ARCADIS

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Mr. Steven Scharf
New York State Department of Environmental Conservation
Remedial Action, Bureau A
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7015

ENVIRONMENTAL

Subject:
Petition for Recommended Modifications to the Operable Unit 2 Groundwater Monitoring Plan, Northrop Grumman Corporation, Bethpage, New York (NYSDEC Site #1-30-003A).

Date:
3 June 2004

Contact:
David E. Stern

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(631) 391-5284

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dstern@arcadis-us.com

Our ref:
NY001348.0504.0001

Dear Mr. Scharf:

On behalf of Northrop Grumman Corporation (NGC), ARCADIS has prepared the enclosed Recommended Modifications to the Operable Unit 2 Groundwater Monitoring Plan to serve as the basis of our petition to the NYSDEC to modify the groundwater sampling frequency component of the currently-approved Draft-Final Operable Unit 2 (OU2) Groundwater Monitoring Plan (ARCADIS Geraghty & Miller, Inc. 2001), that was submitted to NYSDEC on May 11, 2001.

The recommendations were developed based on data developed from the current network, which consists of monitoring wells, remedial wells, and Industrial Well GP-3, for a grand total of 90 wells sampled for groundwater quality monitoring purposes. Groundwater sampling has been ongoing on a quarterly basis since the startup of the OU2 Groundwater Remedy in November 1998 (initially the OU2 groundwater interim remedial measure [IRM]). Before the startup of the IRM, groundwater sampling had been conducted in subsets of wells since 1994. Collectively, the period of record of groundwater quality monitoring data for the volatile organic compound (VOC) groundwater plume clearly demonstrates that a substantial amount of data has been collected and evaluated over the past decade. Furthermore, the recently-completed OU2 Hydraulic Effectiveness Evaluation Report (ARCADIS G&M, Inc. 2003) clearly demonstrated that the on-site portion of the OU2 Groundwater Remedy is effective in preventing the off-site migration of VOCs. ARCADIS therefore believes that modification of the groundwater sampling frequency as specified in Table 1 and on Figure 1 (enclosed) is warranted at this time.

ARCADIS is submitting this plan at this time to facilitate an expeditious review by the NYSDEC in advance of the next quarterly groundwater monitoring round (we anticipate that the Second Quarter 2004 Groundwater Monitoring round will commence during the week of June 21, 2004). We respectfully request that

NYSDEC review and approve the enclosed petition so the modifications can be implemented as soon as possible.

As always, if you have any questions or comments, please feel free to contact us.

Sincerely,

ARCADIS G&M, Inc.

David E. Stern
Senior Hydrogeologist

Carlo San Giovanni
Project Manager

Michael F. Wolfert
Project Director

Enclosures

Copies:
John Cofman, Northrop Grumman
Larry Leskovjan, Northrop Grumman

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Table 1. Rationale for Recommended Modifications to the Operable Unit 2 Groundwater Monitoring Plan, Northrop Grumman Corporation and Naval Weapons Industrial Reserve Plant Sites, Bethpage, New York. [1]

Well Location/Identification	Current Approved Monitoring Frequency [3]	Recommended Modified Monitoring Frequency	Rationale for Recommended Modified Monitoring Frequency
Upgradient Wells[2]			**General**
FW-03	Quarterly	Semiannual	- Trends have been established. - Active remediation of groundwater is not occurring in these areas. - Changes in groundwater quality over time are are expected to occur slowly. - Concentrations over short term indicative of plume heterogeneity.
GM-13D	Quarterly	Semiannual	
GM-14[4]	Quarterly	Semiannual	
GM-16SR	Quarterly	Semiannual	
GM-16I	Quarterly	Semiannual	
			Specific Wells
GM-23S	Semiannual	Discontinue	- Oxy is proposing monitoring of wells based on their recently completed OU3 groundwater investigation; Therefore, current well network (GM-23 and MW-52 clusters) is redundant and not needed.
GM-23I	Semiannual	Discontinue	
GM-32S	Quarterly	Semiannual	
HN-24I	Quarterly	Semiannual	
HN-29I	Quarterly	Semiannual	
HN-29D	Quarterly	Semiannual	
HN-40S	Quarterly	Semiannual	
HN-40I	Quarterly	Semiannual	
HN-42S	Quarterly	Semiannual	
HN-42I	Quarterly	Semiannual	
MW-1GF	Quarterly	Semiannual	
MW-2GF	Quarterly	Semiannual	
MW-52S	Semiannual	Discontinue	
MW-52I	Semiannual	Discontinue	
MW-52D	Semiannual	Discontinue	

