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ENVIRONMENT

Mr. Henry Wilkie
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015

Subject:
Results of Second Quarter 2015 Groundwater Monitoring,
Operable Unit 2, Northrop Grumman Systems Corporation and Naval Weapons Industrial Reserve Plant (NWIRP) Sites, Bethpage, New York.
(NYSDEC Site #s 1-30-003A and B)

Date:
August 28, 2015

Contact:
David Stern

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Our ref:
NY001496.314I.GWMI4

Dear Mr. Wilkie:

On behalf of Northrop Grumman Systems Corporation (Northrop Grumman), ARCADIS is providing the NYSDEC with the validated results of Operable Unit 2 (OU2) groundwater monitoring, performed in accordance with the approved Groundwater Monitoring Plan (ARCADIS of New York, Inc. 2014) and the Public Water Supply Contingency Plan (PWSCP) (ARCADIS G&M, Inc. 2003). Table 1 summarizes OU2 remedial system performance operational data and water balance. Tables 2 through 5 provide the validated 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 of New York, Inc.

David E. Stern
Senior Hydrogeologist

Enclosures

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Table 1. Operational Summary for the On-Site Portion of the Operable Unit 2 Groundwater Remedy, Second Quarter 2015, Northrop Grumman Systems Corporation, Bethpage, New York. [1]

	Quarterly Flow Rates (gpm)		Quarterly Flow Volumes (MG)			Quarterly VOC Concentrations (µg/L)		VOC Mass Removed (lbs) [7]
	Design [2]	Average [3,4,15]	Design [2]	Actual [3,4]	% of Design	TCE [5]	TVOC [5,6]	Quarterly
Influent Groundwater								
Well 1	800	782	104.8	101.4	97%	748	790	669
Well 3R [12]	700	909	91.7	118.0	129%	533	600	579
Well 17 [11]	1,000	993	131.0	119.8	91%	191	240	235
Well 18 [13]	600	615	78.6	66.0	84%	58	82	44
Well 19	700	726	91.7	87.6	96%	174	210	150
Total	3,800	4,025	498	493	99%	--	--	1,677
Effluent Groundwater [8]								
Calpine	100 - 400	312	--	40.9	--	--	--	--
OXY Biosparge [10]	2 - 42	3.8	--	0.5	--	--	--	--
West Recharge Basins	1,112 - 1,455	1,407	--	184.4	--	--	1.32	--
South Recharge Basins [14]	2,231	2,038	292.4	267.0	91%	--	1.43	--
Total Effluent Groundwater	--	3,761	--	493	--	--	--	--
Additional Flow to South Recharge Basins								
Storm Water Runoff Contributing to South Recharge Basins Flow Volume [16]				14.3				
Total Flow Volume to South Recharge Basins [17]			292.4	281.3	96%			
Treatment Efficiencies [9]								
Tower 96 System:	99.6%							
Tower 102 System:	>99.9%							

See footnotes on next page

Table 1. Operational Summary for the On-Site Portion of the Operable Unit 2 Groundwater Remedy, Second Quarter 2015, Northrop Grumman Systems Corporation, Bethpage, New York. (1)

Notes:

(1) Quarterly reporting period: April 06, 2015 through July 06, 2015

(2) "Design" flow rates were determined for the five remedial wells and for the South Recharge Basins based on computer modeling (ARCADIS G&M, Inc. 2003c, modified in April 2005). Flow rates for Calpine, OXY Biosparge and West Recharge Basins are typical flow rates and are provided for reader information. "Design" flow volumes represent the volume of water that should be pumped/discharged during the reporting period and is calculated by multiplying the design rate by the reporting period duration.

(3) "Average" flow rates for the remedial wells represent the average actual pumping rates when the pumps are operational and do not take into account the time that a well is not operational. During this reporting period, the remedial wells operated for the following percentage of the time: Well 1 (99%), Well 3R (99%), Well 17 (92%), Well 18 (82%), and Well 19 (92%). "Actual" volumes are determined via totalizing flow meters.

(4) "Average" flow rates for the system discharges represent the average flow rate during the entire reporting period and are determined by dividing the total flow during the reporting period by the reporting period duration. The Calpine and South Recharge Basins flow volumes are determined via totalizing flow meters. The West Recharge Basin flow is calculated by subtracting the cumulative flow to the other discharges from the total influent flow. Actual flow to the recharge basins are greater than shown because storm water combines with the plant effluent prior to discharge to the recharge basins.

(5) The TCE and TVOC concentrations for the remedial wells are from the quarterly sampling event performed during this reporting period on May 5, 2015 (Table 2).

(6) The TVOC concentration for the two sets of recharge basins are their respective average monthly SPDES concentration for the current quarter.

(7) TVOC mass removed for the reporting period is calculated by multiplying the TVOC concentration from the quarterly sampling event and the quantity of water pumped during the reporting period.

