NORTHROP GRUMMAN

Northrop Grumman Corporation
Aerospace Systems Sector

925 South Oyster Bay Road
Mail Drop 02/BP15 ESHM
Bethpage, NY 11714-3518

ESH&M-36L-18
October 18, 2018

N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 4th Floor
Albany, New York 12233-3506

Subject: **Report for SPDES Permit Equivalent, NYSDEC Site No. 1030-003A**
Northrop Grumman Corporation - Bethpage, New York Facility

Gentlemen:

Enclosed please find the subject SPDES Permit Equivalent summary tables for the month of September 2018, 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

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Mail Drop 02/BP15 ESHM
Bethpage, NY 11714-3518

ESH&M-37L-18
October 18, 2018

N.Y.S. Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 4th Floor
Albany, New York 12233-3506

RE: NYSDEC No. 1-30-003A

Subject: **Additional Sampling Constituents for Report Period: September 1, 2018 – September 30, 2018**

Gentlemen:

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

Outfall 1 – 0.45
Outfall 5 – 4.8
Outfall 6 – 4.1

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

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040- 0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*
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
9/1/2018	9/30/2018

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	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT	******	******	******	6.6	******	6.6	SU	0	1/30	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	Req. Mon. MINIMUM	******	Req. Mon. MAXIMUM	SU		Monthly	Grab
pH	SAMPLE MEASUREMENT	******	******	******	5.7	******	5.7	SU	0	1/30	Grab
00400 I 0 Intake from Well	PERMIT REQUIREMENT	******	******	******	Req. Mon. MINIMUM	******	Req. Mon. MAXIMUM	SU		Monthly	Grab
Nitrogen, total [as N]	SAMPLE MEASUREMENT	******	******	******	******	******	4.3	mg/L	0	1/30	Grab
00600 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	10 DAILY MX	mg/L		Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
34423 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
34475 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
1,1- Dichloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
34501 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
1,1,1- Trichloroethane	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
34506 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Edward J Hannon/ESHH Director	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.	Edward J. Hannon	516-575-2333		10/ 1/2018
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 & REPORTSUPPLY 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 Different)*
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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
9/1/2018	9/30/2018

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	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Vinyl chloride	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
39175 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	1.3	ug/L	0	1/30	Grab
39180 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	******	1.57	****	******	******	******	******	0	1/30	Measured
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	******	5 DAILY MX	MGD	******	******	******	******		Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	1	******	****	******	******	******	******	0	1/30	Calculated
74013 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. Single Rdg	******	N=0;Y=1	******	******	******	******		Monthly	Calculated
cis- 1,2- Dichloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
77093 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
Trichlorotrifluoroethane	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
81611 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
trans- 1,2- Dichloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L		1/30	Grab
85810 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L	0	Monthly	Grab

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TYPED OR PRINTED			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 & REPORTSUPPLY 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 different)*
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	006- C
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
9/1/2018	9/30/2018

