REMEDIAL INVESTIGATION – SUPPLEMENTAL INVESTIGATION WORK PLAN

Turk Hill Park Site
1000 Turk Hill Road
Fairport, Monroe County, New York

Submitted to:

New York State Department of Environmental Conservation
Division of Environmental Remediation
6274 East Avon-Lima Road
Avon, New York 14414

Prepared by:

CB&I Environmental & Infrastructure, Inc.
13 British American Boulevard
Latham, NY 12110

Project No. 152918
September 2016

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Acronyms and Abbreviations

ALS	ALS Environmental, Inc.
ASP	Analytical Services Protocol (ASP)
bgs	below ground surface
CAMP	Community Action Monitoring Plan
CB&I	CB&I Environmental & Infrastructure, Inc.
Canal Corp	New York State Canal Corporation
CLP	Contract Laboratory Program
COC	Chain of Custody
DER-10	Technical Guidance for Site Investigation and Remediation (NYSDEC, 2010)
DI	de-ionized
DO	Dissolved Oxygen
DUP	Duplicate
DUSR	Data Usability Summary Report
EDD	(EQuIS) Electronic Data Deliverable
EDR®	Environmental Data Resources
EMIS	Environmental Information Management System
FAP	Field Activities Plan
FS	Feasibility Study
GPR	Ground Penetrating Radar
HASP	Health and Safety Plan
HSA	Hollow Stem Auger
IDW	Investigation Derived Waste
MNA	Monitored Natural Attenuation
MS/MSD	Matrix spike/matrix spike duplicate
MW	Monitoring Well
NAD	North American Datum
NAVD	North American Vertical Datum

NTU	nephelometric turbidity units
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOH VI Guidance	New York State Department of Health *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (October 2006
PET	Potential evapotranspiration
PID	Photoionization Detector
PPE	Personal Protection Equipment
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
qPCR	quantitative polymerase chain reaction
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
SDG	Sample Data Group
SITE	Turk Hill Park, 1000 Turk Hill Road, Fairport, Monroe County, New York
SOD	Soil Oxygen Demand
SOPs	Standard Operating Procedures
SSDS	Sub-slab depressurization system
TCL	Target Compound List
TOGS	Technical & Operational Guidance Series
USEPA	United States Environmental Protection Agency
USGS	United States Geologic Survey
VOCs	Volatile Organic Compounds
WC	Water Column

I, Heather Fariello, CHMM, certify that I am currently a NYS Qualified Environmental Professional and that this Remedial Investigation Supplemental Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Heather A. Fariello

Signature

9/27/16

Date

1.0 INTRODUCTION

CB&I Environmental & Infrastructure, Inc. (CB&I) is submitting this Supplemental Remedial Investigation Work Plan (RI) outlining the site activities proposed for the site located at 1000 Turk Hill Road, Fairport, Monroe County, New York (Site) (**Figure 1**). The scope of services discussed herein has been prepared based upon the recommendations in CB&I's July 2016 *Draft Remedial Investigation Report* and a written request from the New York State Department of Environmental Conservation (NYSDEC) on September 20, 2016.

Based upon the data collected during the RI, CB&I made the following recommendations:

- Modify the quarterly groundwater sampling program to analyze for Volatile Organic Compounds (VOCs) and metals only. This will aid to further characterize the Site based upon historic site sampling data and observations made during the RI.

- Install transducers in the Erie Canal to monitor Canal water elevations. Complete site/monitoring well gauging on a monthly basis and compare to the transducer information to determine the interconnectedness of the overburden sediments and the Canal.

- Install additional monitoring wells in the overburden sediments near and downgradient from monitoring well (MW) MW-9S to further define the nature and extend of the dissolved groundwater impacts that were observed in this area.

- Continue operation and maintenance of Sub-Slab depressurization (SSDS) systems in compliance with manufacturer's recommendations.

