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ENVIRONMENT

Mr. Steven M. Scharf, P.E.
Project Engineer
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
Remedial Action, Bureau A
625 Broadway
Albany, New York 12233-7015

Subject:
January to June 2012 Semi-Annual Progress Report
Northrop Grumman Systems Corporation
Operable Unit 3 (OU3), NYSDEC Site ID # 1-30-003A,
Bethpage, New York

Date:
July 12, 2012

Contact:
David Stern

Phone:
631-391-5284

Email:
David.Stern@arcadis-us.com

Our ref:
NY001496.0711.RPTA5

Dear Steve:

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, this letter reports OU3 activities performed by Northrop Grumman Systems Corporation (Northrop Grumman) during the months from January to June 2012. Activities planned for July to December 2012 are also summarized. In accordance with our 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.

OU3 Activities Conducted During January to June 2012

Soil Gas IRM

- Continued Operation, Maintenance, and Monitoring (OM&M) of the Soil Gas Interim Remedial Measure (IRM)
- Submitted the Soil Gas IRM Annual OM&M Report (February 2012) and Quarterly OM&M Report (May 2012) to the NYSDEC

Groundwater IRM

- Continued OM&M of the Groundwater IRM
- Submitted the Groundwater IRM Annual OM&M Report (March 2012) and Quarterly OM&M Report (May 2012) to the NYSDEC

Other

- Performed the quarterly monitoring rounds for Monitoring Wells MW109-3 and MW111-4 and monthly monitoring rounds for Monitoring Well MW116-5 from January to June 2012. Data obtained from these monitoring rounds are provided in Tables 1 and 2.

OU3 Activities Scheduled During July to December 2012

Soil Gas IRM

- Continue OM&M of the Soil Gas IRM
- Submittal of OU3 Soil Gas IRM Quarterly Reports (August and November 2012) to the NYSDEC

Groundwater IRM

- Continue OM&M of the Groundwater IRM
- Submittal of OU3 Groundwater IRM Quarterly Reports (August and November 2012) to the NYSDEC

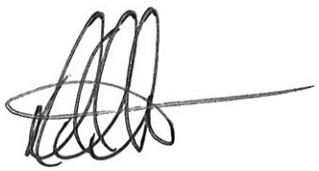
Other

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

Feel free to call us if you have any questions.

Sincerely,

ARCADIS of New York, Inc.



David E. Stern
Senior Scientist/Associate Project Manager

Enclosure

ARCADIS

Mr. Steve Scharf
NYSDEC
July 12, 2012

Copies:
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K. Smith, Northrop Grumman
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C. Henry, EMAGIN
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Table 1. Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Monitoring Wells, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York.

