

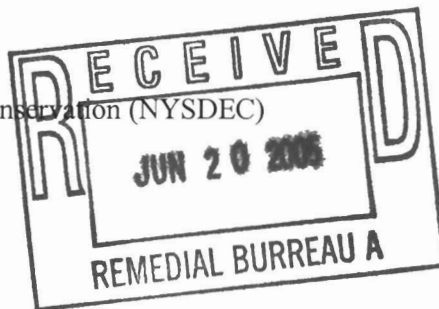
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Infrastructure, environment, buildings

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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:
First Quarter 2005 Groundwater Monitoring Data,
Bethpage Water District and Former Plant 2, Operable Unit 2,
Northrop Grumman Corporation, Bethpage, New York.

ENVIRONMENT

Dear Mr. Scharf:

Date:
15 June 2005

On behalf of Northrop Grumman Corporation (NGC), ARCADIS is providing the
NYSDEC with validated groundwater data for the First Quarter 2005 for the
Bethpage Water District monitoring wells. Table 1 summarizes volatile organic
compound (VOC) concentrations detected in groundwater samples. Figures 1
through 3 depict the trend in total VOC concentrations in groundwater.

Contact:
David E. Stern

Phone:
(631) 391-5284

Also provided are the results of the First Quarter 2005 monitoring for cadmium and
chromium (Cd/Cr) near former NGC Plant 2. Table 2 summarizes Cd/Cr
concentrations detected in groundwater samples during this period.

Email:
dstern@arcadis-us.com

Our ref:
NY001348.0405.00004

Please contact us if you have any questions or comments.

Sincerely,

ARCADIS G&M, Inc.

David E. Stern
Senior Scientist

Carlo San Giovanni
Project Manager

Enclosures

Copies:
J. Cofman - Northrop Grumman
J. Molloy - H2M

Part of a bigger picture

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Table 1. Concentrations of Volatile Organic Compounds Detected in Bethpage Water District Monitoring Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SITE:	GM-35D2	GM-35D2	GM-36D	GM-36D	GM-36D2	GM-36D2
	SAMPLE ID:	GM-35D2	GM-35D2H2M	GM-36D	GM-36DH2M	GM-36D2	GM-36D2H2M
	DATE:	3/28/2005	3/28/2005	3/30/2005	3/30/2005	3/30/2005	3/30/2005
	LAB/SAMPLER:	STL/ARC	H2M/ARC	STL/ARC	H2M/ARC	STL/ARC	H2M/ARC
Chloromethane		<5	<0.5	<5	<0.5	<5	<0.5
Bromomethane		<5	<0.5	<5	<0.5	<5	<0.5
Vinyl chloride		<2	<0.5	<2	<0.5	<2	<0.5
Chloroethane		<5	<0.5	<5	<0.5	<5	<0.5
Methylene chloride		<5	<0.5	<5	<0.5	<5	<0.5
Acetone		<10	--	<10	--	<10	--
Carbon disulfide		<5	--	<5	--	<5	--
1,1-Dichloroethene		2J	1.4	<5	<0.5	<5	<0.5
1,1-Dichloroethane		<5	<0.5	<5	<0.5	<5	<0.5
cis-1,2-Dichloroethene		4J	3.3	<5	<0.5	<5	<0.5
trans-1,2-Dichloroethene		<5	<0.5	<5	<0.5	<5	<0.5
Chloroform		<5	<0.5	<5	<0.5	<5	<0.5
1,2-Dichloroethane		<5	<0.5	<5	<0.5	<5	<0.5
2-Butanone		<10	--	<10	--	<10	--
1,1,1-Trichloroethane		<5	<0.5	<5	<0.5	<5	<0.5
Carbon tetrachloride		<5	<0.5	<5	<0.5	<5	<0.5
Bromodichloromethane		<5	<0.5	<5	<0.5	<5	<0.5
1,2-Dichloropropane		<5	<0.5	<5	<0.5	<5	<0.5
cis-1,3-Dichloropropene		<5	<0.5	<5	<0.5	<5	<0.5
Trichloroethene		330D	336D	9	8.1	<5	<0.5
Dibromochloromethane		<5	<0.5	<5	<0.5	<5	<0.5
1,1,2-Trichloroethane		<5	<0.5	<5	<0.5	<5	<0.5
Benzene		<0.7	<0.5	<0.7	<0.5	<0.7	<0.5
trans-1,3-Dichloropropene		<5	<0.5	<5	<0.5	<5	<0.5
Bromoform		<5	<0.5	<5	<0.5	<5	<0.5
4-Methyl-2-pentanone		<10	--	<10	--	<10	--
2-Hexanone		<10	--	<10	--	<10	--
Tetrachloroethene		8	6.6	0.7J	<0.5	<5	<0.5
1,1,1,2-Tetrachloroethane		<5	<0.5	<5	<0.5	<5	<0.5
Toluene		<5	<0.5	<5	<0.5	<5	<0.5
Chlorobenzene		<5	<0.5	<5	<0.5	<5	<0.5
Ethylbenzene		<5	<0.5	<5	<0.5	<5	<0.5
Styrene		<5	<0.5	<5	<0.5	<5	<0.5
Xylene (total)		<5	--	<5	--	<5	--
Vinyl Acetate		<5	--	<5	--	<5	--
Freon 113		9	--	<5	--	<5	--
Total VOCs		353	347.3	9.7	8.1	0	0

