory Received By	
Lab Name Katahdin Analytical Labs	Cooler Custody Seal (✓) <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Printed Name Evan Price	Signature [Signature]	Printed Name [Signature]	Signature [Signature]	Printed Name [Signature]	Signature [Signature]
Specify Turnaround Requirements Normal TAT-10 business days	Sample Receipt: Condition/Cooler Temp: _____	Firm/Courier Katahdin	Date/Time 10-29-29 0920	Firm/Courier [Signature]	Date/Time [Signature]	Firm [Signature]	Date/Time [Signature]
Shipping Tracking #							

20730426 Co/C AR Form 08.27.2015
 G:\A-PROJECT\Northrup Grumman Bethpage_Program Wide\04 Project Management\Contracts and POS\Lab\Katahdin Analytical\OU2 Navy Wells COC Master

Distribution: **WHITE** - Laboratory returns with results
YELLOW - Lab copy
PINK - Retained by Arcadis

376



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TB GW
FB

Program 1A or 1B
(circle 1 or both indicate which samples to which program below)

PAGE 1 OF 1

FED-EX Tracking #
Accutest Quote #
GOC #4-Navy
Bottle Order Control #
Accutest Job #
PREM-MM-10924-74
JD99221

Form containing Client/Reporting Information, Project Information, Requested Analysis, Matrix Codes, Collection table, Turnaround Time, Data Deliverable Information, and Chain of Custody table.

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JD99221: Chain of Custody

Page 1 of 2



SR 5992

Program 1A or 1B
(circle 1 or both indicate which samples to which program below)



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #
P1a & 1b OU2 NW

Page 1 of 1

Send Results to: Contact & Company Name: Thomas Darmon - Task Manager, 330-515-5713 wk
Address: 105 Maxess Road, Suite N108, Melville, NY 11747
E-mail Address: Thomas.darmon@arcadis.com

Project #: 30224525.NAVI3
Sampler's Printed Name: Pat Quinlan

Keys
Preservation Key:
 A. H₂SO₄
 B. HCl
 C. HNO₃
 D. NaOH
 E. None
 F. Other
 G. Other
 H. Other
Container Information Key:
 1. 40 ml Vial
 2. 1 L Amber
 3. 250 ml Plastic
 4. 500 ml Plastic
 5. Encore
 6. 2 oz. Glass
 7. 4 oz. Glass
 8. 8 oz. Glass
 9. Other
 10. Other
Matrix Key:
 SE - Sediment
 SW - Sludge
 A - Air
 NL - NAPL/Oil
 SW - Sample Wipe
 Other: GW

Sample ID	Collection		Type (✓)		Matrix	REMARKS
	Date	Time	Comp	Grab		
F10224525	10/24	0730		✓	W	X
RE12801	10/25	1050		✓	GW	X
RE12802	10/25	1045		✓	GW	X
RE10601	12/20	1250		✓	GW	X
RE10602	12/28	1258		✓	GW	X
RE10603	12/15	1245		✓	GW	X
REP10224525			✓	✓	GW	X

Special QA/QC Instructions (✓):

Special Instructions/Comments:
 1,4-dioxane extracted by CCLE
 EDD-ARCADIS_EQUIS EQUIS-7 (4-File) file format)

Laboratory Information and Receipt		Relinquished By		Received By		Relinquished By		Laboratory Received By	
Lab Name: Katahdin Analytical Labs	Cooler Custody Seal (✓) <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Printed Name: Pat Quinlan	Signature: [Signature]	Printed Name: [Signature]	Signature: [Signature]	Printed Name: [Signature]	Signature: [Signature]	Printed Name: Evan Price	Signature: [Signature]
Specify Turnaround Requirements: Normal TAT-10 business days	Sample Receipt: Condition/Cooler Temp: _____	Firm: Arcadis	Date/Time: 10/24/24	Firm: Arcadis	Date/Time: 10/24/24	Firm: Arcadis	Date/Time: 10/24/24	Firm: Katahdin	Date/Time: 10-30-24 0930

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ACCUTEST

CHAIN OF CUSTODY

SGS Accutest New Jersey - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480

Program 1A or 1B

(circle 1 or both indicate which samples to which program below)

PAGE 1 OF 1

JD99266

FED-EX Tracking # COC #4-Navy
Accutest Quote # 12211mm-10924-73

Client / Reporting Information, Project Information, Requested Analysis, Matrix Codes, Accutest Samples table with handwritten entries for field IDs and collection times.

