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Ms. Megan Kuczka
New York State Department of Environmental Conservation
Division of Environmental Remediation
700 Delaware Avenue
Buffalo, NY 14209

DATE
9 May 2024

SUBJECT
Natural Attenuation Monitoring Work Plan

REFERENCE
0639846

Dear Ms. Kuczka:

On behalf of Leica Microsystems, Inc. (Leica), ERM Consulting and Engineering, Inc. (ERM) has prepared this work plan to document natural attenuation processes in groundwater in the southeastern portion of the former Leica facility located at 203 Eggert Road in the Town of Cheektowaga, Erie County, New York (the Site). The Site is identified as an Inactive Hazardous Waste Disposal Site (Site Number 915156).

1. PROJECT

The purpose of this work plan is to document the processes responsible for intrinsic biodegradation of chlorinated volatile organic compounds (CVOCs) in groundwater in the southeastern portion of the Site. Several CVOCs were detected in the southeastern portion of the Site at concentrations above the ambient water quality standards and guidance values. ERM presented a conceptual site model, which indicated that intrinsic biodegradation is occurring to a significant degree in this portion of the Site. In discussions with the New York State Department of Environmental Conservation (NYSDEC), ERM indicated that these processes are effectively attenuating CVOCs in groundwater in this area. In response, NYSDEC requested additional laboratory analyses to support further evaluation of this assertion on their part. This work plan presents a natural attenuation monitoring plan to generate those requested data.

2. SCOPE

2.1 GROUNDWATER SAMPLING

Prior to sampling, ERM will conduct a groundwater elevation gauging event for the 21 wells shown on Figure 1 followed by collection of groundwater samples from these wells using low-flow/minimal drawdown purging and sampling techniques (USEPA 2010), including collection of the following geochemical parameters: temperature specific conductivity, dissolved oxygen, pH, turbidity, and oxidation-reduction potential.

These geochemical data will be used to support evaluation of natural attenuation processes. Wells shown in Figure 1 exhibit CVOC speciation indicative of intrinsic biodegradation, which is a significant natural attenuation process. The following parameters will be analyzed for in groundwater samples collected from the wells shown on Figure 1 to further demonstrate that intrinsic biodegradation is occurring:

- Nitrate and Nitrite by USEPA Method E353.2
- Total and Dissolved Metals by USEPA Method 6010
- Sulfate and Chloride by USEPA Method 5310
- Sulfide by USEPA Method 4500-S2-F
- Dissolved Gases by USEPA Method RSK-175
- CVOCs by USEPA Method 8260
- Alkalinity by USEPA Method 2320

2.2 BIO TRAP DNA SAMPLING

ERM will deploy Chlorinated QuantArray® Bio-Trap – DNA Samplers from Microbial Insights, Inc. in three wells distributed throughout the study area, as shown on Figure 1. The Chlorinated QuantArray® provides quantification of a variety of halo-respiring bacteria to assess the potential for biological reductive dechlorination of CVOCs and quantifies functional genes involved in aerobic (co)metabolic biodegradation of CVOCs. This analysis will also quantify the fractionation of carbon isotopes in both primary (trichloroethene) and degradation (cis-1,2-dichloroethylene and vinyl chloride) compounds, providing an additional line of evidence regarding potential biodegradation processes. The wells selected for the Bio-Trap analysis all contain cis-1,2-dichloroethylene and vinyl chloride.

After collecting groundwater samples, Bio-Traps will be deployed to the approximate middle of the saturated well screen for 60 days, allowing the trap to incubate prior to retrieval.

2.3 SAMPLE ANALYSIS

A New York State Department of Health approved environmental laboratory using analytical methods consistent with the NYSDEC's Analytical Services Protocol (NYSDEC 2010b) will perform the analyses listed in Section 2.1. Detection and reporting limits that are below applicable cleanup levels will be requested whenever feasible and to the extent applicable. Laboratory analytical reports will contain Analytical Services Protocol Category B deliverables and electronic data deliverables to facilitate data usability review as required by the NYSDEC.

