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Mr. Steven Scharf, P.E.
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015

Subject:

Results of First Quarter 2009 Groundwater Monitoring,
Operable Unit 2, Northrop Grumman Systems Corporation (Northrop Grumman) and
Naval Weapons Industrial Reserve Plant (NWIRP) Sites, Bethpage, New York.
(NYSDEC Site #s 1-30-003A and B)

Dear Mr. Scharf:

On behalf of Northrop Grumman Systems Corporation (Northrop Grumman),
ARCADIS is providing the New York State Department of Environmental
Conservation (NYSDEC) with the validated results of groundwater monitoring
performed in accordance with the approved groundwater monitoring plan (ARCADIS
G&M, Inc. 2006) and the Public Water Supply Contingency Plan (PWSCP)
(ARCADIS G&M, Inc. 2003) for the First Quarter of 2009 for Operable Unit 2 (OU2).
Table 1 provides OU2 remedial system performance operational data and water
balance. Tables 2, 3, and 4 provide the analytical results of monitoring for this
period. Figure 1 shows the site plan with well locations.

Please contact us if you have any questions or comments.

Sincerely,

ARCADIS U.S., Inc.

David E. Stern
Senior Hydrogeologist

Carlo San Giovanni
Project Manager

Enclosures

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ENVIRONMENT

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June 18, 2009

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Steven Scharf, P.E.
June 18, 2009

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Table 1. Summary of Operational Data and Water Balance for the On-Site Portion of the OU2 Groundwater Remedy, First Quarter 2009, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Identification	Design Pumping/Recharge Rate (a) (gpm)	Current Actual Pumping/Recharge Rate (b) (gpm)	Design Total Pumpage/Recharge (MG)	Current Actual Total Pumpage/Recharge (MG)	Current Percent of Design Pumpage/Recharge	Current TCE Concentration (ug/L)	Current TVOC Concentration (c) (ug/L)	1st Quarter 2009	
								Estimated VOC Mass Removed (d) (lbs)	Estimated VOC Mass Removed (d) (lbs)
<u>Remedial Wells</u>									
Well 1	800	790	111.7	109.3	98%	350	465	423	
Well 3	700	706	97.8	97.6	100%	2,700	2,987	2,428	
Well 17	1,000	1,051	139.7	139.5	100%	230	273	317	
Well 18	600	643	83.8	83.5	100%	100	124	86	
Well 19	700	716	97.8	95.0	97%	190	225.0	178	
Rounded Totals:	3,800	3,906	531	525	99%	--	--	3,432	
<u>Groundwater Removed from Aquifer</u>									
<u>Recharge Basins (a)</u>									
West Recharge Basins	0	1,090	0	152.3	--	--	--	--	
South Recharge Basins	2,231	2,706	311.6	378.0	121%	--	--	--	
Rounded Totals:	2,231	3,796	312	530.3	170%	--	--	--	
<u>Treated Water Sent to Calpine</u>									
Calpine Demand	100-400	106	14-56	14.8	--	--	--	--	
<u>Treatment Efficiencies</u>									
<u>Average SPDES Outfall TVOC Concentrations (ug/L) (f)</u>									
Tower 96 System Efficiency (e):		>99.9%		0.4					
Tower 102 System Efficiency (e):		99.7%		0.7					

see footnotes on last page

Table 1. Summary of Operational Data and Water Balance for the On-Site Portion of the OU2 Groundwater Remedy, First Quarter 2009, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