SGS COURIER

Turnaround Time (Business days), Data Deliverable Information, and Emergency & Rush T/A data available VIA Lablink.

Sample Custody must be documented below each time samples change possession, including courier delivery. Includes a table for Relinquished/Received by and Date Time.





CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Program 1A or 1B

(circle 1 or both indicate which samples to which program below)

Lab Work Order #

P1a & 1b OU2 NW

Page 1 of 1

SR 6013

Contact & Company Name: Thomas Darmon - Task Manager Telephone: 330-515-5713 wk Address: 105 Maxess Road, Suite N108 City: Melville NY 11747 State: NY Zip: 11747 E-mail Address: Thomas.darmon@arcadis.com		Project Name/Location (City, State): OU2 Navy Wells, Bethpage, NY Project #: 30224525.NAVI3 Sampler's Printed Name: <i>Get Quinlan</i> Sampler's Signature: <i>Get Quinlan</i>				
Send Results to: Thomas Darmon - Task Manager Telephone: 330-515-5713 wk Address: 105 Maxess Road, Suite N108 City: Melville NY 11747 State: NY Zip: 11747 E-mail Address: Thomas.darmon@arcadis.com		Project Name/Location (City, State): OU2 Navy Wells, Bethpage, NY Project #: 30224525.NAVI3 Sampler's Printed Name: <i>Get Quinlan</i> Sampler's Signature: <i>Get Quinlan</i>				
Sample ID	Collection Date	Time	Type (✓)		Matrix	Remarks
			Comp	Grab		
F003024K1	10-30-21	0730		✓	W	
RE12701	1002			✓	GW	MS/MSD
RE12702	1000			✓	GW	
RE12703	1155			✓	GW	
RE12704	1207			✓	GW	

Preservation Key:
 A. H₂SO₄
 B. HCl
 C. HNO₃
 D. NaOH
 E. None
 F. Other
 G. Other
 H. Other

Container Information Key:
 1. 40 ml Vial
 2. 1 L Amber
 3. 250 ml Plastic
 4. 500 ml Plastic
 5. Encore
 6. 2 oz. Glass
 7. 4 oz. Glass
 8. 8 oz. Glass
 9. Other
 10. Other

Matrix Key:
 SO - Soil
 W - Water
 T - Tissue
 SE - Sediment
 SL - Sludge
 A - Air
 NL - NAPL/Oil
 SW - Sample Wipe
 Other: GW

PARAMETER ANALYSIS & METHOD

1,4-dioxane
 8270D SIM

Special QA/QC Instructions (✓):

Special Instructions/Comments:
 1,4-dioxane extracted by CCLE
 EDD-ARCADIS_EQUIS_EQUIS-7 (4-File) file format

Laboratory Information and Receipt		Relinquished By		Received By		Relinquished By		Laboratory Received By	
Lab Name:	Katahdin Analytical Labs	Printed Name:	<i>Get Quinlan</i>	Printed Name:		Printed Name:		Printed Name:	<i>Evan Price</i>
<input checked="" type="checkbox"/> Cooler packed with ice (✓)	<input type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Signature:	<i>Get Quinlan</i>	Signature:		Signature:		Signature:	<i>Evan Price</i>
Sample Turnaround Requirements:	Normal TAT-10 business days	Firm:	<i>Arcadis</i>	Firm/Courier:		Firm/Courier:		Firm:	<i>Katahdin</i>
Shipping Tracking #:		Date/Time:	<i>10-30-21</i>	Date/Time:		Date/Time:		Date/Time:	<i>10-31-24 DPSS</i>

