

C.T. MALE ASSOCIATES

Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.

50 Century Hill Drive, Latham, NY 12110
518.786.7400 FAX 518.786.7299 www.ctmale.com



October 26, 2018

*Via Email

Mr. Kevin Carpenter
Project Manager
New York State Department of Environmental Conservation
Remedial Bureau C
Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, NY 12233-7014
kevin.carpenter@dec.ny.gov

**RE: Draft Groundwater Sampling Plan for Emerging Contaminants
Island Dock
City of Kingston, Ulster County
BCP Site ID No.: C356036**

Dear Mr. Carpenter:

C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C. (C.T. Male) has prepared this work plan pursuant to letter correspondence received from your office, dated July 12, 2018, requesting that representative groundwater samples be collected from existing monitoring wells at the above referenced property (the Site) for laboratory analyses for the emerging contaminants 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS).

This work plan identifies the proposed scope of work, groundwater sampling methods and laboratory analyses.

Site Reconnaissance and Monitoring Well Selection

Several years have passed since the last groundwater monitoring event and a number of the existing monitoring wells are suspected to have been covered with sediment or damaged. A site map prepared by C.T. Male in 2017, indicating existing monitoring well locations and previous sampling locations is included as Attachment A. Prior to conducting this sampling event, C.T. Male will perform a site reconnaissance to attempt to locate the existing wells and evaluate which of the wells are viable for sampling or in need of repair,

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abandonment or replacement. Based on the findings of the site reconnaissance, C.T. Male will select three (3) representative monitoring wells to sample for emerging contaminants.

Monitoring Wells to be Sampled

Representative groundwater samples will be collected from hydraulically up-gradient and down-gradient monitoring wells located within the Site. As noted above, actual well selection will be based on the findings of the site reconnaissance.

Sampling Methods

Prior to sampling, the water level in the monitoring well will be measured, and the monitoring well will be purged and allowed to recover to near static conditions. Groundwater samples will be collected employing low flow sampling techniques (Geotech Geopump™ Series II peristaltic pump with new, dedicated tubing at each monitoring well) for field and laboratory analyses. The field parameters to be determined are pH, temperature, turbidity and specific conductance. The field sampling technician will wear a new pair of nitrile gloves at each monitoring well location. The samples will be collected in laboratory provided containers and placed in a laboratory provided cooler containing ice. A chain-of-custody will be prepared and the samples will be picked up at the Site by a laboratory-provided courier.

Laboratory Analyses

The groundwater samples will be analyzed for 1,4-dioxane and the Full PFAS Target Analyte List. The analytical methods, detection limits, data reporting and the 21 compounds constituting the Full PFAS Target Analyte List will be consistent with the NYSDEC-issued April 2018 "Groundwater Sampling for Emerging Contaminants." Laboratory analyses of the samples will be performed by Alpha Analytical Laboratories (Alpha).

Field Quality Control

One (1) set of Field Quality Control samples will be submitted with the groundwater samples. The Field Quality Control samples will include an Equipment Blank, Duplicate,

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Matrix Spike and Matrix Spike Duplicate. One (1) set of Laboratory and Field Trip Blanks will also be submitted with the groundwater samples.

Laboratory Reporting and Data Validation

The laboratory will generate a NYSDEC ASP Category B data deliverable package of the investigative analytical data. A Data Usability Summary Report (DUSR) of the analytical data will be prepared to confirm that the data meets the project specific criteria for data quality and data use. The DUSR will be completed by an independent data validator and will be conducted in accordance with Appendix 2B of DER-10 entitled *Guidance for Data Deliverables and the Development of Data Usability Summary Reports*.

Reporting

A brief letter report will be prepared to summarize the results of the groundwater sampling. The letter report will include drawings showing which monitoring wells were sampled, analytical summary tables and the laboratory analytical report.

Investigation Derived Wastes

Investigation derived wastes (IDW) that are anticipated to be generated during the investigation include monitoring well purge water, disposable pump tubing and used nitrile gloves.

The purge water will be subjectively assessed for evidence of impacts (i.e., sheen, petroleum and/or chemical odors, discoloration, etc.) via organoleptic perception. If the purge water appears subjectively impacted, it will be transferred into DOT-approved 55-gallon drums and staged at a secure location within the Site boundaries pending characterization and off-site disposal at a permitted facility. If the purge water does not appear subjectively impacted, it will be discharged to the ground surface in the vicinity of the monitoring wells that the groundwater originated from.

Disposable pump tubing and nitrile gloves will be placed in trash bags and disposed of off-site as solid waste.

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Should you require additional information regarding this work plan, please do not hesitate to contact the undersigned at d.lent@ctmale.com or (845) 883-0964.