3. DATA QUALITY AND VALIDATION

All groundwater samples will be placed in laboratory supplied sample containers and placed in pre-chilled laboratory provided coolers, packed with additional ice, and submitted to Eurofins Environment Testing of Amherst, New York (Environmental Laboratory Accreditation Program (ELAP) Number 10026) under standard chain-of-custody procedures. All Chlorinated QuantArray® Bio-Trap DNA Samplers will be submitted to Microbial Insights, Inc. Laboratory of Knoxville, Tennessee for a microbial census analysis. A third-party validator will prepare a Data Usability Summary Report (DUSR) for all samples collected during the investigation, consistent with the NYSDEC guidance contained in DER-10 Appendix 2B. The results of the data usability evaluation will be presented in an Electronic Data Summary consistent with the requirements of DER 10 Section 3.14(b).

A Site-specific Quality Assurance Project Plan (QAPP) describing sampling, analysis, and quality assurance and quality control procedures to be used during implementation of these investigation activities is included as Appendix G of the Site Management Plan (ERM 2020).

4. INVESTIGATION DERIVED WASTE

Purged groundwater, decontamination fluids, and personal protective equipment will be containerized, labeled, and placed in the on-Site storage area until characterized for off-Site disposal at a permitted facility.

5. SITE-SPECIFIC HEALTH AND SAFETY PLAN

ERM maintains a Site-specific Health and Safety Plan (HASP) for activities conducted at the Site. The procedures set forth in the HASP are designed to minimize the risk of exposure to chemical and physical hazards that may be present at the Site. These procedures conform to applicable federal, state, and local regulations—including Occupational Safety and Health Administration requirements governing activities at hazardous waste sites contained in 29 CFR 1910.120 (Hazardous Waste Operations and Emergency Response). Specific practices and procedures, including the level of personal protective equipment, are based on a review of currently available information for the Site.

Every potential safety hazard associated with this investigation may not be predicted. The HASP does not attempt to establish rules to cover every contingency that may arise, but it does provide a basic framework for the safe completion of field activities and plans for reasonable contingencies.

6. REPORTING

A letter report will be prepared consistent with NYSDEC requirements contained in DER-10. Conclusions and recommendations will be provided based on data obtained during the scope of work.