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	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT	*******	*******	*******	6.5	*******	6.5	SU	0	1/30	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*******	*******	*******	Req. Mon. MINIMUM	*******	Req. Mon. MAXIMUM	SU		Monthly	Grab
pH	SAMPLE MEASUREMENT	*******	*******	*******	5.4	*******	5.4	SU	0	1/30	Grab
00400 I 0 Intake from Well	PERMIT REQUIREMENT	*******	*******	*******	Req. Mon. MINIMUM	*******	Req. Mon. MAXIMUM	SU		Monthly	Grab
Nitrogen, total [as N]	SAMPLE MEASUREMENT	*******	*******	*******	*******	*******	4.6	mg/L	0	1/30	Grab
00600 1 0 Effluent Gross	PERMIT REQUIREMENT	*******	*******	*******	*******	*******	10 DAILY MX	mg/L		Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT	*******	*******	*******	*******	*******	<0.5	ug/L	0	1/30	Grab
34423 1 0 Effluent Gross	PERMIT REQUIREMENT	*******	*******	*******	*******	*******	5 DAILY MX	ug/L		Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT	*******	*******	*******	*******	*******	<0.5	ug/L	0	1/30	Grab
34475 1 0 Effluent Gross	PERMIT REQUIREMENT	*******	*******	*******	*******	*******	5 DAILY MX	ug/L		Monthly	Grab
1,1- Dichloroethylene	SAMPLE MEASUREMENT	*******	*******	*******	*******	*******	<0.5	ug/L	0	1/30	Grab
34501 1 0 Effluent Gross	PERMIT REQUIREMENT	*******	*******	*******	*******	*******	5 DAILY MX	ug/L		Monthly	Grab
1,1,1- Trichloroethane	SAMPLE MEASUREMENT	*******	*******	*******	*******	*******	<0.5	ug/L	0	1/30	Grab
34506 1 0 Effluent Gross	PERMIT REQUIREMENT	*******	*******	*******	*******	*******	5 DAILY MX	ug/L		Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Edward J Hannon/ ESHM Director	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.	Edward J. Hannon	516-575-2333		10/ /2018
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 GWS HAVE PH OUTSIDE RANGE, IT MAY BE ONE EXTREMITY OF THE ALLOWABLE RANGE (SAMPLE & REPORTSUPPLY 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 SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040- 0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*
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	006- C
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
9/1/2018	9/30/2018

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	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Vinyl chloride	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
39175 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	0.46	ug/L	0	1/30	Grab
39180 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	******	4.01	*****	******	******	******	******	0	1/30	Measured
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	******	4.25 DAILY MX	MGD	******	******	******	******		Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	1	******	*****	******	******	******	******	0	1/30	Calculated
74013 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. Single Rdg	******	N= 0;Y= 1	******	******	******	******		Monthly	Calculated
cis- 1,2- Dichloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	0.37	ug/L	0	1/30	Grab
77093 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
Trichlorotrifluoroethane	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
81611 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
trans- 1,2- Dichloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
85810 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
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TYPED OR PRINTED			AREA Code	NUMBER	MM/DD/YYYY

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

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if different)*
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	001- WSP7
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
9/1/2018	9/30/2018

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	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT	******	******	******	6.5	******	6.5	SU	0	1/30	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	Req. Mon. MINIMUM	******	Req. Mon. MAXIMUM	SU		Monthly	Grab
pH	SAMPLE MEASUREMENT	******	******	******	5.6	******	5.6	SU	0	1/30	Grab
00400 1 0 Intake from Well	PERMIT REQUIREMENT	******	******	******	Req. Mon. MINIMUM	******	Req. Mon. MAXIMUM	SU		Monthly	Grab
Nitrogen, total [as N]	SAMPLE MEASUREMENT	******	******	******	******	******	2.9	mg/L	0	1/30	Grab
00600 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	10 DAILY MX	mg/L		Monthly	Grab
Methylene chloride	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
34423 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
Tetrachloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
34475 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
1,1- Dichloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
34501 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
1,1,1- Trichloroethane	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
34506 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
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TYPED OR PRINTED			AREA Code	NUMBER	MM/DD/YYYY

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DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if different)*
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	001-WSP7
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
9/1/2018	9/30/2018

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	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Vinyl chloride	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
39175 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
Trichloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
39180 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	******	0.35	****	******	******	******	******	0	1/30	Measured
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	******	5 DAILY MX	MGD	******	******	******	******		Monthly	Measured
Calculated limit	SAMPLE MEASUREMENT	1	******	****	******	******	******	******	0	1/30	Calculated
74013 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. Single Rdg	******	N=0;Y=1	******	******	******	******		Monthly	Calculated
cis-1,2-Dichloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
77093 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
Trichlorotrifluoroethane	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L	0	1/30	Grab
81611 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L		Monthly	Grab
trans-1,2-Dichloroethylene	SAMPLE MEASUREMENT	******	******	******	******	******	<0.5	ug/L		1/30	Grab
85810 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	5 DAILY MX	ug/L	0	Monthly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Edward J Hannon/ESHH Director	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	516-575-2333		10/1/2018
TYPED OR PRINTED			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 & REPORTSUPPLY 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