H2M Holmacher, McClendon & Murrell, P.C., Melville, NY.
 ARC ARCADIS G&M, Inc.
 STL Severn Trent Laboratories, Inc., Shelton Connecticut.
 ug/L Micrograms per liter
 J Estimated value
 D Constituent identified at a secondary dilution.
 -- Not analyzed
Bold Constituent detected above Method Detection Limit

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Table 1. Concentrations of Volatile Organic Compounds Detected in Bethpage Water District Monitoring Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SITE:	GM-37D	GM-37D	GM-37D2	GM-37D2	GM-38D	GM-38D
	SAMPLE ID:	GM-37D	GM-37DH2M	GM-37D2	GM-37D2H2M	GM-38D	GM-38DH2M
	DATE:	3/30/2005	3/30/2005	4/1/2005	4/1/2005	3/31/2005	3/31/2005
	LAB/SAMPLER:	STL/ARC	H2M/ARC	STL/ARC	H2M/ARC	STL/ARC	H2M/ARC
Chloromethane		<5	<0.5	<5	<0.5	<5	<0.5
Bromomethane		<5	<0.5	<5	<0.5	<5	<0.5
Vinyl chloride		<2	<0.5	<2	<0.5	<2	<0.5
Chloroethane		<5	<0.5	<5	<0.5	<5	<0.5
Methylene chloride		<5	<0.5	<5	<0.5	<5	<0.5
Acetone		<10	--	<10	--	<10	--
Carbon disulfide		<5	--	<5	--	<5	--
1,1-Dichloroethene		0.9J	<0.5	3J	1.3	5J	6.7
1,1-Dichloroethane		2J	0.8	7	5.3	3J	2.9
cis-1,2-Dichloroethene		<5	<0.5	<5	<0.5	2J	<0.5
trans-1,2-Dichloroethene		<5	<0.5	<5	<0.5	<5	<0.5
Chloroform		0.6J	<0.5	0.4J	<0.5	0.7J	1
1,2-Dichloroethane		<5	<0.5	<5	<0.5	<5	0.7
2-Butanone		<10	--	<10	--	<10	--
1,1,1-Trichloroethane		<5	0.7	3J	2.6	3J	4.3
Carbon tetrachloride		<5	<0.5	<5	<0.5	<5	0.9
Bromodichloromethane		<5	<0.5	<5	<0.5	<5	<0.5
1,2-Dichloropropane		<5	<0.5	<5	<0.5	<5	<0.5
cis-1,3-Dichloropropene		<5	<0.5	<5	<0.5	<5	<0.5
Trichloroethene		<5	<0.5	1J	0.7	830D	1010D
Dibromochloromethane		<5	<0.5	<5	<0.5	<5	<0.5
1,1,2-Trichloroethane		<5	<0.5	<5	<0.5	0.6J	<0.5
Benzene		<0.7	<0.5	<0.7	<0.5	<0.7	<0.5
trans-1,3-Dichloropropene		<5	<0.5	<5	<0.5	<5	<0.5
Bromoform		<5	<0.5	<5	<0.5	<5	<0.5
4-Methyl-2-pentanone		<10	--	<10	--	<10	--
2-Hexanone		<10	--	<10	--	<10	--
Tetrachloroethene		0.8J	<0.5	<5	<0.5	0.6J	1.1
1,1,2,2-Tetrachloroethane		<5	<0.5	<5	<0.5	<5	<0.5
Toluene		<5	<0.5	<5	<0.5	<5	<0.5
Chlorobenzene		<5	<0.5	<5	<0.5	<5	<0.5
Ethylbenzene		<5	<0.5	<5	<0.5	<5	<0.5
Styrene		<5	<0.5	<5	<0.5	<5	<0.5
Xylene (total)		<5	--	<5	--	<5	--
Vinyl Acetate		<5	--	<5	--	<5	--
Freon 113		<5	--	<5	--	0.9J	--
Total VOCs		4.3	1.5	14.4	9.9	845.8	1027.6

