



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:  
February 2009 Monthly Progress Report,  
Northrop Grumman Systems Corporation,  
Operable Unit 3, NYSDEC Site ID # 1-30-003A, Bethpage, New York

Dear Steve:

In accordance with Section III of Administrative Order on Consent (AOC) Index # W1-0018-04-01, this letter reports the activities for Operable Unit 3 (OU3) performed by Northrop Grumman Systems Corporation (Northrop Grumman) during the month of February 2009; activities planned for March 2009 are also discussed. This report is the 35<sup>th</sup> OU3 monthly progress report since the AOC between Northrop Grumman and the New York State Department of Environmental Conservation (NYSDEC) was signed on June 24, 2005.

### **OU3 Activities Conducted During February 2009**

Activities performed this period include:

#### **On- and Off-Site RI/FS**

- Completed vertical profile boring (VPB) VP-117 drilling and groundwater sampling (final depth 780 feet below land surface [ft bls]). Validated analytical results are provided in Table 1.
- Completed development of Monitoring Well MW-117-5 (screen zone 737-757 ft bls). Performed planning for proposed Monitoring Well MW-109.
- Completed demobilization and investigation-derived waste (IDW) characterization from VP-117/ MW-117 location
- Preparation for dedicated sampling pump installation at Monitoring Well MW-111-4
- Performed planning for VPB VP-118

Imagine the result

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ENVIRONMENT

Date:  
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Our ref:  
NY001464.0909.00007

- Continued evaluation of remedial investigation (RI) data and assessment of data gaps
- Continued updates to the regional groundwater model
- Continued preparation of draft Human Health Risk Assessment (HHRA)
- Continued preparation of the Site Area Focused Feasibility Study (FFS) Report
- Completed cost model for possible Site Area FFS alternatives to be used as a decision making tool
- Prepared for and attended monthly conference call with NYSDEC and New York State Department of Health (NYSDOH) on FFS

**Soil Gas IRM**

- Continued OM&M of the Soil Gas IRM; next scheduled monitoring event March 2009
- Submitted November 2008 monthly OM&M report to NYSDEC and completed December 2008 monthly OM&M report
- Initiated preparation of 2008 Annual OM&M Report

**Groundwater IRM**

- Performed additional re-development activities for Recovery Well RW-2. Determined Well RW-2 suitable for use in Groundwater IRM as is.
- Continued with selection and/or ordering of selected IRM system items (air stripper, emission control units (ECUs), major instrumentation, extraction well pumps, well vaults, pitless adapters, and pre-engineered building)
- Completed drilling and installation of water quality monitoring wells along Sycamore Avenue
- Continued remedial system construction

**Other**

- Prepared and submitted January 2009 AOC Monthly Progress Report

**OU3 Activities Expected During March 2009**

**On- and Off-Site RI/FS**

- Continue preparation of Site Area FFS Report
- Continue preparation of Site Area HHRA

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- Initiate drilling and sampling of VP-118
- Complete update to regional groundwater model
- Continue evaluation of RI data and assessment of data gaps
- Install dedicated sampling pump in Monitoring Well MW-111-4

### Soil Gas IRM

- Continue OM&M of the Soil Gas IRM; next scheduled monitoring event March 2009
- Submit December 2008 monthly OM&M report to NYSDEC
- Complete 2008 Annual OM&M Report

### Groundwater IRM

- Continue selection and/or ordering of selected system items
- Continue remedial system construction

### Other

- Prepare and submit March 2009 AOC Monthly Progress Report.

Feel free to call us if you have any questions.

Sincerely,

ARCADIS



David E. Stern  
Senior Scientist /Associate Project Manager

Enclosure

Copies:

C. San Giovanni, ARCADIS  
M. Wolfert, ARCADIS  
File, ARCADIS  
J. Cofman, Northrop Grumman  
K. Smith, Northrop Grumman  
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Table 1. Concentrations of Volatile Organic Compounds in VP-117 Groundwater Samples, Northrop Grumman Systems Corporation, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York