1.1 Supplemental Investigation

In May 2016, CB&I collected a second round of groundwater samples at the Site. After discussions with NYSDEC regarding the data observed in the first round and a verbal discussion of the second round results, NYSDEC granted CB&I permission to sample only for VOCs going forward, beginning with the August 2016 (3rd Quarter) sampling event

2.0 WORK SCOPE

This scope of work is being completed to delineate soil and groundwater impacts at the Site as well as further characterize indoor air and soil vapor concentrations at select locations.

2.1 RI Supplemental Investigation Objectives

The overall objectives of this Supplemental Investigation are to:

- Identify and characterize the overall distribution of contaminants on and adjacent to the Site;
- Based on the distribution of contaminants and groundwater flow patterns, determine the hydraulic relationship between the groundwater system and Erie Canal;
- Sufficiently characterize the geology and hydrogeology of the site to facilitate the evaluation of the necessity to complete interim and/or final remedial alternatives.

2.2 Site Health and Safety and Field Activities Plan

CB&I will follow Site Specific Health and Safety Plan (HASP), provided under separate cover). The HASP is consistent with CB&I policy, outlines all health and safety procedures and protocols that must be followed during any Site activities, and serves as the basis for daily tailgate safety meetings during Site sampling and redevelopment activities. All subcontractors will be required to review and sign this HASP prior to completing work on the site.

All field activities will be conducted in accordance with the Field Activities Plan (FAP) (under separate cover), to acquire information necessary to identify, evaluate, and design potential remedial alternatives for the site should remedial actions be required. Field notes describing each day's activities will be recorded on field sheets and/or in bound field notebooks.

2.3 Water Interconnectivity Study

A site water balance analysis is proposed to help evaluate the interconnectiveness of the overburden sediments and the Canal. CB&I believes that this type of evaluation is necessary to pursue the appropriate remedial approaches for the Feasibility Study (FS) and site remedy.

The evaluation will include installation of Data Loggers (**Appendix A**) at three locations in the Erie Canal, monitoring of precipitation falling onto the site, and the documentation of the stage and flow data for the Erie Canal. Standard hydrologic methods and procedures will be used to help determine site water inflow, outflow, and changes in storage.

The site water balance will include the following:

- Obtaining site elevation data via monthly gauging of the monitoring wells;
- Installation of water level and temperature loggers at three locations in the Erie Canal (**Figure 2**);
- Installation of a tipping bucket style rain gauge and Data Logger;
- Obtain monthly average potential evapotranspiration (PET) estimates from the Northeast Regional Climate Center for Rochester, New York (http://www.nrcc.cornell.edu/wxstation/pet/pet.html);
- Monthly site visits for the collection and download of Data Logger data; and,
- Preparation of a hydrologic report to help evaluate the interconnectiveness between the Canal and overburden.

2.3.1 Data Loggers

With the New York State Canal Corporation's permission, CB&I will install three Level TROLL 700 Data Loggers in the Erie Canal to continuously monitor Canal temperature, water pressure and water elevations. The Data Loggers will be placed near the MW-2 cluster, the MW-6 cluster and eastern property boundary (**Figure 2)**. The CB&I technician will download the data once a month when he or she is on-site gauging the monitoring wells.

2.3.2 Groundwater Elevation Gauging

A CB&I technician will complete monthly site/monitoring well gauging for up to one year. During the months of February, May, August and November the gauging will be conducted as part of the quarterly monitoring events. The elevation will be compared to the transducer information to determine the interconnectedness of the overburden sediments and the Canal.

2.4 MW-9S Delineation

2.4.1 Pre-Drilling Activities

Prior to performing any intrusive work at the site, CB&I and/or the drilling subcontractor will mark all anticipated locations with white spray paint and then call the One-Call Center (811 or Dig Safely New York) in accordance with New York State Code Rule 753 to mark any known utilities entering the site. The call will be made a minimum of 72-hours prior to the start of field work. Prior to installation, each location will be cleared to a five foot depth to ensure that

subsurface utilities or structures are not encountered. A geophysical survey (i.e. ground penetrating radar (GPR)) will also be conducted as detailed below. The GPR subcontractor will mark all utilities near the anticipated work with spray paint. In areas where the GPR survey indicates no subsurface utilities or anomalies are present, it may be used in lieu of pre-clearing to five feet below ground surface (bgs).