(8) There are five discharges for the effluent groundwater: South Recharge Basins, West Recharge Basins, Calpine, OXY Biosparge system, and minor losses (pipe loss, irrigation use). Treated water is continuously discharged to the south and west recharge basins, and is available "on-demand" to both the Calpine Power Plant (Calpine) for use as make-up water, and the biosparge remediation system operated by Occidental Chemical (OXY Biosparge).

(9) Treatment System Efficiencies are calculated by dividing the difference between the influent and effluent TVOC concentrations by the influent concentration.

(10) The flow rate and volume for OXY Biosparge (Occidental Chemical) were estimated based on the average pumping rate calculated from data from April 2007 through March 2012.

(11) Well 17 had multiple shutdowns during the weekends of April 12, May 16 through 17 and May 29 through 31, 2015 due to leakage on pneumatic lines and communication failures at the Tower 102 System.

(12) A Well 3R pilot study was started on July 14, 2014 in an effort to increase the VOC mass removal through an increased pumping rate to approximately 1,000 gpm. The TVOC concentration and mass removal have increased since the initiation of the pilot study. On April 3, 2015 Well 3R flow rate was decreased to approximately 900 gpm to eliminate the increasing trend of TVOC concentration at Tower 96 effluent. Well 3R was brought online December 2013 to replace Well 3 due to decreasing specific capacity at Well 3 indicative of imminent well failure.

(13) Well 18 had multiple shutdowns during the weekends of April 12, May 16 through 17 and May 29 through 31, 2015 due to leakage on pneumatic lines and communication failures at the Tower 102 System. In addition, Well 18 was shutdown from May 19 through May 27, 2015 due to the VFD electrical panel failure and to installation of a new VFD panel.

(14) Actual Effluent Groundwater Flow into South Recharge Basin is lower than design due to lower flow rate from remedial Wells 17 and 18 and increased Calpine consumption. The weir flow meter was noted to under-record and its calibration is scheduled.

(15) Total pumpage/recharge rates are accurate to -/+ 15% due to limitations in metering. Flowmeter calibration is scheduled.

(16) Storm Water Runoff Volume is calculated by multiplying the adjusted tributary area and NOAA precipitation data for the reporting period. The adjusted tributary area is tributary area that is adjusted by the runoff coefficient to exclude the infiltration volume from the total rainfall volume. The tributary area, runoff coeficient, and adjusted tributary area are from Dvirka and Bartilucci Consulting Engineers' Storm Water Permit Evaluation Report (January, 28, 2010). The NOAA precipitation data are calculated as a sum of NOAA daily precipitation data for the reporting period. NOAA precipitation data are retrived from Station GHCND:USW00054787 - FARMINGDALE REPUBLIC AIRPORT, NY US.

(17) Total Flow Volume to South Recharge Basins is estimated as a sum of flow volumes contributed from the Effluent Groundwater to South Recharge Basins and from Storm Water Runoff to South Recharge Basins.

Acronyms:

--	Not Available or Not Applicable	TCE	Trichloroethene	NOAA	National Oceanic and Atmospheric Administration
TVOC	Total Volatile Organic Compounds	lbs	pounds		
µg/L	micrograms per liter	MG	Million Gallons		
VOC	Volatile Organic Compounds	VFD	Variable Frequency Drive		
gpm	gallons per minute	SPDES	State Pollutant Discharge Elimination System		

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Table 2. Concentrations of Volatile Organic Compounds in Groundwater Remedial Wells and Treatment Systems, Second Quarter 2015, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

Constituent (Units in µg/L	Well: Sample ID: Date:	WELL 1 WELL 1 5/5/2015	WELL 3R WELL 3R 5/5/2015	96 EFFLUENT T96 EFFLUENT (GW) 5/5/2015	WELL 17 WELL 17 5/5/2015	WELL 18 WELL 18 5/5/2015	WELL 18 EP-050515-PR 5/5/2015	WELL 19 WELL 19 5/5/2015	102 EFFLUENT T102 EFFLUENT (GW) 5/5/2015
1,1,1-Trichloroethane		<5.0	<4.0	<1.0	**0.51 J**	**0.71 J**	**0.71 J**	**0.44 J**	<1.0
1,1,2,2-Tetrachloroethane		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		<5.0	<4.0	<1.0	**1.2**	**1.3**	**1.1**	**0.87 J**	<1.0
1,1-Dichloroethene		<5.0	**3.6 J**	<1.0	**2.5**	**3.9**	**3.4**	**1.6**	<1.0
1,2-Dichloroethane		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	**0.42 J**	<1.0
1,2-Dichloropropane		**5**	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)		<50	<40	<10	<10	<10	<10	<10	<10
2-Hexanone (MBK)		<25	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-methyl-2-pentanone (MIK)		<25	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone		<50	<40	<10	<10	<10	<10	<10	<10
Benzene		<2.5	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane		<10	<8.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide		<10	<8.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon tetrachloride		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform		<5.0	<4.0	<1.0	**0.38 J**	<1.0	**0.21 J**	**0.51 J**	<1.0
Chloromethane		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene		**4.6 J**	**6.9**	<1.0	**4.3**	**2.2**	**2**	**20.9**	<1.0
cis-1,3-dichloropropene		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride		<10	<8.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 J
Styrene		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		**31**	**34.1**	<1.0	**33.3**	**14.2**	**14.1**	**7.3**	<1.0
Toluene		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-dichloropropene		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethylene		**748**	**533**	**2.6**	**191**	**57.9**	**53**	**174**	<1.0
Trichlorotrifluoroethane (Freon 113)		**2.8 J**	**3.5 J**	<5.0	**4.7 J**	**1.7 J**	**1.6 J**	**1.1 J**	<5.0
Vinyl Chloride		<5.0	**18.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene-o		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes - m,p		<5.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs (1)		**790**	**600**	**2.6**	**240**	**82**	**76**	**210**	0

