

Mr. Jason Pelton
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Subject:
July to December 2019 Semi-Annual Progress Report
Northrop Grumman Systems Corporation
Operable Unit 3 (OU3), NYSDEC Site ID # 1-30-003A,
Bethpage, New York

ENVIRONMENT

Date:
January 10, 2020

Contact:
Arnas Nemickas

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Email:
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Our ref:
30034427.LARA5

Dear Jason:

In accordance with Section III of Administrative Order on Consent (AOC) Index # W1-0018-04-01, and the May 2011 Work Plan for Modification of AOC Progress Report (work plan), this letter report describes OU3 activities performed by Northrop Grumman Systems Corporation (Northrop Grumman) from July through December 2019. Activities planned for January through June 2020 are also summarized. In accordance with the approved work plan, these reports will be submitted to the NYSDEC on a semi-annual basis until it is determined that the reports are no longer necessary. The site plan showing well locations is provided on **Figure 1**.

OU3 ACTIVITIES CONDUCTED DURING JULY THROUGH DECEMBER 2019

Bethpage Park Soil Gas Containment System (Formerly Soil Gas IRM)

- Continued Operation, Maintenance, and Monitoring (OM&M) of the Bethpage Park Soil Gas Containment System (BPSGCS)
- Submitted BPSGCS Quarterly OM&M Reports (August and November 2019, respectively) to the NYSDEC

- Significant shutdown instances this period are summarized below. In each instance the system was fully restored following shutdown.
 - June 2019 System shutdown for 41 hours due to failed power supply and equipment calibrations.

Bethpage Park Groundwater Containment System (Formerly Groundwater IRM)

- Continued OM&M of the Bethpage Park Groundwater Containment System (BPGWCS)
- Performed annual monitoring round for BPGWCS system in July 2019
- Submitted BPGWCS Quarterly OM&M Reports (August and November 2019, respectively) to the NYSDEC
- Significant shutdown instances this period are summarized below. In each instance the system was fully restored following shutdown.
 - June 2019 System shutdown for 41 hours due to failed power supply and equipment calibrations.
 - August 2019 system operating at a reduced flowrate for one day due to RW-2 pump replacement.
 - November 2019 System off for four days, due to alarm system error prevented restart.
 - December 2019 System off for four days due to broken fan on blower, repair and system restart pending. Restart expected mid-January 2020.

Other

- Performed quarterly monitoring rounds for Monitoring Wells MW109-3 and MW111-4 from July through December 2019. Performed monthly monitoring round for Monitoring Well MW116-5 from September through December 2019. Validated data obtained from the July through December 2019 period are provided in **Table 1**.
- The dedicated pump in Monitoring Well MW116-5 failed to function prior to the August 2018 sampling round. Repaired dedicated sampling equipment was re-installed in September 2019. Monthly sampling of Monitoring Well MW116-5 has been resumed since September 2019.

OU3 ACTIVITIES SCHEDULED DURING JANUARY THROUGH JUNE 2020

Bethpage Park Soil Gas Containment System

- Continue OM&M of the BPSGCS

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- Submit OU3 BPSGCS Annual 2020 Report (March 2020) and First Quarter 2020 Report (May 2020) to the NYSDEC

Bethpage Park Groundwater Containment System

- Continue OM&M of the BPGWCS
- Submit OU3 BPGWCS Annual 2020 Report (March 2020) and First Quarter 2020 Report (May 2020) to the NYSDEC.
- Blower fan repair and system restart to be completed by mid-January 2020.

Other

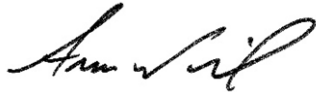
- Perform quarterly monitoring rounds for Monitoring Wells MW109-3 and MW111-4 and monthly monitoring rounds for Monitoring Well MW116-5.

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Feel free to call us if you have any questions.

Sincerely,

Arcadis of New York, Inc.



Arnas Nemickas
Senior Hydrogeologist/ Project Manager

Copies:

S. Karpinski – NYSDOH
D. Hesler – NYSDEC
W. Parrish - NYSDEC
E. Hannon, Northrop Grumman
F. Weber, Northrop Grumman
C. Henry, EMAGIN
C. Stein – USEPA
Bethpage Public Library – Public Repository
C. San Giovanni, Arcadis
D. Stern, Arcadis
File, Arcadis

Enclosures:

Table

- 1 Concentrations of Volatile Organic Compounds and 1,4-Dioxane in Groundwater Samples Collected from Monitoring Wells

Figure

- 1 Site Plan Showing OU3 Well Locations

Table 1.
Concentrations of Volatile Organic Compounds and 1,4-Dioxane in
Groundwater Samples Collected from Monitoring Wells,
Northrop Grumman Systems Corporation,
Bethpage, New York.

