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June 21, 2022

R. Scott Deyette
New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau C
625 Broadway, 11th Floor
Albany, New York 12233-7014

Re: Final Groundwater Monitoring Report: 952-30R Shutdown Test
Former IBM 952/982 Site
Poughkeepsie, Dutchess County, New York
NYSDEC Site No. 314076

Dear Mr. Deyette:

The enclosed document presents the findings of the shutdown test of groundwater extraction well 952-30R at the IBM former leased Building 952/982 site located at the Neptune Commerce Center on Neptune Road, Poughkeepsie, New York.

The work described herein was conducted in accordance with the shutdown test work plan dated July 26, 2019¹ and approved by the Department on October 11, 2019². An interim report on the shutdown test findings was submitted to the Department on April 2, 2021³. On May 19, 2021⁴, the continuation of the groundwater shutdown test at the Site was approved by the Department.

The shutdown test was designed to provide data of sufficient quantity and quality to confirm the results of an assessment and trend analysis that predicted termination of 952-30R withdrawals would not result in meaningful impacts to downgradient groundwater conditions. A comparison of groundwater prior to the initiation of the shutdown test and post-shutdown shows no meaningful changes in groundwater quality at the Site. The results of the shutdown test support the termination of groundwater extraction at 952-30R.

The groundwater remedy implemented at the Site has been successful. Groundwater extraction operations at 952-30R have resulted in significant decreases in VOC concentrations in the source area wells and since startup of the 952-30R extraction well in December 1993, VOC

¹ IBM Corporation, July 26, 2019, Request for Extraction Well 952-30R Shutdown Test Former IBM Leased Building 982 (Neptune Commerce Center) Poughkeepsie, Dutchess County, New York, NYSDEC, Order on Consent Index #A3-0655-12-10, Site No. 314076

² NYSDEC, October 11, 2019, Request for Extraction Well 952-30R Shutdown Test, Former IBM B952/982 Site (Neptune Commerce Center) Poughkeepsie, Dutchess County, New York, NYSDEC Site No. 314076

³ Groundwater Sciences Corporation and Groundwater Sciences, P.C., April 1, 2021, Interim Groundwater Monitoring Report, 952-30R Shutdown Test, Former IBM B952/982 Site (Neptune Commerce Center) Poughkeepsie, Dutchess County, New York, NYSDEC Site No. 314076

⁴ NYSDEC, May 19, 2021, Former IBM B952/982, Site No. 314076, Poughkeepsie, Dutchess County, New York, Interim Groundwater Monitoring Report, 952-30R Shutdown Test

concentrations in groundwater have been reduced by up to two orders of magnitude. Further meaningful reductions in concentrations in groundwater within the source area wells are not expected if operations at 952-30R resumed. Based on our understanding of conditions within and near the Site, the continued shutdown of extraction well 952-30R is expected to result in no meaningful impacts constituting a threat to public health and the environment.

Based on these findings, IBM requests to terminate groundwater extraction at 952-30R.

As previously approved by NYSDEC⁵, IBM will proceed with the decommissioning of perimeter monitoring wells 952-6R, 952-9R, 952-11R, 952-12R, 952-13R, 952-14R, 952-14RA, 952-16R, and 952-29R. Decommissioning of the nine (9) perimeter wells will be as described in the Groundwater Monitoring Well Decommissioning Request Report⁶ and will be performed in accordance with CP-43, Commissioner Policy on Monitoring Well Decommissioning (2009). At least seven (7) days advanced notice will be provided prior to the start of field activities.

If you have any questions, please feel free to contact me at (720) 397-5618.

Sincerely,
International Business Machines Corporation



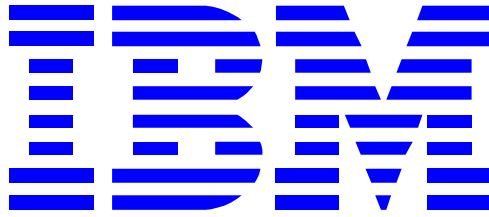
Stephen Brown, P.E.
Program Manager, IBM Corporate Environmental Affairs

Enclosure: Final Groundwater Monitoring Report, 952-30R Shutdown Test

cc: T. Perretta (NYSDOH)
D. Kaminski (NCI)

⁵ NYSDEC, January 18, 2018, Former IBM Building 952/982 Site (Neptune Commerce Center), Groundwater Monitoring Well Decommissioning Request, Poughkeepsie, Dutchess County, New York NYSDEC, Site No. 314076

⁶ IBM Corporation, March 28, 2017 and revised August 18, 2018, Groundwater Monitoring Well Decommissioning Request Report, Former IBM Building 952/982 Site (Neptune Commerce Center), Poughkeepsie, Dutchess County, New York NYSDEC, Order on Consent Index #A3-0655-12-10, Site No. 314076



*FORMER IBM BUILDING 952 AND BUILDING 982 SITE
DUTCHESS COUNTY
TOWN OF POUGHKEEPSIE, NEW YORK*

**FINAL GROUNDWATER MONITORING REPORT
952-30R SHUTDOWN TEST**

NYSDEC Site Number: 314076
Order on Consent, Index #A3-0655-12-10

June 20, 2022

**Prepared by:
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**Professional Geologist Certification
Former Building 952/982 Site
Town of Poughkeepsie
Dutchess County, New York**

**Final Groundwater Monitoring Report
952-30R Shutdown Test**

**Site ID: 314076
Order on Consent, Index #A3-0655-12-10**

June 20, 2022

As the person with primary responsibility for the performance of the geological services and activities associated with the captioned Report, I certify that I have reviewed the document titled "*Former IBM Building 952 and Building 982 Site, Final Groundwater Monitoring Report: 952-30R Shutdown Test, Site ID: 314076, Order on Consent, Index #A3-0655-12-10*". This report is dated June 20, 2022 and was prepared by Groundwater Sciences, P.C. (GSPC) and Groundwater Sciences Corporation (GSC) for IBM Corporation.

As a professional geologist licensed in the State of New York, I certify that the associated geological services and this report have been prepared under my direct supervision while working as agent for GSPC. To the best of my knowledge; all such information contained in this report is complete and accurate.

This report bears the seal of a professional geologist; no alterations may be made to the information contained in this report unless made in accordance with Title 8, Article 145, Section 7209 of New York State Education Law.



Signature: DAF Date: 6/20/2022

Name: Dorothy A. Bergmann

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State: New York

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LIST OF ABBREVIATIONS AND ACRONYMS

IBM	International Business Machines Corporation
NCI	Neptune Capital Investors L.L.C.
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSGQS	New York State Groundwater Quality Standards as described in 6NYCRR Part 703, Division of Water Technical and Operational Guidance Series (1.1.1)
SVOC	Semi Volatile Organic Compound
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
111-TCA	1,1,1-Trichlorethane
11-DCA	1,1-Dichloroethane
11-DCE	1,1-Dichloroethene
12-DCBZ	1,2-Dichlorobenzene
12-DCA	1,2-Dichloroethane
12-DCE (tot)	sum of cis- and trans- isomers of 1,2-dichloroethene
124-TCBZ	1,2,4-Trichlorobenzene
13-DCBZ	1,3-Dichlorobenzene
14-DCBZ	1,4-Dichlorobenzene
BS-2EH-PTAL	Bis(2-Ethylhexyl)phthalate
CBZ	Chlorobenzene
TCM	Chloroform
D(N)BUT-PTAL	Di-n-butyl phthalate
DCM	Methylene Chloride
PCE	Tetrachloroethene
TCE	Trichloroethene

1.0 INTRODUCTION

This report presents the findings of the shutdown test of groundwater extraction well 952-30R located at the former International Business Machines Corporation (IBM) leased Building 952/982 Site (Site), in Poughkeepsie, New York (**Figure 1-1**). This report has been prepared by Groundwater Sciences Corporation and Groundwater Sciences, P.C. at the request of IBM.

The Site is currently listed on the New York State Inactive Hazardous Waste Disposal Site Registry as a Class 4 Site, Site ID 314076. The Site is being remediated by IBM pursuant to Order on Consent Index A3-0655-12-10 executed on May 18, 2011 for Site #314076 between the New York State Department of Environmental Conservation (NYSDEC) and IBM.

Extraction well 952-30R operated for nearly twenty-six years, providing removal of dissolved volatile organic compounds (VOCs) within and near the source area of the Site, localized around the extraction well. The request to perform a shutdown test of groundwater extraction well 952-30R was based on a review and analysis of trends in volatile organic compound (VOC) concentrations and mass removals during groundwater extraction operations at the Site and included the results of the baseline sampling event which was completed during May 2019. The findings of this review indicate that although the groundwater extraction operations resulted in significant decreases in VOC concentrations in groundwater, with reductions of up to two orders of magnitude, concentrations in Site groundwater within the source area had reached asymptotic values and continued operations were unlikely to provide further meaningful reductions in concentrations in groundwater within the source area wells.

Based on these findings, IBM proposed to shutdown of extraction well 952-30R, combined with groundwater monitoring before and after shutdown of groundwater withdrawals at 952-30R. The three-phase approach for the shutdown test was presented in the work plan dated July 26, 2019¹ (952-30R Shutdown Test Work Plan) submitted to the Department, and subsequently approved on October 11, 2019². An interim report on the shutdown test findings was submitted to the NYSDEC

¹ IBM Corporation, July 26, 2019, Request for Extraction Well 952-30R Shutdown Test Former IBM Leased Building 982 (Neptune Commerce Center) Poughkeepsie, Dutchess County, New York NYSDEC, Order on Consent Index #A3-0655-12-10, Site No. 314076

² NYSDEC, October 11, 2019, Request for Extraction Well 952-30R Shutdown Test, Former IBM B952/982 Site (Neptune Commerce Center) Poughkeepsie, Dutchess County, New York, NYSDEC Site No. 314076

on April 2, 2021³. On May 19, 2021⁴, NYSDEC approved the continuation of the groundwater shutdown test at the Site.

1.1 Purpose and Objectives

The shutdown test was designed to provide data of sufficient quantity and quality to confirm the results of an assessment and trend analysis that predicted termination of 952-30R withdrawals would not result in meaningful impacts to downgradient groundwater conditions.

This report presents the results of the shutdown test after completion of ten quarters of monitoring post shutdown of 952-30R.

1.2 Organization of Report

The remainder of this report is organized in four additional sections with associated tables, figures, and appendices. Section 2 presents background information pertinent to the shutdown test. Section 3 describes the shutdown test scope of work. Section 4 presents the findings of the shutdown test and Section 5 provides summary conclusions and recommendations.

³ Groundwater Sciences Corporation and Groundwater Sciences, P.C., April 1, 2021, Interim Groundwater Monitoring Report, 952-30R Shutdown Test, Former IBM B952/982 Site (Neptune Commerce Center) Poughkeepsie, Dutchess County, New York, NYSDEC Site No. 314076

⁴ NYSDEC, May 19, 2021, Former IBM B952/982, Site No. 314076, Poughkeepsie, Dutchess County, New York, Interim Groundwater Monitoring Report, 952-30R Shutdown Test

2.0 SITE BACKGROUND

This section provides an overview of pertinent background information concerning the location and hydrogeologic setting of the Site; a summary of previous investigations and remedial history; site-ownership and regulatory history and the rationale for the 952-30R shutdown.

2.1 Location and Hydrogeologic Setting

The Site is located in the Town of Poughkeepsie, New York, with frontage on both South Road and Neptune Road as shown on **Figure 1-1**. The location of extraction well 952-30R and Site groundwater monitoring wells are shown on **Figure 2-1**.

The Site lies topographically in a broad upland approximately 135 feet above mean sea level (amsl) between Casper Creek, 2,000 feet to the southeast, and a small unnamed stream, 3,500 feet to the northwest. The site is flanked on the northeast and southwest by two prominent hills with elevations greater than 200 feet above mean sea level (amsl). Surface water drainage from the site is primarily to the southeast toward Casper Creek.

The Site is underlain with dolostone, a calcium magnesium carbonate rock prone to solution weathering by groundwater, particularly in zones where the rock is highly fractured. Solution features were apparent in some of the borings, particularly 952-11R (**Figure 2-1**) which contained an open void from 79 feet to 105 feet below ground surface. Bedrock ranges from less than 20 feet to over 50 feet below the ground surface at the Site. Bedrock is overlain by a variable thickness of unconsolidated sediments, including primarily glacially derived tills, outwash materials consisting of gravels, sands, and silts, lake deposits consisting of alluvial silts and clays, and man-made fill material. The thickness of unconsolidated sediments ranges from more than 55 feet thick, southeast of Building 982, to less than ten feet thick along Route 9. The overlying contact with the unconsolidated sediments is an erosional surface. The primary unconsolidated sediments found under the Site are, from oldest to youngest:

- Glacial till, a poorly sorted mixture of boulders, gravel, sand, silt and clay deposited directly by contact with ice;
- Generally poorly sorted outwash material consisting of gravels, sands and silts which is the result of re-working of till and other materials by glacial meltwater;

- Alluvial silts and clays which are the result of deposition in a low-energy environment such as a glacial lake;
- Man-made fill materials which lack bedding or structure.

Beneath the Site, groundwater flow occurs primarily within the dolostone bedrock of the Wappinger Formation with the exception of a few isolated zones of perched water on top of silt and clay lenses within the unconsolidated sediments. Several nested bedrock piezometers have been constructed at this Site and water levels measured in these piezometers indicate a vertical gradient downward in the shallow bedrock and then horizontal flow within the deeper bedrock zone. As shown on **Figure 2-2**, the principal directions of groundwater flow are to the east, south and west from a location near the front of former B982 and pumping well, 952-30R.

2.2 Summary of Previous Investigations and Remedial History

In 1984, upon discovery that a central waste holding tank had leaked, the Site was remediated voluntarily by IBM, without a consent order but with NYSDEC oversight. At that time, IBM occupied the Site as a lessee when the Site was owned by South Road Associates. As such, IBM remains responsible for the current ongoing remedial activities conducted at the Site.

Site groundwater has been monitored periodically since 1982 for various constituents, including Volatile Organic Compounds (VOCs), Semi-volatile Organic Compounds (SVOCs), Metals, Phenols (total); Pesticides, Poly-chlorinated Biphenyls and Oil and Grease. Beginning in 1993, Site groundwater has been monitored under a NYSDEC-approved Groundwater Monitoring Plan (GMP) that was originally submitted as part of the Site's *Operation and Maintenance Plan for the Groundwater Collection and Treatment System, IBM Building 952 and Building 982 Leased Property* (O&M Plan)⁵. Several minor modifications were made to the GMP and approved by the NYSDEC including decommissioning of several monitoring wells and a reduction in monitored constituents.

Remedial investigations were performed to characterize the nature and extent of contamination at the Site beginning in 1982. Generally, the remedial investigations determined that the onsite

⁵ Groundwater Sciences Corporation, February 24, 1994, Operation and Maintenance Plan for the Groundwater Collection and Treatment System, IBM Building 952 and Building 982 Leased Property.

groundwater and subsurface soils were impacted by a former underground waste chemical holding tank located in the courtyard between former Buildings 952 and Building 982 (**Figure 2-2**). The onsite impacted soil was generally located in the vicinity of the underground waste chemical holding tank. Additionally, it was determined that soils under Building 952 and a portion of Building 982 were also impacted. According to previous analytical data, compounds with the highest concentrations in the soil include 1,2-dichlorobenzene (12-DCBZ), methylene chloride (DCM), chloroform (TCM), bis(2-ethylhexyl)phthalate (BS-2EH-PTAL), and di-n-butyl phthalate (D(N)BUT-PTAL). The results of the remedial investigations are described in detail in the following reports:

- Lawler, Matusky, and Skelly, Engineers (LMS), August 1982. *Interim Report on Building 952/982*.
- LMS, March 1983. Final Report: Hydrogeology and Chemistry of Building 952 Area.
- Conestoga-Rovers & Associates Limited (CRA), April 1984. *Soil Sampling & Analysis Buildings 952 and 982*.
- CRA, May 1985. Remedial Action Project Soil and Sampling and Analysis Buildings 952 and 982 (Volume 1).
- CRA, September 1985. Remedial Action Plan Construction Implementation Buildings 952 and 982 (Volume 2).
- Milton Chazen Associates (MCA), May 1986. Groundwater Quality Data Report 1984-1985, Building 952 Site.
- Groundwater Sciences Corporation (GSC), March 1993. IBM B952/982 Site Reclassification Petition, Volumes 1 & 2.
- Henningson, Durham & Richardson Architecture & Engineering, P.C. (HDR), December 2011, Revised February 2012. *B952 Excavation Work Plan*.
- Sanborn, Head Engineering, P.C., September 2013. Subslab Depressurization System (SSDS) Design/Installation Work Plan.
- Sanborn, Head Engineering, P.C., February 2014. Subslab Depressurization System Start-Up and Performance Testing Report.
- HDR, January 2017. B952 Excavation Work Plan Summary Report.