Notes and Abbreviations:

(1) Results rounded to two significant figures.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2014).

Bold	Constituent detected
VOCs	Volatile Organic Compounds
µg/L	Micrograms per liter
J	Constituent value is estimated
REP	Field replicate
<5.0	Compound not detected above its laboratory quantification limit.
OU2	Operable Unit 2

Table 3. Concentrations of Volatile Organic Compounds in Monitoring Wells,
Second Quarter 2015, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in µg/L)	Well: / Sample ID: / Date:	FW-03 / FW-03 / 6/2/2015	FW-03 / REP060215PP1 / 6/2/2015	GM-13D / GM-13D / 4/21/2015	GM-13D / REP042115KV1 / 4/21/2015	GM-15S[1] / GM-15S / 4/30/2015	GM-15D / GM15D / 5/7/2015	GM-15D2 / GM15D2 / 5/7/2015	GM-17I / GM-17I / 4/22/2015	GM-17D / GM-17D / 4/22/2015
1,1,1-Trichloroethane		**0.28 J**	<1.0	**1.7**	**1.8**	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		<1.0	<1.0	**5.4**	**5.6**	<1.0	<1.0	**0.22 J**	<1.0	<1.0
1,1-Dichloroethene		<1.0	<1.0	**9.2**	**9.4**	<1.0	<1.0	**0.85 J**	<1.0	<1.0
1,2-Dichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone		<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Hexanone		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-methyl-2-pentanone		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone		<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon tetrachloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform		<1.0	<1.0	**0.31 J**	**0.33 J**	<1.0	<1.0	**0.24 J**	<1.0	<1.0
Chloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene		<1.0	<1.0	**17**	**17.4**	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		**7.3**	**7.5**	**169**	**172**	<1.0	<1.0	**6.1**	<1.0	<1.0
Toluene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethylene		**2.4**	**2.2**	**66.3**	**68.8**	**1.7**	**0.34 J**	**9.7**	**1.7**	**0.33 J**
Trichlorotrifluoroethane (Freon 113		<5.0	<5.0	**2.6 J**	**2.6 J**	<5.0	<5.0	**1.0 J**	<5.0	<5.0
Vinyl Chloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene-o		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes - m,p		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs [3]		**10**	**9.7**	**270**	**280**	**1.7**	**0.34**	**18**	**1.7**	**0.33**

See notes on last page

Table 3. Concentrations of Volatile Organic Compounds in Monitoring Wells,
Second Quarter 2015, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in µg/L)	Well: / Sample ID: / Date:	GM-18I / GM-18I / 5/13/2015	GM-18D / GM-18D / 4/21/2015	GM-20I / GM-20I / 4/28/2015	GM-20D / GM-20D / 4/24/2015	GM-21S / GM-21S / 6/8/2015	GM-21I / GM-21I / 4/24/2015	GM-21D / GM-21D / 4/24/2015	GM-21D2[2] / GM-21D2 / 6/12/2015
1,1,1-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.8**
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**6.7**
1,1-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**13.8**
1,2-Dichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.46 J**
1,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone		<10	<10	<10	<10	<10	<10	<10	<10
2-Hexanone		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-methyl-2-pentanone		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone		<10	<10	<10	<10	<10	<10	<10	<10
Benzene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon tetrachloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.47 J**
Chloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**17.2**
cis-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**4.1**
Toluene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethylene		**0.36 J**	**0.87 J**	**0.60 J**	**1**	**0.88 J**	**0.62 J**	**2.6**	**109**
Trichlorotrifluoroethane (Freon 1		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**2.5 J**
Vinyl Chloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene-o		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes - m,p		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs [3]		**0.36**	**0.87**	**0.6**	**1**	**0.88**	**0.62**	**2.6**	**160**