Constituents (units in ug/L)	Location ID: Sample Date:	MW-109-3 9/25/2019	MW-109-3 11/19/2019	MW-111-4 9/25/2019	MW-111-4 9/25/2019 (REP)	MW-111-4 11/19/2019
1,1,1-Trichloroethane		< 1.0	< 1.0	< 5.0	< 5.0	<10
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 5.0	< 5.0	<10
1,1,2-Trichloroethane		< 1.0	< 1.0	< 5.0	< 5.0	<10
1,1-Dichloroethane		2.6	2.3	8.8	8.2	8.9 J
1,1-Dichloroethene		0.73 J	0.66 J	3.5 J	3.6 J	<10
1,2-Dichloroethane		1.0	0.99 J	3.8 J	3.1 J	<10
1,2-Dichloropropane		< 1.0	< 1.0	< 5.0	< 5.0	<10
1,3-Butadiene		< 5.0	< 5.0	< 25	< 25	<50
1-chloro-1,1-difluoroethane		< 5.0	< 5.0	< 25	< 25	<50
2-Butanone		< 10	< 10	< 50	< 50	<100
2-Hexanone		< 5.0	< 5.0	< 25	< 25	<50
4-methyl-2-pentanone		< 5.0	< 5.0	< 25	< 25	<50
Acetone		< 10	< 10	< 50	< 50	<100
Benzene		< 0.50	< 0.50	< 2.5	< 2.5	<5.0
Bromodichloromethane		< 1.0	< 1.0	< 5.0	< 5.0	<10
Bromoform		< 1.0	< 1.0	< 5.0	< 5.0	<10
Bromomethane		< 2.0	< 2.0	< 10	< 10	<20
Carbon Disulfide		< 2.0	< 2.0	< 10	< 10	<20
Carbon Tetrachloride		< 1.0	< 1.0	< 5.0	< 5.0	<10
Chlorobenzene		< 1.0	< 1.0	< 5.0	< 5.0	<10
Chlorodifluoromethane (Freon 22)		< 5.0	< 5.0	< 25	< 25	<50
Chloroethane		< 1.0	< 1.0	< 5.0	< 5.0	<10
Chloroform		5.9	5.6	3.0 J	3.1 J	<10
Chloromethane		< 1.0	< 1.0	< 5.0	< 5.0	<10
cis-1,2-dichloroethene		171	156	646	605	694
cis-1,3-dichloropropene		< 1.0	< 1.0	< 5.0	< 5.0	<10
Dibromochloromethane		< 1.0	< 1.0	< 5.0	< 5.0	<10
Dichlorodifluoromethane (Freon 12)		< 2.0	< 2.0	< 10	< 10	<20
Ethylbenzene		< 1.0	< 1.0	< 5.0	< 5.0	<10
Methylene Chloride		< 2.0	< 2.0	< 10	< 10	<20
Styrene		< 1.0	< 1.0	< 5.0	< 5.0	<10
Tetrachloroethene		1.4	1.2	6.7	7.1	<10
Toluene		< 1.0	< 1.0	< 5.0	< 5.0	<10
trans-1,2-dichloroethene		1.5	0.91 J	5.7	8.4	<10
trans-1,3-dichloropropene		< 1.0	< 1.0	< 5.0	< 5.0	<10
Trichloroethylene		268	253	1010	1010	1250
Trichlorotrifluoroethane (Freon 113)		< 5.0	< 5.0	< 25	< 25	<50
Vinyl Chloride		< 1.0	< 1.0	< 5.0	< 5.0	<10
Xylene-o		< 1.0	< 1.0	< 5.0	< 5.0	<10
Xylenes - m,p		< 1.0	< 1.0	< 5.0	< 5.0	<10
TVOCs		450	420	1,700	1,600	2,000
1,4-Dioxane		5.6	4.2	15	14	20

Notes and Abbreviations on Last Page

Table 1.
Concentrations of Volatile Organic Compounds and 1,4-Dioxane in
Groundwater Samples Collected from Monitoring Wells,
Northrop Grumman Systems Corporation,
Bethpage, New York.

