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ENVIRONMENT

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

Subject:
Remedial Well RW-4 Leak Repair Summary Report,
Bethpage Park Groundwater Containment System (BPGWCS),
Operable Unit 3, Northrop Grumman Systems Corporation, Bethpage, New York.

Date:
June 25, 2015

Contact:
Christopher Engler

Phone:
315.446.9120

Email:
Christopher.Engler@
arcadis-us.com

Our ref:
NY001496.1714.RW4H7

Dear Mr. Scharf:

On behalf of Northrop Grumman Systems Corporation (Northrop Grumman), ARCADIS is providing this report summarizing the repair of the water leak at Remedial Well RW-4 at the Operable Unit 3 Bethpage Park Groundwater Containment System (BPGWCS). AGL Contracting, Ltd. (AGL) was subcontracted by ARCADIS to perform the work. An ARCADIS engineer provided continuous oversight of the work and collected the end point samples. To stop the water leak, Remedial Well RW-4 was temporarily shut down upon discovery of the leak on March 30, 2015 and remained offline until repairs were completed on April 23, 2015. During the shutdown, AGL performed the following work:

- Removal of the well vault
- Excavation of soil in the vicinity of the leak area
- Identification and repair of the leak
- Hydrostatic pressure testing of the repair, and;
- Restoration of the work area to pre-construction conditions.

Additional details as to the repair effort are provided below.

The leak was identified at the threaded connection between the pitless adapter and the stainless steel to high density polypropylene (HDPE) transition pipe section. The HDPE pipe was cut to replace the stainless steel to HDPE transition and the pitless adapter. Two HDPE couplings were installed and electro-fused between the new stainless steel to HDPE transition, a one-foot section of new HDPE pipe, and the original HDPE piping. During the hydrostatic pressure test, ARCADIS observed a water leak at the threaded connection between the pitless adapter and the new stainless steel-HDPE transition. Therefore, the horizontal HDPE pipe was cut between the two previously fused couplings, and the transition was re-sealed and re-

torqued. A new, third coupling was then electro-fused and the piping was hydrostatically pressure tested at 70 psi for 1 hour (typical operating pressure is 60 psi). Leaks were not observed at the RW-4 piping during the test, therefore the repair was considered acceptable.

As a result of the repair activities, approximately 3 cubic yards of soil were removed in the vicinity of the leak. Prior to backfilling, two endpoint soil samples were collected from the bottom of the excavation (approximately 5 feet below grade) as discussed with NYSDEC prior the repair work. **Table 1** provides the validated analytical results of the endpoint samples and **Figure 1** depicts the endpoint sampling locations. Excavated soil was containerized, characterized, and disposed of as non-hazardous at an approved off-site facility. The Non-Hazardous Manifest (Doc. No. 135362) is provided as Attachment 1.

Please contact us if you have any questions or comments.

Sincerely,

ARCADIS of New York, Inc.

Christopher D. Engler

Christopher Engler, P.E.
Engineer of Record

Enclosures

Copies:
Walter Parish, New York State Department of Environmental Conservation
Steven Karpinski, NYS Dept. of Health
Joseph DeFranco, Nassau County Dept. of Health
Fred Weber, Northrop Grumman Corporation
Edward Hannon, Northrop Grumman Corporation, w/o enclosure
File

Table 1. Concentrations of Volatile Organic Compounds in Endpoint Soil Samples, Remedial Well RW-4 Leak Repair, Bethpage Park Groundwater Containment System, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York. [1]