Major milestones in the Site history, remedial investigations and operations are provided below:

- October 1981 – A single monitoring well was installed near the abandoned storage tank. The well was screened in the dolostone bedrock since the overlying unconsolidated sediments appeared to be dry.
- 1982 - Removal of the chemical holding tank. Installation of 36 soil borings completed both interior to the buildings and exterior of the buildings to collect soil samples.
- 1984 – Removal of four tanks which included a fuel oil storage tank, a concrete tank, and two concrete vaults containing water main valves, fittings, and piping, removed as part of the remedial action approved by the NYSDEC⁶.
- 1984 – Installation a series of nested piezometers and commencement of the voluntary groundwater monitoring program at the Site. The monitored well locations included a series of perimeter wells that covered all segments of the property line.
- 1990 – Reinstallation of a monitoring well that had been abandoned (952-10RA) as part of the excavation in the courtyard between former B952 and B982.
- 1992 – Seven soil samples were collected from five of the historical soil sampling locations beneath the concrete slab floor of B952. These samples were collected at locations and depths previously sampled in 1982 to determine what changes had occurred in the intervening ten-year period. This comparison indicated that volatile organic compounds (VOCs) in the soil had dissipated and that semivolatile organic compounds (SVOCs) and oil and grease concentrations in the soil were essentially unchanged after ten years.
- 1993 - IBM submits a Petition to Reclassify the Former Buildings 952 and 982 Site from a Class 2a to a Class 4 Site in the NYSDEC Inactive Hazardous Waste Disposal Registry⁷.
- 1993 – Start-up of groundwater extraction well 952-30R and associated on-site treatment system (December 1, 1993).
- 1993 – NYSDEC reclassifies⁸ the Site to a Class 4 Site on the Registry of Inactive Waste Disposal Sites.
- 1994 – IBM transmits⁹ the Operation and Maintenance Plan for the Groundwater Collection and Treatment System.

⁶ IBM identified the area of contaminated soil after purchasing the property from Endicott-Johnson, prior to IBM's redevelopment of the property as the "Clark Street Campus". VOCs detected in the soil included PCE, TCE, 111-TCA, methylene chloride, and toluene. The soil was disposed at the CECOS Landfill in Niagara Falls, New York.

⁷ Groundwater Sciences Corporation, March 8, 1993. IBM B952/982 Site, Reclassification Petition, 2 Volumes.

⁸ NYSDEC, December 2, 1993, Petition to Reclassify, IBM 952/982, Site ID. No.314076.

⁹ Groundwater Sciences Corporation, February 24, 1994. Operation and Maintenance Plan for the Groundwater Collection and Treatment System. IBM Building 952 and Building /982 Leased Property,

- 2005 to 2010 Former B952 and 982 remained vacant and the Site undeveloped.
- 2011 Neptune Capital Investors L.L.C. (NCI) received Site Plan and Subdivision approval from the Town of Poughkeepsie. NCI redevelopment activities included the demolition of former IBM leased Building 952 and the construction of two new commercial buildings in its place. Former IBM leased Building 982 would remain intact and be renovated.

IBM prepared an Excavation Work Plan (EWP) as required by its approved SMP. The EWP was initiated in September 2012 and IBM completed field activities in June 2013. Soils that exhibited detections on the PID and/or an odor were excavated, stockpiled, and sampled for laboratory analyses of VOCs and BN-SVOCs via EPA Methods 8260B and 8270D, respectively, as required by the EWP. There were no detections of VOCs or BN-SVOCs above NYSDEC required site soil cleanup objectives (SCOs) of restricted residential use. Post-excavation samples were collected from each of the excavation areas in accordance with NYSDEC DER-10¹⁰ for VOCs and BN-SVOCs by EPA Methods 8260B and 8270D, respectively. Post excavation sample results indicate that there were no detections of VOCs or BN-SVOCs above NYSDEC required site SCOs of restricted residential use.

- 2018 Emerging Contaminants Sampling Request: On April 23, 2018¹¹, IBM received a request from the NYSDEC to complete sampling at the Site for emerging contaminants, including specific poly and perfluoroalkyl substances (PFAS) and 1,4-dioxane. An Emerging Contaminants, PFAS and 1,4-dioxane Work Plan (Emerging Contaminants Work Plan) for the Site was submitted to NYSDEC on June 15, 2018¹². The NYSDEC approved the Emerging Contaminants Work Plan on July 12, 2018¹³. Groundwater samples were collected on May 1, 2019 and a report on the findings was submitted to the NYSDEC on July 26, 2019¹⁴. Based on the findings, it appears that municipal water has a meaningful impact on the PFAS and 1,4-dioxane concentrations detected in groundwater at the Site. Only 1,4-dioxane was detected in samples at concentrations above the current NYS screening levels (1 ppb). Given the lack of private and public supply wells near the site, the NYSDEC required no further sampling at this time with respect to emerging contaminants in groundwater¹⁵.

¹⁰ NYSDEC, May 2010, DER-10 Technical Guidance for Site Investigation and Remediation.

¹¹ NYSDEC, April 23, 2018, Request for sampling of Emerging Contaminants, Former IBM 952/982, Site ID: 314076

¹² IBM, June 15, 2018, Emerging Contaminants Poly- and Perfluoroalkyl Substances and 1,4-Dioxane Sampling Work Plan, Neptune Commerce Center (Former B952/982 Site), Site ID: 314076.

¹³ NYSDEC, July 12, 2018, Emerging Contaminants, Poly- and Perfluoroalkyl Substances and 1,4-Dioxane Sampling Work Plan, Neptune Commerce Center (Former B952/982 Site), Site ID: 314076.

¹⁴ IBM, July 26, 2019, Emerging Contaminants, Poly- and Perfluoroalkyl Substances and 1,4-Dioxane Sampling Report, Neptune Commerce Center (Former B952/982 Site), Site ID: 314076.

¹⁵ NYSDEC, April 14, 2022, Review of Groundwater Sampling Results for Emerging Contaminants, Former B952/982 Site, Site ID: 314076, Poughkeepsie, Dutchess County.

- 2019 to present: Groundwater extraction well 952-30R is one of two remediation systems installed and operated by IBM at the Site. In May 2019, IBM completed a baseline sampling event of all available groundwater monitoring wells and conducted a review of monitoring data that resulted in a request to shutdown extraction well 952-30R. The shutdown test consists of a program of groundwater monitoring before and after shutdown of groundwater withdrawals at 952-30R. The three-phase approach for the shutdown test was presented in the work plan dated July 26, 2019¹⁶ (952-30R Shutdown Test Work Plan) submitted to the Department, and subsequently approved on October 11, 2019¹⁷. An interim report on the shutdown test findings was submitted to the NYSDEC on April 2, 2021³. On May 19, 2021⁴, NYSDEC approved the continuation of the groundwater shutdown test at the Site. This report is the subject of the findings of the shutdown test.

The second remediation system is a sub-slab depressurization system associated with soil vapor intrusion mitigation at the former IBM leased Building 982. A work plan¹⁸ to evaluate termination of operations of the sub-slab depressurization system was submitted to the NYSDEC and subsequently approved¹⁹. On March 5, 2020, IBM submitted the Sub-slab Depressurization System (SSDS) Shutdown Testing Results Report²⁰, for the former IBM 952/982 Site. On June 9, 2020²¹, NYSDEC recommended that the SSDS remain off with a request for additional sampling to further evaluate the system shutdown. The requested additional samples were collected on April 1, 2021, IBM submitted a report on the findings²². On May 19, 2021²³ the Department requested the system to be placed back online. The SSDS was placed back online in June 2021.

¹⁶ IBM Corporation, July 26, 2019, Request for Extraction Well 952-30R Shutdown Test Former IBM Leased Building 982 (Neptune Commerce Center) Poughkeepsie, Dutchess County, New York NYSDEC, Order on Consent Index #A3-0655-12-10, Site No. 314076

¹⁷ NYSDEC, October 11, 2019, Request for Extraction Well 952-30R Shutdown Test, Former IBM B952/982 Site (Neptune Commerce Center) Poughkeepsie, Dutchess County, New York, NYSDEC Site No. 314076

¹⁸ Sanborn Head and Associates, February 15, 2019, Work Plan for Subslab Depressurization System Shutdown Testing Former IBM Leased Building 982 (Neptune Commerce Center) Poughkeepsie, Dutchess County, New York NYSDEC Site No. 314076

¹⁹ NYSDEC, July 2, 2019, Former IBM B952/982, Subslab Depressurization System Shutdown Testing Results, Site No. 314076, Poughkeepsie, Dutchess County.

²⁰ Sanborn Head and Associates, March 5, 2020, Sub-slab Depressurization System (SSDS) Shutdown Testing Results Report Former IBM Leased Building 982 (Neptune Commerce Center) Poughkeepsie, Dutchess County, New York NYSDEC Site No. 314076.

²¹ NYSDEC, July 2, 2019, Former IBM B952/982, Sub-slab Depressurization System Shutdown Sampling – December 2019 Sampling, Site No. 314076, Poughkeepsie, Dutchess County.

²² Sanborn Head and Associates, April 1, 2021, Sub-slab Depressurization System (SSDS) Shutdown Testing Results Report Former IBM Leased Building 982 (Neptune Commerce Center) Poughkeepsie, Dutchess County, New York NYSDEC Site No. 314076.

²³ NYSDEC, May 19, 2021, Former IBM B952/982, Site No. 314076, Poughkeepsie, Dutchess County, Sub-slab Depressurization System Shutdown Test Results, February 2021 Sampling.

2.3 Site Ownership and Regulatory History

As noted previously, the Site was leased by IBM and owned by South Road Associates. As of April 25, 2005, the site was transacted to NCI.

IBM entered into an Order on Consent, Index #A3-0655-12-10²⁴ (Order) issued by the New York State Department of Environmental Conservation (NYSDEC) on May 18, 2011, which required the preparation of a Site Management Plan (SMP) as the final phase of the remediation, and for the continued operation and management of the Site. As detailed in the Paragraph 11 of the Order, the O&M Plan was superseded by the Order.

Following issuance of the Order, IBM prepared and submitted various documents to fulfill the need for a SMP and associated Environmental Easements. On December 2, 2011, IBM submitted a Final SMP²⁵ and NYSDEC in consultation with the New York State Department of Health (NYSDOH) approved the SMP in a letter dated December 29, 2011²⁶.

In 2011, the Site owner received Site Plan approval from the local municipality to redevelop the Site. During redevelopment, IBM requested and NYSDEC approved suspension²⁷ of the requirement to sample periphery wells at the Site as required under the GMP until such time as the redevelopment of the Site was complete. During the hiatus in sampling of the well field, IBM continued to operate and monitor the pumping well, 952-30R as per the approved GMP.

In addition, IBM submitted information pertaining to the metes and bounds written description for the Site Boundary Modification Request²⁸ based on remedial actions and sampling results conducted during redevelopment of the Site. Lastly, on October 23, 2018²⁹, IBM submitted an update to the SMP to reflect changes at the Site due to redevelopment and to account for changes to the GMP.

²⁴ NYSDEC, Order on Consent Index #A3-0655-12-10, Site No. 314076

²⁵ Groundwater Sciences Corporation and Henningson, Durham and Richardson Architecture & Engineering, P.C., December 2, 2011, Former IBM B952/982 Site, Dutchess County, New York, NYSDEC Site No. 314076, Site Management Plan

²⁶ NYSDEC, Former IBM Building 952/982 Site, Poughkeepsie, Dutchess County, Site No. 314076, Final Site Management Plan

²⁷ IBM and NYSDEC correspondences, January 23, 2013, IBM request and NYSDEC approval to suspend sampling and gauging of peripheral wells at the Site until redevelopment of the Site is complete.

²⁸ Site Boundary Modification Request, March 28, 2018, with corrections dated August 14, 2018.

²⁹ IBM and NYSDEC correspondence, October 23, 2018, Transmittal of updated Site Management Plan.

2.4 Rationale for 952-30R Shutdown

The request to perform a shutdown test of groundwater extraction well 952-30R was based on a review and analysis of trends in volatile organic compound (VOC) concentrations and mass removals during nearly twenty-six years of groundwater extraction operations at the Site and included the results of the baseline sampling event of all remaining Site groundwater monitoring wells which was completed during May 2019.

Data review and trend analysis provided as part of the 952-30R Shutdown Test Work Plan, indicate that the groundwater extraction operations resulted in significant decreases in VOC concentrations in groundwater, with reductions of up to two orders of magnitude. Furthermore, since startup of the 952-30R extraction well, VOC concentrations have shown significant reductions within the source area wells while VOC concentrations were below the NYSGQS in perimeter wells. Despite continued groundwater extraction operations, concentrations in Site groundwater within the source area have reached asymptotic values and further meaningful reductions in concentrations in groundwater within the source area wells are not expected.

3.0 DESCRIPTION OF WORK PERFORMED

952-30R shutdown test was a three-phased monitoring program, consisting of Site groundwater monitoring pre- and post-shutdown of groundwater extraction well 952-30R and was designed to provide data of sufficient quantity and quality to confirm the results of an assessment and trend analysis that predicted termination of 952-30R withdrawals would not result in meaningful impacts to downgradient groundwater conditions.

Phase 1: Pre-Shutdown Monitoring was completed during May 2019 consisted of a baseline monitoring round performed prior to shutdown of 952-30R, including recording groundwater elevations for all Site monitoring wells and analysis of groundwater samples for the list of parameters consistent with the approved GMP.

Phase 2: Post-Shutdown Quarterly Monitoring was completed during the fourth quarter 2019 and the first quarter 2020. Monitoring activities included the recording groundwater elevations for the wells shown on **Figure 2-1** and VOC analysis of groundwater samples collected from inactive extraction well 952-30R and groundwater monitoring wells 952-10RA, and 952-31R.

Phase 3: Quarterly monitoring was completed during the second quarter 2020 through the first quarter 2022 which represents Site monitoring for an additional 2 years following completion of Phase 2. Monitoring activities included recording groundwater elevations and sampling of all accessible wells on-Site.

3.1 Groundwater Elevation Measurements

The groundwater elevation measurements for the shutdown test included recording of water levels at all accessible wells on-Site (**Figure 2-2**). Groundwater elevations were calculated by subtracting the measured depth to water from the surveyed elevation of the measuring point. The measuring point for most wells is the top of the inner well casing (i.e., “Surveyed Reference Point Elevation”). Pre- and post-shutdown depth-to-water measurements and their calculated groundwater elevations are provided in **Table A-1** of **Appendix A**.

3.2 Groundwater Sampling

The groundwater sampling program for the shutdown test consisted of collection of groundwater samples from the accessible on-Site monitoring wells shown on **Figure 2-2**. The twelve wells sampled include:

- Extraction well 952-30R.
- Source area monitoring wells: 952-10RA and 952-31R.
- Other Site monitoring wells: 952-6R; 952-9R; 952-11R; 952-12R; 952-13R; 952-14R; 952-14RA 952-16R and 952-29R.

Monitoring wells were purged using a dedicated pump system, small non-dedicated pump systems or dedicated bailers. After purging the samples were collected into laboratory-provided, properly preserved sample containers and placed in coolers with ice for transportation to EnviroTest Laboratories of Newburgh, New York (EnviroTest) using standard chain-of-custody protocols. The samples delivered to EnviroTest were analyzed for VOCs using SW-846 Method 8021B and if required, BN-SVOCs using SW-846 Method 8270D, Oil and Grease and turbidity by standard methods.

The results of laboratory analyses are summarized by well in **Appendix B**.