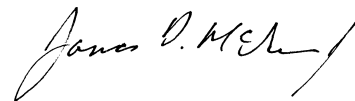
Respectfully,

C.T. MALE ASSOCIATES



David R. Lent, P.G.
Managing Geologist

Reviewed and Approved



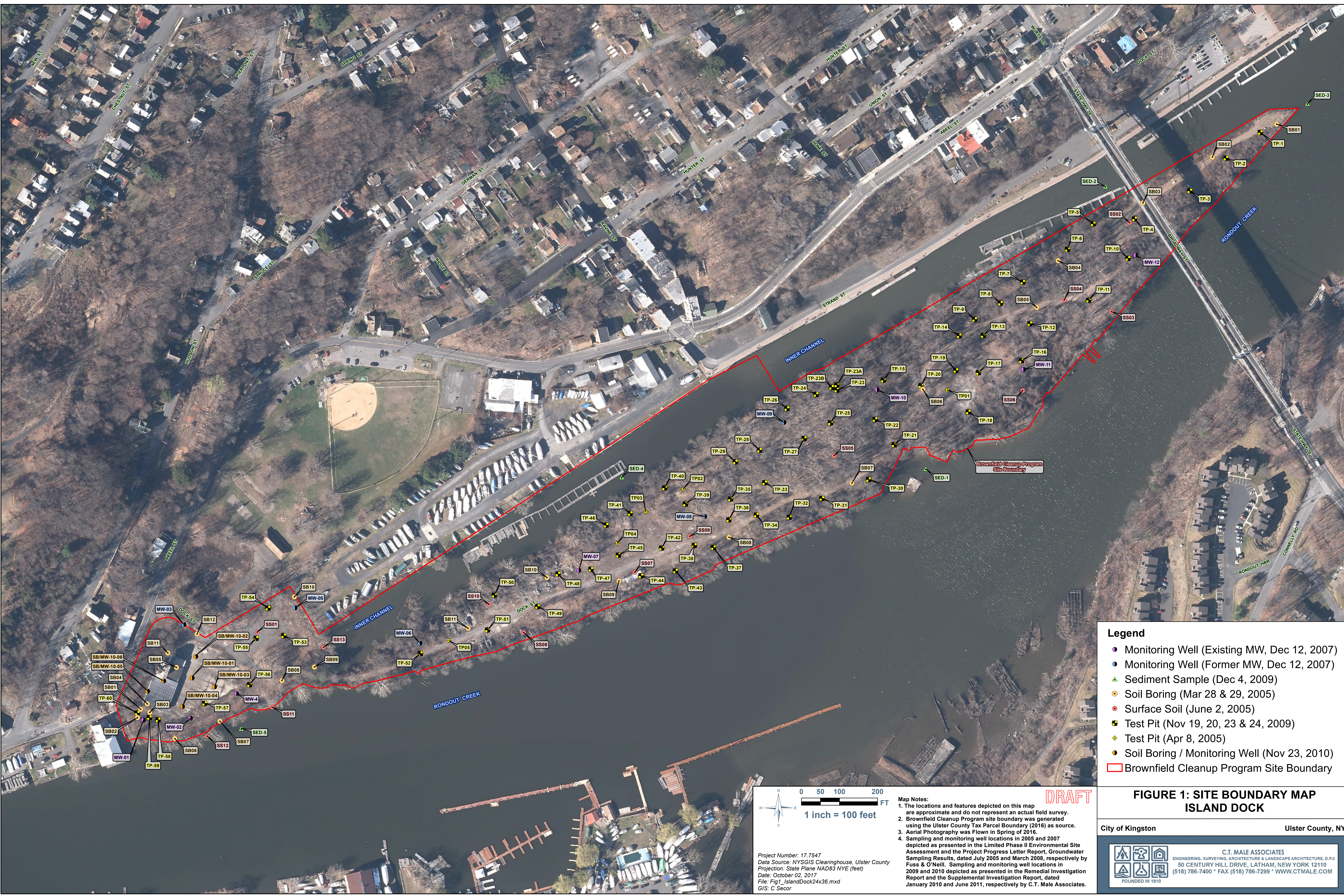
Jim McIver, P.G.
Managing Geologist

Attachments:

ec: Robert Iannucci
Lauren Forman .

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ATTACHMENT A
DRAWINGS



- Legend**
- Monitoring Well (Existing MW, Dec 12, 2007)
 - Monitoring Well (Former MW, Dec 12, 2007)
 - ▲ Sediment Sample (Dec 4, 2009)
 - Soil Boring (Mar 28 & 29, 2005)
 - Surface Soil (June 2, 2005)
 - ✚ Test Pit (Nov 19, 20, 23 & 24, 2009)
 - ✚ Test Pit (Apr 8, 2005)
 - Soil Boring / Monitoring Well (Nov 23, 2010)
 - Brownfield Cleanup Program Site Boundary



Map Notes:

- The locations and features depicted on this map are approximate and do not represent an actual field survey.
- Brownfield Cleanup Program site boundary was generated using the Ulster County Tax Parcel Boundary (2016) as source.
- Aerial Photography was Flown in Spring of 2016.
- Sampling and monitoring well locations in 2005 and 2007 depicted as presented in the Limited Phase II Environmental Site Assessment and the Project Progress Letter Report, Groundwater Sampling Results, dated July 2005 and March 2008, respectively by Fuss & O'Neill. Sampling and monitoring well locations in 2009 and 2010 depicted as presented in the Remedial Investigation Report and the Supplemental Investigation Report, dated January 2010 and June 2011, respectively by C.T. Male Associates.

Project Number: 17.7547
 Data Source: NYSGIS Clearinghouse, Ulster County
 Projection: State Plane NAD83 NYE (feet)
 Date: October 02, 2017
 File: Fig1_IslandDock24x36.mxd
 GIS: C. Secor

FIGURE 1: SITE BOUNDARY MAP ISLAND DOCK

City of Kingston Ulster County, NY

C.T. MALE ASSOCIATES
 ENGINEERING, SURVEYING, ARCHITECTURE & LANDSCAPE ARCHITECTURE, D.P.C.
 50 CENTURY HILL DRIVE, LATHAM, NEW YORK 12110
 (518) 786-7400 * FAX (518) 786-7299 * WWW.CTMALE.COM
 FOUNDED IN 1910

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