- (a) - Design remedial well pumping rates based on computer modeling (ARCADIS G& M, Inc. 2003c). Acceptable design recharge rates based on computer modeling (ARCADIS G&M, Inc. 2004b). Design pumping and recharge rates were modified in April, 2005. Recharge includes remedial well pumpage (minus Calpine demand, Oxy biosparge system demand, and pipe loss), plus incidental runoff from precipitation. Current average recharge rates have been determined using the entire 98-day span of time as opposed to current average pumping rates, which account for varying amounts of downtime, as indicated below.
- b) - OU2 wells were operational during the First Quarter 2009, at the following percentages: Well-1 (99%), Well-3 (99%); Well-17 (95%), Well-18 (93%), and Well-19 (95%). The Actual Average Pumping Rates and rate of treated water sent to Calpine are for when the wells are pumping.
- (c) - The TVOC concentration for each well was calculated based on First Quarter 2009 groundwater monitoring data (Table 2).
- (d) - TVOC mass removed is based on the TVOC data given above and the following formula:

$$\boxed{\text{TVOC concentration in ug/L} \times (\text{gallons pumped}) \times (3.785 \text{ L/gal}) \times (1 \times 10^{-6} \text{ g/ug}) \times (2.2 \times 10^{-3} \text{ lb/g})}$$

(e) Air Stripping Efficiency calculated from values above and in Table 2 using the following formula:

$$1 - \left[\frac{\text{Average SPDES TVOC Concentration at Outfall}}{[(\text{TVOC}_{\text{Well 1}} \times Q_{\text{Well 1}}) + (\text{TVOC}_{\text{Well 2}} \times Q_{\text{Well 2}}) \text{ etc...}] \times (Q_{\text{Well 1}} + Q_{\text{Well 2}} \text{ etc...})} \right]$$

- When non-detectable levels of VOCs are found in the effluent, a value of zero is used to estimate the efficiency of the air stripper.
- (f) -Towers 102 and 96 outfalls utilize SPDES Outfalls 005 and 006 (commonly known as the South Recharge Basins and Plant 5 Recharge Basins, respectively). Complete SPDES reporting provided to NYSDEC by NGC under separate cover.

--	Not Available or Not Applicable	lb/g	pounds per gram
TVOC	Total Volatile Organic Compounds	lbs	pounds
g/ug	grams per microgram	MG	Million Gallons
gpm	gallons per minute	ug/L	micrograms per liter
L/gal	Liters per gallon	OU2	Operable Unit 2
SPDES	State Pollutant Discharge Elimination System	Q	Pumping Rate
NGC	Northrop Grumman Systems Corporation	NYSDEC	New York State Department of Environmental Conservation

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Table 2. Concentrations of Volatile Organic Compounds Detected in Monitoring Wells and Groundwater Remedial Wells, First Quarter 2009, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	Well:	N-10627	N-10631	FW-03	GM-13D	GM-15S	GM-15I	GM-15D	GM-15D2
	Sample ID:	N-10627	N-10631	FW-03	GM-13D	GM-15S	GM-15I	GM-15D	GM-15D2
	Date:	3/17/2009	3/17/2009	2/27/2009	2/27/2009	2/24/2009	3/31/2009	2/27/2009	2/27/2009
1,1,1-Trichloroethane	< 5	< 5	0.43 J	5.3	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	< 5	< 5	< 5	7.6	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	< 5	< 5	< 5	17	< 5	< 5	< 5	< 5	0.98 J
1,2-Dichloroethane	< 5	< 5	< 5	0.31 J	< 5	< 5	< 5	< 5	< 5
1,2-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
2-Butanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
2-Hexanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
4-methyl-2-pentanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Acetone	< 50 B	< 50	< 50	< 50 B	< 50 B	< 50	< 50	< 50	2.8 J
Benzene	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Bromodichloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Bromoform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Bromomethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbon Disulfide	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbon tetrachloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chloroform	< 5	< 5	< 5	0.39 J	< 5	< 5	< 5	< 5	< 5
Chloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
cis-1,2-dichloroethene	< 5	< 5	0.76 J	32	< 5	< 5	< 5	< 5	0.36 J
cis-1,3-dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene Chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Styrene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	< 5	< 5	56	260 D	< 5	< 5	0.69 J	12	12
Toluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
trans-1,2-dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
trans-1,3-dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Trichloroethylene	0.64 J	0.38 J	3.4 J	80	5.2	4 J	1.5 J	11	11
Trichlorotrifluoroethane (Freon 113)	< 5	< 5	< 5	3.4 J	< 5	< 5	< 5	< 5	1.3 J
Vinyl Chloride	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Xylene-o	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Xylenes - m,p	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Total VOCs	0.64	0.38	60.59	408.4	5.2	4	2.19	29.64	