September 2018
9/1/18 12:00 AM 10/1/18 12:00 AM
30 Days

ARCADIS Design & Consultancy for natural and built assets

OU2 South Basins: Outfall 005

OU-2 Groundwater Remedy Towers 102 & 96 Treatment Systems - Treated Air Stripper Discharges and Storm Water Runoff

Parameter[1]	CAS Number	OUTFALL 005 09/05/2018	Discharge Limit[2]	Units	Monitoring Frequency	Sample Type	Average Mass Loading[3,8]	Units
Daily Average Flow[4,6]	--	1.39	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow[4,6]	--	1.57	Monitor	MGD	Continuous	SCADA	--	--
Influent pH	--	5.7	NS[5]	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH	--	6.6	Range: 5.0-8.5[5]	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	See Note 1	**4.3**	10.0	mg/L	Monthly (1/30) Days	Grab	49.87	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[2,7]	See Note 1	ND	1000	µg/L	Monthly (1/30) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	**1.3**	5.0	µg/L	Monthly (1/30) Days	Grab	0.02	lbs/day
Vinyl Chloride	75-01-4	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	**4.8**	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

ARCADIS Design & Consultancy for natural and built assets

OU2 West Basins: Outfall 006

OU-2 Groundwater Remedy Towers 96 & 102 Treatment Systems - Treated Air Stripper Discharge and Storm Water Runoff

Parameter[1]	CAS Number	OUTFALL 006 09/05/2018	Discharge Limit[2]	Units	Monitoring Frequency	Sample Type	Average Mass Loading[3,8]	Units
Daily Average Flow[4,6]	--	3.67	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow[4,6]	--	4.01	Monitor	MGD	Continuous	SCADA	--	--
Influent pH	--	5.4	NS[5]	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH	--	6.5	Range: 5.0-8.5[5]	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	See Note 1	**4.6**	10.0	mg/L	Monthly (1/30) Days	Grab	141.00	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[2,7]	See Note 1	ND	1000	µg/L	Monthly (1/30) Days	Calculated	--	lbs/day
1,1-Dichloroethylene	75-35-4	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	**0.46**	5.0	µg/L	Monthly (1/30) Days	Grab	0.01	lbs/day
Vinyl Chloride	75-01-4	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
trans-1,2-Dichloroethylene	156-60-5	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
cis-1,2-Dichloroethylene	156-59-2	**0.37**	5.0	µg/L	Monthly (1/30) Days	Grab	0.01	lbs/day
Chloroform	67-66-3	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	**4.1**	Monitor	µg/L	Monthly (1/30) 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

ARCADIS Design & Consultancy for natural and built assets

OU3 Effluent: Outfall 001 (WSP-7)

OU-3 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) 09/05/2018	Discharge Limit[2]	Units	Monitoring Frequency	Sample Type	Average Mass Loading[3,8]	Units
Daily Average Flow[4]	--	0.33	Monitor	MGD	Continuous	SCADA	--	--
Daily Maximum Flow[4]	--	0.35	Monitor	MGD	Continuous	SCADA	--	--
Influent pH	--	5.6	NS[5]	SU	Monthly (1/30) Days	Grab	--	--
Effluent pH	--	6.5	Range: 5.0-8.5[5]	SU	Monthly (1/30) Days	Grab	--	--
Total Nitrogen (as N)	See Note 1	**2.9**	10.0	mg/L	Monthly (1/30) Days	Grab	7.95	lbs/day
Total Iron	7439-89-6	<100	600	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Total Manganese[2]	7439-96-5	**46**	600	µg/L	Monthly (1/30) Days	Grab	0.13	lbs/day
Sum of Total Iron and Manganese[2,7]	See Note 1	**46**	1000	µg/L	Monthly (1/30) Days	Calculated	0.13	lbs/day
1,1-Dichloroethylene	75-35-4	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Methylene Chloride	75-09-2	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Tetrachloroethylene	127-18-4	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,1,1-Trichloroethane	71-55-6	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichloroethylene	79-01-6	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Vinyl Chloride	75-01-4	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2 (trans)-Dichloroethylene	156-60-5	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,2-(cis)-Dichloroethylene	156-59-2	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Chloroform	67-66-3	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
Trichlorotrifluoroethane (Freon 113)	76-13-1	<0.50	5.0	µg/L	Monthly (1/30) Days	Grab	--	lbs/day
1,4-Dioxane	123-91-1	**0.45**	Monitor	µg/L	Monthly (1/30) Days	Grab	1.23E-03	lbs/day