Compound (ug/L)	NYSDEC SCGs	Sample Location: MW-109-3 Sample Date: 4/14/2009	MW-109-3 7/8/2009	MW-109-3 10/22/2009	MW-109-3 4/14/2010	MW-109-3 2/21/2011	MW-109-3 5/20/2011	MW-109-3 8/11/2011	MW-109-3 11/17/2011	MW-109-3 3/13/2012
1,1,1-Trichloroethane	5	**1.8 J**	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1,2,2-Tetrachloroethane	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1,2-Trichloroethane	1	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1-Dichloroethane	5	**18 J**	**16 J**	**17 J**	**16 J**	**15J**	**14J**	**13 J**	**12J**	**11J**
1,1-Dichloroethene	5	**7.4 J**	**5.7 J**	**7.7 J**	**5.4 J**	**5.3J**	**6.1J**	**3.6 J**	**5J**	**5J**
1,2-Dichloroethane	0.6	**6.4 J**	**4.5 J**	**5.8 J**	**6.2 J**	**4.8J**	**4.5J**	**4.1 J**	**3.5J**	**3.1J**
1,2-Dichloropropane	1	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
2-Butanone	NE	< 250	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500
2-Hexanone	50	< 250	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500
4-methyl-2-pentanone	50	< 250	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500
Acetone	NE	< 250	< 500 B	< 500	< 500	< 500	< 500	< 500 B	< 500	< 500
Benzene	1	< 3.5	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7
Bromodichloromethane	50	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Bromoform	50	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Bromomethane	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Carbon Disulfide	60	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Carbon tetrachloride	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chlorobenzene	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chlorodifluoromethane (Freon 22)	NE	**2.2 J**	< 50	< 50	< 50	< 50	**3.2J**	**2.5 J**	**3.2J**	**3.9J**
Chloroethane	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chloroform	7	**7 J**	**4.5 J**	**5.6 J**	**5.3 J**	**5.2J**	**5.6J**	**6.1 J**	**5.8J**	**5.6J**
Chloromethane	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
cis-1,2-dichloroethene	5	**1100 D**	**1000**	**1100**	**1000**	**770**	**760**	**850**	**790**	**750**
cis-1,3-dichloropropene	0.4	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Dibromochloromethane	50	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Dichlorodifluoromethane (Freon 12)	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	**2.8J**
Ethylbenzene	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Methyl tert-Butyl Ether	10	--	--	--	< 50	< 50	< 50	< 50	< 50	< 50
Methylene Chloride	5	< 25	< 50	< 50 B	< 50	< 50	< 50	< 50	< 50	< 50
Styrene	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Tetrachloroethene	5	**9.1 J**	**5.9 J**	**6.2 J**	**6.2 J**	**5.9J**	**6.2J**	**6.9 J**	**4.9J**	**5.1J**
Toluene	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
trans-1,2-dichloroethene	5	**3.9 J**	**4 J**	**4.5 J**	**3.7 J**	**4.2J**	**8.3J**	**4.2 J**	**3.8J**	**4.2J**
trans-1,3-dichloropropene	0.4	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Trichloroethylene	5	**2300 D**	**1200**	**1700**	**1500**	**1500**	**1800**	**1300**	**1400**	**1200**
Trichlorofluoromethane (Freon 11)	5	--	--	--	< 50	< 50	< 50	< 50	< 50	< 50
Trichlorotrifluoroethane (Freon 113)	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Vinyl Chloride	2	**2.1 J**	**4.6 J**	**4 J**	**4.6 J**	<20	<20	< 20	< 20	< 20
Xylene-o	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Xylenes - m,p	5	< 25	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
TVOC		**3500**	**2200**	**2900**	**2600**	**2300**	**2600**	**2200**	**2200**	**1900**

See notes on last page.

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Table 1. Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Monitoring Wells, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York.

Compound (ug/L)	Sample Location: / Sample Date:	NYSDEC SCGs	MW-109-3 5/22/2012	MW-111-4 5/6/2008	MW-111-4 7/15/2009	MW-111-4 11/3/2009	MW-111-4 4/14/2010	MW-111-4 2/18/2011	MW-111-4 5/20/2011	MW-111-4 8/11/2011
1,1,1-Trichloroethane		5	< 50	< 250	**9 J**	< 250	< 250	< 250	< 250	**6.5 J**
1,1,2,2-Tetrachloroethane		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
1,1,2-Trichloroethane		1	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
1,1-Dichloroethane		5	**8.4 J**	< 250	**35 J**	**32 J**	**34 J**	**27J**	**33J**	**23 J**
1,1-Dichloroethene		5	< 50	< 250	**26 J**	**22 J**	**26 J**	**28J**	**23J**	**22 J**
1,2-Dichloroethane		0.6	**2.6 J**	< 250	**27 J**	**26 J**	**18 J**	**17J**	**19J**	**15 J**
1,2-Dichloropropane		1	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
2-Butanone		NE	< 500	< 2500	< 1000	< 2500	< 2500	< 2500	< 2500	< 1300
2-Hexanone		50	< 500	< 2500	< 1000	< 2500	< 2500	< 2500	< 2500	< 1300
4-methyl-2-pentanone		50	< 500	< 2500	< 1000	< 2500	< 2500	< 2500	< 2500	< 1300
Acetone		NE	< 500	< 2500	< 1000	< 2500	< 2500	< 2500	< 2500	< 1300 B
Benzene		1	< 7	< 35	< 14	< 35	< 35	< 35	< 35	< 18
Bromodichloromethane		50	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Bromoform		50	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Bromomethane		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Carbon Disulfide		60	< 50	< 2500	< 100	< 250	< 250	< 250	< 250	< 130
Carbon tetrachloride		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Chlorobenzene		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Chlorodifluoromethane (Freon 22)		NE	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Chloroethane		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Chloroform		7	**5.7 J**	< 350	**9.6 J**	< 250	< 250	< 250	< 250	**7 J**
Chloromethane		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
cis-1,2-dichloroethene		5	**610**	**1500**	**1600**	**1500**	**1300**	**1000**	**1300**	**1500**
cis-1,3-dichloropropene		0.4	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Dibromochloromethane		50	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Dichlorodifluoromethane (Freon 12)		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Ethylbenzene		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Methyl tert-Butyl Ether		10	< 50	--	--	--	< 250	< 250	< 250	< 130
Methylene Chloride		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Styrene		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Tetrachloroethene		5	**3.7 J**	< 250	**8.8 J**	< 250	< 250	< 250	< 250	**17 J**
Toluene		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
trans-1,2-dichloroethene		5	**4.8 J**	< 250	< 100	< 250	< 250	< 250	< 250	**8.3 J**
trans-1,3-dichloropropene		0.4	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Trichloroethylene		5	**980**	**8800**	**5100 D**	**5700**	**6000**	**6700**	**5600**	**4500**
Trichlorofluoromethane (Freon 11)		5	< 50	--	--	--	< 250	< 250	< 250	< 130
Trichlorotrifluoroethane (Freon 113)		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Vinyl Chloride		2	< 50	< 100	< 40	< 100	< 100	< 100	< 100	< 50
Xylene-o		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
Xylenes - m,p		5	< 50	< 250	< 100	< 250	< 250	< 250	< 250	< 130
TVOC			**1600**	**10000**	**6800**	**7300**	**7400**	**7800**	**7000**	**6100**