COMPOUND	Sample Location: / Sample ID: / Sample Date: / Units:	RW-4 / RW-4 EP-1 / 4/23/2015 / (µg/kg)	RW-4 / RW-4 EP-2 / 4/23/2015 / (µg/kg)
1,1,1-Trichloroethane		< 1.9	< 2.0
1,1,2,2-Tetrachloroethane		< 1.9	< 2.0
1,1,2-Trichloroethane		< 1.9	< 2.0
1,1-Dichloroethane		< 0.94	< 0.98
1,1-Dichloroethene		< 0.94	< 0.98
1,2-Dichloroethane		< 0.94	< 0.98
1,2-Dichloropropane		< 1.9	< 2.0
2-Butanone		< 9.4	< 9.8
4-methyl-2-pentanone		< 4.7	< 4.9
Acetone		< 9.4	**5.4 J**
Benzene		< 0.47	< 0.49
Bromodichloromethane		< 1.9	< 2.0
Bromoform		< 4.7	< 4.9
Bromomethane		< 4.7	< 4.9
Carbon Disulfide		< 1.9	< 2.0
Carbon tetrachloride		< 1.9	< 2.0
Chlorobenzene		< 1.9	< 2.0
Chlorodibromomethane		< 1.9	< 2.0
Chlorodifluoromethane (Freon 22)		< 4.7	< 4.9
Chloroethane		< 4.7	< 4.9
Chloroform		< 1.9	< 2.0
Chloromethane		< 4.7	< 4.9
cis-1,2-dichloroethene		< 0.94	< 0.98
cis-1,3-dichloropropene		< 1.9	< 2.0
Dichlorodifluoromethane (Freon 12)		< 4.7	< 4.9
Dichloromethane		< 4.7	< 4.9
Ethylbenzene		**0.17 J**	**0.26 J**
Methyl N-Butyl Ketone		< 4.7	< 4.9
Methyl tert-Butyl Ether		< 0.94	< 0.98
Styrene		< 1.9	< 2.0
Tetrachloroethene		< 1.9	< 2.0
Toluene		**0.32 J**	**0.43 J**
trans-1,2-dichloroethene		< 0.94	< 0.98
trans-1,3-dichloropropene		< 1.9	< 2.0
Trichloroethylene		< 0.94	< 0.98
Trichlorofluoromethane (Freon 11)		< 4.7	< 4.9
Trichlorotrifluoroethane (Freon 113)		< 4.7	< 4.9
Vinyl Chloride		< 1.9	< 2.0
Xylene-o		**0.31 J**	**0.41 J**
Xylenes - m,p		**0.46 J**	**0.87 J**
Total VOCs [2]		**1.3**	**7.4**
Total Project VOCs [3]		**1.1**	**1.7**

See notes on last page.

Table 1. Concentrations of Volatile Organic Compounds in Endpoint Soil Samples, Remedial Well RW-4 Leak Repair, Bethpage Park Groundwater Containment System, Operable Unit 3 (Former Grumman Settling Ponds), Bethpage, New York. (1)

Notes:

(1) Soil samples collected by ARCADIS on the dates shown and submitted to a NYSDOH ELAP certified laboratory for VOC analyses per USEPA Method 8260C. Results validated following protocols specified in Sampling and Analysis Plan in the December 2009 DRAFT OM&M Manual (ARCADIS 2009).

(2) "Total VOCs" represents the sum of estimated individual concentrations of the VOCs detected.

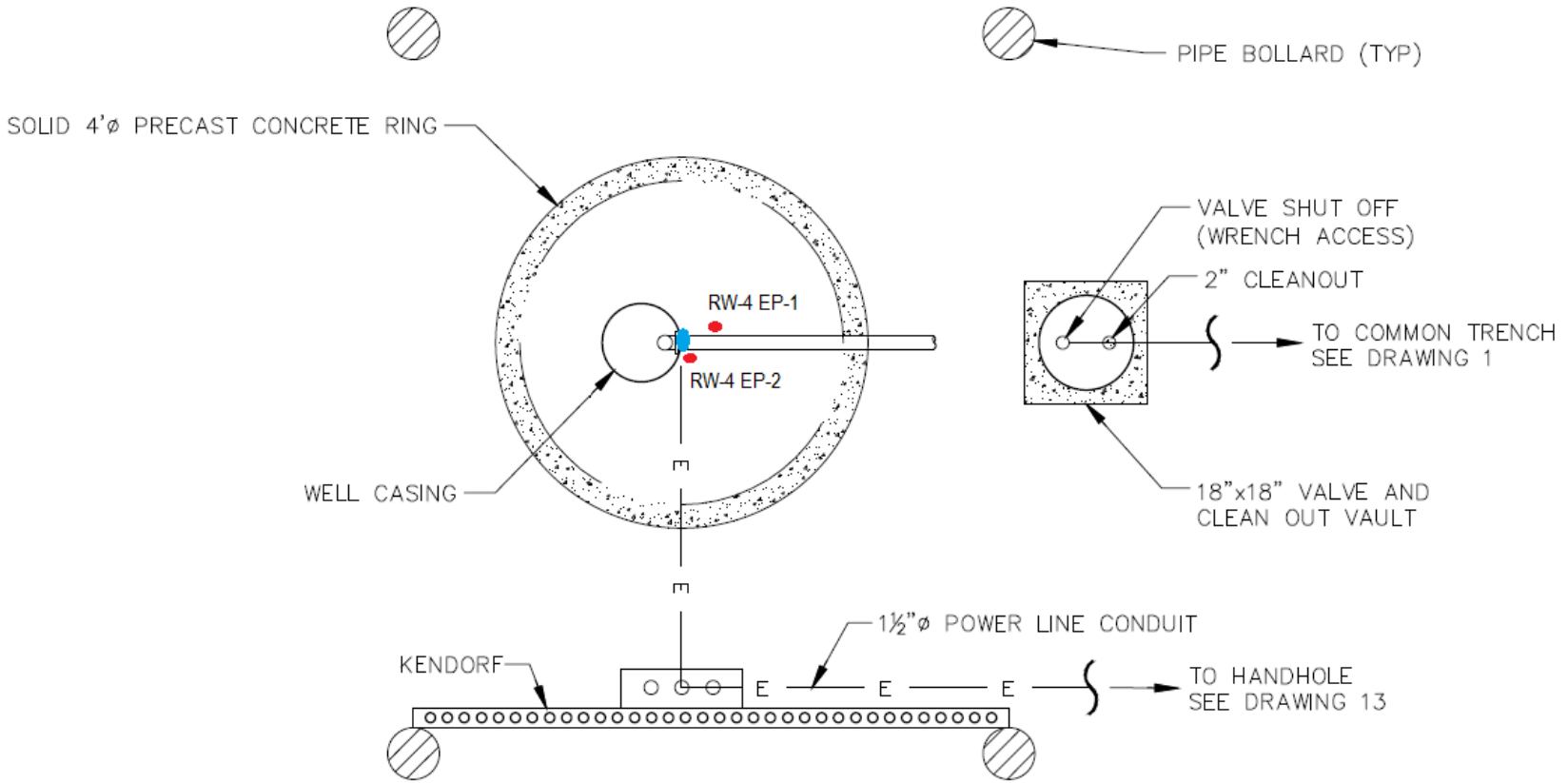
(3) "Project VOCs" represents the sum of estimated individual compound concentrations of 1,1,1-trichloroethane; 1,1-dichloroethane; 1,2-dichloroethane; 1,1-dichloroethene; tetrachloroethene; trichloroethene; vinyl chloride; cis-1,2-dichloroethene; trans-1,2-dichloroethene; benzene; toluene; and xylenes-o,m, and p.