20730826 CoC AR Form 06.27.2015
 G:\PROJECT\Northrop Grumman Bethpage_Program Wide\04 Project Management\Contracts and POS\Lab\Katahdin Analytical\OU2 Navy Wells COC Master

Distribution: WHITE - Laboratory returns with results
 YELLOW - Lab copy
 PINK - Retained by Arcadis

SR 6096

Program 1A or 1B

(circle 1 or both indicate which samples to which program below)



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #

Page 1 of 1

P1a & 1b OU2 NW

Contact & Company Name: Thomas Darmon - Task Manager Address: 105 Maxess Road, Suite N108 City: Melville State: NY Zip: 11747 Telephone: 330-515-5713 wk Fax: _____ E-mail Address: Thomas.darmon@arcadis.com		Preservative Filtered (✓) NO # of Containers 2 Container Information		Keys Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encone 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: _____ 10. Other: _____ Preservation Key: A. H ₂ SO ₄ B. HCl C. HNO ₃ D. NaOH E. None F. Other: _____ G. Other: _____ H. Other: _____ Matrix Key: SE - Sediment SL - Sludge A - Air NL - NAPL/Oil SW - Sample Wipe Other: GW	
Send Results to: Project Name/Location (City, State): OU2 Navy Wells, Bethpage, NY Project #: 30224525.NAV13 Sampler's Printed Name: Kyra Kraus Signature:					
PARAMETER ANALYSIS & METHOD					
1,4-dioxane 8270D SIM					
Sample ID FB11D424X1 BE129D1 RE129D2		Collection Date: 11/14/24 Time: 0730 11/14/24 1100 11/14/24 1102	Type (✓) Comp: _____ Grab: _____	Matrix N GW GW	
REMARKS					
<input type="checkbox"/> Special QA/QC Instructions (✓):					
Special Instructions/Comments: 1,4-dioxane extracted by CCLE EDD-ARCADIS_EQUIS EQUIS-7 (4-File) file format)					
Lab Name: Katahdin Analytical Labs <input checked="" type="checkbox"/> Cooler packed with ice (✓)		Relinquished By Printed Name: Kyra Kraus Signature: Firm: Arcadis Date/Time: 11/14/2024		Received By Printed Name: _____ Signature: _____ Firm/Courier: _____ Date/Time: _____	
Sample Receipt: Normal TAT-10 business days Shipping Tracking #: _____		Relinquished By Printed Name: _____ Signature: _____ Firm/Courier: _____ Date/Time: _____		Laboratory Received By Printed Name: Evan Price Signature: Firm: Katahdin Date/Time: 11-5-24 0935	

20730826 CoIC AR Form 08.27.2015
 G:\PROJECT\Northrup Grumman Bethpage_L\Program Wide\04 Project Management\Contracts and POS\Lab\Katahdin Analytical\OU2 Navy Wells COC Master

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30



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www.sgs.com

Program 1A or 1B

(circle 1 or both indicate which samples to which program below)

PAGE 1 OF 1

FED EX Tracker: COC #4-Navy
Accutest Quote #
Bottle Order #
FROM-1111-10924-23
JD99935