See notes on last page.

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Table 1. Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Monitoring Wells, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York.

Compound (ug/L)	NYSDEC SCGs	Sample Location: MW-111-4 Sample Date: 11/18/2011	MW-111-4 3/12/2012	MW-111-4 5/22/2012
1,1,1-Trichloroethane	5	**11J**	**11J**	**6.5 J**
1,1,2,2-Tetrachloroethane	5	< 130J	< 250	< 130
1,1,2-Trichloroethane	1	< 130J	< 250	< 130
1,1-Dichloroethane	5	**27J**	**28J**	**25 J**
1,1-Dichloroethene	5	**26J**	**34J**	**19 J**
1,2-Dichloroethane	0.6	**17J**	**15J**	**15 J**
1,2-Dichloropropane	1	< 130J	< 250	< 130
2-Butanone	NE	< 1300J	< 2500	< 1300
2-Hexanone	50	< 1300J	< 2500	< 1300
4-methyl-2-pentanone	50	< 1300J	< 2500	< 1300
Acetone	NE	< 1300J	< 2500	< 1300
Benzene	1	< 18J	< 35	< 18
Bromodichloromethane	50	< 130J	< 250	< 130
Bromoform	50	< 130J	< 250	< 130
Bromomethane	5	< 130J	< 250	< 130
Carbon Disulfide	60	< 130J	< 250	< 130
Carbon tetrachloride	5	< 130J	< 250	< 130
Chlorobenzene	5	< 130J	< 250	< 130
Chlorodifluoromethane (Freon 22)	NE	< 130J	< 250	< 130
Chloroethane	5	< 130J	< 250	< 130
Chloroform	7	**5.8J**	< 250	< 130
Chloromethane	5	< 130J	< 250	< 130
cis-1,2-dichloroethene	5	**1500J**	**1600**	**1300**
cis-1,3-dichloropropene	0.4	< 130J	< 250	< 130
Dibromochloromethane	50	< 130J	< 250	< 130
Dichlorodifluoromethane (Freon 12)	5	< 130J	< 250	< 130
Ethylbenzene	5	< 130J	< 250	< 130
Methyl tert-Butyl Ether	10	< 130J	< 250	< 130
Methylene Chloride	5	< 130J	< 250	< 130
Styrene	5	< 130J	< 250	< 130
Tetrachloroethene	5	**16J**	**16J**	**15 J**
Toluene	5	< 130J	< 250	< 130
trans-1,2-dichloroethene	5	< 130J	< 250	**5.8 J**
trans-1,3-dichloropropene	0.4	< 130J	< 250	< 130
Trichloroethylene	5	**5500 DJ**	**5300**	**4600**
Trichlorofluoromethane (Freon 11)	5	< 130J	< 250	< 130
Trichlorotrifluoroethane (Freon 113)	5	< 130J	< 250	< 130
Vinyl Chloride	2	< 50J	< 100	< 50
Xylene-o	5	< 130J	< 250	< 130
Xylenes - m,p	5	< 130J	< 250	< 130
TVOC		**7100**	**7000**	**6000**

See notes on last page.