2.4.2 Geophysical Survey

A GPR survey will be conducted prior to any intrusive activities to determine locations of readily identifiable utilities / subsurface anomalies as well as to aid in the delineation of the known tank pit near MW-9S. GPR is a non-intrusive, non-destructive digital imaging technology used to determine the depth and location of underground objects and conditions. A control unit, antenna and power supply make up the GPR system. The control unit contains the electronics which triggers the pulse of radar energy that the antenna sends into the ground. The antenna receives the electrical pulse produced by the control unit, amplifies it and transmits it into the ground or other medium at a particular frequency.

GPR works by sending a tiny pulse of energy into a material and recording the strength and the time required for the return of any reflected signal. A series of pulses over a single area make up a scan. Reflections are produced whenever the energy pulse enters into a material with different electrical conduction properties or dielectric permittivity from the material it left. The strength, or amplitude, of the reflection is determined by the contrast in the dielectric constants in the dielectric constants and the conductivities the different materials.

Data is collected in parallel transects and then placed together in their appropriate locations for computer processing. The computer then produces a horizontal surface at a particular depth in the record that allows operators to interpret a plan view of the survey area.

2.4.3 Soil Borings

CB&I anticipates up to eight soil borings (to be designated SB-27 through SB-35) will be advanced at select locations around MW-9S to delineate the tank pit boundary as well as observed contamination (**Figure 2**). Exact locations will be chosen in the field at the conclusion of the GPR survey. Three of the borings will be advanced inside the tank pit, two of the eight borings will be advanced inside the Cross Fit Gym and the final three borings will be installed outside of the tank pit. The three borings located outside of the tank pit will be converted to overburden monitoring wells (see Section 2.4.4). Borings will be advanced via 4 or 5-foot macrocore, using a GeoProbe 6712DT drill rig (or similar rig). Prior to advancement of the boring, each location will be cleared for utilities (e.g. hand auger or air knife) to the required depth of 5-feet bgs as detailed above.

Each soil boring will be advanced either to refusal or bedrock (presumed to be approximately 25-feet bgs), whichever comes first. All recovered soils will be examined for visible signs of contamination, screened for volatile vapors with a photoionization detector (PID), and logged by a CB&I geologist according to the Unified Soil Classification System. An example of the typical soil boring log is provided in the FAP (under separate cover).

Two soil samples will be collected from each soil boring either at the interval exhibiting the highest PID measurement or immediately above bedrock/ water table interface. VOC soil samples will be collected using EnCore™ samplers and in 2 to 4 ounce soil jars (dry weight). Samples will be packed on ice and couriered to the laboratory for analysis. Sixteen soil samples plus one duplicate (DUP) sample, one matrix spike/matrix spike duplicate (MS/MSD) sample and one field blank sample will be analyzed for Target Compound List (TCL) VOCs Upon completion of the boring, all soil cuttings will be placed in 55-gallon drums for characterization and appropriate disposal.

CB&I personnel will also collect two samples at the approximate soil groundwater interface to be tested for Soil Oxygen Demand (SOD). The results of the SOD test will provide a better understanding of subsurface conditions as part of the evaluation of potential remedial alternatives.

2.4.4 Monitoring Well Installation

Three of the eight soil boring locations will be converted to shallow monitoring wells using HSA during techniques. The overburden monitoring wells will be installed via a 4-1/4 inch (inner diameter) hollow-stem auger (HSA) will typically be employed to install 2-inch diameter wells. The boreholes will extend to top of bedrock (assumed to be approximately 25 feet bgs) and be constructed with a 10-foot section of 10 slot well screen and the appropriate length of schedule 40 PVC flush-joint casing to ground surface.