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)										Matrix Codes								
Company Name Arcadis		Project Name: AGMNYM72080 // OU2 Navy Outpost & Monitoring Wells Navy Wells OU2 -Bethpage, New York												DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SS - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank								
Street Address 105 Maxess Road Suite N108		Street Bethpage NY																				
City State Zip Melville NY 11747		City State Bethpage NY																				
Project Contact Thomas Darmon, Thomas.darmon@arcadis.com		Project # 30224425.NAVI3																				
Phone # 330-615-5713		Client Purchase Order #												V5242NG36GW+40 VC82602NG36GW+40 5225IM14DIOX								
Sampler(s) Name(s) Kyra Kraus (631)871-3820		Project Manager Art Zahradnik																				
Billing Information (if different from Report to)		Company Name Arcadis, U.S., Inc.																				
Street Address 630 Plaza Drive, Suite 600		City State Zip Highlands Ranch CO 80129																				
Attention: Accounts Payable														LAB USE ONLY								
Accutest Sample #	Field ID / Point of Collection	MECHNDI Val #	Date	Time	Sampled by	Matrix	# of bottles	VI	INCL	INCL	INCL	INCL	INCL		INCL	INCL	INCL	INCL	INCL	INCL	INCL	
1	TB110624KK1		11/6/24		KK	TB	2															
2	TB110624SH1		11/6/24		SH	TB	2															
3	BPOW1-3		11/6/24	1008	SH	GW	5															
4	BPOW1-5		11/6/24	1107	AH	GW	5															
5	BPOW1-1		11/6/24	1120	BM	GW	5															
6	BPOW1-2		11/6/24	1225	SH	GW	5															
7	BPOW1-4		11/6/24	1135	KK	GW	5															
8	BPOW1-6		11/6/24	1310	AH	GW	5															
9	REP110624BM1		11/6/24		BM	GW	5															
Turnaround Time (Business days)		Approved By (Accutest PM): Date:		Data Deliverable Information										Comments / Special Instructions								
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink				<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> State Forms <input type="checkbox"/> NJ Reduced <input checked="" type="checkbox"/> EDD Format-EQUS 7 Arcadis <input type="checkbox"/> Commercial "C" <input checked="" type="checkbox"/> Other COMMC+										Initial Assessment Label Verification 2/26/24								
Sample Custody must be documented below each time samples change possession, including courier delivery.																						
Relinquished by Sampler: Kyra Kraus		Date Time: 11/6/24		Received By: Art Zahradnik		Date Time: 11/6/24		Relinquished By: Art Zahradnik		Date Time: 11/6/24		Received By: Art Zahradnik		Date Time: 11/6/24		Received By: Art Zahradnik		Date Time: 11/6/24		Received By: Art Zahradnik		
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:		Date Time:		Received By:		
Custody Seal #																						

Initial Assessment
Label Verification
2/26/24

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JD99935: Chain of Custody

Page 1 of 2



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Program 1A or 1B

(circle 1 or both indicate which samples to which program below)

PRGM-MM-10924-73

PAGE 1 OF 1

FED-EX Tracking # COC #4-Navy
Accutest Quote #
Accutest Job # JE206

Form containing Client/Reporting Information, Project Information, Requested Analysis, Matrix Codes, Turnaround Time, Data Deliverable Information, and Sample Custody sections.

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5

SGS COURIER PIU

1.7 11250

JE206: Chain of Custody

Page 1 of 2





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Program IA or IB

PAGE 1 OF 1

FED-EX TRACKING COC #4-Navy Bottle Order Control # DRAM-MM-10924-793
Accident Quote # JE331

Client / Reporting Information, Project Information, Requested Analysis, Matrix Codes, Accutest Sample #, Field ID / Point of Collection, MECH(D) Vial #, Date, Time, Sampled by, Matrix, # of bottles, Number of preserved bottles, LAB USE ONLY

Initial Assessment 3A
Label Verification

Turnaround Time (Business days), Data Deliverable Information, Comments / Special Instructions, Sample Custody must be documented below each time samples change possession, including courier delivery

2 Coolers

IR 50 2 1/2.3

SGS Carrier #10

5.1 5

JE331: Chain of Custody

Page 1 of 2





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Program 2

PAGE 1 OF 1

FED-EX Tracking # COC #5-NG
Accutest Quote #
Bottle type/lot # PREM-MM-10924-74
Accutest Job # JE335