H2M Holmacher, McClendon & Murrell, P.C., Melville, NY.
 ARC ARCADIS G&M, Inc.
 STL Severn Trent Laboratories, Inc., Shelton Connecticut.
 ug/L Micrograms per liter
 J Estimated value
 D Constituent identified at a secondary dilution.
 -- Not analyzed
Bold Constituent detected above Method Detection Limit

Table 1. Concentrations of Volatile Organic Compounds Detected in Bethpage Water District Monitoring Wells, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SITE:	GM-38D2	GM-38D2	GM-70D2	GM-70D2	GM-71D2	GM-71D2
	SAMPLE ID:	GM-38D2	GM-38D2H2M	GM-70D2	GM-70D2H2M	GM-71D2	GM-71D2H2M
	DATE:	3/31/2005	3/31/2005	4/18/2005	4/18/2005	3/28/2005	3/28/2005
	LAB/SAMPLER:	STL/ARC	H2M/ARC	STL/ARC	H2M/ARC	STL/ARC	H2M/ARC
Chloromethane	<5	<0.5	<5	<0.5	<5	<0.5	
Bromomethane	<5	<0.5	<5	<0.5	<5	<0.5	
Vinyl chloride	<2	<0.5	<2	<0.5	<2	<0.5	
Chloroethane	<5	<0.5	<5	<0.5	<5	<0.5	
Methylene chloride	<5	<0.5	<5	<0.5	<5	<0.5	
Acetone	<10	--	<10	--	<10	--	
Carbon disulfide	<5	--	<5	--	<5	--	
1,1-Dichloroethene	2J	2	<5	<0.5	2J	0.7	
1,1-Dichloroethane	<5	<0.5	<5	<0.5	9	6.8	
cis-1,2-Dichloroethene	6	8.2	<5	<0.5	<5	<0.5	
trans-1,2-Dichloroethene	<5	<0.5	<5	<0.5	<5	<0.5	
Chloroform	0.7J	<0.5	<5	<0.5	1J	1.1	
1,2-Dichloroethane	<5	<0.5	<5	<0.5	<5	<0.5	
2-Butanone	<10	--	<10	--	<10	--	
1,1,1-Trichloroethane	<5	1.6	<5	<0.5	2J	1.5	
Carbon tetrachloride	<5	<0.5	<5	<0.5	<5	0.8	
Bromodichloromethane	<5	<0.5	<5	<0.5	<5	<0.5	
1,2-Dichloropropane	<5	<0.5	<5	<0.5	<5	<0.5	
cis-1,3-Dichloropropene	<5	<0.5	<5	<0.5	<5	<0.5	
Trichloroethene	1400D	1140D	82	95.2	5J	4	
Dibromochloromethane	<5	<0.5	<5	<0.5	<5	<0.5	
1,1,2-Trichloroethane	2J	1.2	<5	<0.5	<5	<0.5	
Benzene	<0.7	<0.5	<0.7	<0.5	<0.7	<0.5	
trans-1,3-Dichloropropene	<5	<0.5	<5	<0.5	<5	<0.5	
Bromoform	<5	<0.5	<5	<0.5	<5	<0.5	
4-Methyl-2-pentanone	<10	--	<10	--	<10	--	
2-Hexanone	<10	--	<10	--	<10	--	
Tetrachloroethene	<5	<0.5	7	6.1	<5	<0.5	
1,1,2,2-Tetrachloroethane	<5	<0.5	<5	<0.5	<5	<0.5	
Toluene	<5	<0.5	<5	<0.5	<5	<0.5	
Chlorobenzene	<5	<0.5	<5	<0.5	<5	<0.5	
Ethylbenzene	<5	<0.5	<5	<0.5	<5	<0.5	
Styrene	<5	<0.5	<5	<0.5	<5	<0.5	
Xylene (total)	<5	--	<5	--	<5	--	
Vinyl Acetate	<5	--	<5	--	<5	--	
Freon 113	1J	--	2J	--	<5	--	
Total VOCs	1411.7	1153	91	101.3	19	14.9	