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Table 1. Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Monitoring Wells, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York.

Notes:

Results validated following protocols specified in March 2006 RI/FS Work Plan (ARCADIS G&M, Inc. 2006).
Samples analyzed for the TCL VOCs using NYSDEC ASP Method 2000 OLM4.2.

Acronyms:

Indicates an exceedance of an SCG.

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
ASP	Analytical services protocol.
SCGs	Standards, criteria, and guidance values.
ug/L	Micrograms per liter.
NE	Not established.
J	Value is estimated.
D	Constituent identified from secondary dilution.
--	Not analyzed

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Table 2. Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Monitoring Well MW116-5, Northrop Grumman Systems Corporation, Bethpage, New York.

Location ID:	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5
Sample Date:	4/11/2008	8/4/2008	9/29/2008	12/29/2008	3/31/2009	7/22/2009	11/3/2009	12/3/2009
Constituent Name (units in ug/L)								
1,1,1-Trichloroethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1,2,2-Tetrachloroethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1,2-Trichloroethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1-Dichloroethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1-Dichloroethene	< 50	< 50	< 50	< 50	**3.7 J**	< 50	< 50	< 50
1,2-Dichloroethane	< 50	< 50	< 50	< 50	**15 J**	**6.5 J**	**7.0 J**	**7.9 J**
1,2-Dichloropropane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
2-Butanone	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500
2-Hexanone	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500
4-methyl-2-pentanone	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500
Acetone	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500
Benzene	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Bromodichloromethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Bromoform	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Bromomethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Carbon Disulfide	< 500	< 500	< 500	< 500	< 50	< 50	< 50	< 50
Carbon Tetrachloride	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chlorobenzene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chlorodifluoromethane (Freon 22)	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chloroethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chloroform	< 70	< 70	< 70	< 70	**34 J**	**15 J**	**13 J**	**14 J**
Chloromethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50 R
cis-1,2-dichloroethene	**130**	**130**	**140**	**150**	**210**	**130**	**150**	**160**
cis-1,3-dichloropropene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Dibromochloromethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Dichlorodifluoromethane (Freon 12)	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Ethylbenzene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--
Methylene Chloride	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Styrene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Tetrachloroethene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Toluene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
trans-1,2-dichloroethene	< 50	< 50	< 50	< 50	**5.6 J**	< 50	**5.3 J**	< 50
trans-1,3-dichloropropene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Trichloroethylene	**1100**	**1100**	**1300**	**1100**	**1200**	**1100**	**2000**	**2000 D**
Trichlorofluoromethane (CFC-11)	--	--	--	--	--	--	--	--
Trichlorotrifluoroethane (Freon 113)	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Vinyl Chloride	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Xylene-o	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Xylenes - m,p	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
TVOCs	**1200**	**1200**	**1400**	**1300**	**1500**	**1300**	**2200**	**2200**

Notes and Abbreviations on last page.

Table 2. Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Monitoring Well MW116-5, Northrop Grumman Systems Corporation, Bethpage, New York.