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Table 3. Concentrations of Volatile Organic Compounds in Monitoring Wells,
Second Quarter 2015, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in µg/L)	Well: / Sample ID: / Date:	GM-33D2 / GM-33D2 / 6/8/2015	GM-34D / GM-34D / 4/27/2015	GM-34D2 / GM-34D2 / 4/27/2015	GM-35D2 / GM35D2 / 5/12/2015	GM-36D / GM-36D / 4/28/2015	GM-36D2 / GM-36D2 / 4/28/2015	GM-37D / GM-37D / 5/1/2015	GM-37D2 / GM-37D2 / 4/29/2015
1,1,1-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	**0.42 J**	<1.0	<1.0
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		<1.0	**0.64 J**	<1.0	<1.0	<1.0	**0.66 J**	**0.61 J**	**1.9**
1,1-Dichloroethene		<1.0	**3.8**	**0.78 J**	<1.0	<1.0	**0.60 J**	<1.0	**0.77 J**
1,2-Dichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone		<10	<10	<10	<10	<10	<10	<10	<10
2-Hexanone		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-methyl-2-pentanone		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone		<10	<10	<10	<10	<10	<10	<10	<10
Benzene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon tetrachloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0 J	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform		<1.0	**0.65 J**	**0.19 J**	<1.0	<1.0	**0.21 J**	<1.0	**0.26 J**
Chloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene		<1.0	**9.7**	**2.8**	**0.43 J**	<1.0	<1.0	<1.0	**0.64 J**
cis-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		**4**	**9**	**8.3**	**6.8**	<1.0	<1.0	<1.0	**0.68 J**
Toluene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethylene		**16.6**	**403 D**	**148**	**78.9**	<1.0	**2.6**	**0.66 J**	**2.3**
Trichlorotrifluoroethane (Freon 113)		**5.3**	**9.4**	**1.1 J**	**1.1 J**	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene-o		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes - m,p		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs (3)		**26**	**440**	**160**	**87**	0	**4.5**	**1.3**	**6.6**

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Table 3. Concentrations of Volatile Organic Compounds in Monitoring Wells,
Second Quarter 2015, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in µg/L)	Well: / Sample ID: / Date:	GM-38D / GM38D / 5/8/2015	GM-38D2 / GM38D2 / 5/8/2015	GM-39DA / GM-39DA / 4/23/2015	GM-39DB / GM-39DB / 4/23/2015	GM-70D2 / GM-70D2 / 6/25/2015	GM-71D2 / GM71D2 / 5/12/2015	GM-73D / GM-73D / 4/17/2015	GM-73D2 / GM-73D2 / 4/17/2015	GM-73D3 (2) / GM-73D3 / 5/17/2015
1,1,1-Trichloroethane		**0.40 J**	**0.36 J**	<1.0	<1.0	<1.0	**1.9**	<1.0	**0.26 J**	<1.0
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		**0.87 J**	**2.5**	<1.0	<1.0	<1.0	**5.9**	<1.0	**0.68 J**	<1.0
1,1-Dichloroethene		**0.75 J**	**0.71 J**	<1.0	<1.0	<1.0	**3**	<1.0	**0.98 J**	<1.0
1,2-Dichloroethane		**0.62 J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone		<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Hexanone		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-methyl-2-pentanone		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone		<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon tetrachloride		<1.0	<1.0	<1.0	<1.0	<1.0	**0.33 J**	<1.0	<1.0	<1.0
Chlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform		<1.0	**0.46 J**	<1.0	<1.0	<1.0	**0.61 J**	<1.0	**0.26 J**	<1.0
Chloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene		**0.73 J**	**0.72 J**	<1.0	<1.0	<1.0	**0.76 J**	<1.0	**0.70 J**	<1.0
cis-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		**5.5**	<1.0	<1.0	<1.0	**3.1**	<1.0	<1.0	**1.9**	**0.83 J**
Toluene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethylene		**175 J**	**29.8**	**1**	**43.9**	**10.3**	**11**	**11.1**	**46.7**	**1.7**
Trichlorotrifluoroethane (Freon 11:		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene-o		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes - m,p		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs (3)		**180**	**35**	**1**	**44**	**13**	**24**	**11**	**51**	**2.5**