4.0 FINDINGS

This section describes the findings of the 952-30R shutdown test, including a review of groundwater levels and flow conditions on Site; a summary of the principal constituents of concern; source area groundwater quality monitoring results and Site-wide groundwater quality monitoring results.

4.1 Groundwater Levels and Flow Directions

Beneath the site, groundwater flow occurs primarily within the dolostone bedrock of the Wappinger Formation with the exception of a few isolated zones of perched water on top of silt and clay lenses within the unconsolidated sediments.

Several nested bedrock piezometers have been constructed at this Site and water levels measured in these piezometers indicate a vertical gradient downward in the shallow bedrock and then horizontal flow within the deeper bedrock zone

Figure 4-1 and **Figure 4-2** depict groundwater elevation contours recorded during Phase 2 non-pumping conditions for the fourth quarter 2019 and first quarter 2020, respectively. **Figure 4-3**, **Figure 4-4**, **Figure 4-5**, and **Figure 4-6** depict groundwater elevation contours recorded during the first year of Phase 3 non-pumping conditions for the second quarter 2020, third quarter 2020, fourth quarter 2020 and first quarter 2021, respectively. **Figure 4-7**, **Figure 4-8**, **Figure 4-9**, and **Figure 4-10** depict groundwater elevation contours recorded during the second year of Phase 3 non-pumping conditions for the second quarter 2021, third quarter 2021, fourth quarter 2021 and first quarter 2022, respectively.

As shown on these figures, the principal directions of groundwater flow are to the east and south from a location near the front of former B982 and near monitoring well 952-10RA and pumping well, 952-30R.

4.2 Principal Constituents of Concern

The principal constituents detected at the site include chlorinated benzenes, chlorinated ethanes and chlorinated ethenes. A brief description of each of these groupings of VOCs is provided below.

Chlorinated benzenes – The principal chlorinated benzenes detected in groundwater at the Site include the three isomers of dichlorobenzene (12-DCBZ; 1,3-dichlorobenzene (13-DCBZ) and 1,4-dichlorobenzene (14-DCBZ)); 1,2,4-trichlorobenzene (124-TCBZ) and chlorobenzene (CBZ).

Chlorinated ethanes – The principal chlorinated ethanes detected in groundwater at the Site include: 1,1,1-trichloroethane (111-TCA); 1,1-dichloroethane (11-DCA); 1,2-dichloroethane (12-DCA) and 1,1-dichloroethene (11-DCE). 111-TCA is a primary solvent used in many industrial applications and in printing operations with 11-DCA as a principal transformation products by reductive dechlorination and 11-DCE by an abiotic elimination reaction.

Chlorinated ethenes – The principal chlorinated ethenes detected in groundwater at the Site include tetrachloroethene (PCE); trichloroethene (TCE) and 1,2-dichloroethene (12-DCE(tot)). TCE can be either a daughter product of PCE by reductive dechlorination or a primary solvent unrelated to PCE use. Dissolved TCE, whether derived from PCE or directly from the solvent TCE, degrades by reductive dechlorination to either cis-1,2-dichloroethene (preferentially) or trans-1,2-dichloroethene.

Other compounds detected in groundwater include the semi-volatile compound BS-2EH-PTAL and chloroform (TCM).

4.3 Source Area Groundwater Quality Monitoring Results

A comparison of source area groundwater quality sampling results is provided in **Table B-1** of **Appendix B** and shown on **Plate 4-1**. It should be noted that groundwater quality monitoring results for each compound detected at each monitored location during the shutdown test is provided in **Table B-1** and **Plate 4-1**; therefore, the list of compounds detected at locations may vary.

Source area wells include 952-10RA, 952-31R and the pumping well 952-30R. In addition to the data collected under the 952-30R Shutdown Test Work Plan, **Table B-1** includes data from the last sampling event prior to Site redevelopment (2012), the historical maximum concentration detected for each compound detected during the shutdown test and the date the historical maximum concentration was detected. **Plate 4-1** shows a summary of the historical maximum concentration, the results from the *Phase 1 Baseline* sampling event and the sampling results from the last quarter

of the shutdown test sampling activities (*Phase 3, Post-shutdown, Quarter 8 of 8, First Quarter 2022*).

Chlorinated benzene concentrations, including 12-DCBZ, 13-DCBZ and 14-DCBZ at source area monitoring well 952-10RA were consistently detected above the 3 ug/L New York State Groundwater Quality Standard (6NYCRR Part 703) (NYSGQS) for these compounds for samples collected through the second quarter 2021 (**Appendix B, Table B-1, Phase 3, Quarter 5 of 8**) with sporadic detections throughout the remainder of the shutdown test monitoring. These compounds were non-detect at a concentration of 1 ug/L at 952-10RA for the sample collected during the last quarter of Phase 3 monitoring (**Appendix B, Table B-1, Phase 3, Quarter 8 of 8**). Monitoring results for 952-31R show a similar pattern of concentrations for chlorinated benzenes (12-DCBZ, 13-DCBZ and 14-DCBZ) detected above the NYSGQS of 3 ug/L although at much lower concentrations than found at 952-10RA. Samples collected during Phase 1 (*Baseline*), Phase 2 (*Post-shutdown*) and the first two quarters of Phase 3 (*Post-shutdown*) at 952-31R show concentrations exceeding the NYSGQS (**Appendix B, Table B-1**). These three chlorinated benzene compounds were detected sporadically and at concentrations below the NYSGQS with one exception (12-DCBZ, **Appendix B, Table B-1, Phase 3 Quarter 7 of 8, fourth quarter 2021**) for the remainder of the shutdown test. For the compounds detected at the extraction well 952-30R, during the shutdown test, none were detected above the NYSGQS.

Although groundwater quality measurements for wells 952-10RA and 952-31R indicate the presence of chlorinated benzene compounds that exceed the NYSGQS, the detected concentrations during the shutdown test did not exceed the maximum historical detected concentrations for these compounds as shown in **Table B-1 of Appendix B** and on **Plate 4-1**.

TCE was consistently detected in all groundwater samples collected under the shutdown test at source area monitoring well 952-10RA (**Table B-1**). TCE was detected in six of the ten quarters of data collected post-shutdown of 952-30RA at concentrations that exceed the NYSGQS of 5 ug/L and in one quarter post-shutdown at a concentration equal to the NYSGQS. In all instances, TCE detections in groundwater samples collected under the shutdown test at 952-10RA were below the historical maximum detected concentration of TCE (**Table B-1**). TCE was also consistently detected in source area monitoring well 952-31R; however, of the ten quarters of data collected

post-shutdown of 952-30R, only two results exceeded the NYSGQS. Where detected, TCE concentrations in groundwater samples collected from 952-31R under the shutdown test were below the historical maximum detected concentration of TCE (**Table B-1**).

Other compounds detected in source area wells during the six quarters of post-shutdown of 952-30R include: CBZ; 124-TCBZ; 111-TCA; 11-DCE; 11-DCA; 12-DCA; 12-DCE (total); PCE; TCM; 1,2-dichloropropane; 2-chlorotoluene; 4-chlorotoluene vinyl chloride and BS-2EH-PTAL.

4.4 Site-wide Groundwater Quality Monitoring Results

A comparison of Site-wide groundwater quality sampling results is provided in **Table B-2** of **Appendix B** and **Plate 4-1**. Site-wide monitoring includes wells that are upgradient, side-gradient and downgradient of the source area.

Groundwater quality monitoring results for each compound detected at each monitored location during the shutdown test is provided in **Table B-2** and **Plate 4-1**, therefore the list of compounds detected at locations may vary.

Nine site-wide wells were monitored during *Phase 3* of the shutdown test and include: 952-6R; 952-9R; 952-11R; 952-12R; 953-13R; 952-14R; 952-14RA; 952-16R and 952-29R.

Table B-2 includes data from the last sampling event prior to Site redevelopment (2012), the historical maximum concentration detected for each compound detected during the shutdown test and the date the historical maximum concentration was detected. **Plate 4-1** shows a summary of the historical maximum concentration, the results from the *Phase 1 Baseline* sampling event and the sampling results from the last quarter of the shutdown test sampling activities (*Phase 3, Post-shutdown, Quarter 8 of 8, First Quarter 2022*).

As shown on **Table B-2**, of the samples collected from non-source area locations, only one compound, BS-2EH-PTAL was detected at concentrations that exceeded the NYSGQS of 5 ug/L. BS-2EH-PTAL was detected sporadically at the following three locations: 952-9R; 952-14R and 952-14RA. At 952-9R, BS-2EH-PTAL was detected in only one sample during the 952-30R shutdown test at a concentration of 7.4 J ug/L (*Phase 3, Post-shutdown, Quarter 3 of 8, Fourth Quarter 2020, Table B-2*) compared with the historical maximum concentration of 20 ug/L at this

same location (**Table B-2**). BS-2EH-PTAL was detected at 952-14R at a concentration of 6.7 J ug/L (*Phase 3, Post-shutdown, Quarter 3 of 8, Fourth Quarter 2020, Table B-2*) which is slightly elevated from the maximum historical concentration of 5 ug/L. It should be noted however, that a duplicate sample collected on the same date from this location detected BS-2EH-PTAL at 3.5 J ug/L which is below the NYSGQS of 5 ug/L. At 952-14RA, BS-2EH-PTAL was detected in groundwater twice during the 952-30R shutdown test at concentrations above the NYSGQS; 6.6 J ug/L (*Phase 3, Post-shutdown, Quarter 3 of 8, Fourth Quarter 2020, Table B-2*) and; 5.2 ug/L (*Phase 3, Post-shutdown, Quarter 6 of 8, Third Quarter 2021, Table B-2*). It should be noted that where BS-2EH-PTAL was detected above the NYSGQS at 952-14RA, those concentrations are less than half of the maximum BS-2EH-PTAL concentration detected at this location (15 ug/L, **Table B-2**).

A review **Table B-2** shows detections for other compounds at wells that are outside the source area are sporadic and not at concentrations that exceed the NYSGQS for these constituents. Eight compounds were detected in non-source area wells following the shutdown of 952-30R including: 12-DCBZ; 111-TCA; 11-DCA; 12-DCA; TCE; TCM; toluene; and benzo(b)fluorene. As shown on **Table B-2**, where these eight compounds were detected, none were detected at concentrations that exceed the NYSGQS for samples collected following shutdown of 952-30R.

A review of **Plate 4-1** shows little to no change between the Baseline sampling results and the last quarterly sampling results post-shutdown of 952-30R (*Phase 3, Post-shutdown, Quarter 8 of 8*).

5.0 SUMMARY CONCLUSIONS AND RECOMMENDATIONS

Groundwater quality results indicate the groundwater remedy implemented at the Site has been successful. Groundwater extraction operations at 952-30R resulted in significant decreases in VOC concentrations in the source area wells. Since startup of the 952-30R extraction well in December 1993, VOC concentrations in groundwater have been reduced by up to two orders of magnitude (**Appendix B, Table B-1** and **Plate 4-1**). Despite continued groundwater extraction operations, concentrations in Site groundwater within the source area have reached asymptotic values while chlorinated benzene concentrations have been detected at perimeter monitoring wells sporadically and at levels below NYSGQS since early 1999 (**Appendix B, Table B-2** and **Plate 4-1**).

Further meaningful reductions in concentrations in groundwater within the source area wells are not expected if operations at 952-30R resumed. In addition, it is anticipated that there will be no meaningful changes in groundwater quality at the perimeter monitoring wells if operations at 952-30R were terminated based on the comparison of groundwater quality at perimeter monitoring locations prior to the initiation of the shutdown of 952-30R and during the shutdown test (**Appendix B, Table B-2** and **Plate 4-1**).

Based on our understanding of conditions within and near the Site, the continued shutdown of extraction well 952-30R is expected to result in no meaningful impacts constituting a threat to public health and the environment.

The results of the shutdown test support the termination of groundwater extraction at 952-30R.

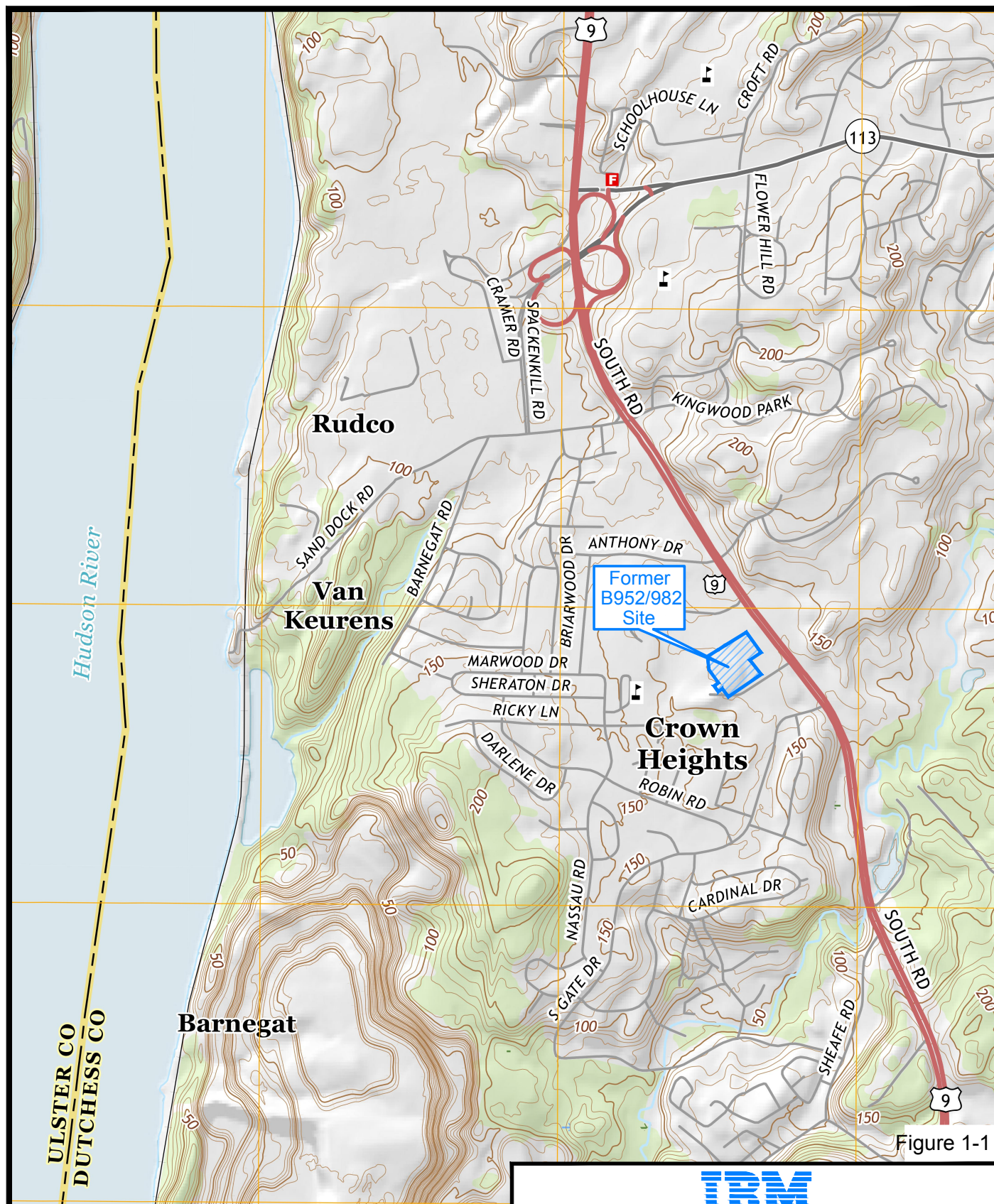
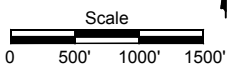


Figure 1-1

Portion of the Poughkeepsie, New York
7.5-minute USGS Quadrangle (2016)