The annular space between the boring wall and the screen will be backfilled with Morie Sand to at least two feet above the screened interval; at least two feet of bentonite chips will be placed above the sand pack and hydrated. The remaining annular space will be backfilled with a cement/bentonite grout mixture.

Monitoring wells will be completed at the ground surface with flush mounted protective roadboxes. Each well will have a cap and a locking cover. A concrete pad will be installed around each well casing and a weep hole will be drilled in the protective casing to allow any water between the inner and outer casing to drain.

All monitoring wells will be developed (no sooner than 48-hours after installation) by the drilling subcontractor and/or CB&I personnel. The wells will be developed to remove any drilling fluids or sediment that may have entered the well during installation and to "settle" the filter pack. Development of each monitoring well will include a combination of surging the well and pumping to remove groundwater from the well and will be considered complete when either the turbidity is below 50 nephelometric turbidity units (NTUs) and/or if the groundwater parameters (pH, specific conductivity, dissolved oxygen (DO), turbidity, ORP, and temperature) have stabilized.

2.4.5 Groundwater Sampling

After the two-week stabilization period, CB&I will collect groundwater samples from the newly installed monitoring wells. All monitoring wells will be gauged for depth to water, depth to bottom and depth to product, if encountered. Each sampled location will be purged of at least one well volume using low-flow techniques prior to collection of a groundwater sample. All groundwater samples will be collected via low-flow techniques until the parameters stabilize. Samples will be packed on ice and couriered under appropriate chain of custody (COC) to the laboratory for analysis of TCL VOCs. Additionally, one set of Quality Assurance/Quality Control (QA/QC) samples (duplicate, MS/MSD and trip blank) will be collected and analyzed via the methods mentioned above. The analysis will be completed under a standard turnaround time (15 business days), and the analytical results will be submitted for data validation after preliminary review by CB&I's Project Chemist.

CB&I will continue collecting groundwater samples from the newly installed monitoring wells beginning with the next scheduled quarterly sampling event. At this time it is anticipated the newly installed monitoring wells will only be sampled and analyzed for VOCs.

CB&I personnel will also collect groundwater samples from three monitoring wells for a series of quantitative polymerase chain reaction (qPCR) assays tests for dehalococcoides and water quality parameters (nitrate, manganese (total and dissolved), iron (total and dissolved), sulfate, biological oxygen demand, chemical oxygen demand, and carbonate alkalinity) to determine/support monitored natural attenuation (MNA). The results will be used in the evaluation of groundwater remedial alternatives in the Feasibility Study.

2.4.6 Slug Test

CB&I personnel will perform a series of slug tests at a minimum of three existing monitoring well locations to obtain in situ permeability values. The tests will be conducted using a 15 psig Level TROLL 700 Basic pressure transducer and Rugged Reader computer monitor system or an equivalent.

Monitoring well locations will be selected in consultation with NYSDEC. The in-situ permeability is an important design parameter when determining reagent selection and in-situ treatment quantities

2.4.7 Decontamination

To reduce the potential for cross contamination during the investigation the augers will be decontaminated between each sampling location. New tubing will be used for the collection of groundwater samples at each location. All hand sampling tools and down hole, equipment will be cleaned before collecting each sample. Cleaning will utilize an Alconox® soap solution wash (scrub), a tap water rinse, and de-ionized (DI) water rinse. All down-hole sampling equipment (non-disposables) will be decontaminated between each sample interval.

2.4.8 Investigation Derived Waste (IDW)

Waste generated during the Supplemental Investigation is anticipated to include soil cuttings, decontamination fluids, groundwater purge and development water, and construction and debris (C&D), including personal protection equipment (PPE). Waste will be containerized in either closed-top (liquid) or open-top (soil and C&D) 55-gallon drums and stored in a predetermined location on the Site.

Drums will be properly labeled and composite samples will be collected from the soil and water drums for waste characterization analysis. Drums will be transported and disposed at a licensed disposal facility. Manifests for the waste will be included in the Supplemental Investigation Letter Report.

