ARCADIS Design & Consultancy for natural and built assets

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ENVIRONMENT

Subject:

2019 Annual Operation Maintenance and Monitoring Report,
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)
Water Contour Figures and Table of Contents Revisions

Date:
June 24, 2020

Contact:
Christopher Engler

Phone:
315.409.6579

Email:
christopher.enlger@arcadis.com

Our ref:
30038454.RPTI4
30038457.NAVI4

Dear Jason:

On behalf of Northrop Grumman Systems Corporation (Northrop Grumman), Arcadis is providing the NYSDEC with the below responses to your questions related to the water contour figures (i.e., Figures 9 and 10) from the Operable Unit 2 (OU2) 2019 Annual Operation Maintenance and Monitoring Report.

Upon further review of Figures 9 and 10 originally included in the subject report, CADD-related typos, including presentation of the 4Q 2018 contour line “layer” being mistakenly shown (Figure 9), and inaccurate title/date blocks (Figures 9 and 10) were noted. The date typos were also carried over into the Table of Contents. Electronic PDF copies of revised Figures 9 and 10 and the affected page of the Table of Contents are provided herein. Hard copies can be provided upon request.

Please note that the revisions to the contour lines on Figure 9 do not represent a substantial difference from what was previously submitted and do not materially change overall groundwater flow directions or our findings and conclusions.

We regret any confusion that this issue may have caused.

Please contact us if you have any questions or comments.

Sincerely,

Arcadis of New York, Inc.

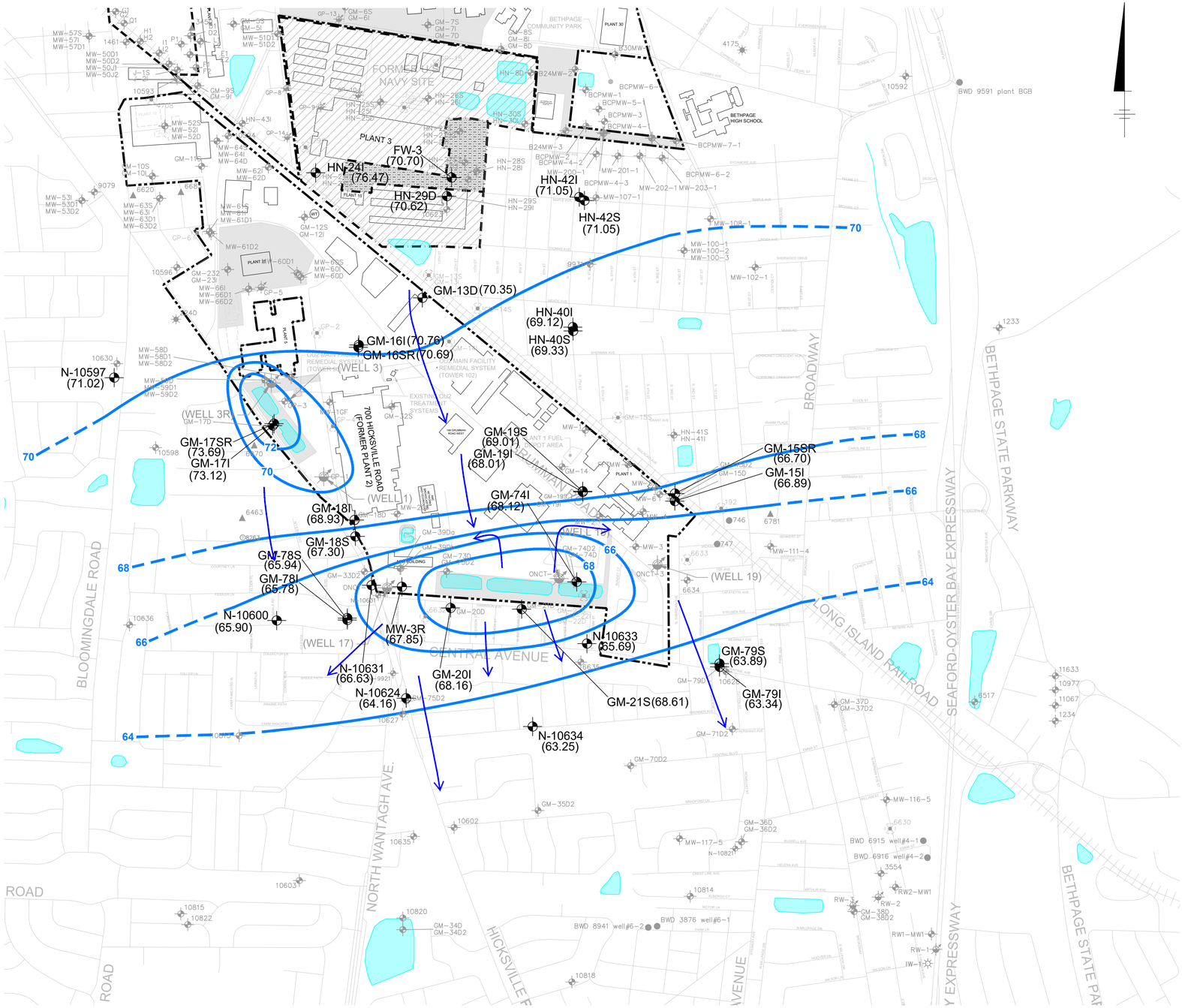
Christopher Engler, P.E.
New York PE-069748
Vice President