Location ID:	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5
Sample Date:	1/13/2010	2/8/2010	3/11/2010	4/26/2010	5/26/2010	6/25/2010	7/27/2010	8/25/2010	9/20/2010
Constituent Name (units in ug/L)									
1,1,1-Trichloroethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1,2,2-Tetrachloroethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1,2-Trichloroethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1-Dichloroethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1-Dichloroethene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	**3.6 J**
1,2-Dichloroethane	**7.5 J**	**5.6 J**	**7.0 J**	**7.7 J**	**8.2 J**	**9.0 J**	**8.2 J**	**8.4 J**	**9.0 J**
1,2-Dichloropropane	< 50	< 50	< 50	< 50	< 50	< 50	**4.5 J**	**5.1 J**	**5.1 J**
2-Butanone	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500
2-Hexanone	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500
4-methyl-2-pentanone	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500
Acetone	< 500	< 500 B	< 500	< 500	< 500	< 500	< 500	< 500	**9.5 J**
Benzene	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Bromodichloromethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Bromoform	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Bromomethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Carbon Disulfide	< 50	**3.4 J**	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Carbon Tetrachloride	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chlorobenzene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chlorodifluoromethane (Freon 22)	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chloroethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chloroform	**12 J**	**9.4 J**	**10 J**	**13 J**	**15 J**	**20 J**	**15 J**	**15 J**	**15 J**
Chloromethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
cis-1,2-dichloroethene	**150**	**130**	**150**	**180**	**170**	**180**	**180**	**190**	**160**
cis-1,3-dichloropropene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Dibromochloromethane	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Dichlorodifluoromethane (Freon 12)	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Ethylbenzene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Methyl tert-Butyl Ether	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Methylene Chloride	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Styrene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Tetrachloroethene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Toluene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
trans-1,2-dichloroethene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	**3.5 J**	< 50
trans-1,3-dichloropropene	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Trichloroethylene	**2000**	**1600**	**1700**	**1800**	**1800**	**1700**	**1700**	**1900**	**2100 D**
Trichlorofluoromethane (CFC-11)	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Trichlorotrifluoroethane (Freon 113)	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Vinyl Chloride	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Xylene-o	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Xylenes - m,p	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
TVOCs	**2200**	**1700**	**1900**	**2000**	**2000**	**1900**	**1900**	**2100**	**2300**

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Table 2. Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Monitoring Well MW116-5, Northrop Grumman Systems Corporation, Bethpage, New York.

Location ID:	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5
Sample Date:	10/22/2010	11/22/2010	12/17/2010	1/17/2011	2/16/2011	3/22/2011	4/21/2011	5/19/2011
Constituent Name (units in ug/L)								
1,1,1-Trichloroethane	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
1,1,2,2-Tetrachloroethane	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
1,1,2-Trichloroethane	< 100	< 50	**3.1 J**	< 50	**3.6 J**	**3.3 J**	**4.2 J**	**3.6 J**
1,1-Dichloroethane	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
1,1-Dichloroethene	< 100	**4.0 J**	**4.5 J**	**5.8 J**	**5.8 J**	**6.3 J**	**4.4 J**	**6.1 J**
1,2-Dichloroethane	**12 J**	**15 J**	**16 J**	**17 J**	**20 J**	**17 J**	**17 J**	**17 J**
1,2-Dichloropropane	< 100	**4.3 J**	**3.3 J**	**3.8 J**	**4.4 J**	**4.4 J**	**4.2 J**	**5.6 J**
2-Butanone	<1000	< 500	< 500	< 500	< 500	< 500	500R	< 500
2-Hexanone	<1000	< 500	< 500	< 500	< 500	< 500	500R	< 500
4-methyl-2-pentanone	<1000	< 500	< 500	< 500	< 500	< 500	500R	< 500
Acetone	<1000	< 500	< 500	< 500	< 500	< 500	500R	< 500
Benzene	< 14	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	7.0R	< 7.0
Bromodichloromethane	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Bromoform	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Bromomethane	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Carbon Disulfide	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Carbon Tetrachloride	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Chlorobenzene	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Chlorodifluoromethane (Freon 22)	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Chloroethane	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Chloroform	**18 J**	**28 J**	**31 J**	**32 J**	**33 J**	**32 J**	**32 J**	**34 J**
Chloromethane	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
cis-1,2-dichloroethene	**170**	**230**	**250**	**270**	**270**	**270**	**300 J**	**280**
cis-1,3-dichloropropene	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Dibromochloromethane	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Dichlorodifluoromethane (Freon 12)	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Ethylbenzene	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Methyl tert-Butyl Ether	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Methylene Chloride	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Styrene	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Tetrachloroethene	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Toluene	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
trans-1,2-dichloroethene	< 100	**4.8 J**	**4.7 J**	< 50	**5.9J**	**6.1J**	50R	**4.3J**
trans-1,3-dichloropropene	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Trichloroethylene	**2100**	**1800**	**1800**	**1900**	**1900**	**1900**	**2000J**	**2200**
Trichlorofluoromethane (CFC-11)	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Trichlorotrifluoroethane (Freon 113)	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Vinyl Chloride	< 40	< 20	< 20	< 20	< 20	< 20	50R	< 20
Xylene-o	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
Xylenes - m,p	< 100	< 50	< 50	< 50	< 50	< 50	50R	< 50
TVOCs	**2300**	**2100**	**2100**	**2200**	**2200**	**2200**	**2400**	**2600**

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Table 2. Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Monitoring Well MW116-5, Northrop Grumman Systems Corporation, Bethpage, New York.