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Table 3. Concentrations of Volatile Organic Compounds in Monitoring Wells,
Second Quarter 2015, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in µg/L)	Well: / Sample ID: / Date:	GM-74I GM74I 4/21/2015	GM-74D GM-74D 4/23/2015	GM-74D2 GM-74D2 4/23/2015	GM-74D3[2] GM-74D3 6/13/2015	GM-75D2 GM-75D2 6/4/2015	GM-78S GM-78S 6/1/2015	GM-78I GM-78I 6/1/2015	GM-78D[2] GM-78D 6/12/2015	GM-78D2[2] GM-78D2 6/12/2015
1,1,1-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		<1.0	<1.0	**0.43 J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene		<1.0	<1.0	**0.68 J**	**0.52 J**	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone		<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Hexanone		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-methyl-2-pentanone		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone		<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon tetrachloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform		<1.0	<1.0	**0.24 J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene		<1.0	<1.0	<1.0	**0.32 J**	<1.0	<1.0	<1.0	**0.29 J**	<1.0
cis-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		<1.0	<1.0	**3.1**	**3.8**	**1.2**	<1.0	<1.0	<1.0	<1.0
Toluene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethylene		**0.76 J**	**1**	**7.2**	**6.2**	**23.9**	**0.57 J**	**0.39 J**	**2.5**	**0.96 J**
Trichlorotrifluoroethane (Freon 11		<5.0	<5.0	**0.67 J**	**0.65 J**	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene-o		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes - m,p		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs [3]		**0.76**	**1**	**12**	**12**	**25**	**0.57**	**0.39**	**2.8**	**0.96**

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Table 3. Concentrations of Volatile Organic Compounds in Monitoring Wells,
Second Quarter 2015, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in µg/L)	Well: / Sample ID: / Date:	GM-79I / GM-79I / 4/22/2015	GM-79D / GM-79D / 6/13/2015	HN-24I / HN-24I / 6/2/2015	HN-40S / HN-40S / 4/20/2015	HN-40I / HN-40I / 4/20/2015	HN-42S / HN-42S / 4/20/2015	HN-42I / HN-42I / 4/27/2015	MW-3-1[2] / MW-3-1 / 6/5/2015
1,1,1-Trichloroethane		<1.0	<1.0	**1.1**	<1.0	<1.0	<1.0	<1.0	**0.57 J**
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		<1.0	<1.0	**1.9**	<1.0	<1.0	<1.0	<1.0	**2.5**
1,1-Dichloroethene		<1.0	<1.0	**8.4**	<1.0	<1.0	<1.0	<1.0	**1.3**
1,2-Dichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone		<10	<10	<10	<10	<10	<10	<10	<10
2-Hexanone		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-methyl-2-pentanone		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone		<10	<10	<10	<10	<10	<10	<10	<10
Benzene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon tetrachloride		<1.0	<1.0	**0.44 J**	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform		<1.0	<1.0	**1.4**	**1.7**	<1.0	<1.0	<1.0	**0.27 J**
Chloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene		<1.0	**0.40 J**	**0.90 J**	<1.0	<1.0	<1.0	<1.0	**6.8**
cis-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		<1.0	<1.0	**32.9**	<1.0	<1.0	<1.0	<1.0	**11.6**
Toluene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethylene		<1.0	**18**	**18.9**	<1.0	<1.0	<1.0	**0.56 J**	**67.6**
Trichlorotrifluoroethane (Freon 113		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**4.8**
Xylene-o		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes - m,p		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs [3]		0	**18**	**66**	**1.7**	0	0	**0.56**	**95**

Table 3. Concentrations of Volatile Organic Compounds in Monitoring Wells,
Second Quarter 2015, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in µg/L)	Well: / Sample ID: / Date:	N-10624 / N-10624 / 6/4/2015	N-10627 / N-10627 / 6/4/2015	N-10631 / N-10631 / 6/8/2015	TT-101D / TT-101D / 5/26/2015	TT-101D1 / TT-101D1 / 5/26/2015	TT-101D2 / TT-101D2 / 5/26/2015
1,1,1-Trichloroethane		<1.0	<1.0	<1.0	**0.46 J**	**0.65 J**	<5.0
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	**0.26 J**	**0.51 J**	<5.0
1,1-Dichloroethane		<1.0	<1.0	<1.0	**0.95 J**	**0.92 J**	<5.0
1,1-Dichloroethene		<1.0	<1.0	<1.0	**4.1**	**4**	**4.0 J**
1,2-Dichloroethane		<1.0	<1.0	<1.0	**0.27 J**	<1.0	<5.0
1,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
2-Butanone		<10	<10	<10	<10	<10	<50
2-Hexanone		<5.0	<5.0	<5.0	<5.0	<5.0	<25
4-methyl-2-pentanone		<5.0	<5.0	<5.0	<5.0	<5.0	<25
Acetone		<10	<10	<10 B	<10	<10	<50
Benzene		<0.50	<0.50	<0.50	<0.50	<0.50	<2.5
Bromodichloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Bromoform		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Bromomethane		<2.0	<2.0	<2.0	<2.0	<2.0	<10
Carbon Disulfide		<2.0	<2.0	<2.0	<2.0	<2.0	<10
Carbon tetrachloride		<1.0	<1.0	<1.0	<1.0	**1.6**	<5.0
Chlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Chloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Chloroform		<1.0	<1.0	<1.0	**0.56 J**	**0.93 J**	**1.6 J**
Chloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
cis-1,2-dichloroethene		<1.0	<1.0	<1.0	**3.6**	**2.2**	**2.5 J**
cis-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Dibromochloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Methylene Chloride		<2.0	<2.0	<2.0	<2.0	<2.0	<10
Styrene		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Tetrachloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Toluene		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
trans-1,2-dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
trans-1,3-dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Trichloroethylene		<1.0	**0.37 J**	**1**	**76.3**	**162**	**524**
Trichlorotrifluoroethane (Freon 11:		<5.0	<5.0	<5.0	**17.3**	**9**	**12.4 J**
Vinyl Chloride		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Xylene-o		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Xylenes - m,p		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Total VOCs (3)		0	**0.37**	**1**	**100**	**180**	**550**