See notes on last page.

Table 1. Rationale for Recommended Modifications to the Operable Unit 2 Groundwater Monitoring Plan, Northrop Grumman Corporation and Naval Weapons Industrial Reserve Plant Sites, Bethpage, New York. [1]

Well Location/Identification	Current Approved Monitoring Frequency [3]	Recommended Modified Monitoring Frequency	Rationale for Recommended Modified Monitoring Frequency
Site Southern Boundary Monitoring Wells [2]		***Modifications to Monitoring Frequency Are Not Recommended For These Wells At This Time***	General - Wells are key for monitoring the performance and effectiveness of the on-site portion of the OU2 groundwater remedy. - Continued monitoring of Cd/Cr at site southern boundary is needed and will continue on a quarterly basis to document compliance with NYSDEC SCGs.
GM-15S	Quarterly		
GM-15I	Quarterly		
GM-15D	Quarterly		
GM-15D2	Quarterly		
GM-17SR	Quarterly		
GM-17I	Quarterly		
GM-17D	Quarterly		
GM-18S	Quarterly		
GM-18I	Quarterly		
GM-18D	Quarterly		
GM-20I	Quarterly		
GM-20D	Quarterly		
GM-21S	Quarterly		
GM-21I	Quarterly		
GM-21D	Quarterly		
GM-33D2	Quarterly		
$GM\text{-}39D_A$	Quarterly		
$GM\text{-}39D_B$	Quarterly		
GM-73D	Quarterly		
GM-73D2	Quarterly		
GM-74I	Quarterly		
GM-74D	Quarterly		
GM-74D2	Quarterly		

See notes on last page.

Table 1. Rationale for Recommended Modifications to the Operable Unit 2 Groundwater Monitoring Plan, Northrop Grumman Corporation and Naval Weapons Industrial Reserve Plant Sites, Bethpage, New York. [1]

Well Location/Identification	Current Approved Monitoring Frequency [3]	Recommended Modified Monitoring Frequency	Rationale for Recommended Modified Monitoring Frequency
Site Southern Boundary [2] Monitoring Wells (continued)			**General** Same as above
GM-78S	Quarterly		
GM-78I	Quarterly		
GM-79I	Quarterly		
GM-79D	Quarterly		
PLT1MW-04	Quarterly		
PLT1MW-05	Quarterly		
PLT1MW-06	Quarterly		
MW-3R	Quarterly		
N-10631	Quarterly		
Remedial Wells			
GP-1	Quarterly		
ONCT-1	Quarterly		
ONCT-2	Quarterly		
ONCT-3	Quarterly		
Industrial Well			
GP-3	Quarterly		
		Modifications to Monitoring Frequency Are Not Recommended For These Wells At This Time	
Downgradient Wells [2]			**General**
N-10624	Quarterly	Semiannual	
N-10627	Quarterly	Semiannual	- Trends have been established.
GM-75D2	Quarterly	Quarterly	- Active remediation of groundwater is not currently occurring in these areas.
N-10634	Quarterly	Semiannual	- Changes in groundwater quality over time are expected to occur slowly.
GM-34D	Quarterly	Quarterly	- Concentrations over short term more indicative of plume heterogeneity.
GM-34D2	Quarterly	Quarterly	
GM-35D2	Quarterly	Quarterly	**Specific Wells**
GM-36D	Quarterly	Semiannual	- Monitoring of Wells GM-34D, GM-34D2, GM-35D2 and GM-75D2 will continue on a quarterly basis to develop additional data from the GM-75D2 area.
GM-36D2	Quarterly	Semiannual	
GM-37D	Quarterly	Semiannual	
GM-37D2	Quarterly	Semiannual	
GM-38D	Quarterly	Semiannual	
GM-38D2	Quarterly	Semiannual	
GM-70D2	Quarterly	Semiannual	
GM-71D2	Quarterly	Semiannual	

See notes on last page.