2.4.9 Site Survey

All soil boring locations and newly installed monitoring wells will be surveyed. This survey will be completed by a licensed surveyor. The survey company will provide CB&I with coordinates using a NY State Plane North American Datum (NAD) 1983, and monitoring well elevations using North American Vertical Datum (NAVD) 1988. CB&I will update the base map used for all future figures using this information.

2.5 Operation and Maintenance of Sub-Slab Depressurization System

CB&I will implement the following recommendations from the SSDS installation contractor until all post-mitigation air sampling results are within the New York State Department of Health (NYSDOH) VI Guidelines.

2.5.1 Monthly inspections

During the monthly groundwater elevation gauging events, CB&I personnel will:

- visually inspect the readings of the manometers installed on the extraction points and compare the current readings to the market readings obtained immediately after installation. If the reading on the manometer is more than 1.0 Water Column (WC) different, CB&I will contact their subcontractor further review;

- visually inspect the interior piping for any water/ condensation noise or (gurgling sounds) on the inside of any of the interior piping. If any such noise is encountered, CB&I will contact their subcontractor; and,

- visually inspect the exterior components and fans. If a fan is noticeably louder than usual, or contains a significant vibration, or does not seem to be running, CB&I will contact their subcontractor.

All inspections will be documented. Additionally, if any broken or detached piping interior or exterior is encountered, contact the installer.

2.5.2 Annual inspections

CB&I's subcontractor will perform an annual inspection on the system. During the inspection, the following will be completed:

- visually inspect the readings of manometers installed on the extraction points and compare the current readings to the installation readings.

- visually inspect the interior piping for any water/ condensation noise or (gurgling sounds) on the inside of any of the interior piping.

- visually inspect the exterior components and fans for adequate operation.

- visually inspect all piping and electrical components.

- perform sub slab pressure differential readings and compare the readings to the readings collected immediately after installation.

A brief letter report summarizing the annual inspection will be generated after completion.

3.0 LABORATORY ANALYSIS AND DATA VALIDATION

All soil and groundwater samples will be collected and analyzed in accordance with the methodologies described in the FAP and Quality Assurance Plan (QAPP) provided under separate cover.

All soil and groundwater samples will be sent to ALS Environmental (ALS) in Rochester, New York in accordance with NYSDEC's DER-10. ALS is certified by the NYSDOH to perform Contract Laboratory Program (CLP) analysis on all media mentioned in this Work Plan. ALS will perform sample analysis in accordance with the most recent NYSDEC Analytical Services Protocol (ASP). The NYSDEC ASP program requires a full data deliverables package (Category B) to support the performance of SW-846 methods. It ensures that all monitoring and analytical projects be conducted according to approved QAPP, Standard Operating Procedures (SOPs), equipment manufacturers specifications and 40 CFR 136, as appropriate.

ALS will provide a complete ASP Category B deliverable to be used to generate future data validation reports. Additionally, ALS will provide all data in an EQuIS Electronic Data Deliverable (EDD) format to be uploaded to the NYSDEC Environmental Information Management System (EMIS).

All Sample Data Groups (SDGs) (i.e. data packages) will undergo independent data validation. The independent validation deliverable will be a Data Usability Summary Report (DUSR) and will describe compliance with analytical method protocols described in the NYSDEC ASP. The validation will be completed in accordance with NYSDEC DER-10 DUSR guidelines.

The collection and reporting of reliable data is a primary focus of the sampling and analytical activities. Laboratory and field data will be reviewed to ensure that the procedures are effective and that the data generated provides sufficient information to achieve the project objectives. Limitations of the data will also be noted. A qualified independent third party will evaluate the laboratory analytical data according to NYSDEC-DER DUSR guidelines.

4.0 REPORTING AND SCHEDULES

4.1 Remedial Investigation Supplemental Investigation Report

Following receipt and review of laboratory analytical data, an RI Supplemental report will be generated. The report will detail all field activities, analytical results, and observations recorded during the soil and groundwater sampling activities. The report will summarize any exceedances of NYSDEC Restricted Commercial Soil Clean-up Objectives (6 NYCRR Part 375-6.8) and NYSDEC's Technical & Operational Guidance Series (TOGS) 1.1.1 groundwater quality standards.