Notes and Abbreviations:

46 Bold value indicates the constituent was detected at or above its laboratory quantification limit.
<0.50 Compound is not detected above laboratory quantification limit

µg/L	micrograms per liter	CAS	Chemical Abstracts Service
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	SU	Standard Units
ND	None Detect	TKN	Total Kjeldahl Nitrogen

1. Samples were analyzed for permit equivalency Volatile Organic Compounds (VOCs) using USEPA Method 624; 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 July 30, 2018 and transmitted on August 9, 2018.
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. **Flowrates are rounded to two decimals places.**
5. Field measurement of pH taken by hand held meter on sample date. Discharge limit for pH values are per the SPDES permit equivalency; NYSDEC Division of Water memorandum dated July 30, 2018.
6. Discharge Flow was intentionally diverted from Outfall 005 to Outfall 006 to accommodate South Basin maintenance.
7. When Total Iron and Total Manganese are below their respective detection limits the Sum Total of Iron and Manganese is reported as "ND".
8. Mass Loading Calculations are based on actual flow rates.

GW WTB

SGS 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 # PAGE 1 OF 1

FED-EX Tracking # | Bottle Order Control #
Accutest Quote # | Accutest Job # JC73288

Client / Reporting Information

Company Name: Arcadis
Street Address: 2 Huntington Quad, Suite 1S10
City: Melville | State: NY | Zip: 11747
Project Contact: Patricia Riche, patricia.riche@arcadis.com | E-mail
Phone #: 631-249-7600 | Fax #: 631-249-7610
Sampler(s) Name(s): Jeff Conte (JC) 631-747-3209 | Phone #

Project Information

Project Name: AGMNYM62233 // OU2 System - GW
Northrop Grumman OU2 Groundwater System
Street:
City: Bethpage | State: NY
Project #: NY001496.22TM.OMM3
Client Purchase Order #:
Work Authorization #: NY001496_2015.10.30
Project Manager: Carlo San Giovanni

Billing Information (if different from Report to)

Company Name: Arcadis, U.S., Inc.
Street Address: 630 Plaza Drive, Suite 600
City: Highlands Ranch, | State: CO | Zip: 80129
Attention: Accounts Payable

Requested Analysis (see TEST CODE)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	NaHSO4	VC82602NG36GW+40 (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 + Maganese EPA 200.7 (500 mL Plastic)		LAB USE ONLY
1	Well 1		9/5/18	16:20	JC	GW	3	3									X					
2	Well 3R			16:35	JC	GW	3	3									X					
3	Well 17			16:55	JC	GW	6	3									X					
4	Well 18			11:20	JC	GW	3	3									X					
5	Well 19			16:35	JC	GW	3	3									X					
6	T96 EFFLUENT			14:00	JC	EFF	3	3									X					
7	T102 EFFLUENT***			9:15	JC	EFF	9	9									X					
8	REP-C96518-JC-1			—	JC	GW	3	3									X					
9	REP-C96518-JC-2			—	JC	EFF	6	3		1	1							X	X	X			
10	TB-C96518-JC-1			—	—	TB	2	2									X					
11	Outfall 005			10:15	JC	EFF	6	3		1	1							X	X	X			
12	Outfall 006			15:15	JC	EFF	6	3		1	1							X	X	X			

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

Turnaround Time (Business days)

- [ ] Std. 10 Business Days
- [x] Std. 10 Business Days (by Contract only)
- [ ] 10 Day *RUSH*
- [ ] 5 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Labtnk