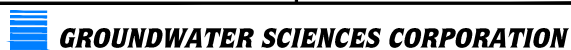


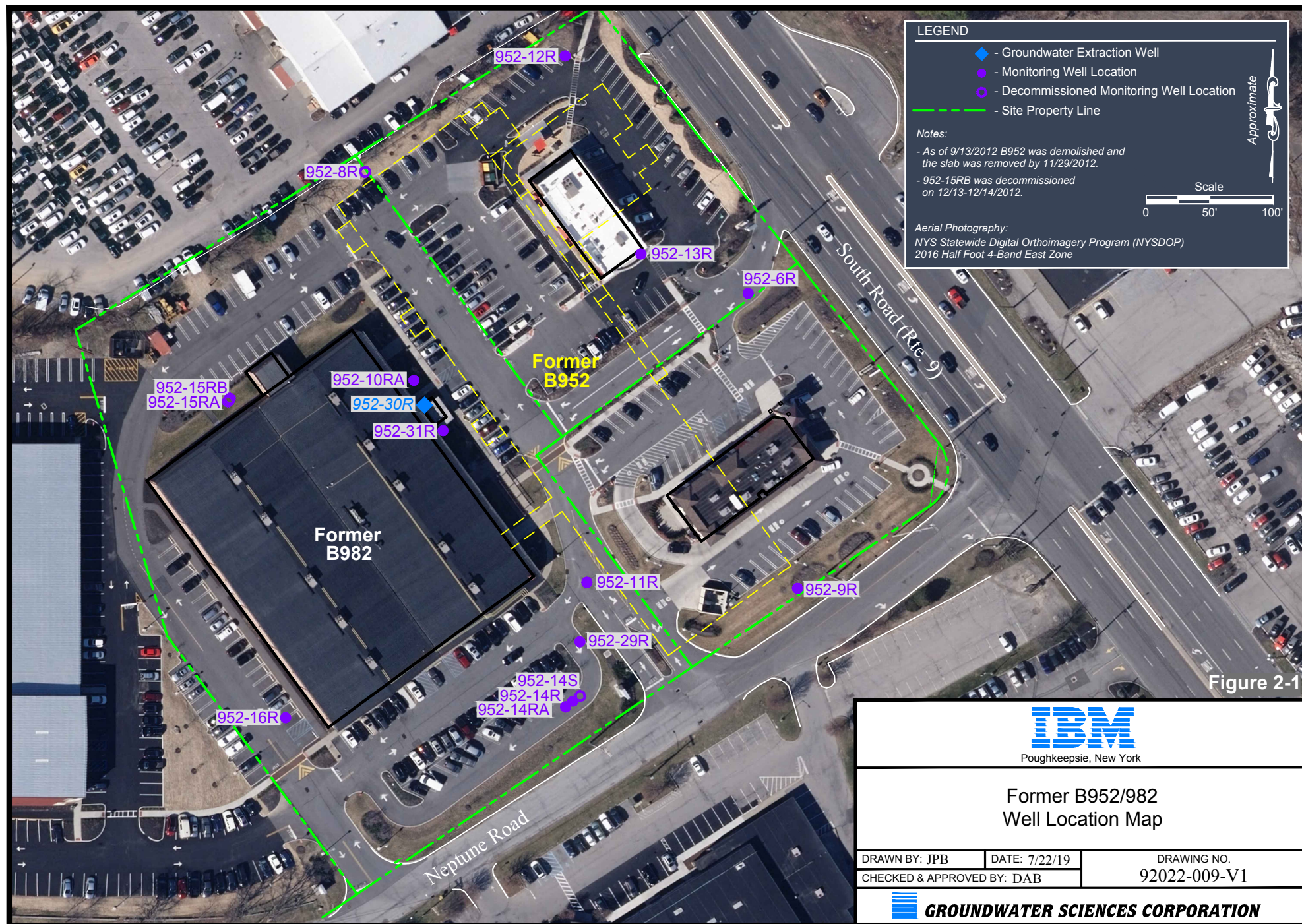
Source: USGS National Map US Topo



Former B952/982 Site Location Map

DRAWN BY: JPB	DATE: 7/22/19	DRAWING NO.
CHECKED & APPROVED BY: DAB		92022-034-B1



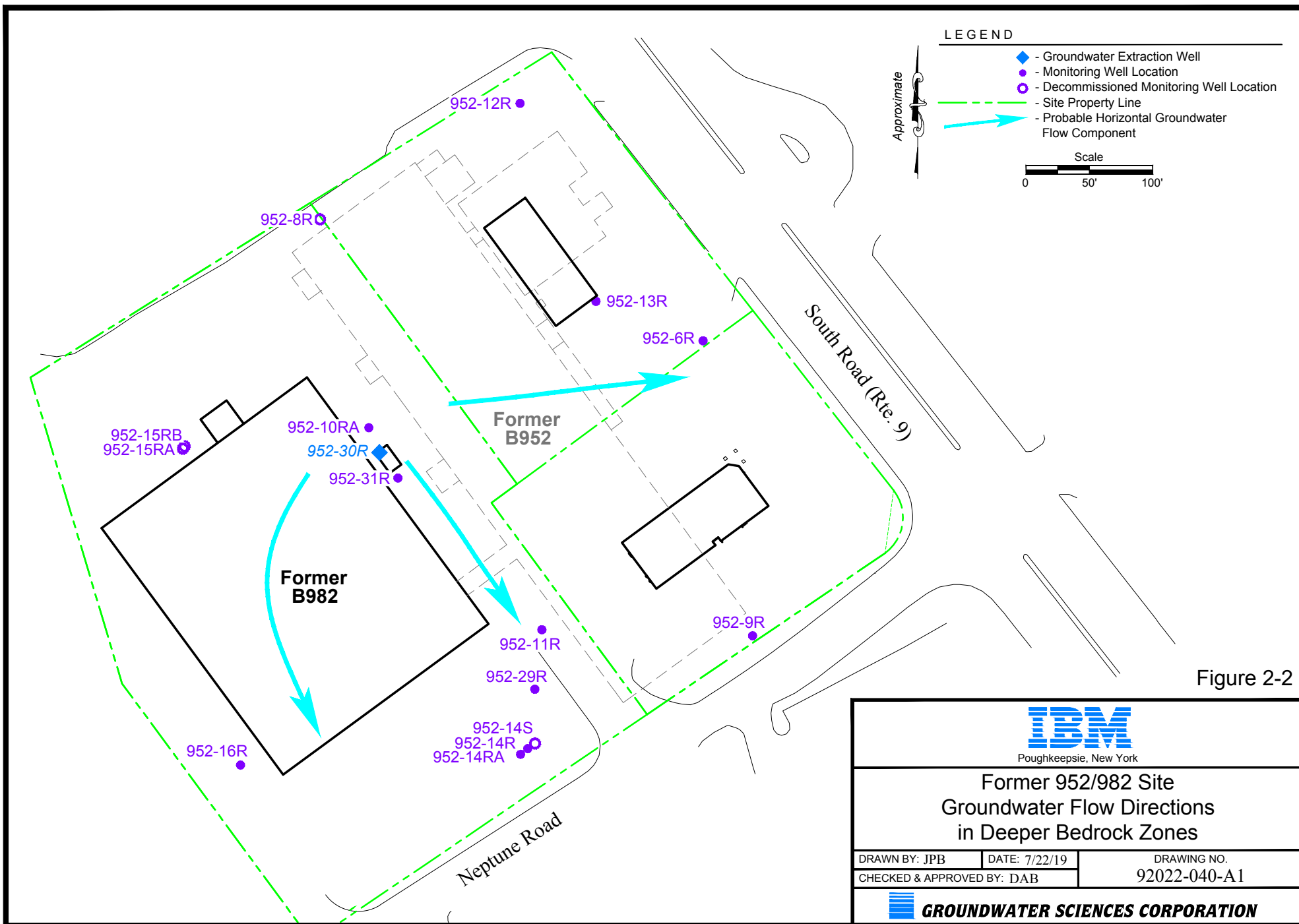


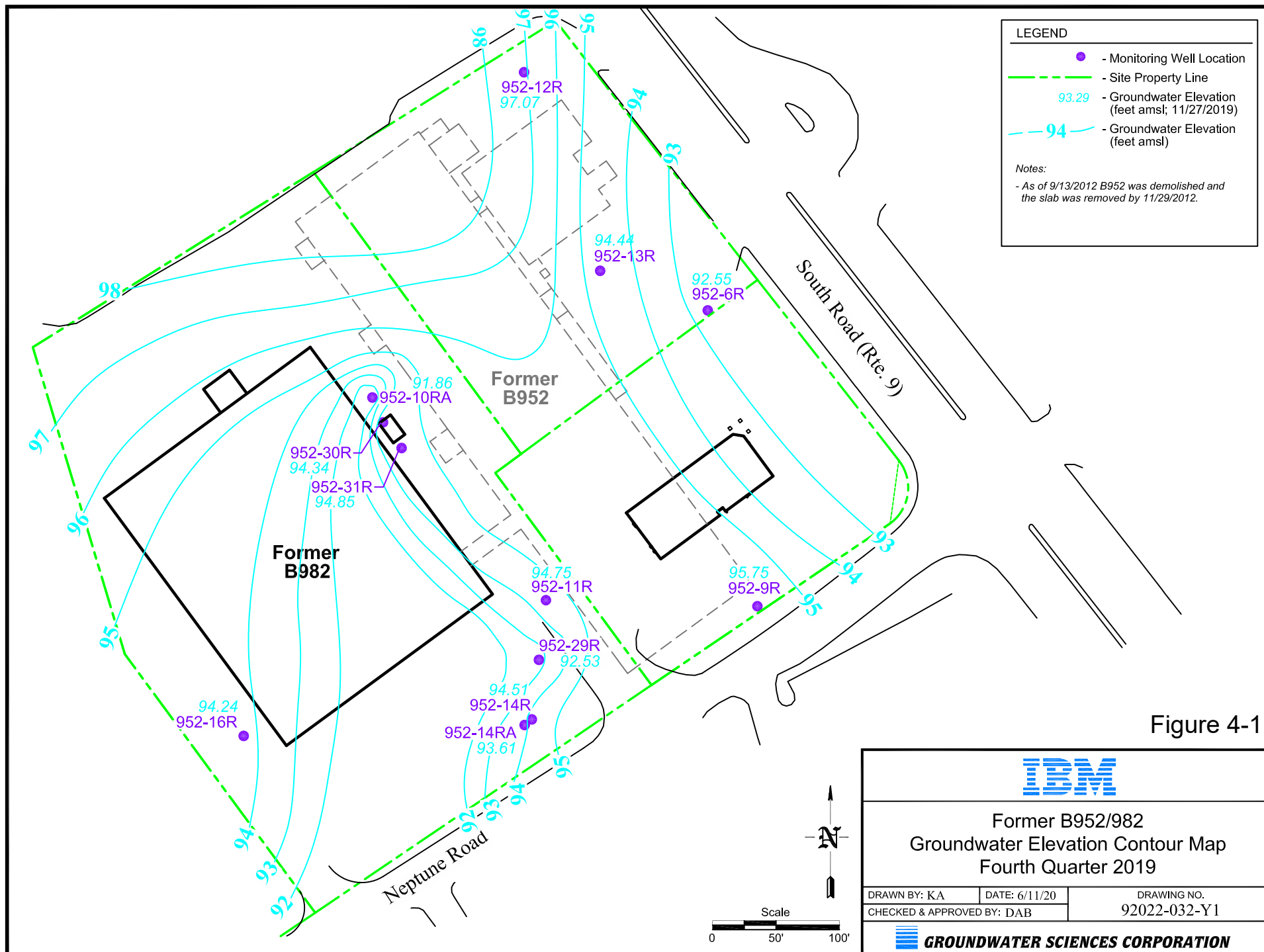
Former B952/982 Well Location Map

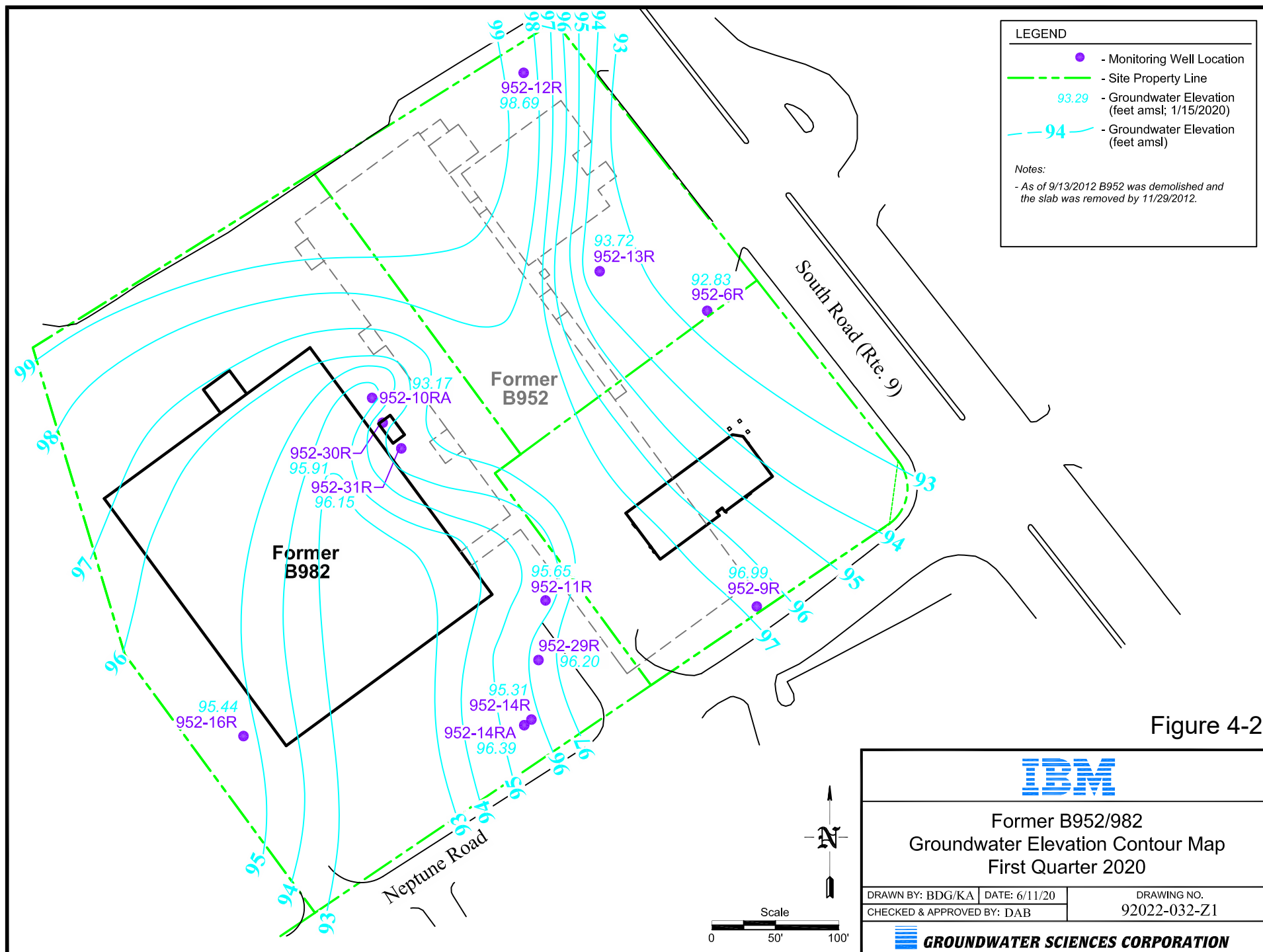
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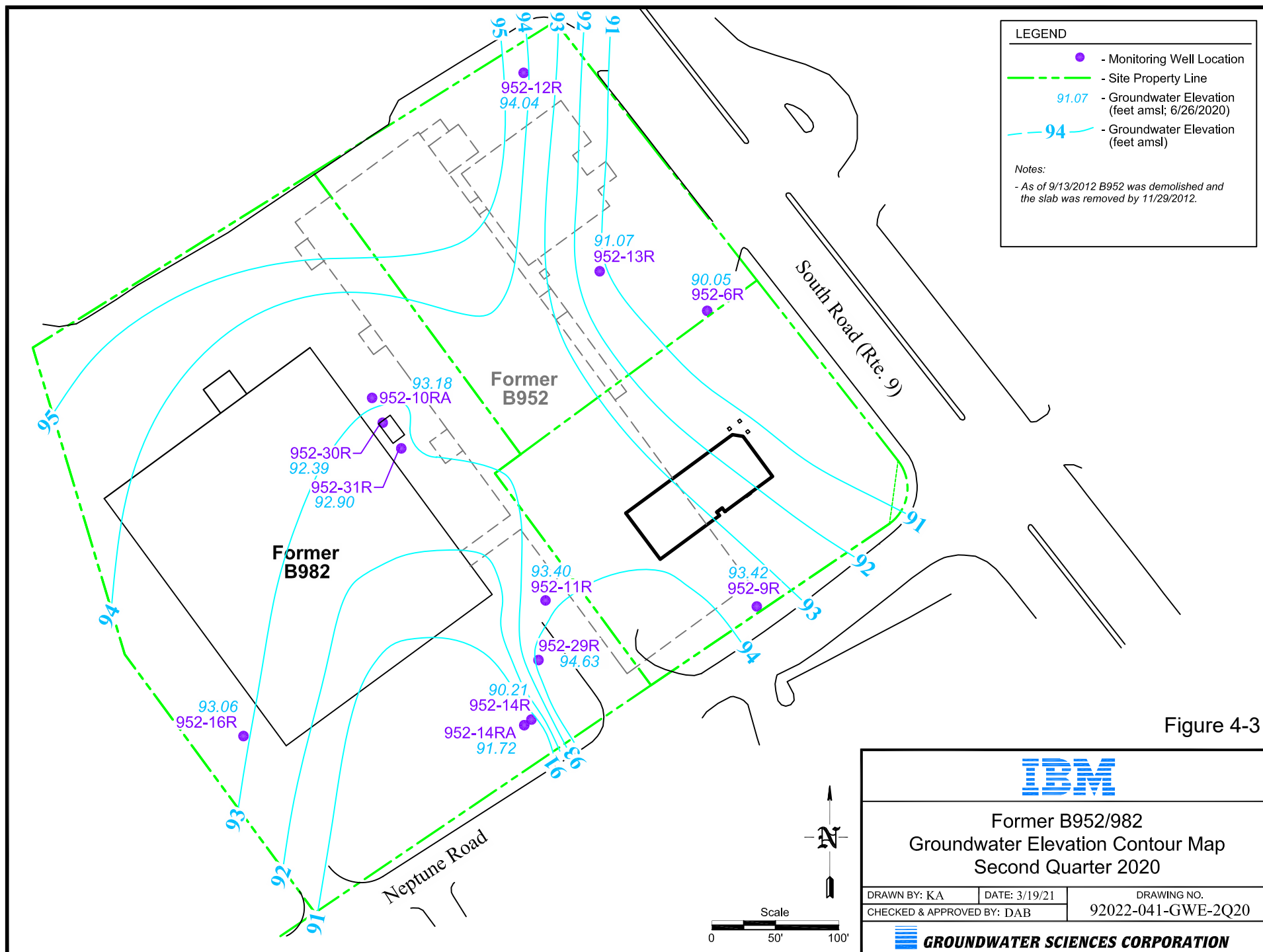
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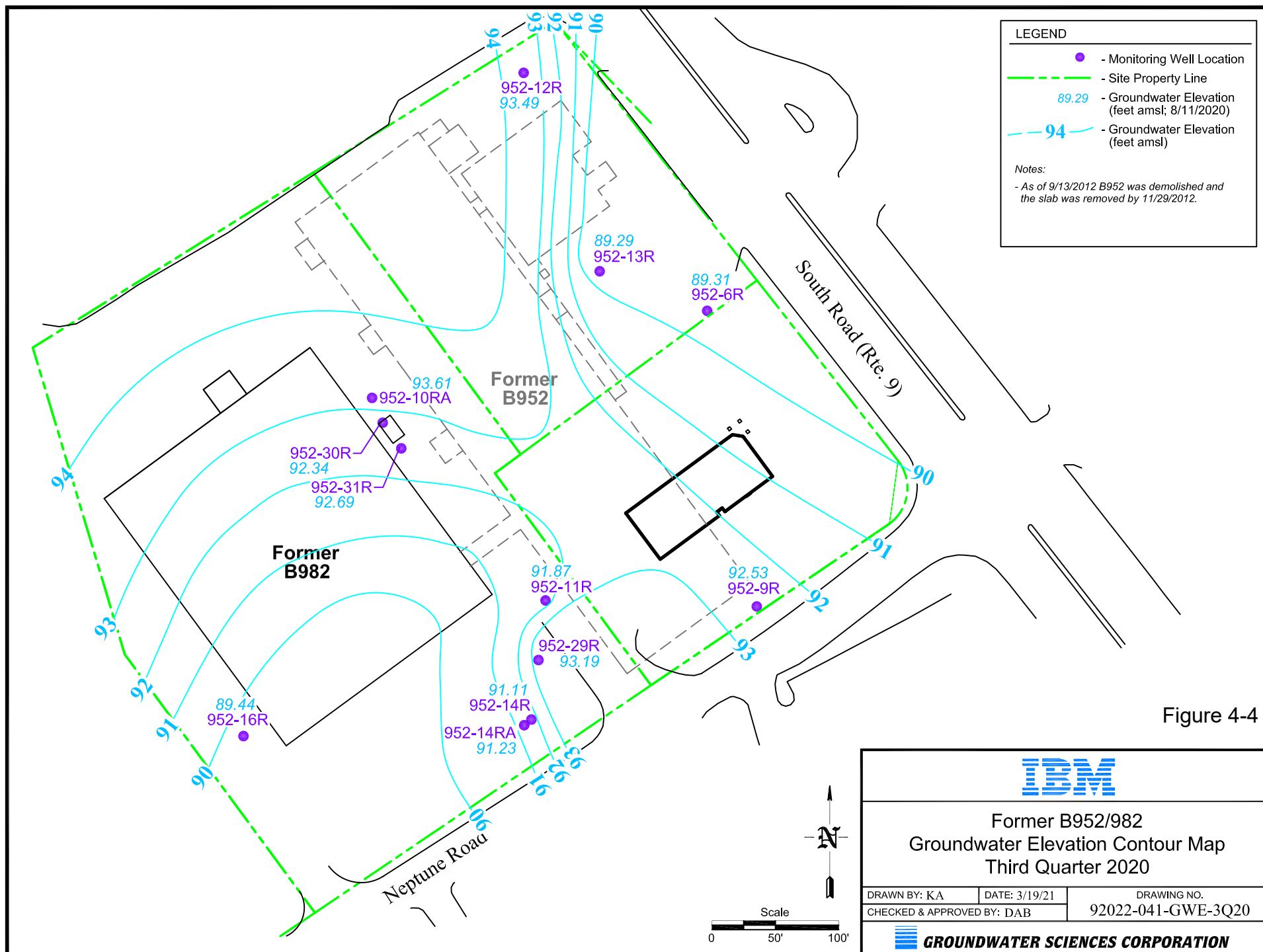
GROUNDWATER SCIENCES CORPORATION