Bold Constituent detected
VOCs Volatile Organic Compounds
ug/L Micrograms per liter
J Constituent value is estimated
D Constituent identified at a secondary dilution

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Table 2. Concentrations of Volatile Organic Compounds Detected in Monitoring Wells and Groundwater Remedial Wells, First Quarter 2009, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	Well:	GM-17I	GM-17D	GM-18I	GM-18D	GM-20I	GM-20D	GM-21S	GM-21I
	Sample ID:	GM-17I	GM-17D	GM-18I	GM-18D	GM-20I	GM-20D	GM-21S	GM-21I
	Date:	2/17/2009	2/17/2009	3/31/2009	4/1/2009	3/21/2009	3/21/2009	3/29/2009	4/1/2009
1,1,1-Trichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
2-Butanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
2-Hexanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
4-methyl-2-pentanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Acetone	< 50	< 50	2 J	4.5 J	1.3 J	2 J	< 50 B	2.5 J	
Benzene	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Bromodichloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Bromoform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Bromomethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbon Disulfide	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbon tetrachloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chloroform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
cis-1,2-dichloroethene	< 5	< 5	0.81 J	< 5	< 5	< 5	< 5	< 5	< 5
cis-1,3-dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene Chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Styrene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Toluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
trans-1,2-dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
trans-1,3-dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Trichloroethylene	< 5	0.32 J	4 J	1.5 J	< 5	< 5	< 5	< 5	< 5
Trichlorotrifluoroethane (Freon 113)	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Xylene-o	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Xylenes - m,p	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Total VOCs	0	0.32	6.81	6	1.3	2	0	2.5	

Bold Constituent detected
VOCs Volatile Organic Compounds
ug/L Micrograms per liter
J Constituent value is estimated
D Constituent identified at a secondary dilution

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Table 2. Concentrations of Volatile Organic Compounds Detected in Monitoring Wells and Groundwater Remedial Wells, First Quarter 2009, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	Well:	GM-21D	GM-33D2	GM-34D	GM-34D2	GM-35D2	GM-36D	GM-36D2	GM-37D
	Sample ID:	GM-21D	GM-33D2	GM-34D	GM-34D2	GM-35D2	GM-36D	GM-36D2	GM-37D
	Date:	3/20/2009	3/17/2009	2/25/2009	2/25/2009	3/23/2009	3/24/2009	3/24/2009	3/30/2009
1,1,1-Trichloroethane	< 5	< 5	0.41 J	< 10	0.34 J	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	< 5	< 5	1 J	< 10	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	< 5	< 5	13	2.4 J	0.69 J	< 5	0.41 J	< 5	< 5
1,2-Dichloroethane	< 5	< 5	0.31 J	< 10	< 5	< 5	< 5	< 5	< 5
1,2-Dichloropropane	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
2-Butanone	< 50	< 50	< 50	< 100	< 50	< 50	< 50	< 50	< 50
2-Hexanone	< 50	< 50	< 50	< 100	< 50	< 50	< 50	< 50	< 50
4-methyl-2-pentanone	< 50	< 50	< 50	< 100	< 50	< 50	< 50	< 50	< 50
Acetone	< 50	< 50	< 50	< 100 B	< 50	1.6 J	2 J	< 50 B	< 50 B
Benzene	< 0.7	< 0.7	< 0.7	< 1.4	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Bromodichloromethane	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Bromoform	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Bromomethane	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Carbon Disulfide	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Carbon tetrachloride	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Chloroethane	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Chloroform	< 5	< 5	0.62 J	< 10	< 5	< 5	< 5	< 5	< 5
Chloromethane	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
cis-1,2-dichloroethene	< 5	0.75 J	8.8	6.8 J	1.9 J	< 5	< 5	< 5	< 5
cis-1,3-dichloropropene	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Methylene Chloride	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Styrene	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	< 5	9.5	12	9.6 J	8.8	< 5	< 5	< 5	0.47 J
Toluene	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
trans-1,2-dichloroethene	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
trans-1,3-dichloropropene	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Trichloroethylene	0.69 J	56	860 D	280	210 D	2.8 J	0.91 J	< 5	< 5
Trichlorotrifluoroethane (Freon 113)	< 5	25	18	4.2 J	4.4 J	< 5	< 5	< 5	< 5
Vinyl Chloride	< 2	< 2	< 2	< 4	< 2	< 2	< 2	< 2	< 2
Xylene-o	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Xylenes - m,p	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5
Total VOCs	0.69	91.25	915.44	303	227.09	4.4	3.32	0.47	