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULL T1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [x] EDD Format-EQuIS 4
- [x] Other COMMC+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

*** Project MS/MSD on T102 Effluent

INITIAL ASESSMENT

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:
1		9/6/18 9:15	Chris Lau 9/6/18 9:45	Chris Lau 9/6/18 1725	
2					
3					
4					
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Intact / Not Intact
6					On Ice / Cooler Temp. 2.9°, 3.5°C IR

G:\PROJECT\Northrop Grumman Bethpage_Program Wide\04 Project Management\Contracts and PO's\Labs\SGS-Accutest\LAB_CODE\Send\COCs\Customized_1N_COCs\PAR_OU2_COCs_labtnk_82233_82235_RevDec2017

5.2 5

A29
G1
50 20
V241

JC73288: Chain of Custody
Page 1 of 2

SL8612

ARCADIS

ID#: COC-090518-JJC-1

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order #: MSA 3601

Send Results to:

Contact & Company Name: Patricia Riche -Task Manager	Telephone: 516-790-6150 cell
Address: Two Huntington Quad-Suite 1S10	Fax: 631-249-7610
City: Melville State: NY Zip: 11747	E-mail Address: Patricia.Riche@arcadis.com
Project Name/Location (City, State): Program 3 - OU2 TS/SPDES (Bethpage, NY)	Project #: NY001496.22TM.OMMI3
Sampler's Printed Name:	Sampler's Signature:

Keys

Preservation Key: A. H_2SO_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. 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

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	1,4-Dioxane 8270D-SIM-CLLE	REMARKS
Outfall 005	9/5/18	10:15		X	EFF	E	-		26	X	
Outfall 006		15:15		X	EFF					X	
REP-090518-JJC-2		—		X	GW					X	
Well 1		16:20		X	GW					X	
Well 3R		16:35		X	GW					X	
Well 17		11:00		X	GW					X	
Well 18		11:20		X	GW					X	
Well 19		16:55		X	GW					X	
T96 Effluent		14:00		X	EFF					X	
T102 Effluent***	↓	9:15		X	EFF					X	

Special Instructions/Comments:

SVOC extracted by CLLE

EDD-ARCADIS_EQUIS (EQuIS6-4 file format)

☐ Special QA/QC Instructions(✓):

***Project MS/MSD on T102 Effluent

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Katahdin Analytical Labs	Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact	Printed Name: JEFFREY CONTE	Printed Name: S Otterson	Printed Name:	Printed Name:
☐ Cooler packed with ice (✓)		Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements: Normal TAT-10 business days	Sample Receipt:	Firm: ARCADIS	Firm/Courier: KAS	Firm/Courier:	Firm:
Shipping Tracking #:	Condition/Cooler Temp:	Date/Time: 9/5/18 1830	Date/Time: 9/6/18 900	Date/Time:	Date/Time:

Distribution: WHITE – Laboratory returns with results; YELLOW – Lab copy; PINK – Retained by Arcadis

Report of Analysis

Client Sample ID:	OUTFALL 005		
Lab Sample ID:	JC73288-11	Date Sampled:	09/05/18
Matrix:	AQ - Effluent	Date Received:	09/06/18
Method:	EPA 624.1	Percent Solids:	n/a
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T233717.D	1	09/13/18 14:11	CSF	n/a	n/a	VT9625
Run #2	N271828.D	1	09/13/18 15:10	CSF	n/a	n/a	VN11456

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

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	0.50	0.35	ug/l	
75-35-4	1,1-Dichloroethene	ND	0.50	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	0.32	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.46	ug/l	
76-13-1	Freon 113 [a]	ND [b]	0.50	0.50	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.33	ug/l	
127-18-4	Tetrachloroethene	ND	0.50	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.29	ug/l	
79-01-6	Trichloroethene	1.3	0.50	0.29	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	105%	100%	76-122%
2037-26-5	Toluene-D8 (SUR)	102%	99%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%	91%	80-120%
1868-53-7	Dibromofluoromethane (S)	105%	102%	80-120%