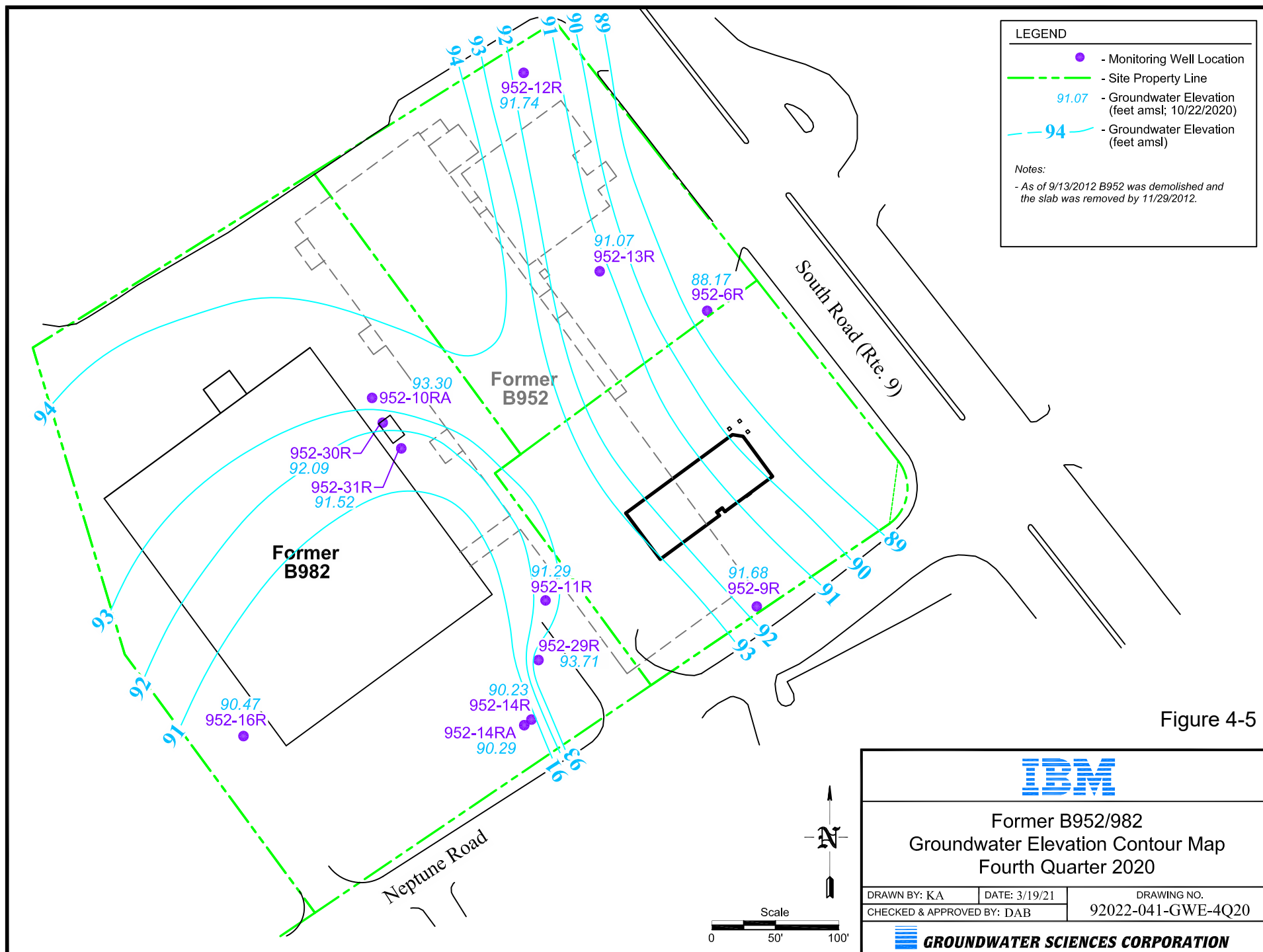


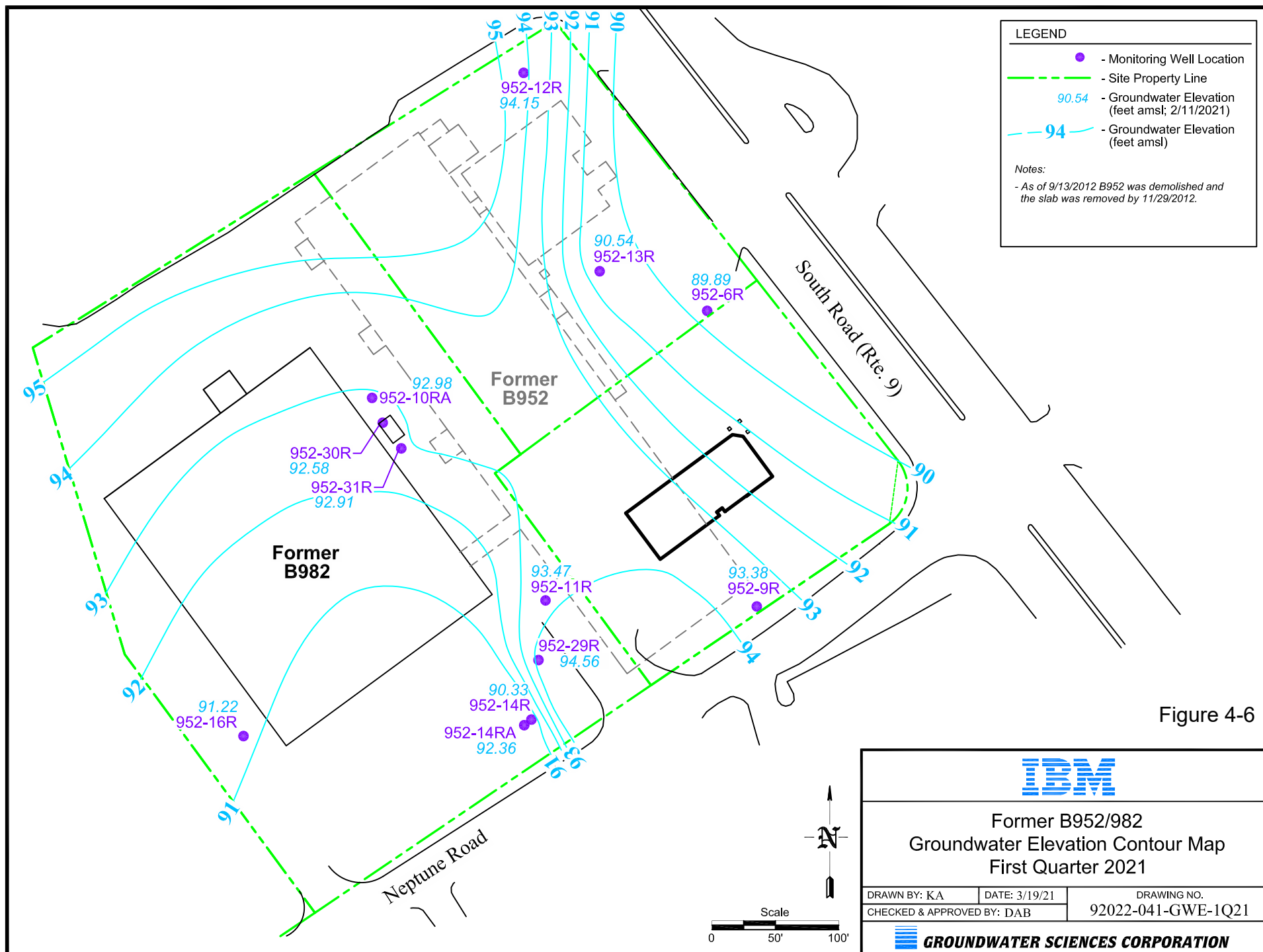


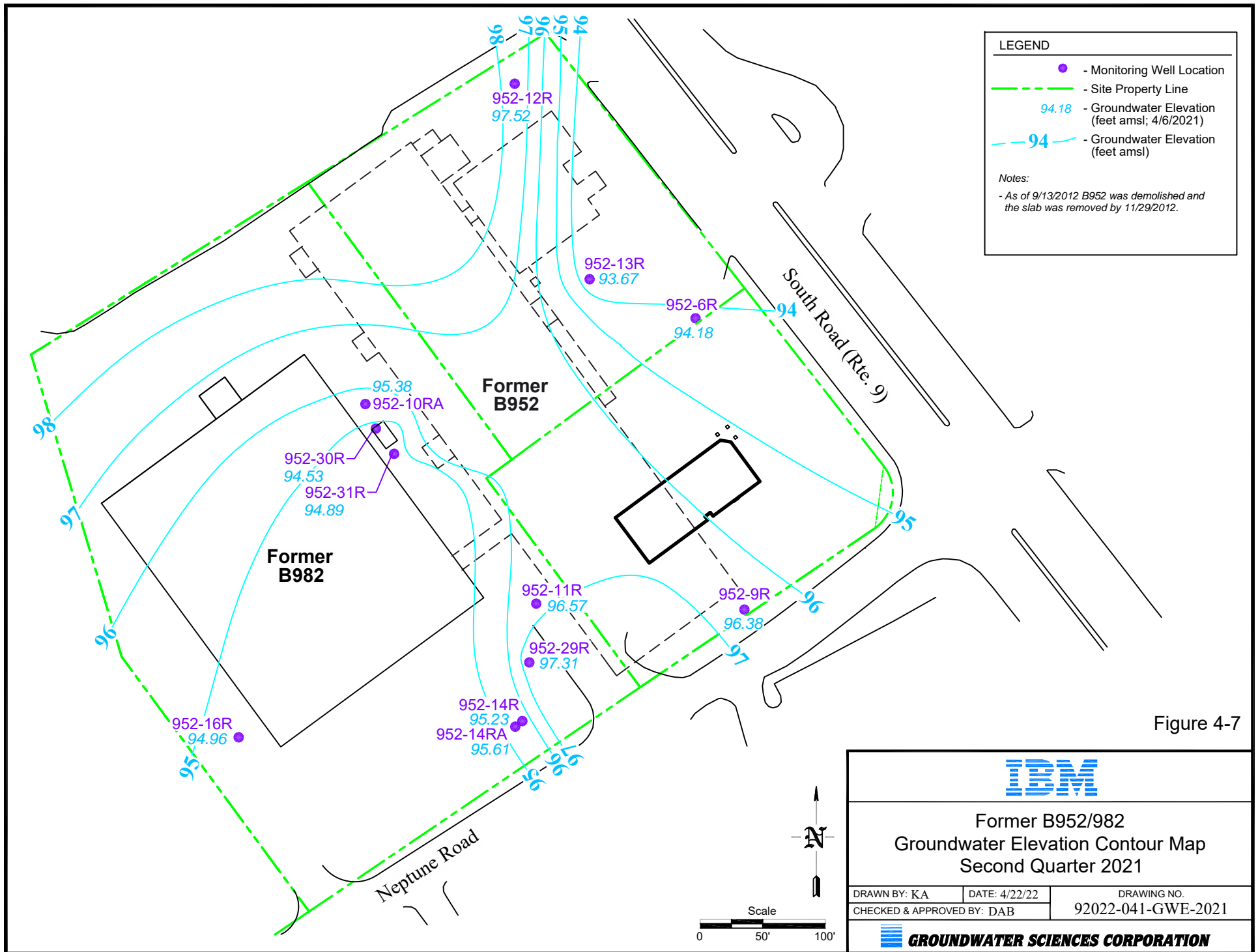


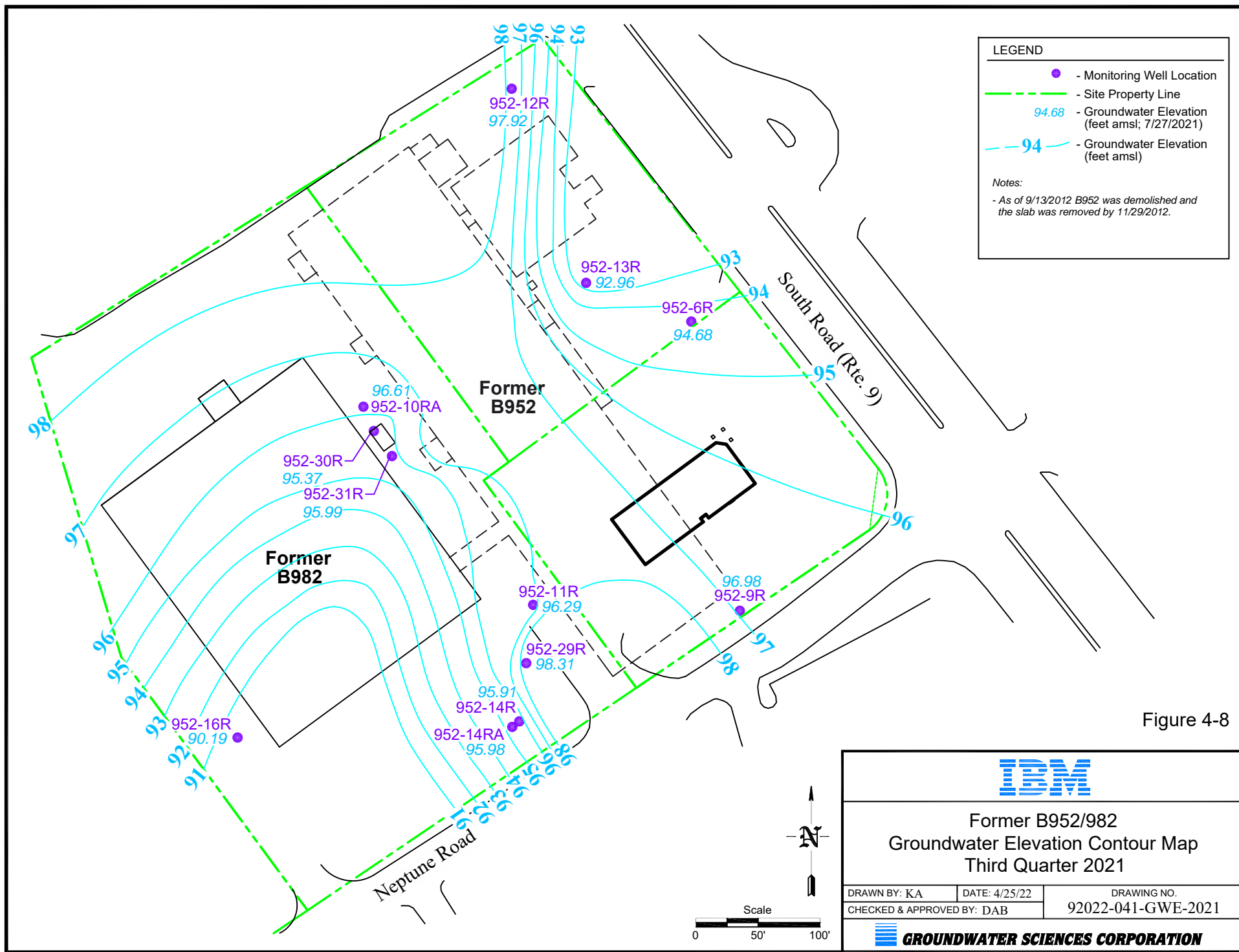


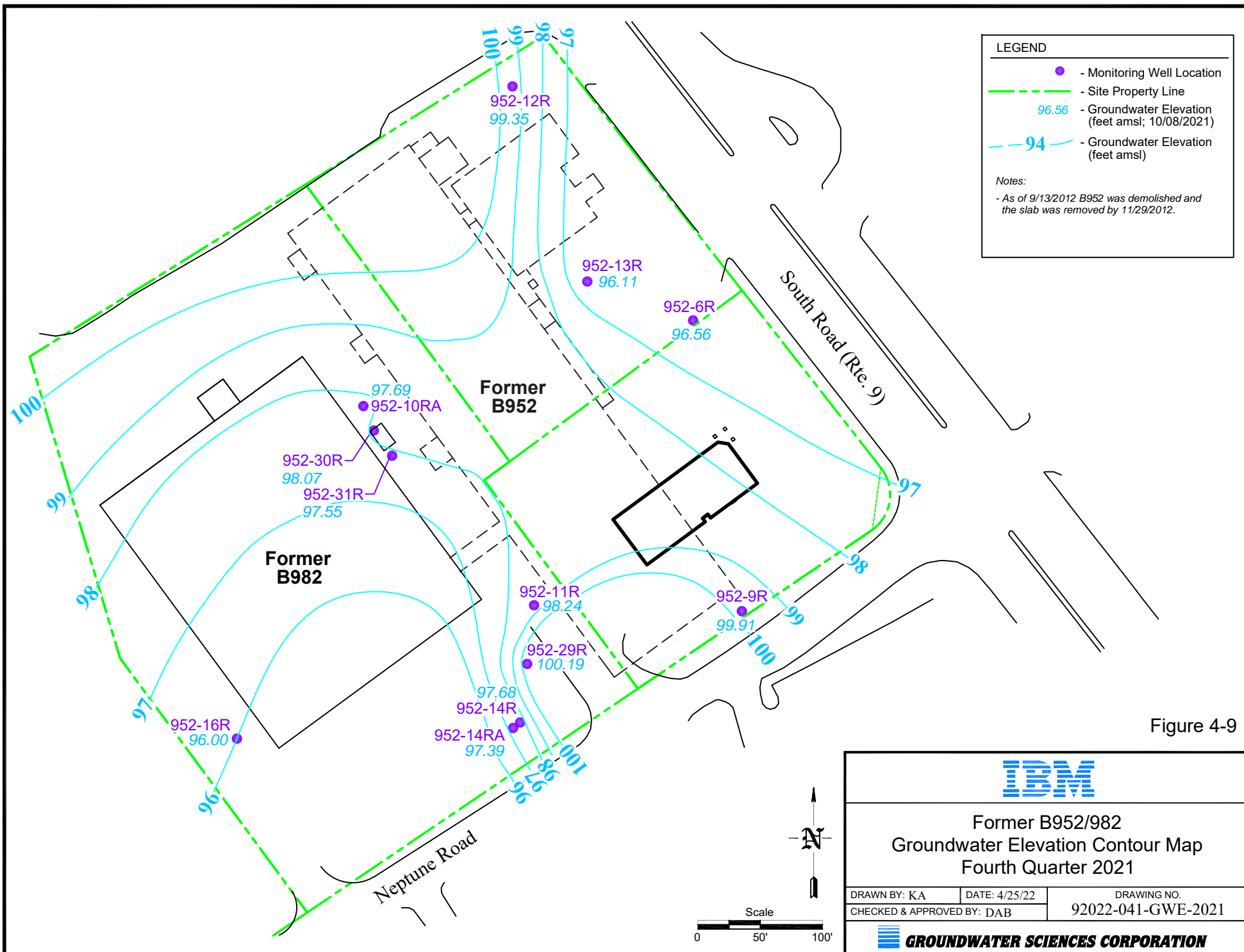