Notes and Abbreviations:

(1) Due to technical issues with the dedicated sampling and packer system, a groundwater sample was not collected for GM-15I during the second quarter round.

(2) Supplememtal wells GM-21D2, GM-73D3, GM-74D3, GM-78D , GM-78D2 and MW3-1 were sampled during the Second Quarter 2015 as per the recommendation from " *2014 Annual Groundwater Monitoring Report, ARCADIS, March 30, 2015* ".

(3) Total VOCs rounded to two significant figures.

Bold	Constituent detected
J	Constituent value is estimated
D	Concentration is based on a diluted sample analysis
REP	Replicate Sample
µg/L	Micrograms per liter
VOCs	Volatile Organic Compounds
<5.0	Compound not detected above its laboratory quanitfication limit.

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Table 4. Concentrations of Metals in Monitoring Wells,
Second Quarter 2015, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in mg/L)	Well: / Sample ID: / Date:	GM-15S / GM-15S / 4/30/2015	GM-78I / GM-78I / 6/1/2015	GM-78S / GM-78S / 6/1/2015	MW-01GF / MW-1GF / 4/30/2015	MW-02GF / MW-2GF / 4/30/2015	MW-02GF / REP043015KV1 / 4/30/2015	N-10631 / N-10631 / 6/8/2015	PLT1 MW-04 / PLT1 MW04 / 4/30/2015	PLT1 MW-05 / PLT1 MW05 / 4/30/2015	PLT1 MW-06 / PLT1 MW-06 / 4/30/2015
Cadmium		--	<3.0	<3.0	<3.0	<3.0	<3.0	**18.2**	--	--	--
Cadmium (Dissolved)		--	<3.0	<3.0	<3.0	<3.0	<3.0	**17.2**	--	--	--
Chromium		**781**	<10	<10	<10	**25.7**	**25.1**	**13.1**	<10	**618**	**185**
Chromium (Dissolved)		**767**	<10	<10	<10	**22.2**	**22.5**	<10	<10	**623**	**188**

Notes and Abbreviations:

Bold Constituent detected
mg/L Milligrams per liter
-- Not analyzed
<3.0 Compound not detected above its laboratory quanitfication limit.

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Table 5. Concentrations of Site Related Volatile Organic Compunds in Outpost Wells,
Second Quarter 2015, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in µg/L)	Well: / Sample ID: / Date:	BPOW 1-1 / BPOW 1-1 / 5/27/2015	BPOW 1-2 / BPOW 1-2 / 5/27/2015	BPOW 1-3 / BPOW 1-3 / 5/21/2015	BPOW 1-4 [1] / BPOW 1-4 / 5/27/2015	BPOW 1-5 [1] / BPOW 1-5 / 5/29/2015	BPOW 1-6 [1] / BPOW 1-6 / 6/2/2015	BPOW 2-1 / BPOW 2-1 / 5/21/2015
1,1,1-Trichloroethane		**0.26 J**	**0.18 J**	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane		**0.14 J**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethene		**0.34 J**	**0.15 J**	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chlorobenzene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform		<0.50 B	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorotrifluoroethane (Freon 113)		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethene		**0.97**	**0.45 J**	<0.50	<0.50	<0.50	<0.50	<0.50
Total Site-Related VOCs [4]:		**1.7 [5]**	**0.78 [5]**	0	0	0	0	0
TVOC Trigger Value [7]:		**0.6**	**0.6**	**0.6**	**NE**	**NE**	**NE**	**NE**

See notes on last page

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Table 5. Concentrations of Site Related Volatile Organic Compunds in Outpost Wells,
Second Quarter 2015, Operable Unit 2, Northrop Grumman Systems Corporation, Bethpage, New York.