Location ID:	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5	MW-116-5
Sample Date:	6/21/2011	7/19/2011	8/22/2011	9/22/2011	10/17/2011	11/16/2011	12/21/2011	1/24/2012
Constituent Name (units in ug/L)								
1,1,1-Trichloroethane	<100	<100	<100	<100	<100	<100	< 100	< 100
1,1,2,2-Tetrachloroethane	<100	<100	<100	<100	<100	<100	< 100	< 100
1,1,2-Trichloroethane	<100	<100	<100	<100	**4.8 J**	<100	< 100	< 100
1,1-Dichloroethane	<100	<100	<100	<100	<100	<100	< 100	< 100
1,1-Dichloroethene	<100	**6.2 J**	**6.0 J**	**5.4 J**	**5 J**	**5.8 J**	< 100	< 100
1,2-Dichloroethane	**15 J**	**15 J**	**14 J**	**12 J**	**14 J**	**17 J**	**16 J**	**20 J**
1,2-Dichloropropane	<100	**7.0 J**	**6.6 J**	<100	**8 J**	**8.6 J**	**7.6 J**	< 100
2-Butanone	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000
2-Hexanone	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000
4-methyl-2-pentanone	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000
Acetone	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000
Benzene	< 14	< 14	< 14	< 14	< 14	< 14	< 14	< 14
Bromodichloromethane	<100	<100	<100	<100	<100	<100	< 100	< 100
Bromoform	<100	<100	<100	<100	<100	<100	< 100	< 100
Bromomethane	<100	<100	<100	<100	<100	<100	< 100	< 100
Carbon Disulfide	<100	<100	<100	<100	<100	<100	< 100	< 100
Carbon Tetrachloride	<100	<100	<100	<100	<100	<100	< 100	< 100
Chlorobenzene	<100	<100	<100	<100	<100	<100	< 100	< 100
Chlorodifluoromethane (Freon 22)	<100	<100	<100	<100	<100	<100	< 100	< 100
Chloroethane	<100	<100	<100	<100	<100	<100	< 100	< 100
Chloroform	**28 J**	**28 J**	**25 J**	**29 J**	**25 J**	**26J**	**26 J**	**35 J**
Chloromethane	<100	<100	<100	<100	<100	<100	< 100	< 100
cis-1,2-dichloroethene	**350**	**350**	**270**	**350**	**360**	**390**	**380**	**430**
cis-1,3-dichloropropene	<100	<100	<100	<100	<100	<100	< 100	< 100
Dibromochloromethane	<100	<100	<100	<100	<100	<100	< 100	< 100
Dichlorodifluoromethane (Freon 12)	<100	<100	<100	<100	<100	<100	< 100	< 100
Ethylbenzene	<100	<100	<100	<100	<100	<100	< 100	< 100
Methyl tert-Butyl Ether	<100	<100	<100	<100	<100	<100	< 100	< 100
Methylene Chloride	<100	<100	<100	<100	<100	**4.6 BJ**	< 100	< 100
Styrene	<100	<100	<100	<100	<100	<100	< 100	< 100
Tetrachloroethene	<100	<100	<100	<100	<100	<100	< 100	< 100
Toluene	<100	<100	<100	<100	<100	<100	< 100	< 100
trans-1,2-dichloroethene	<100	<100	<100	<100	**5 J**	<100	**9.6 J**	**11 J**
trans-1,3-dichloropropene	<100	<100	<100	<100	<100	<100	< 100	< 100
Trichloroethylene	**2300**	**2600**	**2700**	**2600**	**3000**	**2900**	**2700**	**2400**
Trichlorofluoromethane (CFC-11)	< 50	<100	<100	<100	<100	<100	< 100	< 100
Trichlorotrifluoroethane (Freon 113)	< 50	<100	<100	<100	<100	<100	< 100	< 100
Vinyl Chloride	< 20	< 40	< 40	< 40	< 40	< 40	< 40	< 40
Xylene-o	< 50	<100	<100	<100	<100	<100	< 100	< 100
Xylenes - m,p	< 50	<100	<100	<100	<100	<100	< 100	< 100
TVOCs	**2700**	**3000**	**3000**	**3000**	**3400**	**3400**	**3100**	**2900**

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Table 2. Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Monitoring Well MW116-5, Northrop Grumman Systems Corporation, Bethpage, New York.