Client / Reporting Information		Project Information				Requested Analysis (see TEST CODE sheet)										Matrix Codes	
Company Name Arcadis		Project Name OU2 Outpost & Monitoring Wells				VC82602NG36GW+40 Cd, Cr (Total) 6010C Cd, Cr (Dissolved, Field Filtered) 6010C Cr (total) Cr (dissolved)										DW - Drinking Water GW - Ground Water WW - Waste Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Waste FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
Street Address 105 Maxess Road Suite N108		Street Northrop Grumman Wells OU2 -Bethpage, New York															
City State Zip Melville NY 11747		Billing Information (if different from Report to) Company Name Arcadis, U.S., Inc.															
Project Contact Thomas Darmon, thomas.darmon@arcadis.com		Street Address 630 Plaza Drive, Suite 600															
Phone # 330-515-5713		Project # 30218437.GWMI3		City State Zip Highlands Ranch, CO 80129													
Fax # 516-675-6548		Client/Purchase Order #		Attention: Accounts Payable													
Sampler(s) Name(s) Shirley He		Project Manager Art Zahradnik															
Field ID / Point of Collection		MECH/DI Val #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEMO	ENCORE	NHS/SP	LAB USE ONLY
FB11124SH2			11/11/24		SH	TB	2	2									
1 FB11124SH2			11/11/24	0730	SH	FB	1										A25
2 MW-01GF			11/11/24	0930	SH	GW	2										

Turnaround Time (Business days)		Data Deliverable Information										Comments / Special Instructions		
<input type="checkbox"/> Std. 15 Business Days <input checked="" type="checkbox"/> Std. 10 Business Days (by Contract only) <input type="checkbox"/> 10 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <small>Emergency & Rush T/A data available VIA Lablink</small>		Approved By (Accutest PM) / Date		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> State Forms <input type="checkbox"/> NJ Reduced <input checked="" type="checkbox"/> EDD Format-EQUS 6 <input type="checkbox"/> Commercial "C" <input checked="" type="checkbox"/> Other COMM-C* <small>Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data</small>										Initial Assessment 3A Label Verification

Sample Custody must be documented below each time samples change possession, including courier delivery.									
Relinquished by Sampler 1 Shirley He		Date Time 11/11/24/1425		Received By <i>[Signature]</i>		Date Time 11/11/24		Received By 2 <i>[Signature]</i>	
Relinquished by Sampler 3		Date Time		Received By 3		Date Time		Received By 4	
Relinquished by 5		Date Time		Received By 5		Date Time		Received By	
				Custody Seal #		<input type="checkbox"/> Intact <input type="checkbox"/> Not intact		Preserved where applicable <input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp.	

IR 50 21/23

JE335: Chain of Custody

Page 1 of 2



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Program iA or iB

(circle 1 or both indicate which samples to which program below)

PAGE 1 OF 1

PREM-MM-042324-4

GW TB FB

FED-EX Tracking: COC #4-Navy
Accutest Quote #:
Accutest Job #: JE452

Client / Reporting Information, Project Information, Requested Analysis, Matrix Codes, Accutest Sample #, Field ID / Point of Collection, ME-01/01 Val #, Date, Time, Sampled by, Matrix, # of bottles, Number of preserved Bottles, LAB USE ONLY

Turnaround Time (Business days), Data Deliverable Information, Comments / Special Instructions, Approved By (Accutest PM) / Date, Commercial "A" (Level 1), Commercial "B" (Level 2), FULLT1 (Level 3+4), NJ Reduced, Commercial "C", NYASP Category A, NYASP Category B, State Forms, EDD Format-EQuIS 7 Arcadis, Other COMM-C

Sample Custody must be documented below each time samples change possession, including courier delivery. Relinquished by Sampler, Date Time, Received By, Date Time, Relinquished By, Date Time, Relinquished By, Date Time, Custody Seal #, Intact, Not intact, Preserved where applicable, On Ice, Cooler Temp.

Initial Assessment Label Verification

JE452: Chain of Custody

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