Bold Constituent detected
VOCs Volatile Organic Compounds
ug/L Micrograms per liter
J Constituent value is estimated
D Constituent identified at a secondary dilution

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Table 2. Concentrations of Volatile Organic Compounds Detected in Monitoring Wells and Groundwater Remedial Wells, First Quarter 2009, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	Well:	GM-37D2	GM-38D	GM-38D2	GM-39D _A	GM-39D _B	GM-70D2	GM-71D2	GM-73D
	Sample ID:	GM-37D2	GM-38D	GM-38D2	GM-39D _A	GM-39D _B	GM-70D2	GM-71D2	GM-73D
	Date:	3/28/2009	3/22/2009	3/22/2009	3/16/2009	3/16/2009	3/30/2009	3/31/2009	2/17/2009
1,1,1-Trichloroethane		1.3 J	3.7 J	< 25	< 5	< 5	< 5	1.9 J	< 5
1,1,2,2-Tetrachloroethane		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane		3.4 J	5.8 J	< 25	< 5	< 5	< 5	3.8 J	< 5
1,1-Dichloroethene		1.4 J	5.8 J	2.2 J	< 5	< 5	< 5	2.6 J	< 5
1,2-Dichloroethane		< 5	< 25	< 25	< 5	< 5	< 5	0.37 J	< 5
1,2-Dichloropropane		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
2-Butanone		< 50	< 250	< 250	< 50	< 50	< 50	< 50	< 50
2-Hexanone		< 50	< 250	< 250	< 50	< 50	< 50	< 50	< 50
4-methyl-2-pentanone		< 50	< 250	< 250	< 50	< 50	< 50	< 50	< 50
Acetone		< 50	< 250	< 250	< 50	< 50	< 50 B	< 50	< 50 B
Benzene		< 0.7	< 3.5	< 3.5	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Bromodichloromethane		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Bromoform		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Bromomethane		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Carbon Disulfide		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Carbon tetrachloride		< 5	< 25	< 25	< 5	< 5	< 5	0.83 J	< 5
Chlorobenzene		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Chloroethane		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Chloroform		0.35 J	< 25	< 25	< 5	< 5	< 5	0.99 J	< 5
Chloromethane		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
cis-1,2-dichloroethene		< 5	< 25	2.3 J	< 5	< 5	< 5	1.4 J	< 5
cis-1,3-dichloropropene		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Ethylbenzene		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Methylene Chloride		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Styrene		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene		0.42 J	9.4 J	< 25	< 5	0.36 J	4.6 J	< 5	< 5
Toluene		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
trans-1,2-dichloroethene		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
trans-1,3-dichloropropene		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Trichloroethylene		1.9 J	990 D	550	5.1	68	27	9.1	16
Trichlorotrifluoroethane (Freon 113)		< 5	< 25	3.5 J	< 5	< 5	0.84 J	< 5	< 5
Vinyl Chloride		< 2	< 10	< 10	< 2	< 2	< 2	< 2	< 2
Xylene-o		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Xylenes - m,p		< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 5
Total VOCs		8.77	1014.7	558	5.1	68.36	32.44	20.99	16