(4) Samples were collected on April 23, 2015 from the base of the excavation after leak repair and pressure testing of the pipeline, and prior to backfilling.

Acronyms\Key:

Bold value indicates a detection.

ELAP	Environmental Laboratory Approval Program
NYSDEC	New York State Department of Environmental Conservation.
NYSDOH	New York State Department of Health
VOC	Volatile organic compound.
µg/kg	Micrograms per kilogram.
J	Compound detected but below its reporting limit; the value is estimated.
USEPA	United States Environmental Protection Agency



ARCADIS

ARCADIS OF NEW YORK, INC.

NORTHROP GRUMMAN CORPORATION • BETHPAGE, NEW YORK

OPERABLE UNIT 3 - FORMER GRUMMAN SETTLING PONDS

RW-4 LEAK REPAIR

ENDPOINT SAMPLING LOCATIONS

ARCADIS Project No.
NY001496.1714.RW4H7

Date
APRIL 2015

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

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Attachment 1

Non-Hazardous Manifest

Non-Hazardous Manifest

Manifest Doc No.135362

Generator

Generator ID: 16080
NORTHROP GRUMMAN CORP.
600 GRUMMAN RD. WEST
BETHPAGE, NY 11714
5165754680

Transporter

ABLE ENVIRONMENTAL SERVICE
6315676545
NYR000003582
1A-392

Facility

A B OIL SERVICE LTD.
1599 Ocean Avenue
Bohemia, NY 11716
631.567.6545
NYD987023371

Shipping Name and Description	NumCont	ContType	Quantity	Units	Profile ID
CONTAMINATED DIRTS, SOILS, AND SANDS	13	DM	5200	P	N816
NON HAZARDOUS SOLIDS	3	DM	1200	P	NONHAZ S
New Drum Supply.	7	DM	280	P	ND

Material Name	Quantity

Additional Descriptions for Materials Listed Above

Handling Codes Listed Above

Special Handling Instructions and Additional Information
24 Hour Emergency # (631) 567 - 6545
ERG# 128

Generator's Certification: I certify the materials described above are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed / Typed Name X MAGDALENA RYCHTECKA Signature X Date 5/28/15

Transporter 1 Acknowledgement of Receipt of Materials

Printed / Typed Name John MARINELLI Signature John Marinelli Date 5/28/15

Transporter 2 Acknowledgement of Receipt of Materials

Printed / Typed Name _____ Signature _____ Date _____

Discrepancy Indication Space

Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted above.

Printed / Typed Name Jennifer Coleman Signature J. Coleman Date 5/29/15

White = Original Yellow = Transporter Pink = TSDF Gold = Generator Copy