Enclosure

Copies:

Ed Hannon – Northrop Grumman
Walter Parish – NYSDEC Region 1
Donald Hesler – NYSDEC
Steven Scharf – NYSDEC
James Sullivan – New York State Department of Health
John Lovejoy - NCDOH
Brian S. Murray – NAVFAC Midlant Environmental
David Brayack – TetraTech NUS, Inc.
Paul Bluestein – Glenn Springs Holdings, Inc.
Manfred Bohms – Steel Equities
Mike Negrelli – USEPA
Nidal Azzam – USEPA
Carol Stein - USEPA
Matthew Russo – Town of Oyster Bay
Stan Carey – Massapequa Water District
Richard Kern – New York American Water
Frank Koch – South Farmingdale Water District
John Reinhardt – Town of Hempstead Water District
Michael Boufis – Bethpage Water District
Bethpage Public Library
File

ATTACHMENTS



EXPLANATION:

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE SITE
- PROPERTY BOUNDARY OF THE FORMER U.S. NAVY SITE
- LONG ISLAND RAILROAD
- NORTHROP GRUMMAN PROPERTY AS OF 2009
- NAVY PROPERTY AS OF 2014
- RECHARGE BASIN
- OBSERVATION/MONITORING WELL
- INDUSTRIAL WELL
- PUBLIC SUPPLY WELL
- IRRIGATION WELL
- NORTHROP GRUMMAN ONCT WELL
- ABANDONED WELL
- 62 — LINE OF EQUAL WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (DASHED WHERE LESS CONTROL)
- (66.89) — WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- DIRECTION OF HORIZONTAL COMPONENT OF GROUNDWATER FLOW
- OU-2 OPERABLE UNIT 2
- OU-3 OPERABLE UNIT 3

NOTES:

1. NORTHROP GRUMMAN ONCT WELLS 1, 3R, 17, 18 AND 19 SCREENED IN DEEP ZONE.
2. BETHPAGE WATER DISTRICT WELL 3876 SCREENED IN DEEP ZONE (NOT PUMPING FOR 2019).
3. BETHPAGE WATER DISTRICT WELLS 6915 AND 6916 SCREENED IN DEEP 2 ZONE.
4. BETHPAGE WATER DISTRICT WELL 8941 SCREENED IN DEEP 3 ZONE.

0 600' 1200'
APPROXIMATE SCALE IN FEET

ALL COORDINATES REFERENCED TO NORTH AMERICAN DATUM 1983

NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK
OPERABLE UNIT 2

WATER-TABLE ELEVATION AND GENERALIZED HORIZONTAL GROUNDWATER FLOW DIRECTIONS IN THE SHALLOW/INTERMEDIATE ZONE, DECEMBER 2019