(a) MDL from current instrument. Associated CCV outside of control limits high, sample was ND.
(b) Result is from Run# 2

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		
Lab Sample ID:	JC73288-11	Date Sampled:	09/05/18
Matrix:	AQ - Effluent	Date Received:	09/06/18
		Percent Solids:	n/a
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	< 100	100	ug/l	1	09/07/18	09/07/18	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	< 15	15	ug/l	1	09/07/18	09/07/18	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA45223
(2) Prep QC Batch: MP8986

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OUTFALL 005		
Lab Sample ID:	JC73288-11	Date Sampled:	09/05/18
Matrix:	AQ - Effluent	Date Received:	09/06/18
		Percent Solids:	n/a
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	4.3	0.10	0.090	mg/l	1	09/18/18 12:47	RP	EPA 353.2/LACHAT
Nitrogen, Total [a]	4.3	0.30	0.21	mg/l	1	09/18/18 12:47	RP	SM4500 A-11
Nitrogen, Total Kjeldahl	0.12 U	0.20	0.12	mg/l	1	09/18/18 10:24	RP	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 Analysis

Client Sample ID:	OUTFALL 006		
Lab Sample ID:	JC73288-12	Date Sampled:	09/05/18
Matrix:	AQ - Effluent	Date Received:	09/06/18
Method:	EPA 624.1	Percent Solids:	n/a
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T233716.D	1	09/13/18 13:41	CSF	n/a	n/a	VT9625
Run #2	N271829.D	1	09/13/18 15:40	CSF	n/a	n/a	VN11456

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

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	0.50	0.35	ug/l	
75-35-4	1,1-Dichloroethene	ND	0.50	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	0.37	0.50	0.32	ug/l	J
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.46	ug/l	
76-13-1	Freon 113 [a]	ND [b]	0.50	0.50	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.33	ug/l	
127-18-4	Tetrachloroethene	ND	0.50	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.29	ug/l	
79-01-6	Trichloroethene	0.46	0.50	0.29	ug/l	J
75-01-4	Vinyl chloride	ND	0.50	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	103%	101%	76-122%
2037-26-5	Toluene-D8 (SUR)	101%	99%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%	90%	80-120%
1868-53-7	Dibromofluoromethane (S)	102%	102%	80-120%

(a) MDL from current instrument. Associated CCV outside of control limits high, sample was ND.
(b) Result is from Run# 2

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 006		
Lab Sample ID:	JC73288-12	Date Sampled:	09/05/18
Matrix:	AQ - Effluent	Date Received:	09/06/18
		Percent Solids:	n/a
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	< 100	100	ug/l	1	09/07/18	09/07/18	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	< 15	15	ug/l	1	09/07/18	09/07/18	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA45223
(2) Prep QC Batch: MP8986

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OUTFALL 006		
Lab Sample ID:	JC73288-12	Date Sampled:	09/05/18
Matrix:	AQ - Effluent	Date Received:	09/06/18
		Percent Solids:	n/a
Project:	Northrop Grumman, OU2 System, Bethpage, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	4.6	0.10	0.090	mg/l	1	09/18/18 12:48	RP	EPA 353.2/LACHAT
Nitrogen, Total [a]	4.6	0.30	0.21	mg/l	1	09/18/18 12:48	RP	SM4500 A-11
Nitrogen, Total Kjeldahl	0.12 U	0.20	0.12	mg/l	1	09/18/18 10:37	RP	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

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ARCADIS
Lab ID: SL8612-1
Client ID: OUTFALL 005
Project: Program 3 - OU2 TS/SPDES Bethpage, NY
SDG: SL8612
Lab File ID: G4032.D

Sample Date: 05-SEP-18
Received Date: 06-SEP-18
Extract Date: 08-SEP-18
Extracted By: JMS
Extraction Method: SW846 3520C
Lab Prep Batch: WG236102

Analysis Date: 13-SEP-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 04-OCT-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.8	ug/L	1	.25	0.24	0.080
1,4-Dioxane-D8		58.1	%				