Bold Constituent detected
VOCs Volatile Organic Compounds
ug/L Micrograms per liter
J Constituent value is estimated
D Constituent identified at a secondary dilution

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Table 2. Concentrations of Volatile Organic Compounds Detected in Monitoring Wells and Groundwater Remedial Wells, First Quarter 2009, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	Well:	GM-73D2	GM-74I	GM-74D	GM-74D2	GM-75D2	GM-78S	GM-78I	GM-79I
	Sample ID:	GM-73D2	GM-74I	GM-74D	GM-74D2	GM-75D2	GM-78S	GM-78I	GM-79I
	Date:	2/17/2009	2/17/2009	2/17/2009	2/17/2009	3/17/2009	2/24/2009	2/24/2009	3/20/2009
1,1,1-Trichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	< 5	< 5	< 5	0.36 J	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	0.35 J	< 5	< 5	0.76 J	1.2 J	< 5	< 5	< 5	< 5
1,2-Dichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
2-Butanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
2-Hexanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
4-methyl-2-pentanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Acetone	< 50	< 50	< 50 B	< 50	< 50 B	< 50 B	< 50 B	< 50 B	< 50
Benzene	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Bromodichloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Bromoform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Bromomethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbon Disulfide	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbon tetrachloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chloroform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
cis-1,2-dichloroethene	< 5	< 5	< 5	< 5	0.36 J	< 5	< 5	< 5	< 5
cis-1,3-dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene Chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Styrene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	0.55 J	< 5	0.32 J	8.2	3.3 J	< 5	< 5	< 5	< 5
Toluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
trans-1,2-dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
trans-1,3-dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Trichloroethylene	40	< 5	2.5 J	8.6	140	< 5	< 5	< 5	< 5
Trichlorotrifluoroethane (Freon 113)	< 5	< 5	< 5	0.82 J	0.86 J	< 5	< 5	< 5	< 5
Vinyl Chloride	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Xylene-o	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Xylenes - m,p	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Total VOCs	40.9	0	2.82	19.27	145.72	0	0	0	0

Bold Constituent detected
VOCs Volatile Organic Compounds
ug/L Micrograms per liter
J Constituent value is estimated
D Constituent identified at a secondary dilution

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Table 2. Concentrations of Volatile Organic Compounds Detected in Monitoring Wells and Groundwater Remedial Wells, First Quarter 2009, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	Well:	GM-79D	HN-24I	HN-40S	HN-40I	HN-42I	HN-42S	GP-1	GP-3
	Sample ID:	GM-79D	HN-24I	HN-40S	HN-40I	HN-42I	HN-42S	WELL 1	WELL 3
	Date:	3/20/2009	2/27/2009	2/23/2009	2/23/2009	2/23/2009	2/23/2009	2/23/2009	2/23/2009
1,1,1-Trichloroethane	< 5	1.9 J	< 5	< 5	< 5	< 5	< 5	0.75 J	< 100
1,1,2,2-Tetrachloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
1,1,2-Trichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
1,1-Dichloroethane	0.42 J	2.4 J	< 5	< 5	< 5	< 5	< 5	1.1 J	< 100
1,1-Dichloroethene	0.51 J	6.6	< 5	< 5	< 5	< 5	< 5	3.3 J	13 J
1,2-Dichloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
1,2-Dichloropropane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	3.4 J	< 100
2-Butanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 130	< 1000
2-Hexanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 130	< 1000
4-methyl-2-pentanone	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 130	< 1000
Acetone	1.7 J	< 50	< 50	< 50	1.6 J	2.5 J	< 130	< 130	< 1000
Benzene	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 1.8	< 14
Bromodichloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Bromoform	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Bromomethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Carbon Disulfide	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Carbon tetrachloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Chlorobenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Dibromochloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Chloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Chloroform	< 5	1.1 J	0.34 J	0.76 J	< 5	< 5	< 5	< 13	< 100
Chloromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
cis-1,2-dichloroethene	0.45 J	1.3 J	< 5	< 5	7.1	< 5	< 5	4.6 J	13 J
cis-1,3-dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Ethylbenzene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Methylene Chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Styrene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Tetrachloroethene	0.96 J	13	< 5	< 5	< 5	< 5	< 5	97	69 J
Toluene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
trans-1,2-dichloroethene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
trans-1,3-dichloropropene	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Trichloroethylene	48	21	< 5	< 5	18	< 5	< 5	350	2700
Trichlorotrifluoroethane (Freon 113)	0.75 J	3.6 J	< 5	< 5	< 5	< 5	< 5	4.7 J	12 J
Vinyl Chloride	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 5	180
Xylene-o	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Xylenes - m,p	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 13	< 100
Total VOCs	52.79	51.83	0.34	0.76	26.7	2.5	464.85	2987	