The report will include the following:

- Summary of the data collection activities;
- Summary of soil and groundwater related data;
- Tabulated summary of all soil and groundwater data compared to applicable New York Guidance Values
- Sample location map for all soil and groundwater locations;
- Figures presenting soil and groundwater contaminant concentrations;
- Cross sections maps of Site lithology (as applicable);
- Photo Log of activities;
- Drill logs;
- Groundwater contour maps;
- Copy of all sampling data forms;
- Copy of laboratory analytical data reports; and
- Copy of all Validation Reports.

The results of the investigation will help in the development of the feasibility study, as needed.

4.2 EQuIS

An EQuIS database will be developed for this project. All data generated during RI/FS activities will be entered and uploaded to the NYSDEC EMIS.

5.0 SCHEDULE

A copy of the proposed scheduled is included as **Appendix B**. It is based on assumptions for durations (in business days) and conditions of key events occurring on critical and non-critical paths. The schedule assumptions are detailed below.

- The schedule for the field activities is dependent upon access to all properties without difficulty.
- Field activities will not be significantly delayed by adverse weather or site access issues.
- The schedule for the field activities is dependent on timely review and approval of the work plan and associated documents.
- The schedule for the field investigation is dependent upon all field activities being performed in modified Level D health and safety protection.
- Laboratory EDDs will be received in the proper format and no manipulation of the data will be required to upload the data into the EQuIS database.
- It is assumed that NYSDEC and NYSDOH review and respond to any work plans, fact sheets, memorandums or reports in a timely manner.

6.0 REFERENCES

_____. 2010. Final Commissioner Policy CP-51/Soil Cleanup Guidance. Albany, New York, October 21, 2010.

_____. 1988a. Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA, Interim Final. EPA-540-G-89-004, Office of Emergency and Remedial Response, Washington, D.C.

CB&I. 2014. Records Search Report. September 2014

CB&I. 2015. Remedial Investigation/Feasibility Study Work Plan. May 28, 2015

CB&I. 2015. *R*esponse to Comments Turk Hill Park (Site# 828161) Conditional Approval of the draft Remedial Investigation Work Plan (RIWP) dated May 28, 2015, September 18, 2015.

EDR® The EDR® Radius Map™ Report with GeoCheck®. Inquiry Number: 4023093.2s. July 31, 2014

NYSDEC. 2006. Remedial Program Soil Cleanup Objectives, 6 NYCRR Subpart 375-6.8, December 14, 2006.

NYSDEC. 2015. Turk Hill Park (Site# 828161) – 1000 Turk Hill Rd. – Fairport (v)/Perinton (T) Conditional Approval of the draft Remedial Investigation Work Plan (RIWP) dated May 28, 2015, August 12, 2015.

USEPA. Contaminated Sediment Remediation Guidance for Hazardous Waste Sites. 2005