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ARCADIS
Lab ID: SL8612-2
Client ID: OUTFALL 006
Project: Program 3 - OU2 TS/SPDES Bethpage, NY
SDG: SL8612
Lab File ID: G4033.D

Sample Date: 05-SEP-18
Received Date: 06-SEP-18
Extract Date: 08-SEP-18
Extracted By: JMS
Extraction Method: SW846 3520C
Lab Prep Batch: WG236102

Analysis Date: 13-SEP-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 04-OCT-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		4.1	ug/L	1	.25	0.24	0.082
1,4-Dioxane-D8		40.8	%				

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

ACCUTEST LABORATORIES

GW WTR

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

PAGE 1 OF 1

FED-EX Tracking # | Bottle Order Control #
Accutest Quote # | Accutest Job # JC73287

Client / Reporting Information

Company Name: Arcadis
Street Address: 2 Huntington Quad, Suite 1S10
City: Melville | State: NY | Zip: 11747
Project Contact: Albina Redzepagic | E-mail: albina.redzepagic@arcadis.com
Phone #: 631-249-7600 | Fax #: 631-249-7610
Sampler(s) Name(s): Marc Gluberman (MG) | Phone #: 631-903-2237

Project Information

Project Name: ~~AGMNYM62236 # OU3 BPGWCS - GW~~
Northrop Grumman OU3 Bethpage GROUNDWATER Containment System
Street:
City: Bethpage | State: NY
Project #: NY001496.32TM.OMMI3
Client Purchase Order #:
Work Authorization #: NY001496_2015.10.30
Project Manager: Carlo San Giovanni

Billing Information (If different from Report to)

Company Name: Arcadis, U.S., Inc.
Street Address: 630 Plaza Drive, Suite 600
City: Highlands Ranch, | State: CO | Zip: 80129
Attention: Accounts Payable

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	NaHSO4	V6242NG9SPD31 (40 mL Clear Glass VOA's)	XTNIT - EPA 353.2 & EPA 351.2 w/TL N Calc- (250 mL Plastic)	Iron + Maganese EPA 200.7 (500 mL Plastic)	LAB USE ONLY
1	WSP-7		9/05/18	9:15	MG	GW	5	3		1	1						X	X	X	
2	TB-090518-MG-1		9/05/18	—	MG	GW	2	2									X			

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

V239
SUB

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [x] Std. 10 Business Days (by Contract only)
- [ ] 10 Day *RUSH*
- [ ] 5 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [x] EDD Format EQuIS 6
- [x] Other COMM+

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

INITIAL ASESSMENT
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:
1	Marc Gluberman	9/05/18 14:00	1	2 Chris Land 9/6/18 17:25	2
3			3	4	4
5			5	Custody Seal #	Intact / Not Intact; On Ice: X; Cooler Temp. 2.9°, 3.5°

Report of Analysis

Client Sample ID:	WSP-7		
Lab Sample ID:	JC73287-1	**Date Sampled:**	09/05/18
Matrix:	AQ - Ground Water	**Date Received:**	09/06/18
Method:	EPA 624.1	**Percent Solids:**	n/a
Project:	Northrop Grumman, OU3 BPGWCS System, Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T233715.D	1	09/13/18 13:10	CSF	n/a	n/a	VT9625
Run #2	N271830.D	1	09/13/18 16:09	CSF	n/a	n/a	VN11456

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

VOA OU2 SPDES List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-66-3	Chloroform	ND	0.50	0.35	ug/l	
75-35-4	1,1-Dichloroethene	ND	0.50	0.45	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	0.32	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	0.46	ug/l	
76-13-1	Freon 113 [a]	ND [b]	0.50	0.50	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.33	ug/l	
127-18-4	Tetrachloroethene	ND	0.50	0.41	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.29	ug/l	
79-01-6	Trichloroethene	ND	0.50	0.29	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	104%	99%	76-122%
2037-26-5	Toluene-D8 (SUR)	100%	100%	80-120%
460-00-4	4-Bromofluorobenzene (SUR)	100%	90%	80-120%
1868-53-7	Dibromofluoromethane (S)	104%	102%	80-120%