Bold Constituent detected
VOCs Volatile Organic Compounds
ug/L Micrograms per liter
J Constituent value is estimated
D Constituent identified at a secondary dilution

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Table 2. Concentrations of Volatile Organic Compounds Detected in Monitoring Wells and Groundwater Remedial Wells, First Quarter 2009, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	Well: TOWER 102 EFF	WELL 17	WELL 18	WELL 19	TOWER 96 EFF
	Sample ID: TOWER 102 EFF	WELL 17	WELL 18	WELL 19	TOWER 96 EFF
	Date: 2/23/2009	2/23/2009	2/23/2009	2/23/2009	2/23/2009
1,1,1-Trichloroethane	< 5	0.64 J	1.6 J	0.66 J	< 5
1,1,2,2-Tetrachloroethane	< 5	< 10	< 5	< 5	< 5
1,1,2-Trichloroethane	< 5	< 10	< 5	< 5	< 5
1,1-Dichloroethane	< 5	1 J	1.3 J	0.93 J	< 5
1,1-Dichloroethene	< 5	1.8 J	4.9 J	1.5 J	< 5
1,2-Dichloroethane	< 5	< 10	< 5	0.7 J	< 5
1,2-Dichloropropane	< 5	< 10	< 5	< 5	< 5
2-Butanone	< 50	< 100	< 50	< 50	< 50
2-Hexanone	< 50	< 100	< 50	< 50	< 50
4-methyl-2-pentanone	< 50	< 100	< 50	< 50	< 50
Acetone	< 50	3.3 B	< 50	< 50	< 50
Benzene	< 0.7	< 1.4	< 0.7	< 0.7	< 0.7
Bromodichloromethane	< 5	< 10	< 5	< 5	< 5
Bromoform	< 5	< 10	< 5	< 5	< 5
Bromomethane	< 5	< 10	< 5	< 5	< 5
Carbon Disulfide	< 5	< 10	< 5	< 5	< 5
Carbon tetrachloride	< 5	< 10	< 5	< 5	< 5
Chlorobenzene	< 5	< 10	< 5	< 5	< 5
Dibromochloromethane	< 5	< 10	< 5	< 5	< 5
Chloroethane	< 5	< 10	< 5	< 5	< 5
Chloroform	< 5	< 10	< 5	0.75 J	< 5
Chloromethane	< 5	< 10	< 5	< 5	< 5
cis-1,2-dichloroethene	< 5	3.6 J	1.7 J	21	< 5
cis-1,3-dichloropropene	< 5	< 10	< 5	< 5	< 5
Ethylbenzene	< 5	< 10	< 5	< 5	< 5
Methylene Chloride	< 5	< 10	< 5	< 5	< 5
Styrene	< 5	< 10	< 5	< 5	< 5
Tetrachloroethene	< 5	24	12	7.9	< 5
Toluene	< 5	< 10	< 5	< 5	< 5
trans-1,2-dichloroethene	< 5	< 10	< 5	< 5	< 5
trans-1,3-dichloropropene	< 5	< 10	< 5	< 5	< 5
Trichloroethylene	0.34 J	230	100	190 D	1.2 J
Trichlorotrifluoroethane (Freon 113)	< 5	8.4 J	1.8 J	0.95 J	< 5
Vinyl Chloride	< 2	< 4	< 2	< 2	< 2
Xylene-o	< 5	< 10	< 5	< 5	< 5
Xylenes - m,p	< 5	< 10	< 5	< 5	< 5
Total VOCs	0.34	272.74	123.67	224.83	1.2