CONSTITUENT (ug/L)	Sample Location: VP-117					
	VP-117	VP-117	VP-117	VP-117	VP-117	VP-117
	Sample Depth (ft bls): 54	104	104	154	204	254
	Sample Date: 12/9/2008 12/9/2008 12/9/2008 12/10/2008 12/10/2008 12/10/2008					
NYSDEC SCGs						
1,1,1-Trichloroethane	5	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	5	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	1	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	0.6	< 5	< 5	< 5	< 5	< 5
1,2-Dichloropropane	1	< 5	< 5	< 5	< 5	< 5
2-Butanone	50	< 50	< 50	< 50	< 50	< 50
2-Hexanone	NE	< 50	< 50	< 50	< 50	< 50
4-Methyl-2-pentanone	NE	< 50	< 50	< 50	< 50	< 50
Acetone	50	< 50	< 50	< 50	< 50	< 50
Benzene	1	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Bromodichloromethane	NE	< 5	< 5	< 5	< 5	< 5
Bromoform	NE	< 5	< 5	< 5	< 5	< 5
Bromomethane	5	< 5	< 5	< 5	< 5	< 5
Carbon Disulfide	50	< 50	< 50	< 50	< 50	< 50
Carbon Tetrachloride	5	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	5	< 5	< 5	< 5	< 5	< 5
Chlorodibromomethane	5	< 5	< 5	< 5	< 5	< 5
Chlorodifluoromethane (Freon 22)	NE	< 5	< 5	< 5	< 5	< 5
Chloroethane	5	< 5	< 5	< 5	< 5	< 5
Chloroform	5	< 7	< 7	< 7	< 7	< 7
Chloromethane	NE	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	0.4	< 5	< 5	< 5	< 5	< 5
Dichlorodifluoromethane (Freon 12)	5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	5	< 5	< 5	< 5	< 5	< 5
Methylene Chloride	50	< 5	< 5	< 5	< 5	< 5
Styrene	5	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	5	< 5	< 5	< 5	< 5	< 5
Toluene	5	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5
Trans-1,3-Dichloropropene	NE	< 5	< 5	< 5	< 5	< 5
Trichloroethene	5	< 5	< 5	< 5	< 5	< 5
Trichlorotrifluoroethane (Freon 113)	5	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	2	< 2	< 2	< 2	< 2	< 2
Xylene- O	5	< 5	< 5	< 5	< 5	< 5
Xylene- M & P	5	< 5	< 5	< 5	< 5	< 5
<b>TVOCs</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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Table 1. Concentrations of Volatile Organic Compounds in VP-117 Groundwater Samples, Northrop Grumman Systems Corporation, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York

CONSTITUENT (ug/L)	Sample Location: Sample Depth (ft bls):	VP-117	VP-117	VP-117	VP-117	VP-117	VP-117
		304	329	349	374	394	414
		Sample Date: 12/11/2008	12/11/2008	12/12/2008	12/12/2008	12/13/2008	12/15/2008
NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	1	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	0.6	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloropropane	1	< 5	< 5	< 5	< 5	< 5	< 5
2-Butanone	50	< 50	< 50	< 50	< 50	< 50	< 50
2-Hexanone	NE	< 50	< 50	< 50	< 50	< 50	< 50
4-Methyl-2-pentanone	NE	< 50	< 50	< 50	< 50	< 50	< 50
Acetone	50	< 50	< 50	< 50	< 50	< 50	< 50
Benzene	1	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Bromodichloromethane	NE	< 5	< 5	< 5	< 5	< 5	< 5
Bromoform	NE	< 5	< 5	< 5	< 5	< 5	< 5
Bromomethane	5	< 5	< 5	< 5	< 5	< 5	< 5
Carbon Disulfide	50	< 50	< 50	< 50	< 50	< 50	< 50
Carbon Tetrachloride	5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorodibromomethane	5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorodifluoromethane (Freon 22)	NE	< 5	< 5	< 5	< 5	< 5	< 5
Chloroethane	5	< 5	< 5	< 5	< 5	< 5	< 5
Chloroform	5	< 7	< 7	< 7	< 7	< 7	< 7
Chloromethane	NE	< 5	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	0.4	< 5	< 5	< 5	< 5	< 5	< 5
Dichlorodifluoromethane (Freon 12)	5	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene Chloride	50	< 5	< 5	< 5	< 5	< 5	< 5
Styrene	5	< 5	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	5	< 5	5.4	5	< 5	< 5	< 5
Toluene	5	< 5	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
Trans-1,3-Dichloropropene	NE	< 5	< 5	< 5	< 5	< 5	< 5
Trichloroethene	5	< 5	89	61	110	210 D	190 D
Trichlorotrifluoroethane (Freon 113)	5	< 5	< 5	< 5	< 5	7.4	7.9
Vinyl Chloride	2	< 2	< 2	< 2	< 2	< 2	< 2
Xylene- O	5	< 5	< 5	< 5	< 5	< 5	< 5
Xylene- M & P	5	< 5	< 5	< 5	< 5	< 5	< 5
<b>TVOCs</b>	<b>0</b>	<b>94.4</b>	<b>66</b>	<b>110</b>	<b>217.4</b>	<b>197.9</b>	