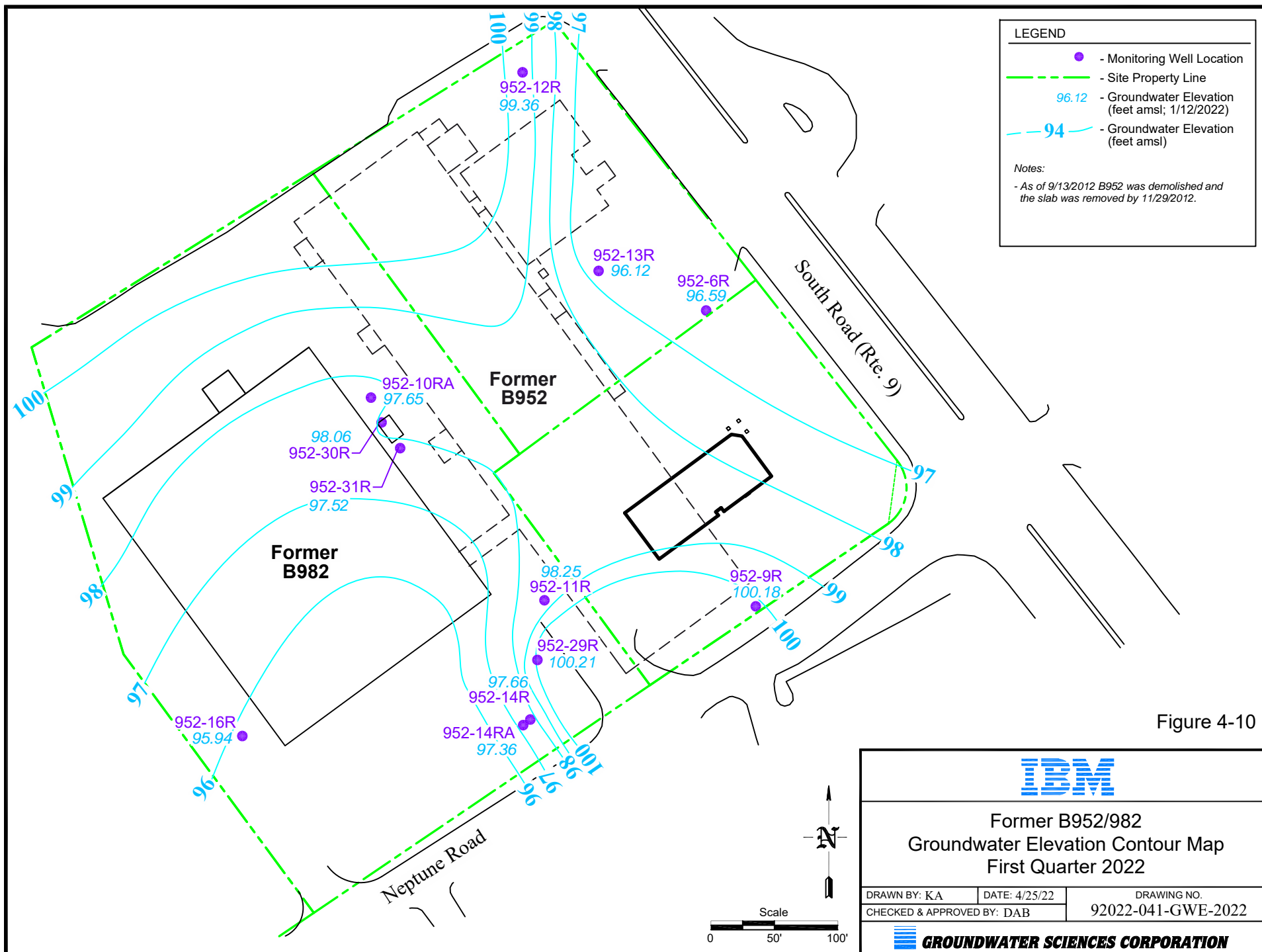


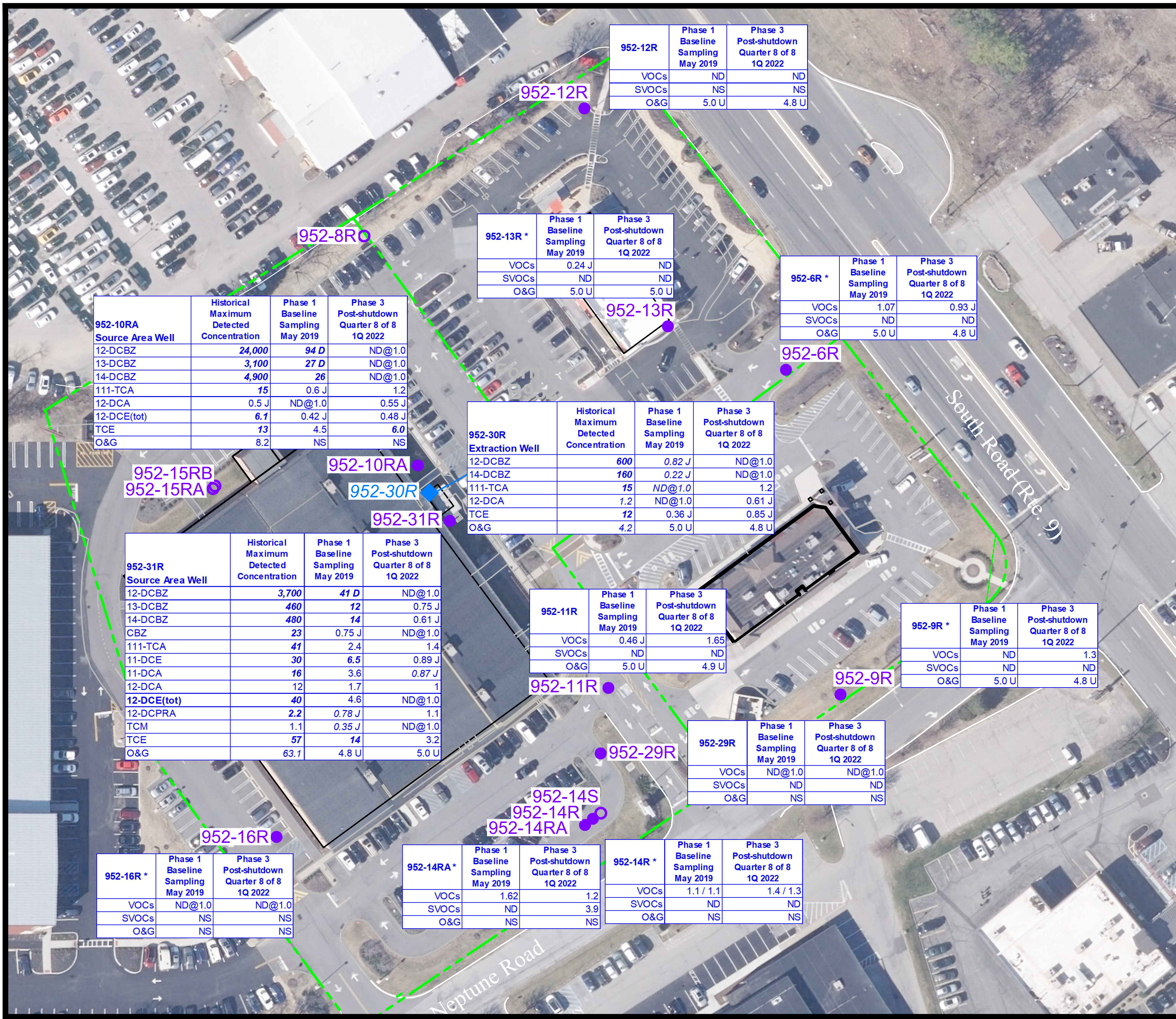












LEGEND

- Groundwater Extraction Well
- Monitoring Well Location
- Decommissioned Monitoring Well Location
- Site Property Line

All results in µg/L.