Bold Constituent detected
 VOCs Volatile Organic Compounds
 ug/L Micrograms per liter
 J Constituent value is estimated
 D Constituent identified at a secondary dilution

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Table 3. Concentrations of Total and Dissolved Cadmium and Chromium Detected in Monitoring Wells, First Quarter 2009, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in mg/L)	Well: Sample ID: Date:	N-10631 N-10631 3/17/2009	GM-15S GM-15S 2/24/2009	GM-78S GM-78S 2/24/2009	GM-78I GM-78I 2/24/2009	MW-01GF MW-01GF 3/29/2009	MW-02GF MW-02GF 3/29/2009	MW-4 PT1MW-04 2/24/2009	MW-5 PT1MW-05 2/24/2009	MW-6 PT1MW-06 2/24/2009
Cadmium		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Cadmium (Dissolved)		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chromium		38	458	< 10	< 10	< 10	98	< 10	450	243
Chromium (Dissolved)		28	452	< 10	< 10	< 10	101	< 10	453	248

ug/L Micrograms per liter

Bold Constituent detected above IDL.

-- Not analyzed

Table 4. Concentrations of Site-Related Volatile Organic Compounds Detected in Outpost Wells, First Quarter 2009, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

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CONSTITUENT (Units in ug/L)	Well: BPOW 1-1 ⁽³⁾ BPOW 1-2 ⁽³⁾ BPOW 1-3 ⁽³⁾ BPOW 3-1 BPOW 3-2 BPOW 4-1 BPOW 4-2													
	Sample ID: BPOW 1-1		BPOW 1-2		BPOW 1-3		BPOW 3-1		BPOW 3-2		BPOW 4-1		BPOW 4-2	
	Date:	3/3/2009	3/3/2009	3/3/2009	3/4/2009	3/6/2009	3/6/2009	3/6/2009	3/6/2009	3/6/2009	3/13/2009	3/13/2009	3/16/2009	3/16/2009
1,1,1-Trichloroethane	1.9	< 0.5	< 0.5	1.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	0.74	< 0.5	< 0.5	0.66	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	1	< 0.5	< 0.5	1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorotrifluoroethane (Freon 113)	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.31 J	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	1.4	< 0.5	< 0.5	0.55	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Total Site-Related VOCs ⁽¹⁾: 5.04 0 0 3.71 0 0 0 0.31 0

TVOC Trigger Value ⁽²⁾: 0.6 0.6 0.6 0.6 1.5 1.5 1.5 1.5 1.5

Note: Outpost wells OW2-1 and OW2-2 were not sampled by Northrop Grumman this round, due to ongoing NYSDEC investigation of non-site related VOCs (benzene and methyl tertiary butyl ether) detected in these wells.

⁽¹⁾ Site-related VOCs were established in the Public Water Supply Contingency Plan (PWSCP) (ARCADIS G&M, Inc. 2003).

⁽²⁾ TVOC Trigger Values were established in the PWSCP (ARCADIS G&M, Inc. 2003).

⁽³⁾ The TVOC Trigger Value for Cluster 1 was initially exceeded on April 23, 2004; confirmatory sampling and reporting was conducted as per the PWSCP (ARCADIS G&M, Inc. 2003)

ug/L
Bold Micrograms per liter
 Constituent detected
 TVOC Total Volatile Organic Compounds
 J Constituent value is estimated