Table 1. Rationale for Recommended Modifications to the Operable Unit 2 Groundwater Monitoring Plan, Northrop Grumman Corporation and Naval Weapons Industrial Reserve Plant Sites, Bethpage, New York. [1]

Well Location/Identification	Current Approved Monitoring Frequency [3]	Recommended Modified Monitoring Frequency	Rationale for Recommended Modified Monitoring Frequency
Outpost Wells [2] [5]			**Outpost Wells**
BPOW 1-1	Quarterly		
BPOW 1-2	Quarterly		- Sampling will be conducted in accordance with the Public Water Supply Contingency Plan.
BPOW 1-3	Quarterly		
BPOW 2-1	Quarterly	***Modifications to Monitoring Frequency Are Not Recommended For These Wells At This Time***	
BPOW 2-2	Quarterly		
BPOW 3-1	Quarterly		
BPOW 3-2	Quarterly		
BPOW 4-1	Quarterly		
BPOW 4-2	Quarterly		

Notes

[1] Recommended modifications to the sampling component of the monitoring plan will be made to the NYSDEC-approved Draft-Final OU2 Groundwater Monitoring Plan, dated May 11, 2001. These modifications will be incorporated into the OU2 Operation, Maintenance, and Monitoring Plan. The current hydraulic network, as provided in the May 2001 Draft-Final OU2 Groundwater Monitoring Plan will not be modified at this time. The hydraulic monitoring network includes the majority of the above wells, plus the following wells: HN-24S, GM-19S, GM-19I, GM-79S, N-9921, N-10633, N-10821, N-10597, and N-10600. Associated changes to the Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP) will be made, as needed. NYSDEC DER-10 Category A Deliverables will be requested for all subsequent monitoring rounds.

[2] See Figure 1 for location of wells. The term Site includes NGC and NWIRP.