Location ID:	MW-116-5	MW-116-5	MW-116-5	MW-116-5
Sample Date:	2/22/2012	3/30/2012	4/30/2012	5/30/2012
Constituent Name (units in ug/L)				
1,1,1-Trichloroethane	< 100	< 100	< 100	<50
1,1,2,2-Tetrachloroethane	< 100	< 100	< 100	<50
1,1,2-Trichloroethane	< 100	< 100	< 100	<50
1,1-Dichloroethane	< 100	< 100	< 100	<50
1,1-Dichloroethene	**4.4 J**	**5.4 J**	**4.2 J**	**3.6 J**
1,2-Dichloroethane	**16 J**	**13 J**	**9.4 J**	**10 J**
1,2-Dichloropropane	< 100	< 100	**6.2 J**	**4.9 J**
2-Butanone	< 1000	< 1000	< 1000	<500
2-Hexanone	< 1000	< 1000	< 1000	<500
4-methyl-2-pentanone	< 1000	< 1000	< 1000	<500
Acetone	< 1000	< 1000	< 1000	<500
Benzene	< 14	< 14	< 14	< 7
Bromodichloromethane	< 100	< 100	< 100	<50
Bromoform	< 100	< 100	< 100	<50
Bromomethane	< 100	< 100	< 100	<50
Carbon Disulfide	< 100	< 100	< 100	<50
Carbon Tetrachloride	< 100	< 100	< 100	<50
Chlorobenzene	< 100	< 100	< 100	<50
Chlorodifluoromethane (Freon 22)	< 100	< 100	< 100	<50
Chloroethane	< 100	< 100	< 100	<50
Chloroform	**26 J**	**20 J**	**13 J**	**14 J**
Chloromethane	< 100	< 100	< 100	<50
cis-1,2-dichloroethene	**370**	**270**	**230**	**210**
cis-1,3-dichloropropene	< 100	< 100	< 100	<50
Dibromochloromethane	< 100	< 100	< 100	<50
Dichlorodifluoromethane (Freon 12)	< 100	< 100	< 100	<50
Ethylbenzene	< 100	< 100	< 100	<50
Methyl tert-Butyl Ether	< 100	< 100	< 100	<50
Methylene Chloride	**5 J**	< 100	< 100	<50
Styrene	< 100	< 100	< 100	<50
Tetrachloroethene	< 100	< 100	< 100	<50
Toluene	< 100	< 100	< 100	<50
trans-1,2-dichloroethene	**4.8 J**	< 100	**4.6 J**	**3.7 J**
trans-1,3-dichloropropene	< 100	< 100	< 100	<50
Trichloroethylene	**2500**	**1900**	**1900**	**2000**
Trichlorofluoromethane (CFC-11)	< 100	< 100	< 100	<50
Trichlorotrifluoroethane (Freon 113)	< 100	< 100	< 100	<50
Vinyl Chloride	< 40	< 40	< 40	< 20
Xylene-o	< 100	< 100	< 100	<50
Xylenes - m,p	< 100	< 100	< 100	<50
TVOCs	**2900**	**2200**	**2200**	**2200**

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Table 2. Concentrations of Volatile Organic Compounds in Groundwater Samples Collected from Monitoring Well MW116-5, Northrop Grumman Systems Corporation, Bethpage, New York.

Notes and Abbreviations:

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

Samples analyzed for the TCL VOCs using NYSDEC ASP Method 2000 OLM4.2.

TVOCs are rounded to two significant figures.

"B" qualified data not included in sum of VOCs.

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
ASP	Analytical services protocol
ug/L	Micrograms per liter
B	Compound detected in associated blank sample
J	Value is estimated
R	Value is rejected
D	Value from a secondary dilution