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Table 1. Concentrations of Volatile Organic Compounds in VP-117 Groundwater Samples, Northrop Grumman Systems Corporation, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York

CONSTITUENT (ug/L)	Sample Location:	VP-117	VP-117	VP-117	VP-117	VP-117	VP-117
	Sample Depth (ft bls):	434	454	479	499	529	549
	Sample Date:	12/15/2008	12/16/2008	12/17/2008	12/17/2008	12/18/2008	12/19/2008
NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	1	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	0.6	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloropropane	1	< 5	< 5	< 5	< 5	< 5	< 5
2-Butanone	50	< 50	< 50	< 50	< 50	< 50	< 50
2-Hexanone	NE	< 50	< 50	< 50	< 50	< 50	< 50
4-Methyl-2-pentanone	NE	< 50	< 50	< 50	< 50	< 50	< 50
Acetone	50	< 50	< 50	< 50	< 50	< 50	< 50
Benzene	1	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Bromodichloromethane	NE	< 5	< 5	< 5	< 5	< 5	< 5
Bromoform	NE	< 5	< 5	< 5	< 5	< 5	< 5
Bromomethane	5	< 5	< 5	< 5	< 5	< 5	< 5
Carbon Disulfide	50	< 50	< 50	< 50	< 50	< 50	< 50
Carbon Tetrachloride	5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorodibromomethane	5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorodifluoromethane (Freon 22)	NE	< 5	< 5	< 5	< 5	< 5	< 5
Chloroethane	5	< 5	< 5	< 5	< 5	< 5	< 5
Chloroform	5	< 7	< 7	< 7	< 7	< 7	< 7
Chloromethane	NE	< 5	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	0.4	< 5	< 5	< 5	< 5	< 5	< 5
Dichlorodifluoromethane (Freon 12)	5	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene Chloride	50	< 5	< 5	< 5	< 5	< 5	< 5
Styrene	5	< 5	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
Toluene	5	< 5	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
Trans-1,3-Dichloropropene	NE	< 5	< 5	< 5	< 5	< 5	< 5
Trichloroethene	5	74	91	39	95	130	15
Trichlorotrifluoroethane (Freon 113)	5	5	6.2	6.8	9.8	6.3	< 5
Vinyl Chloride	2	< 2	< 2	< 2	< 2	< 2	< 2
Xylene- O	5	< 5	< 5	< 5	< 5	< 5	< 5
Xylene- M & P	5	< 5	< 5	< 5	< 5	< 5	< 5
<b>TVOCs</b>		<b>79</b>	<b>97.2</b>	<b>45.8</b>	<b>104.8</b>	<b>136.3</b>	<b>15</b>

see footnotes on last page

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Table 1. Concentrations of Volatile Organic Compounds in VP-117 Groundwater Samples, Northrop Grumman Systems Corporation, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York