USEPA. Guidance for Conducting Treatability Studies under CERCLA, 1992

USGS. Quaternary Geologic Map of the Fairport Quadrangle. 1972

Figures

DRAWING NUMBER	150174-01A1
APPROVED BY	HAF
CHECKED BY	HAF
DRAWN BY	MJS
DESIGNED BY	HAF
DATE	04/14/14
OFFICE	LATHAM, NY

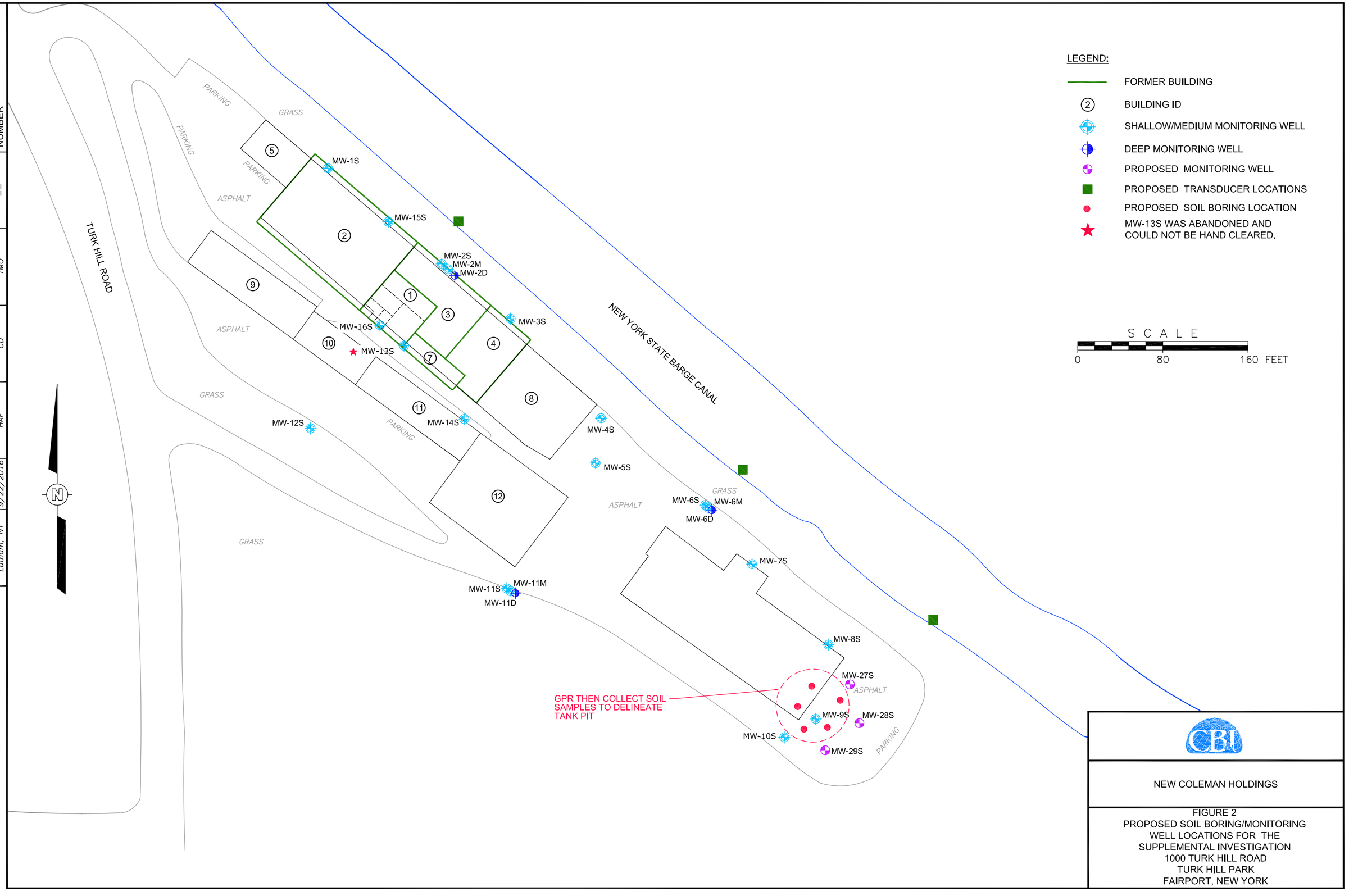
NEW COLEMAN HOLDINGS

FIGURE 1
SITE LOCATION MAP
1000 TURK HILL ROAD
FAIRPORT, NEW YORK

DRAWING NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	DESIGNED BY	DATE
150174-B26	---	TMO	CD	HAF	9/22/2016

OFFICE: Latham, NY

File: R:\Project\150174\150174-B26.dwg Layout: SOIL AND MW LOC User: chris.desiata Sep 26, 2016 - 2:05pm