Constituents (units in ug/L)	Location ID: Sample Date:	MW-116-5 9/23/2019	MW-116-5 10/25/2019	MW-116-5 11/19/2019	MW-116-5 12/3/2019
1,1,1-Trichloroethane		< 20	<10	<25	3.6 J
1,1,2,2-Tetrachloroethane		< 20	<10	<25	<5.0
1,1,2-Trichloroethane		< 20	<10	<25	4.3 J
1,1-Dichloroethane		13.2 J	14.8	<25	13.5
1,1-Dichloroethene		14.2 J	17.5	15.5 J	16.9
1,2-Dichloroethane		31.2	30.2	31.8	29.5
1,2-Dichloropropane		< 20	9.7 J	<25	9.3
1,3-Butadiene		< 100	<50	<130	<25
1-chloro-1,1-difluoroethane		< 100	<50	<130	<25
2-Butanone		< 200	<100	<250	<50
2-Hexanone		< 100	<50	<130	<25
4-methyl-2-pentanone		< 100	<50	<130	<25
Acetone		< 200	<100	<250	<50
Benzene		< 10	<5.0	<13	<2.5
Bromodichloromethane		< 20	<10	<25	<5.0
Bromoform		< 20	<10	<25	<5.0
Bromomethane		< 40	<20	<50	<10
Carbon Disulfide		< 40	<20	<50	<10
Carbon Tetrachloride		< 20	<10	<25	3.7 J
Chlorobenzene		< 20	<10	<25	<5.0
Chlorodifluoromethane (Freon 22)		< 100	<50	<130	<25
Chloroethane		< 20	<10	<25	<5.0
Chloroform		24.5	25.3	25.7	24.8
Chloromethane		< 20	<10	<25	<5.0
cis-1,2-dichloroethene		561	645	632	622
cis-1,3-dichloropropene		< 20	<10	<25	<5.0
Dibromochloromethane		< 20	<10	<25	<5.0
Dichlorodifluoromethane (Freon 12)		< 40	<20	<50	<10
Ethylbenzene		< 20	<10	<25	<5.0
Methylene Chloride		< 40	<20	<50	<10
Styrene		< 20	<10	<25	<5.0
Tetrachloroethene		< 20	<10	<25	<5.0
Toluene		< 20	<10	<25	<5.0
trans-1,2-dichloroethene		< 20	<10	<25	4.4 J
trans-1,3-dichloropropene		< 20	<10	<25	<5.0
Trichloroethylene		3230	4230	3870	3870
Trichlorotrifluoroethane (Freon 113)		< 100	<50	<130	<25
Vinyl Chloride		< 20	<10	<25	<5.0
Xylene-o		< 20	<10	<25	<5.0
Xylenes - m,p		< 20	<10	<25	<5.0
TVOCs		3,800	5,000	4,600	4,600
1,4-Dioxane		61	74	58	93

Notes and Abbreviations on Last Page

Table 1.
Concentrations of Volatile Organic Compounds and 1,4-Dioxane in
Groundwater Samples Collected from Monitoring Wells,
Northrop Grumman Systems Corporation,
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Notes and Abbreviations:

Results validated following protocols specified in March 2006 RI/FS Work Plan (ARCADIS G&M, Inc. 2006).

Samples analyzed for TCL VOCs using EPA Method 8260C.

Samples analyzed for 1,4-Dioxane using USEPA Method 8270D SIM.

TVOCs are rounded to two significant figures.

Bold value indicates a detection.

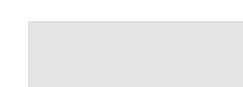




RI/FS	Remedial Investigation/Feasibility Study
NYSDEC	New York State Department of Environmental Conservation
TCL	Target compound list
VOC	Volatile Organic Compound
TVOC	Total Volatile Organic Compounds
ug/L	Micrograms per liter
J	Value is estimated
REP	Blind replicate

FIGURES

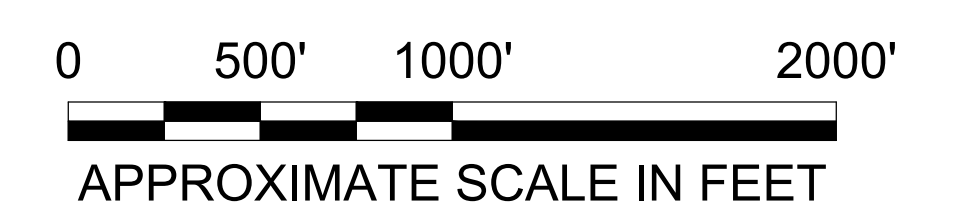




EXPLANATION:

-  CURRENT NORTHROP GRUMMAN PROPERTY
-  CURRENT NAVAL OWNED PROPERTY
-  FORMER NORTHROP GRUMMAN PROPERTY BOUNDARY
-  FORMER NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
-  MONITORING WELL
-  REMEDIAL WELL
-  INJECTION WELL
-  PUBLIC SUPPLY WELL

NAVY AND BETHPAGE WELLS SHOWN FOR REFERENCE PURPOSES



NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK

**SITE PLAN
SHOWING OU3 WELL LOCATIONS**