(a) MDL from current instrument. Associated CCV outside of control limits high, sample was ND.
(b) Result is from Run# 2

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		
Lab Sample ID:	JC73287-1	**Date Sampled:**	09/05/18
Matrix:	AQ - Ground Water	**Date Received:**	09/06/18
		Percent Solids:	n/a
Project:	Northrop Grumman, OU3 BPGWCS System, Bethpage, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	< 100	100	ug/l	1	09/07/18	09/10/18	ND	EPA 200.7 [1]	EPA 200.7 [2]
Manganese	46.2	15	ug/l	1	09/07/18	09/10/18	ND	EPA 200.7 [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA45227
(2) Prep QC Batch: MP8995

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WSP-7		
Lab Sample ID:	JC73287-1	**Date Sampled:**	09/05/18
Matrix:	AQ - Ground Water	**Date Received:**	09/06/18
		Percent Solids:	n/a
Project:	Northrop Grumman, OU3 BPGWCS System, Bethpage, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	2.9	0.10	mg/l	1	09/17/18 16:16	RP	EPA 353.2/LACHAT
Nitrogen, Total [a]	2.9	0.30	mg/l	1	09/18/18 10:22	RP	SM4500 A-11
Nitrogen, Total Kjeldahl	< 0.20	0.20	mg/l	1	09/18/18 10:22	RP	EPA 351.2/LACHAT

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

RL = Reporting Limit

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ARCADIS
Lab ID: SL8683-1
Client ID: WSP-7
Project: Program 4- OU3 TS/SPDES Bethpage, NY
SDG: SL8683
Lab File ID: G4046.D

Sample Date: 05-SEP-18
Received Date: 07-SEP-18
Extract Date: 11-SEP-18
Extracted By: DP/LR
Extraction Method: SW846 3520C
Lab Prep Batch: WG236252

Analysis Date: 13-SEP-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 04-OCT-18

Compound	Qualifier	Result	Units	Dilution	PQL	ADJ PQL	ADJ MDL
1,4-Dioxane		0.45	ug/L	1	.25	0.24	0.081
1,4-Dioxane-D8		64.6	%				

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

SL8683

ARCADIS

ID#: COC-090518-MG-1

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order #: MSA 3601

Send Results to:

Contact & Company Name: Albina Redzepagic - Task Manager	Telephone: 212-365-4651 cell
Address: Two Huntington Quad-Suite 1S10	Fax: 631-249-7610
City: Melville State: NY Zip: 11747	E-mail Address: Albina.Redzepagic@arcadis.com
Project Name/Location (City, State): Program 4 - OU3 TS/SPDES (Bethpage, NY)	Project #: NY001496.32TM.OMMI3
Sampler's Printed Name: Marc Guberman	Sampler's Signature:

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

PARAMETER ANALYSIS & METHOD

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	1,4-Dioxane 8270D-SIM-CLLE							REMARKS
WSP-7	9/05/18	9:20		X	EFF	X							

Keys

Preservation Key: A. H_2SO_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. 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

Special Instructions/Comments:

SVOC extracted by CLLE

EDD-ARCADIS_EQUIS (EQuIS6-4 file format)

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Katahdin Analytical Labs	Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact	Printed Name: Marc Guberman	Printed Name:	Printed Name:	Printed Name: Jacob Bruce
☐ Cooler packed with ice (✓)		Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements: Normal TAT-10 business days	Sample Receipt	Firm: Arcadis	Firm/Courier:	Firm/Courier:	Firm: KAS
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time: 9/05/18 1630	Date/Time:	Date/Time:	Date/Time: 9.7.18 900

20730826 CofC AR Form 08.27.2015

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

G:\APROJECT\Northrop Grumman Bethpage_Program Wide\04 Project Management\Contracts and POs\Lab\Katahdin Analytical\OU2 Navy Wells COC Master

9000000