CONSTITUENT (ug/L)	Sample Location: Sample Depth (ft bls)	VP-117	VP-117	VP-117	VP-117	VP-117	VP-117
		569	589	614	634	649	679
Sample Date:		12/19/2008	12/19/2008	12/22/2008	12/23/2008	12/23/2008	12/27/2008
NYSDEC SCGs							
1,1,1-Trichloroethane	5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	1	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	0.6	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloropropane	1	< 5	< 5	< 5	< 5	< 5	< 5
2-Butanone	50	< 50	< 50	< 50	< 50	< 50	< 50
2-Hexanone	NE	< 50	< 50	< 50	< 50	< 50	< 50
4-Methyl-2-pentanone	NE	< 50	< 50	< 50	< 50	< 50	< 50
Acetone	50	< 50	< 50	< 50	< 50	< 50	< 50
Benzene	1	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Bromodichloromethane	NE	< 5	< 5	< 5	< 5	< 5	< 5
Bromoform	NE	< 5	< 5	< 5	< 5	< 5	< 5
Bromomethane	5	< 5	< 5	< 5	< 5	< 5	< 5
Carbon Disulfide	50	< 50	< 50	< 50	< 50	< 50	< 50
Carbon Tetrachloride	5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorodibromomethane	5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorodifluoromethane (Freon 22)	NE	< 5	< 5	< 5	< 5	< 5	< 5
Chloroethane	5	< 5	< 5	< 5	< 5	< 5	< 5
Chloroform	5	< 7	< 7	< 7	< 7	< 7	< 7
Chloromethane	NE	< 5	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	0.4	< 5	< 5	< 5	< 5	< 5	< 5
Dichlorodifluoromethane (Freon 12)	5	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene Chloride	50	< 5	< 5	< 5	< 5	< 5	< 5
Styrene	5	< 5	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
Toluene	5	< 5	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	5	< 5	< 5	< 5	< 5	< 5	< 5
Trans-1,3-Dichloropropene	NE	< 5	< 5	< 5	< 5	< 5	< 5
Trichloroethene	5	36	9.4	< 5	< 5	< 5	< 5
Trichlorotrifluoroethane (Freon 113)	5	< 5	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	2	< 2	< 2	< 2	< 2	< 2	< 2
Xylene- O	5	< 5	< 5	< 5	< 5	< 5	< 5
Xylene- M & P	5	< 5	< 5	< 5	< 5	< 5	< 5
<b>TVOCs</b>		<b>36</b>	<b>9.4</b>	0	0	0	0

see footnotes on last page

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Table 1. Concentrations of Volatile Organic Compounds in VP-117 Groundwater Samples, Northrop Grumman Systems Corporation, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York

CONSTITUENT (ug/L)	Sample Location: VP-117 VP-117 VP-117		
	Sample Depth (ft bls): 715	729	764
	Sample Date: 1/7/2009 1/8/2009 1/12/2009		
NYSDEC SCGs			
1,1,1-Trichloroethane	5	< 5	< 5
1,1,1,2-Tetrachloroethane	5	< 5	< 5
1,1,2-Trichloroethane	1	< 5	< 5
1,1-Dichloroethene	5	< 5	< 5
1,1-Dichloroethane	5	< 5	< 5
1,2-Dichloroethane	0.6	< 5	< 5
1,2-Dichloropropane	1	< 5	< 5
2-Butanone	50	< 50	< 50
2-Hexanone	NE	< 50	< 50
4-Methyl-2-pentanone	NE	< 50	< 50
Acetone	50	< 50	< 50
Benzene	1	< 0.7	< 0.7
Bromodichloromethane	NE	< 5	< 5
Bromoform	NE	< 5	< 5
Bromomethane	5	< 5	< 5
Carbon Disulfide	50	< 5	< 5
Carbon Tetrachloride	5	< 5	< 5
Chlorobenzene	5	< 5	< 5
Chlorodibromomethane	5	< 5	< 5
Chlorodifluoromethane (Freon 22)	NE	< 5	< 5
Chloroethane	5	< 5	< 5
Chloroform	5	< 5	< 5
Chloromethane	NE	< 5	< 5
cis-1,2-Dichloroethene	5	< 5	< 5
cis-1,3-Dichloropropene	0.4	< 5	< 5
Dichlorodifluoromethane (Freon 12)	5	< 5	< 5
Ethylbenzene	5	< 5	< 5
Methylene Chloride	50	< 5	< 5
Styrene	5	< 5	< 5
Tetrachloroethene	5	< 5	< 5
Toluene	5	< 5	< 5
trans-1,2-Dichloroethene	5	< 5	< 5
Trans-1,3-Dichloropropene	NE	< 5	< 5
Trichloroethene	5	< 5	< 5
Trichlorotrifluoroethane (Freon 113)	5	< 5	< 5
Vinyl Chloride	2	< 2	< 2
Xylene- O	5	< 5	< 5
Xylene- M &P	5	< 5	< 5
<b>TVOCs</b>	<b>0</b>	<b>0</b>	<b>0</b>

see footnotes on last page



Table 1: Concentrations of Volatile Organic Compounds in VP-117 Groundwater Collected Northrop Grumman Systems Corporation, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York

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**Notes and Abbreviations:**

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

**Bold value indicates a detection**

RI/FS	Remedial Investigation/Feasibility Study
TCL	Target compound list
VOC	Volatile organic compound
ASP	Analytical services protocol
ft bls	Feet below land surface
ug/L	Micrograms per liter
TVOC	Total volatile organic compounds