H2M Holmacher, McClendon & Murrell, P.C., Melville, NY.
 ARC ARCADIS G&M, Inc.
 STL Severn Trent Laboratories, Inc., Shelton Connecticut.
 ug/L Micrograms per liter
 J Estimated value
 D Constituent identified at a secondary dilution.
 -- Not analyzed
Bold Constituent detected above Method Detection Limit

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Table 2. Concentrations of Total and Dissolved Cadmium and Chromium Detected in Groundwater, First Quarter 2005, Northrop Grumman Corporation, Bethpage, New York.

CONSTITUENT (Units in ug/L)	SITE:	MW-01GF	MW-02GF	MW-03R	10631	GM-16SR	GM-17S	GM-18S	GM-32S	GM-78S	GM-78I
SAMPLE ID:	MW-1GF	MW-2GF	MW-3R	N-10631	GM-16SR	GM-17SR	GM-18S	GM-32S	GM-78S	GM-78I	
DATE:	4/13/2005	4/13/2005	4/13/2005	4/16/2005	4/11/2005	4/16/2005	4/15/2005	4/18/2005	4/13/2005	4/13/2005	
Cadmium	<1.1	<1.1	26.8	4 B	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	
Cadmium (Dissolved)	<1.1	<1.1	25	3.2 B	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	
Chromium	1.9 B	31	46.9	28.2	<1.3	<1.3	3.9 B	54.8	<1.3	<1.3	
Chromium (Dissolved)	<1.3	27.9	46.9	20	<1.3	<1.3	<1.3	50.3	<1.3	<1.3	