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FIGURE 9

CITY:SYRACUSE-NY DIV/GROUP-ENV DB:A.SANCHEZ LD:ALS PIC:(Opt) PM:(Resp) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\asanchez\BIM 360\Acadis\ANA - Northrop Grumman\Project Files\OU2 ONCT OM&M Program\2020\30038454\01-DWG\NGC-BP-ONCT-GW-S-I-ZONE.dwg LAYOUT: 9 SAVED: 6/15/2020 9:48 AM ACADVER: 23.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 6/22/2020 4:39 PM BY: SANCHEZ, ADRIAN
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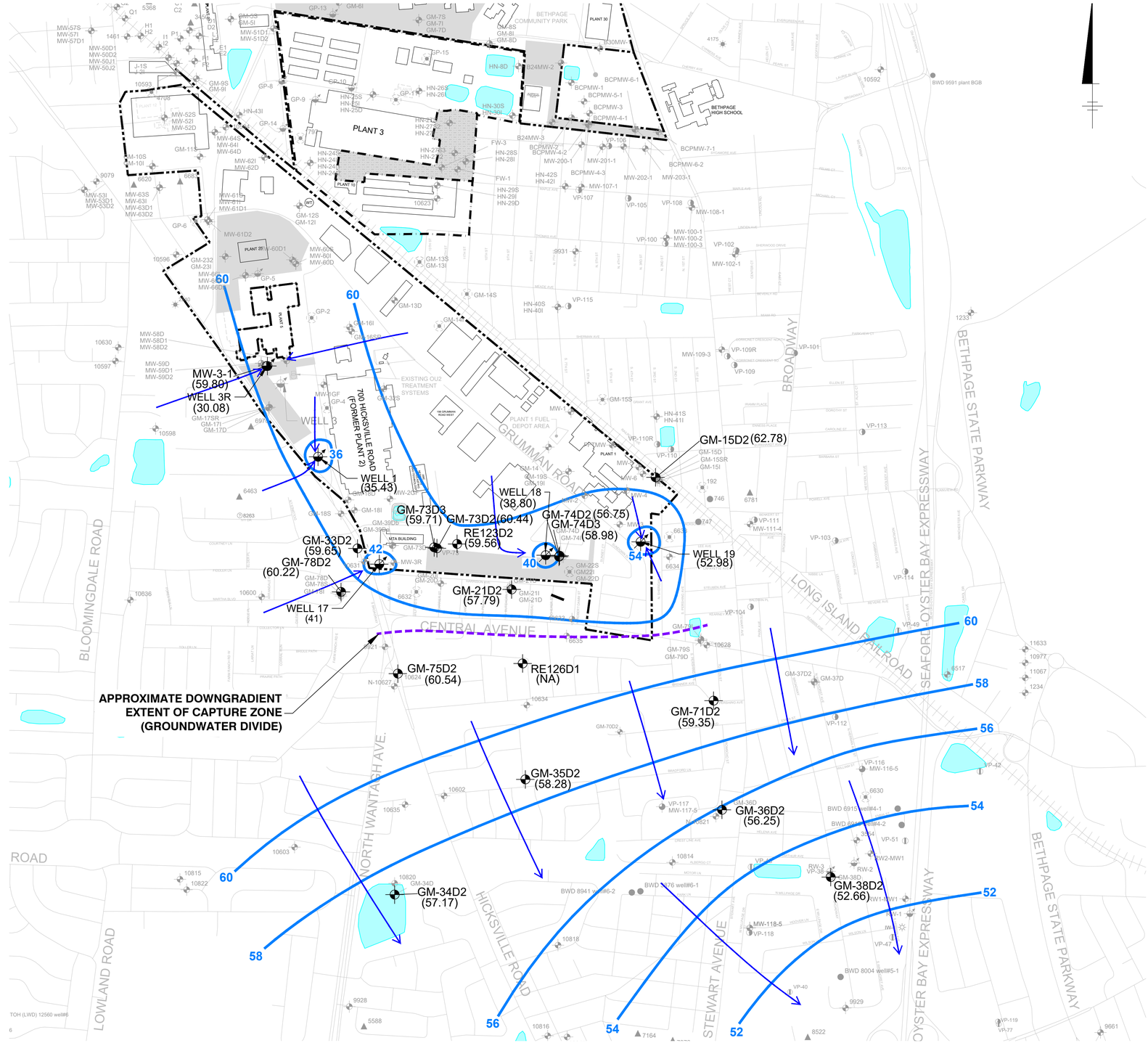

EXPLANATION:

- PROPERTY BOUNDARY OF THE FORMER GRUMMAN AEROSPACE SITE
- PROPERTY BOUNDARY OF THE FORMER NAVY SITE
- LONG ISLAND RAILROAD
- NORTHROP GRUMMAN PROPERTY AS OF 2009
- NAVY PROPERTY AS OF 2014
- RECHARGE BASIN
- OBSERVATION/MONITORING WELL
- INDUSTRIAL WELL
- PUBLIC SUPPLY WELL
- IRRIGATION WELL
- NORTHROP GRUMMAN ONCT WELL
- ABANDONED WELL
- 58 — LINE OF EQUAL WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (DASHED WHERE LESS CONTROL)
- (52.48) — WATER-LEVEL ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- DIRECTION OF HORIZONTAL COMPONENT OF GROUNDWATER FLOW
- OU-2 — OPERABLE UNIT 2
- OU-3 — OPERABLE UNIT 3
- NA — NOT APPLICABLE, WATER LEVEL MEASUREMENT WAS COLLECTED OUTSIDE OF DECEMBER 2019 SYNOPTIC PERIOD

NOTES:

1. NORTHROP GRUMMAN ONCT WELLS 1, 3R, 17, 18 AND 19 SCREENED IN DEEP ZONE.
2. BETHPAGE WATER DISTRICT WELL 3876 SCREENED IN DEEP ZONE (NOT PUMPING IN 2019).
3. BETHPAGE WATER DISTRICT WELLS 6915 AND 6916 SCREENED IN DEEP 2 ZONE.
4. BETHPAGE WATER DISTRICT WELL 8941 SCREENED IN DEEP 3 ZONE

ALL COORDINATES REFERENCED TO NORTH AMERICAN DATUM 1983

NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK
OPERABLE UNIT 2

POTENTIOMETRIC SURFACE ELEVATION AND GENERALIZED HORIZONTAL GROUNDWATER FLOW DIRECTIONS IN THE DEEP 2 ZONE DECEMBER 2019

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FIGURE 10

FIGURES