CONSTITUENT (Units in µg/L)	Well: / Sample ID: / Date:	BPOW 2-2 / BPOW 2-2 / 5/22/2015	BPOW 2-3 (1) / BPOW 2-3 / 5/22/2015	BPOW 3-1 / BPOW 3-1 / 5/29/2015	BPOW 3-3 (1) (2) / BPOW 3-3 / 6/9/2015	BPOW 3-4 (1) / BPOW 3-4 / 6/9/2015	BPOW 3-4(1) / REP060915AM1 / 6/9/2015	BPOW 4-1R(3) / BPOW 4-1R / 6/3/2015	BPOW 4-2R(3) / BPOW 4-2R / 6/3/2015
1,1,1-Trichloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane		<0.50	<0.50	<0.50	<0.50	**0.58**	**0.61**	<0.50	<0.50
1,1-Dichloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethene		<0.50	<0.50	<0.50	<0.50	**0.5**	**0.49 J**	**0.30 J**	**0.29 J**
1,2-Dichloroethane		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.13 J**	**0.099 J**
Carbon Tetrachloride		<0.50	<0.50	<0.50	<0.50	**0.87**	**0.86**	**0.11 J**	<0.50
Chlorobenzene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform		<0.50	<0.50	<0.50	<0.50	**1**	**1.1**	<0.50 B	<0.50
cis-1,2-Dichloroethene		<0.50	<0.50	<0.50	<0.50	**0.87**	**0.79**	**0.20 J**	**0.14 J**
Trichlorotrifluoroethane (Freon 11:		<1.0	<1.0	<1.0	<1.0	**0.67 J**	**0.77 J**	**6.3 J**	**4.2**
Tetrachloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethene		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethene		<0.50	<0.50	<0.50	<0.50	**52.9 D**	**52.5 D**	**0.58**	**0.82**
Total Site-Related VOCs (4) :		0	0	0	0	**57**	**57**	**7.6(6)**	**5.6**
TVOC Trigger Value (7) :		**NE**	**NE**	**1.5**	**NE**	**NE**	**NE**	**1.5**	**1.5**

Notes and Abbreviations:

Samples analyzed for site related VOCs per the PWSCP (ARCADIS G&M, Inc. 2003) using USEPA Method 524.2

(1) Wells BPOW1-4, BPOW1-5, BPOW1-6, BPOW 2-3, BPOW3-3, and BPOW3-4 are currently monitored by Northrop Grumman on a voluntary basis. The screen intervals for these wells were selected by the Navy based on data obtained from vertical profile borings VP-127 (BPOW-1 cluster) and VP-128 (BPOW-3 cluster).

(2) Due to technical issues with the dedicated sampling system, a groundwater sample could not be collected for BPOW 3-2 during the second quarter round.

(3) The NAVY abandoned original Wells BPOW4-1 and BPOW4-2 and installed replacement Wells BPOW4-1R and BPOW4-2R between August, 2014 and October, 2014.

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

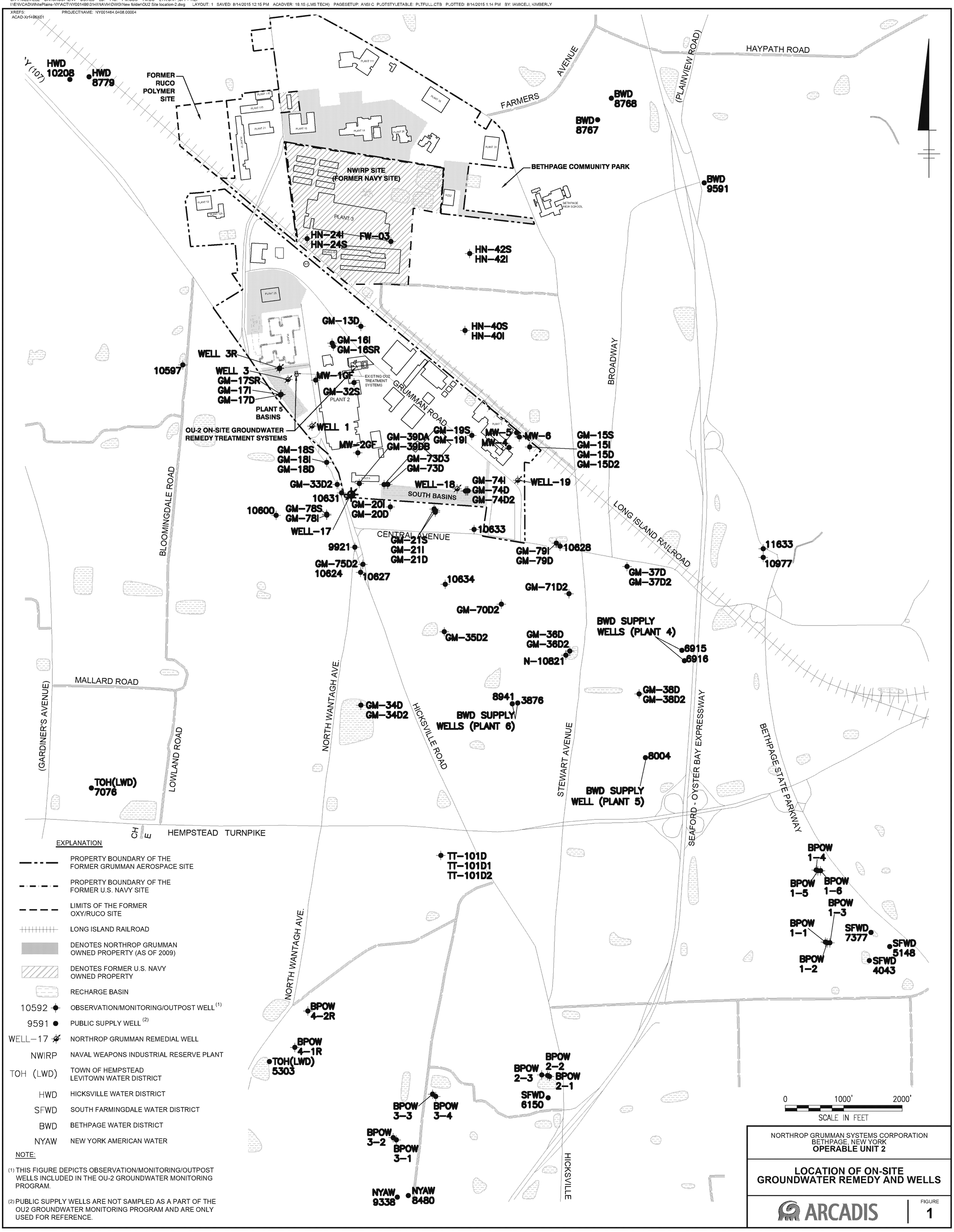
(5) The TVOC Trigger Value for Cluster 1 was initially exceeded on April 23, 2004; confirmatory sampling and reporting was conducted as per the PWSCP (ARCADIS G&M, Inc. 2003).