U - The analyte was analyzed for but not detected at or above the lowest stated limit

D - Indicates result reported from a secondary dilution factor

J - Estimated Value

ND@X - Not Detected at Laboratory Detection Limit "X"

NS - Not Sampled

VOCs - Volatile Organic Compounds (8021B)

SVOCs - Semi Volatile Organic Compounds (8270D)

O&G - Oil & Grease (HEM 1664)

Value/Value - Analytical Result and Duplicate Result

* - Downgradient Perimeter Monitoring Location

12-DCBZ - 1,2-Dichlorobenzene

13-DCBZ - 1,3-Dichlorobenzene

14-DCBZ - 1,4-Dichlorobenzene

CBZ - Chlorobenzene

111-TCA - 1,1,1-Trichloroethane

11-DCE - 1,1-Dichloroethene

11-DCA - 1,1-Dichloroethane

12-DCA - 1,2-Dichloroethane

12-DCE(tot) - 1,2-Dichloroethene (Total)

12-DCPRA - 1,2-Dichloropropane

TCM - Chloroform

TCE - Trichloroethene

Notes:

- As of September 13, 2012, B952 was demolished, and the slab was removed by November 29, 2012.
- 952-15RB was decommissioned on December 13-14, 2012.
- BOLD** and *italicized* results exceed applicable NYS groundwater standards (6NYCRR Part 703).
- VOC and SVOC results in µg/L. O&G results in mg/L.

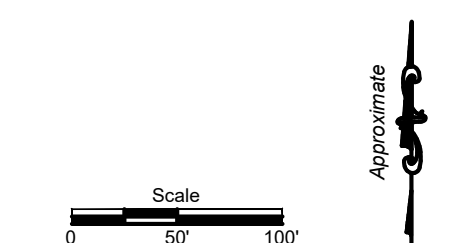



Plate 4-1



Poughkeepsie, New York

Former B952/982
Summary of Monitoring Results


DRAWN BY: KA

DATE: 5/19/22

DRAWING NO.

CHECKED & APPROVED BY: DAB

92022-009-W1

 **GROUNDWATER SCIENCES CORPORATION**

Appendix A

Groundwater Elevation Determinations

Table A-1: Depth to Water Measurements and Calculated Groundwater Elevation Data

Table A-1

**Former Leased Property - Buildings 952/982
Depth to Water Measurements and Calculated Groundwater Elevation Data**

Well No.	Elevation TOC	11/27/2019	
		DTW	GWE
952-6R	130.68	38.13	92.55
952-9R	137.80	42.06	95.74
952-10RA	137.61	42.50	95.11
952-11R	135.57	40.82	94.75
952-12R	135.07	38.00	97.07
952-13R	131.07	36.63	94.44
952-14R	135.33	40.82	94.51
952-14RA	135.61	42.00	93.61
952-16R	135.44	41.20	94.24
952-29R	137.31	44.78	92.53
952-30R	136.69	42.35	94.34
952-31R	137.07	42.22	94.85

Notes:

TOC Top of Casing (surveyed reference point)
DTW Measured Depth to Water from surveyed reference point (Elevation TOC) (feet)
GWE Calculated Groundwater Elevation (feet above mean sea level)

Table A-1

Former Leased Property - Buildings 952/982
Depth to Water Measurements and Calculated Groundwater Elevation Data

Well No.	Elevation TOC	1/15/2020		6/26/2020		8/11/2020		10/22/2020	
		DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE
952-6R	130.68	37.85	92.83	40.63	90.05	41.37	89.31	42.51	88.17
952-9R	137.80	40.81	96.99	44.38	93.42	45.27	92.53	46.12	91.68
952-10RA	137.61	41.19	96.42	44.43	93.18	44.00	93.61	44.31	93.30
952-11R	135.57	39.92	95.65	42.17	93.40	43.70	91.87	44.28	91.29
952-12R	135.07	36.38	98.69	41.03	94.04	41.58	93.49	43.33	91.74
952-13R	131.07	37.35	93.72	40.00	91.07	41.78	89.29	40.00	91.07
952-14R	135.33	40.02	95.31	45.12	90.21	44.22	91.11	45.10	90.23
952-14RA	135.61	39.22	96.39	43.89	91.72	44.38	91.23	45.32	90.29
952-16R	135.44	40.00	95.44	42.38	93.06	46.00	89.44	44.97	90.47
952-29R	137.31	41.11	96.20	42.68	94.63	44.12	93.19	43.60	93.71
952-30R	136.69	40.78	95.91	44.30	92.39	44.35	92.34	44.60	92.09
952-31R	137.07	40.92	96.15	44.17	92.90	44.38	92.69	45.55	91.52

Notes:

TOC Top of Casing (surveyed reference point)
DTW Measured Depth to Water from surveyed reference point (Elevation TOC) (feet)
GWE Calculated Groundwater Elevation (feet above mean sea level)

Table A-1 (continued)

Former Leased Property - Buildings 952/982
Depth to Water Measurements and Calculated Groundwater Elevation Data

Well No.	Elevation TOC	2/11/2021		4/6/2021		7/27/2021		10/8/2021	
		DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE
952-6R	130.68	40.79	89.89	36.50	94.18	36.00	94.68	34.12	96.56
952-9R	137.80	44.42	93.38	41.42	96.38	40.82	96.98	37.89	99.91
952-10RA	137.61	44.63	92.98	42.23	95.38	41.00	96.61	39.92	97.69
952-11R	135.57	42.10	93.47	39.00	96.57	39.28	96.29	37.33	98.24
952-12R	135.07	40.92	94.15	37.55	97.52	37.15	97.92	35.72	99.35
952-13R	131.07	40.53	90.54	37.40	93.67	38.11	92.96	34.96	96.11
952-14R	135.33	45.00	90.33	40.10	95.23	39.42	95.91	37.65	97.68
952-14RA	135.61	43.25	92.36	40.00	95.61	39.63	95.98	38.22	97.39
952-16R	135.44	44.22	91.22	40.48	94.96	45.25	90.19	39.44	96.00
952-29R	137.31	42.75	94.56	40.00	97.31	39.00	98.31	37.12	100.19
952-30R	136.69	44.11	92.58	42.16	94.53	41.32	95.37	38.62	98.07
952-31R	137.07	44.16	92.91	42.18	94.89	41.08	95.99	39.52	97.55

Notes:

TOC Top of Casing (surveyed reference point)
DTW Measured Depth to Water from surveyed reference point (Elevation TOC) (feet)
GWE Calculated Groundwater Elevation (feet above mean sea level)

Table A-1 (continued)

Former Leased Property - Buildings 952/982
Depth to Water Measurements and Calculated Groundwater Elevation Data

Well No.	Elevation TOC	1/12/2022	
		DTW	GWE
952-6R	130.68	34.09	96.59
952-9R	137.80	37.62	100.18
952-10RA	137.61	39.96	97.65
952-11R	135.57	37.32	98.25
952-12R	135.07	35.71	99.36
952-13R	131.07	34.95	96.12
952-14R	135.33	37.67	97.66
952-14RA	135.61	38.25	97.36
952-16R	135.44	39.50	95.94
952-29R	137.31	37.10	100.21
952-30R	136.69	38.63	98.06
952-31R	137.07	39.55	97.52

Notes:

TOC Top of Casing (surveyed reference point)
DTW Measured Depth to Water from surveyed reference point (Elevation TOC) (feet)
GWE Calculated Groundwater Elevation (feet above mean sea level)

Appendix B

Groundwater Monitoring Data Summary Tables

Table B-1: Source Area Monitoring Wells: Comparison of Historical, Phase 1 (Baseline), Phase 2 (Post-shutdown) and Phase 3 (Post-shutdown) Groundwater Monitoring Results

Table B-2: Site-wide Monitoring Wells: Comparison of Historical, Phase 1 (Baseline) and Phase 3 (Post-shutdown) Groundwater Monitoring Results

Table B-1: Comparison of Historical, Phase 1 (Baseline), Phase 2 (Post-shutdown) and Phase 3 (Post-shutdown) Groundwater Monitoring Result:
Former Building 952/982 Site, NYSDEC Site #314076
Source Area Wells

952-10RA Source Area Well	Phase 1 Baseline Sampling May 2019	Phase 2 Post-shutdown Quarter 1 of 2 4Q 2019	Phase 2 Post-shutdown Quarter 2 of 2 1Q 2020	Phase 3 Post-shutdown Quarter 1 of 8 2Q 2020	Phase 3 Post-shutdown Quarter 2 of 8 3Q 2020	Phase 3 Post-shutdown Quarter 3 of 8 4Q 2020	Phase 3 Post-shutdown Quarter 4 of 8 1Q 2021	Phase 3 Post-shutdown Quarter 5 of 8 2Q 2021	Phase 3 Post-shutdown Quarter 6 of 8 3Q 2021	Phase 3 Post-shutdown Quarter 7 of 8 4Q 2021	Phase 3 Post-shutdown Quarter 8 of 8 1Q 2022	Prior to Site redevelopment April 12, 2012	Historical Maximum Detected Concentration	Historical Maximum Detected (Date)
1,2-Dichlorobenzene	94 D	80 D	74 D	19	300 D	690 D	47 D	540 D	ND@1.0	ND@1.0	ND@1.0	430	24,000	3/29/1994
1,3-Dichlorobenzene	27 D	20	20	7.4	53 D	120 D	17	120	ND@1.0	8.8	ND@1.0	110	3,100	11/13/1995
1,4-Dichlorobenzene	26	22	20	7.8	73 D	150 D	11	120	ND@1.0	1.1	ND@1.0	150	4,900	3/29/1994
Chlorobenzene	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.58 J	1.6	ND@1.0	0.88 J	ND@1.0	ND@1.0	ND@1.0	3.1	14	12/2/1993
1,2,4-Trichlorobenzene	ND@1.0	ND@1.0	ND@1.0	ND@1.0	3.5 J	ND@1.0	ND@1.0	3.0 J	ND@1.0	1.2 J	ND@1.0	28	330	6/9/1998
1,1,1-Trichloroethane	0.6 J	0.68 J	0.55 J	0.76 J	1	1.1	0.84 J	ND@1.0	2.4	1.7	1.2	0.95 J	15	12/2/1993
1,1-Dichloroethene	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.36 J	ND@1.0	0.81 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	2.3	9/5/1995
1,1-Dichloroethane	ND@1.0	0.29 J	ND@1.0	ND@1.0	0.31 J	0.55 J	0.40 J	ND@1.0	0.36 J	0.31 J	ND@1.0	0.83 J	1.7	9/5/1995
1,2-Dichloroethane	ND@1.0	ND@1.0	ND@1.0	0.34 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.56 J	ND@1.0	0.55 J	ND@1.0	0.5 J	9/5/1995
1,2-Dichloroethene (total)	0.42 J	0.80 J	0.41 J	0.38 J	1.1	1.5	1.3	0.77 J	0.79 J	0.69 J	0.48 J	2.6	6.1	9/5/1995
1,2-Dichloropropane	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.28 J	0.30 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	
2-Chlorotoluene	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.48 J	1.7	ND@1.0	0.86 J	ND@1.0	ND@1.0	ND@1.0	1.1	9.2	6/12/2007
4-Chlorotoluene	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.51 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	1.1	9.2	6/12/2007
Chloroform	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.21 J	ND@1.0	ND@1.0	ND@1.0	0.33 J	0.36 J	ND@1.0	0.21 J	0.6 J	9/5/1995
Tetrachloroethene	ND@1.0	ND@1.0	ND@1.0	0.31 J	0.39 J	0.72 J	ND@1.0	0.61 J	ND@1.0	ND@1.0	ND@1.0	0.15 J	1.7	9/5/1995
Trichloroethene	4.5	6.5	3.2	2.9	5.7	5.0	4.8	5.8	9.1	6.3	6.0	3.4	13	9/5/1995
Vinyl Chloride	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.2 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.96 J	1.0	6/23/2009
Bis(2-ethylhexyl phthalate)	ND@9.5	NS	NS	ND@9.5	ND@9.5	ND@9.5	2.7 J	ND@4.8	ND@4.9	ND@2.2	ND@2.3	ND@10	13	3/29/1994

952-31R Source Area Well	Phase 1 Baseline Sampling May 2019	Phase 2 Post-shutdown Quarter 1 of 2 4Q 2019	Phase 2 Post-shutdown Quarter 2 of 2 1Q 2020	Phase 3 Post-shutdown Quarter 1 of 8 2Q 2020	Phase 3 Post-shutdown Quarter 2 of 8 3Q 2020	Phase 3 Post-shutdown Quarter 3 of 8 4Q 2020	Phase 3 Post-shutdown Quarter 4 of 8 1Q 2021	Phase 3 Post-shutdown Quarter 5 of 8 2Q 2021	Phase 3 Post-shutdown Quarter 6 of 8 3Q 2021	Phase 3 Post-shutdown Quarter 7 of 8 4Q 2021	Phase 3 Post-shutdown Quarter 8 of 8 1Q 2022	Prior to Site redevelopment April 12, 2012	Historical Maximum Detected Concentration	Historical Maximum Detected (Date)
1,2-Dichlorobenzene	41 D	430 D	12	17	5.2	0.75 J	ND@1.0	0.48 J	3.5 J	6.6	ND@1.0	110 /120	3700	5/20/1996
1,3-Dichlorobenzene	12	65 D	2.7	3.4 J	3.5	0.22 J	ND@1.0	ND@1.0	1.1 J	3.5	0.75 J	13 / 16	460	11/26/1996
1,4-Dichlorobenzene	14	110 D	3.9	4.6 J	4.0	ND@1.0	ND@1.0	ND@1.0	1.2 J	3.9	0.61 J	21 / 24	480	6/9/1998
Chlorobenzene	0.75 J	1.8	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	4.0 / ND@12	23	6/1/2006
1,1,1-Trichloroethane	2.4	0.78 J	0.85 J	1.5	0.53 J	0.99 J	0.93 J	ND@1.0	1.3	2	1.4	3.8 / ND@12	41	12/21/1994
1,1-Dichloroethene	6.5	1.3	2.1	2.5	0.32 J	0.29 J	ND@1.0	ND@1.0	1.1	2.8	0.89 J	8.7 / 6.4	30	9/5/1995
1,1-Dichloroethane	3.6	2.0	1.2	2.0	0.34 J	ND@1.0	0.54 J	0.33 J	1.1	2.1	0.87 J	5.9 / 4.4	16	12/4/1998
1,2-Dichloroethane	1.7	0.69 J	0.69 J	1.4	ND@1.0	0.89 J	ND@1.0	ND@1.0	1.1	1.8	1.0	2.8 / 2.5	12	12/4/1998
1,2-Dichloroethene (total)	4.6	1.7	1.6	3.3	0.46 J	ND@1.0	0.44 J	0.43 J	2.2	3.7	ND@1.0	6.2 / 5.7	40	9/12/1996
1,2-Dichloropropane	0.78 J	0.26 J	0.59 J	0.52 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	1.1	2	1.1	1.1 / ND@5	2.2	2/14/1995
2-Chlorotoluene	ND@1.0	0.68 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.52 J / ND@12	0.98 J	6/17/2011
4-Chlorotoluene	ND@1.0	0.23 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.23 J / ND@12	0.7 J	9/15/1998
Chloroform	0.35 J	ND@1.0	0.19 J	0.33 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.39 J	0.61 J	ND@1.0	0.75 J / ND@12	1.1	6/2/2010
Trichloroethene	14	2.4	4.2	6.5	1.4	1.2	1.1	2.8	4.1	6.6	3.2	19 / 14	57	2/14/1995
Vinyl Chloride	ND@1.0	0.23 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	1.4	ND@1.0	1.3 / ND@5.0	3.2	6/17/2011