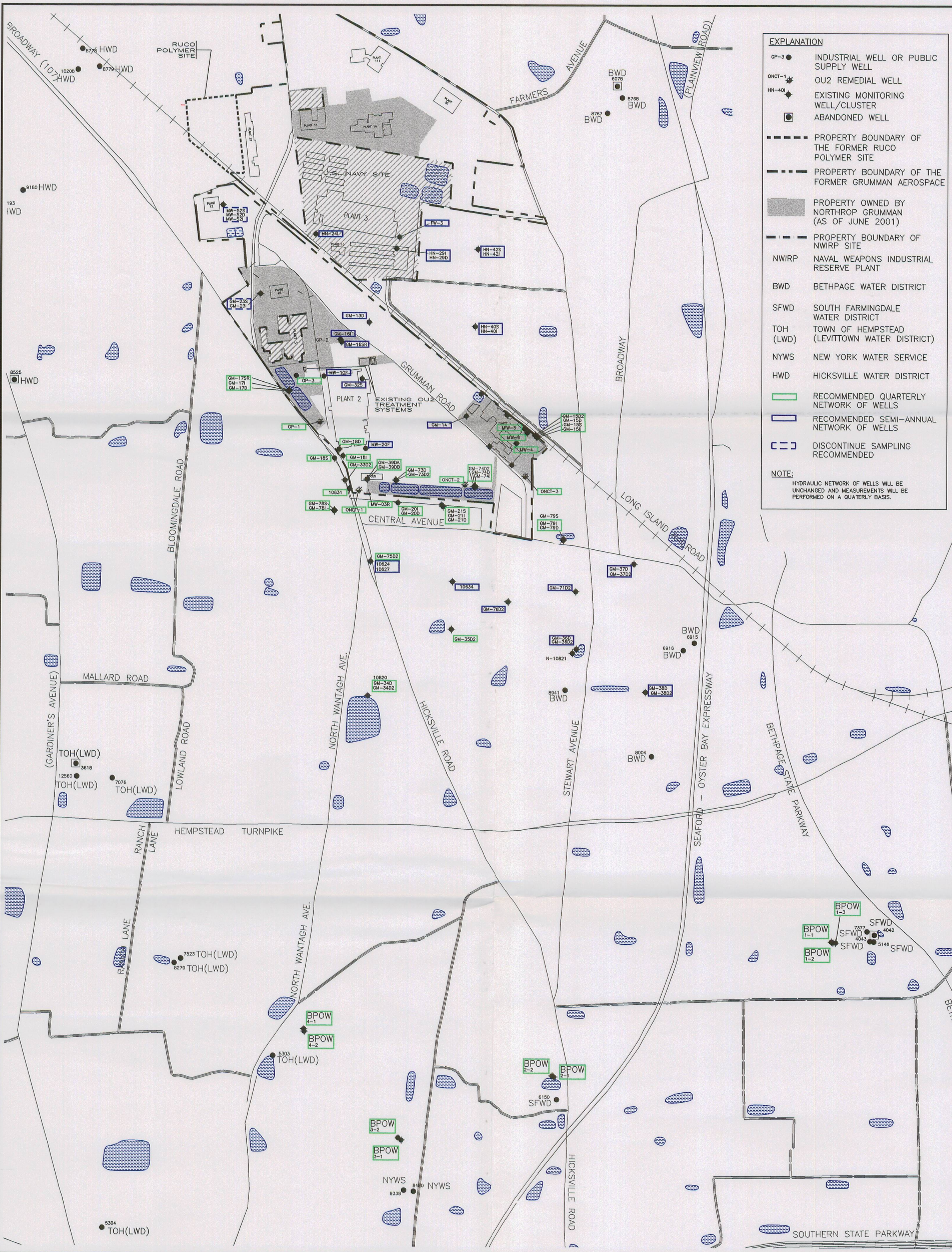
[3] Monitoring frequency is given on a per calendar year basis. Semi-annual basis wells will be monitored during the spring and fall of each calendar year.

[4] Well GM-14 is located downgradient of Plant 1 fuel depot and will be sampled only if light, non-aqueous phase liquid is not present.

[5] Outpost wells are downgradient of the Site and will be sampled on a quarterly basis with additional samples collected as required in accordance with the provisions of the PWSCP.

Definitions

OU2	Operable Unit 2 for Northrop Grumman Corporation/Naval Weapons Industrial Reserve Plant Sites.
VCM	Vinyl Chloride Monomer
OU3	Operable Unit 3 for Occidental Chemical/Ruco Corporation
NYSDEC	New York State Department of Environmental Conservation
SCG	Standards, Criteria, and Guidance, as specified in the OU2 Groundwater Feasibility Study (ARCADIS, Geraghty & Miller, Inc. 2000).
PWSCP	Public Water Supply Contingency Plan
NGC	Northrop Grumman Corporation
NWIRP	Naval Weapons Industrial Reserve Plant
Cd	Cadmium
Cr	Chromium



REV. ISSUED DATE DESCRIPTION

SEAL

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NORTHROP GRUMMAN CORP.
BETHPAGE, NEW YORK

RECOMMENDED MODIFICATIONS TO OPERABLE UNIT 2 GROUNDWATER MONITORING PLAN

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C. SANGIOVANNI	M. WOLFERT	A.G.	D. STERN
		TASK/PHASE NUMBER 0404.00004	DRAWN BY GS
		PROJECT NUMBER NY001348.0404	DRAWING NUMBER 1