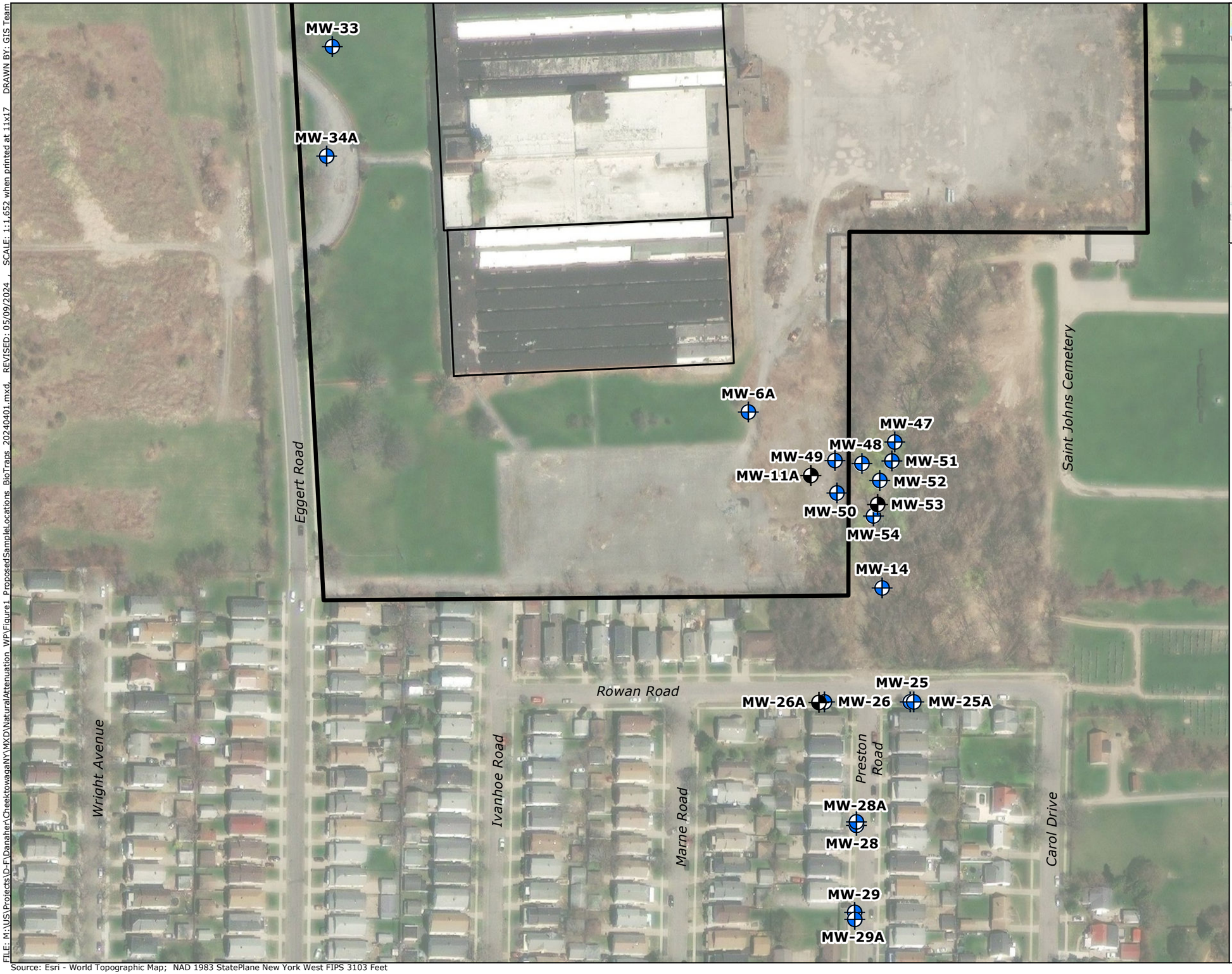
Sincerely,

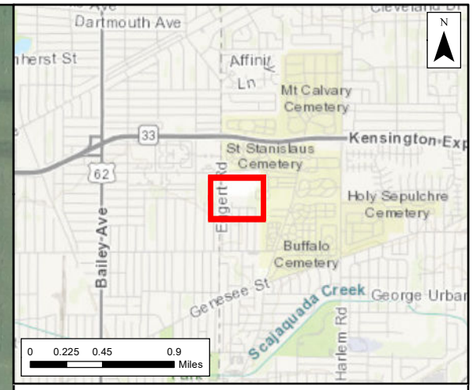
Tim Daniluk

Project Manager

LIST OF ATTACHED FIGURES

FIGURE 1: PROPOSED GROUNDWATER AND BIO-TRAP SAMPLING LOCATIONS





Legend

- Proposed Groundwater Sample Location
- Proposed Groundwater Sample and Biotrap Sample Location
- Building Outline
- Site Property Boundary

N

0 65 130 260 Feet

Figure 1
Proposed Groundwater and Biotrap Sample Locations
Former Leica, Inc.
Cheektowaga, NY

ERM

Source: Esri - World Topographic Map; NAD 1983 StatePlane New York West FIPS 3103 Feet

FILE: M:\US\Projects\D-F\Danaher\CheektowagaNY\MXD\NaturalAttenuation_WP\Figure1_ProposedSampleLocations_BioTraps_20240401.mxd, REVISED: 05/09/2024 , SCALE: 1:1,652 when printed at 11x17 DRAWN BY: GIS Team