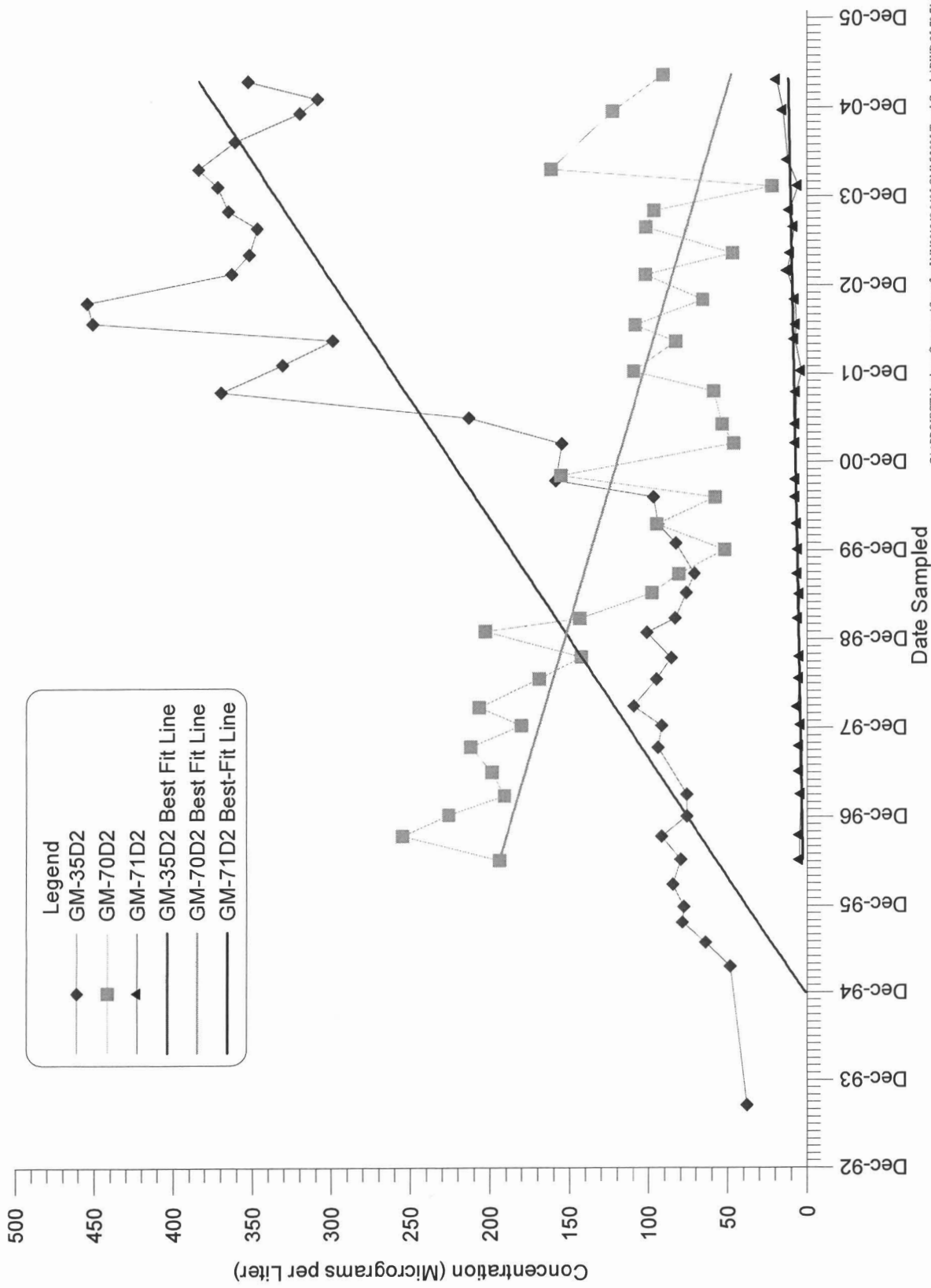
ug/L
 B Detected between the IDL and CRDL
 IDL Instrument detection limit
 CRDL Contract-required detection limit
 Bold Constituent detected above IDL.