(6) The TVOC Trigger Value for BPOW 4-1 was initially exceeded on March 1, 2012; confirmatory sampling and reporting was conducted as per the PWSCP (ARCADIS G&M, Inc. 2003).

(7) TVOC Trigger Values were established for Wells BPOW1-1, BPOW1-2, BPOW1-3, BPOW3-1, BPOW3-2, BPOW4-1, and BPOW4-2 in the PWSCP (ARCADIS G&M, Inc. 2003).
BPOW 4-1R and BPOW 4-2R uses the same trigger value originally established for BPOW 4-1 and 4-2.
Established trigger values have been previously exceeded (except for BPOW 3-1 and BPOW 3-2) and no longer apply as the goal of the PWSCP has been met.

Total Site-Related VOCs rounded to two significant figures.

Bold Bold value indicates constituent detected.
J Constituent value is estimated
D Concentration is based on a diluted sample analysis
B Blank Contamination
NE Not Established
REP Replicate Sample
TVOCs Total Volatile Organic Compounds
USEPA United States Environmental Protection Agency
VOC Volatile Organic Compounds
µg/L micrograms per liter
<0.5 Compound not detected above its laboratory quantification limit.



EXPLANATION

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE SITE
- PROPERTY BOUNDARY OF THE FORMER U.S. NAVY SITE
- LIMITS OF THE FORMER OXY/RUCO SITE
- LONG ISLAND RAILROAD
- DENOTES NORTHROP GRUMMAN OWNED PROPERTY (AS OF 2009)
- DENOTES FORMER U.S. NAVY OWNED PROPERTY
- RECHARGE BASIN
- 10592 — OBSERVATION/MONITORING/OUTPOST WELL (1)
- 9591 — PUBLIC SUPPLY WELL (2)
- WELL-17 — NORTHROP GRUMMAN REMEDIAL WELL
- NWIRP — NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
- TOH (LWD) — TOWN OF HEMPSTEAD LEVITOWN WATER DISTRICT
- HWD — HICKSVILLE WATER DISTRICT
- SFWD — SOUTH FARMINGDALE WATER DISTRICT
- BWD — BETHPAGE WATER DISTRICT
- NYAW — NEW YORK AMERICAN WATER

NOTE:

(1) THIS FIGURE DEPICTS OBSERVATION/MONITORING/OUTPOST WELLS INCLUDED IN THE OU-2 GROUNDWATER MONITORING PROGRAM.

(2) PUBLIC SUPPLY WELLS ARE NOT SAMPLED AS A PART OF THE OU2 GROUNDWATER MONITORING PROGRAM AND ARE ONLY USED FOR REFERENCE.

NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK
OPERABLE UNIT 2

LOCATION OF ON-SITE GROUNDWATER REMEDY AND WELLS

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FIGURE 1