952-30R Extraction Well	Phase 1 Baseline Sampling May 2019	Phase 2 Post-shutdown Quarter 1 of 2 4Q 2019	Phase 2 Post-shutdown Quarter 2 of 2 1Q 2020	Phase 3 Post-shutdown Quarter 1 of 8 2Q 2020	Phase 3 Post-shutdown Quarter 2 of 8 3Q 2020	Phase 3 Post-shutdown Quarter 3 of 8 4Q 2020	Phase 3 Post-shutdown Quarter 4 of 8 1Q 2021	Phase 3 Post-shutdown Quarter 5 of 8 2Q 2021	Phase 3 Post-shutdown Quarter 6 of 8 3Q 2021	Phase 3 Post-shutdown Quarter 7 of 8 4Q 2021	Phase 3 Post-shutdown Quarter 8 of 8 1Q 2022	Prior to Site redevelopment April 12, 2012	Historical Maximum Detected Concentration	Historical Maximum Detected (Date)
1,2-Dichlorobenzene	0.82 J	ND@1.0	0.55 J	0.34 J	ND@1.0	ND@1.0	0.65 J	ND@1.0	1.2	ND@1.0	ND@1.0	4.1	600	12/3/1993
1,4-Dichlorobenzene	0.22 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	1.6	160	12/3/1993
1,1,1-Trichloroethane	ND@1.0	ND@1.0	0.43 J	0.69 J	0.46 J	0.51 J	0.69 J	ND@1.0	ND@1.0	0.94 J	1.2	1.2	15	12/21/1994
1,2-Dichloroethane	ND@1.0	ND@1.0	ND@1.0	0.39 J	0.3 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.61 J	0.21 J	1.2	9/5/1995
Chloroform	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.51 J	0.41 J	ND@1.0	ND@1.0	ND@1.0	
Trichloroethene	0.36 J	ND@1.0	ND@1.0	0.92 J	0.59 J	0.62 J	0.57 J	ND@1.0	0.64 J	0.66 J	0.85 J	2.4	12	9/5/1995
Bis(2-ethylhexyl phthalate)	ND@9.5	NS	NS	ND@9.5	1.7 J	ND@9.8	ND@9.5	ND@4.9	ND@4.8	ND@1.2	ND@2.3	2.0 J	2.0 J	9/12/1996

Notes:
All results in ug/L
BOLD and Italicized results exceed applicable New York State Groundwater Standard (6NYCRR Part 703)
D Indicates result reported from a secondary dilution factor
J Estimated Value
ND@X Not Detected at Laboratory Detection Limit "X"
NS Not Sampled
VOCs Volatile Organic Compounds
SVOCs Semivolatile Organic Compounds
Value / Value Analytical Result and Duplicate Result

Table B-2: Comparison of Historical, Phase 1 (Baseline) and Phase 3 (Post-shutdown) Groundwater Monitoring Results
Former Building 952/982 Site, NYSDEC Site #314076
Site-wide Monitoring Wells

952-6R *	Phase 1 Baseline Sampling May 2019	Phase 3 Post-shutdown Quarter 1 of 8 2Q 2020	Phase 3 Post-shutdown Quarter 2 of 8 3Q 2020	Phase 3 Post-shutdown Quarter 3 of 8 4Q 2020	Phase 3 Post-shutdown Quarter 4 of 8 1Q 2021	Phase 3 Post-shutdown Quarter 5 of 8 2Q 2021	Phase 3 Post-shutdown Quarter 6 of 8 3Q 2021	Phase 3 Post-shutdown Quarter 7 of 8 4Q 2021	Phase 3 Post-shutdown Quarter 8 of 8 1Q 2022	Prior to Site redevelopment May 2, 2012	Historical Maximum Detected Concentration	Historical Maximum Detected (Date)
1,1,1-Trichloroethane	0.39 J	0.56 J	0.51 J	0.65 J	0.50 J	ND@1.0	0.66 J / 0.85 J	1.2	0.93 J	0.42 J	1.0	6/5/2011
1,1-Dichloroethane	ND@1.0	0.43 J	0.36 J	0.62 J	ND@1.0	ND@1.0	ND@1.0 / ND@1.0	ND@1.0	ND@1.0	0.55 J	1.0	9/13/1996
Trichloroethene	0.68 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0 / ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.36 J	6/23/2009
Benzo(b)fluoranthene	ND@1.0	ND@1.0	0.73 J	ND@9.5	ND@9.8	ND@4.9	ND@1.3 / ND@4.9	ND@1.3	ND@1.0	ND@1.0	2.0	3/29/1994
Bis(2-ethylhexyl phthalate)	ND@9.5	ND@9.5	ND@9.5	3.5 J	ND@9.8	ND@4.9	ND@2.2 / ND@4.9	ND@2.2	ND@2.2	ND@10	7.0	9/25/2003

952-9R *	Phase 1 Baseline Sampling May 2019	Phase 3 Post-shutdown Quarter 1 of 8 2Q 2020	Phase 3 Post-shutdown Quarter 2 of 8 3Q 2020	Phase 3 Post-shutdown Quarter 3 of 8 4Q 2020	Phase 3 Post-shutdown Quarter 4 of 8 1Q 2021	Phase 3 Post-shutdown Quarter 5 of 8 2Q 2021	Phase 3 Post-shutdown Quarter 6 of 8 3Q 2021	Phase 3 Post-shutdown Quarter 7 of 8 4Q 2021	Phase 3 Post-shutdown Quarter 8 of 8 1Q 2022	Prior to Site redevelopment May 2, 2012	Historical Maximum Detected Concentration	Historical Maximum Detected (Date)
1,1,1-Trichloroethane	ND@1.0	ND@1.0	ND@1.0	0.84 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	5/21/1996
Toluene	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.46 J	ND@1.0	0.47 J	1.3	ND@1.0	22	3/31/1994
Bis(2-ethylhexyl phthalate)	ND@9.5	ND@9.5	ND@9.8	7.4 J	ND@9.8	ND@4.9	ND@4.8	ND@2.2	ND@2.3	ND@10	20	5/21/1996

952-11R	Phase 1 Baseline Sampling May 2019	Phase 3 Post-shutdown Quarter 1 of 8 2Q 2020	Phase 3 Post-shutdown Quarter 2 of 8 3Q 2020	Phase 3 Post-shutdown Quarter 3 of 8 4Q 2020	Phase 3 Post-shutdown Quarter 4 of 8 1Q 2021	Phase 3 Post-shutdown Quarter 5 of 8 2Q 2021	Phase 3 Post-shutdown Quarter 6 of 8 3Q 2021	Phase 3 Post-shutdown Quarter 7 of 8 4Q 2021	Phase 3 Post-shutdown Quarter 8 of 8 1Q 2022	Prior to Site redevelopment April 30, 2012	Historical Maximum Detected Concentration	Historical Maximum Detected (Date)
1,2-Dichlorobenzene	ND@1.0	ND@1.0	ND@1.0	0.27 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	9	12/2/1993
1,1,1-Trichloroethane	0.27 J	0.46 J	0.47 J	0.63 J	0.83 J	ND@1.0	0.65 J	0.71 J	1.2	0.32 J	1.1	12/20/1994
1,1-Dichloroethane	ND@1.0	ND@1.0	ND@1.0	0.33 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	
1,2-Dichloroethane	ND@1.0	ND@1.0	ND@1.0	0.46 J	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	1.2	6/13/1995
Trichloroethene	ND@1.0	ND@1.0	ND@1.0	0.54 J	ND@1.0	ND@1.0	ND@1.0	0.30 J	0.45 J	ND@1.0	2	12/9/1993
Chloroform	0.19 J	0.25 J	ND@1.0	0.26 J	ND@1.0	ND@1.0	0.31 J	ND@1.0	ND@1.0	0.21 J	17	12/9/1998
Bis(2-ethylhexyl phthalate)	ND@9.5	ND@9.5	ND@9.5	3.5 J	2.6 J	ND@4.9	ND@4.9	ND@2.2	ND@2.2	ND@10	21	9/20/1994

952-12R	Phase 1 Baseline Sampling May 2019	Phase 3 Post-shutdown Quarter 1 of 8 2Q 2020	Phase 3 Post-shutdown Quarter 2 of 8 3Q 2020	Phase 3 Post-shutdown Quarter 3 of 8 4Q 2020	Phase 3 Post-shutdown Quarter 4 of 8 1Q 2021	Phase 3 Post-shutdown Quarter 5 of 8 2Q 2021	Phase 3 Post-shutdown Quarter 6 of 8 3Q 2021	Phase 3 Post-shutdown Quarter 7 of 8 4Q 2021	Phase 3 Post-shutdown Quarter 8 of 8 1Q 2022	Prior to Site redevelopment May 2, 2012	Historical Maximum Detected Concentration	Historical Maximum Detected (Date)
1,1,1-Trichloroethane	ND@1.0	ND@1.0	ND@1.0	0.59 J	1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.30 J	1.0	9/6/1995
Chloroform	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	0.49 J	0.38 J	ND@1.0	ND@1.0	ND@1.0	

952-13R *	Phase 1 Baseline Sampling May 2019	Phase 3 Post-shutdown Quarter 1 of 8 2Q 2020	Phase 3 Post-shutdown Quarter 2 of 8 3Q 2020	Phase 3 Post-shutdown Quarter 3 of 8 4Q 2020	Phase 3 Post-shutdown Quarter 4 of 8 1Q 2021	Phase 3 Post-shutdown Quarter 5 of 8 2Q 2021	Phase 3 Post-shutdown Quarter 6 of 8 3Q 2021	Phase 3 Post-shutdown Quarter 7 of 8 4Q 2021	Phase 3 Post-shutdown Quarter 8 of 8 1Q 2022	Prior to Site redevelopment May 2, 2012	Historical Maximum Detected Concentration	Historical Maximum Detected (Date)
1,1,1-Trichloroethane	0.24 J	0.39 J	0.47 J	0.86 J	0.56 J	ND@1.0	0.59 J	1.4	ND@1.0	ND@1.0	4.1	6/21/2002
SVOCs	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

952-14R *	Phase 1 Baseline Sampling May 2019	Phase 3 Post-shutdown Quarter 1 of 8 2Q 2020	Phase 3 Post-shutdown Quarter 2 of 8 3Q 2020	Phase 3 Post-shutdown Quarter 3 of 8 4Q 2020	Phase 3 Post-shutdown Quarter 4 of 8 1Q 2021	Phase 3 Post-shutdown Quarter 5 of 8 2Q 2021	Phase 3 Post-shutdown Quarter 6 of 8 3Q 2021	Phase 3 Post-shutdown Quarter 7 of 8 4Q 2021	Phase 3 Post-shutdown Quarter 8 of 8 1Q 2022	Prior to Site redevelopment April 30, 2012	Historical Maximum Detected Concentration	Historical Maximum Detected (Date)
1,1,1-Trichloroethane	1.1 / 1.1	1.3 / 1.3	1.0 / 1.2	1.5 / 1.5	0.78 J / 0.92 J	0.71 J / 0.58 J	1.2 / 1.7	2.1 / 2.2	1.4 / 1.3	1.5	2.2	11/25/1996
1,1-Dichloroethane	ND@1.0 / 0.39 J	ND@1.0 / ND@1.0	ND@1.0 / ND@1.0	ND@1.0 / ND@1.0	ND@1.0 / ND@1.0	ND@1.0 / ND@1.0	ND@1.0 / ND@1.0	ND@1.0 / ND@1.0	ND@1.0 / ND@1.0	0.18 J / 0.17 J	0.24 J	12/12/2007
1,2-Dichloroethane	ND@1.0 / ND@1.0	0.4 J / 0.39 J	0.31 J / ND@1.0	0.53 J / 0.51 J	ND@1.0 / ND@1.0	ND@1.0 / ND@1.0	ND@1.0 / ND@1.0	ND@1.0 / ND@1.0	ND@1.0 / ND@1.0	ND@1.0 / ND@1.0	ND@1.0	
Bis(2-ethylhexyl phthalate)	ND@9.5/ND@9.5	ND@9.5/ND@9.5	ND@9.8/ND@9.8	6.7 J / 3.5 J	ND@9.8 / ND@9.8	ND@4.8 / ND@4.8	ND@5.1 / ND@4.8	ND@2.2 / ND@2.2	ND@2.0 / ND@2.3	ND@10 / ND@10	5	11/16/1995

952-14RA *	Phase 1 Baseline Sampling May 2019	Phase 3 Post-shutdown Quarter 1 of 8 2Q 2020	Phase 3 Post-shutdown Quarter 2 of 8 3Q 2020	Phase 3 Post-shutdown Quarter 3 of 8 4Q 2020	Phase 3 Post-shutdown Quarter 4 of 8 1Q 2021	Phase 3 Post-shutdown Quarter 5 of 8 2Q 2021	Phase 3 Post-shutdown Quarter 6 of 8 3Q 2021	Phase 3 Post-shutdown Quarter 7 of 8 4Q 2021	Phase 3 Post-shutdown Quarter 8 of 8 1Q 2022	Prior to Site redevelopment April 30, 2012	Historical Maximum Detected Concentration	Historical Maximum Detected (Date)
1,1,1-Trichloroethane	0.79 J	0.98 J	1.1	1.3	1.3	0.54 J	1.3	1.4	1.2	1.2	3.0	11/25/1996
Trichloroethene	0.83 J	0.95 J	0.78 J	0.89 J	ND@1.0	ND@1.0	0.75 J	0.31 J	ND@1.0	1.3	2.1	11/25/1996
Toluene	ND@1.0	ND@1.0	ND@1.0	ND@1.0	2.5	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	
Bis(2-ethylhexyl phthalate)	ND@9.5	ND@9.5	ND@9.5	6.6 J	ND@9.5	ND@4.9	5.2	ND@2.2	3.9 J	ND@10	15	11/15/1995

952-16R *	Phase 1 Baseline Sampling May 2019	Phase 3 Post-shutdown Quarter 1 of 8 2Q 2020	Phase 3 Post-shutdown Quarter 2 of 8 3Q 2020	Phase 3 Post-shutdown Quarter 3 of 8 4Q 2020	Phase 3 Post-shutdown Quarter 4 of 8 1Q 2021	Phase 3 Post-shutdown Quarter 5 of 8 2Q 2021	Phase 3 Post-shutdown Quarter 6 of 8 3Q 2021	Phase 3 Post-shutdown Quarter 7 of 8 4Q 2021	Phase 3 Post-shutdown Quarter 8 of 8 1Q 2022	Prior to Site redevelopment April 30, 2012	Historical Maximum Detected Concentration	Historical Maximum Detected (Date)
VOCs	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0		
SVOCs	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		

952-29R	Phase 1 Baseline Sampling May 2019	Phase 3 Post-shutdown Quarter 1 of 8 2Q 2020	Phase 3 Post-shutdown Quarter 2 of 8 3Q 2020	Phase 3 Post-shutdown Quarter 3 of 8 4Q 2020	Phase 3 Post-shutdown Quarter 4 of 8 1Q 2021	Phase 3 Post-shutdown Quarter 5 of 8 2Q 2021	Phase 3 Post-shutdown Quarter 6 of 8 3Q 2021	Phase 3 Post-shutdown Quarter 7 of 8 4Q 2021	Phase 3 Post-shutdown Quarter 8 of 8 1Q 2022	Prior to Site redevelopment April 30, 2012	Historical Maximum Detected Concentration	Historical Maximum Detected (Date)
VOCs	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0		
SVOCs	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		

Notes:
All results in ug/L
BOLD and Italicized results exceed applicable New York State Groundwater Standard (6NYCRR Part 703)
* Downgradient Perimeter Monitoring Location
D Indicates result reported from a secondary dilution factor
J Estimated Value
ND@X Not Detected at Laboratory Detection Limit "X"
NS Not Sampled
VOCs Volatile Organic Compounds
SVOCs Semivolatile Organic Compounds
Value / Value Analytical Result and Duplicate Result