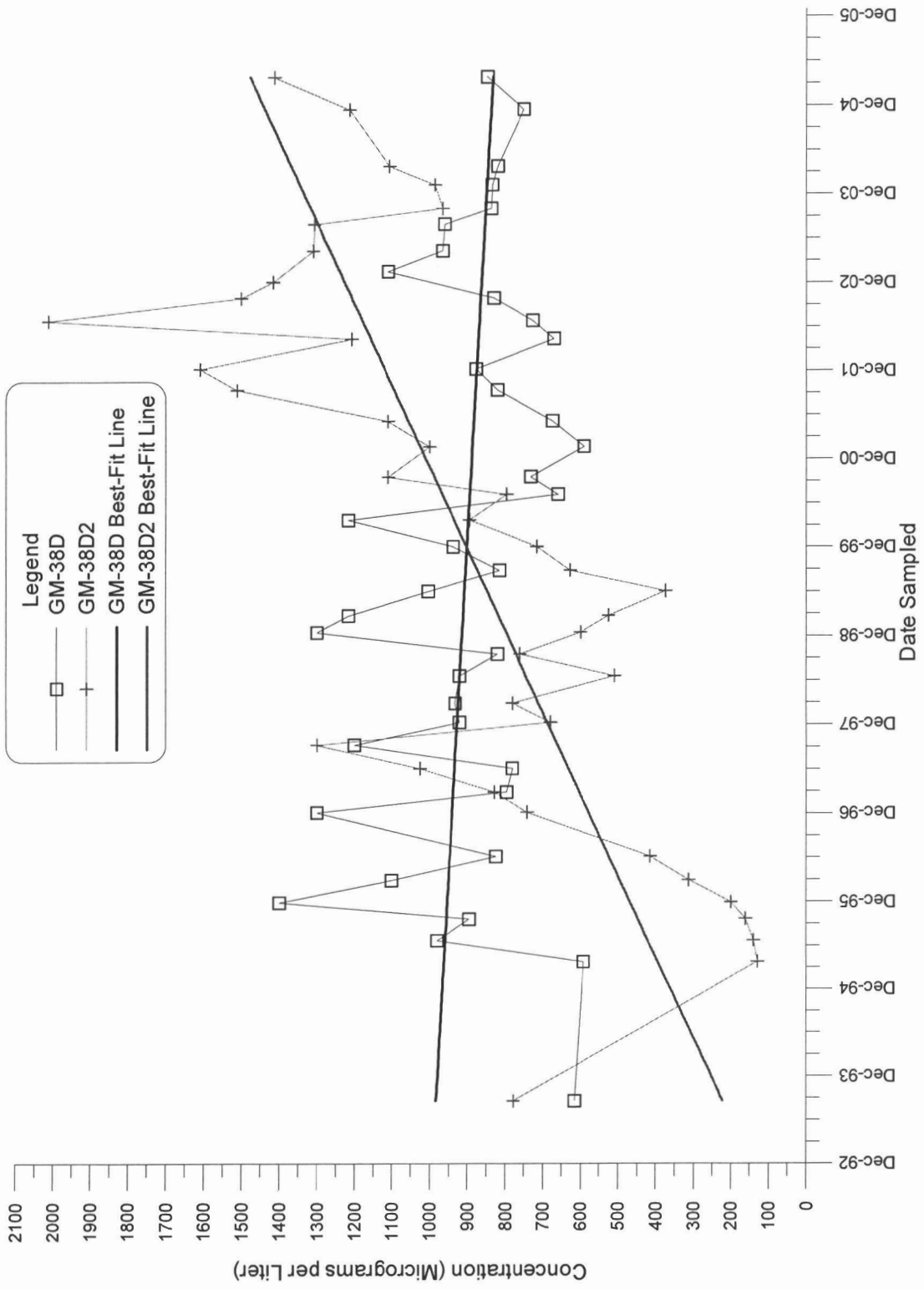


Total Volatile Organic Compound Concentrations in Selected Deep2 Monitoring Wells Northrop Grumman Corporation, Bethpage, New York

FIGURE 1

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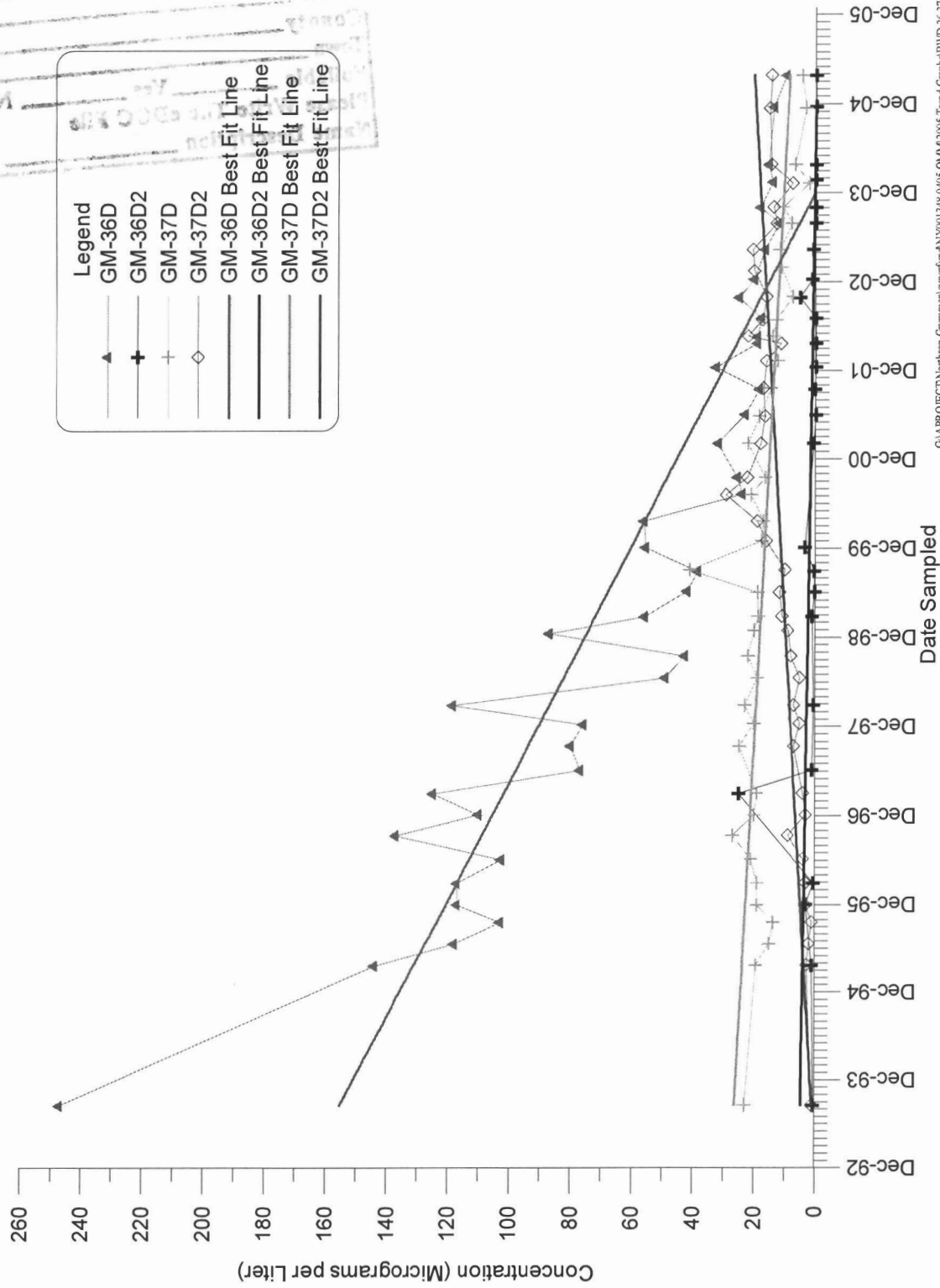




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FIGURE 2
 Total Volatile Organic Compound Concentrations in
 GM-38 Area Deep and Deep2 Monitoring Wells
 Northrop Grumman Corporation, Bethpage, New York



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Total Volatile Organic Compound Concentrations in Selected Deep and Deep2 Monitoring Wells Northrop Grumman Corporation, Bethpage, New York

FIGURE 3