CBI

NEW COLEMAN HOLDINGS

FIGURE 2
PROPOSED SOIL BORING/MONITORING WELL LOCATIONS FOR THE SUPPLEMENTAL INVESTIGATION
1000 TURK HILL ROAD
TURK HILL PARK
FAIRPORT, NEW YORK

Appendix A

Data Logger Information

800-446-7488 (tel:18004467488) Contact (https://in-situ.com/contact-us/)

About (https://in-situ.com/about/) Careers (/about/careers/)

Blog (https://in-situ.com/blog/)

HydroVu Data Services (https://in-situ.com/products/data-management/hydrovu-data-services/)

In-Situ Europe (http://www.in-situ-europe.com/)

(https://www.facebook.com/InSituInc)

(https://twitter.com/InSituWater)

(https://www.linkedin.com/company/in-situ)

(https://plus.google.com/116422786141174521E

(https://www.youtube.com/user/InSituWater)

Level TROLL 700 Data Logger

Part Number: LT700

Please **contact us (https://in-situ.com/contact-us/us-sales-rentals/)** for pricing information.

The Level TROLL 700 is In-Situ's premier water level data logger, giving groundwater professionals higher data resolution, expanded memory and advanced logging modes for specialized applications. Designed specifically for aquifer characterization, the Level TROLL 700 provides continuous monitoring of water level, water pressure, and temperature. Titanium construction means long-lasting performance in fresh, saline and even contaminated environments, with low-power batteries that last 10 years or more.

Available in pressure ranges up to 1153 ft (351 m) for vented configurations and 2274 ft (693 m) for non-vented configurations. Get real-time data via direct-read RuggedCable, or download data periodically. Integrate with telemetry systems (https://in-situ.com/product-category/remote-water-level-monitoring/telemetry/) and HydroVu Data Services (https://in-situ.com/products/data-management/hydrovu-data-services/) for real-time feedback on all of your water monitoring sites.

(/wp-content/uploads/2014/12/Level_TROLL_700_cable-1024x791.jpg)

(/wp-content/uploads/2014/12/Level_TROLL_700-1024x791.jpg)

(/wp-content/uploads/2014/12/Level_TROLL_70-1024x791.jpg)

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Features:

- Sub-1 inch diameter (0.72 in; 1.83 cm)
- Vented (gauged) or non-vented (absolute) pressure measurement
- Automatic atmospheric compensation (vented models only)
- Fully sealed, all titanium construction and sensors
- 4.0 MB memory holds 260,000 data points
- Advanced logging modes
- NIST calibration report
- Rugged Twist-lock cable (sold separately)

Includes:

- Level/Pressure/Temperature Data Logger
- Win-Situ 5 Software

Benefits:

- **Ideal for specialized applications** – Data logger provides highest possible accuracy, precision, and reliability.
- **Reduce field time** – Powerful, user-friendly software with special logging modes means faster data collection, and low-power batteries last 10+ years.
- **Protect data and equipment** – Durable titanium construction withstands even harsh environments.
- **Simplify project setup and control** – Open communications protocols easily integrate with existing telemetry systems (https://in-situ.com/product-category/remote-water-level-monitoring/telemetry/) and HydroVu Data Services (https://in-situ.com/products/data-management/hydrovu-data-services/), plus get 24/7 data and automatic event alerts.
- **Streamline data analysis** – Win-Situ Software automates water level corrections, post-processing, report generation and data export.

SPEC SHEET

Level TROLL 400, 500, 700, Baro Data Logger Specifications

(/wp-content/uploads/2014/11/Level_TROLL_400-500-700-Baro_Specification_Sheet.pdf)

SELECTION GUIDES

Water Level Brochure

(/wp-content/uploads/2016/02/In-Situ_Water_Level_Brochure.pdf)

MANUAL

Level TROLL 400, 500, 700, 700H Manual

(/wp-content/uploads/2014/11/Level-TROLL-400-500-700-700h_Manual.pdf)

VIEW ALL DOWNLOADS ❯ (/SUPPORT/BY-PRODUCT/PROD_ID/249/)

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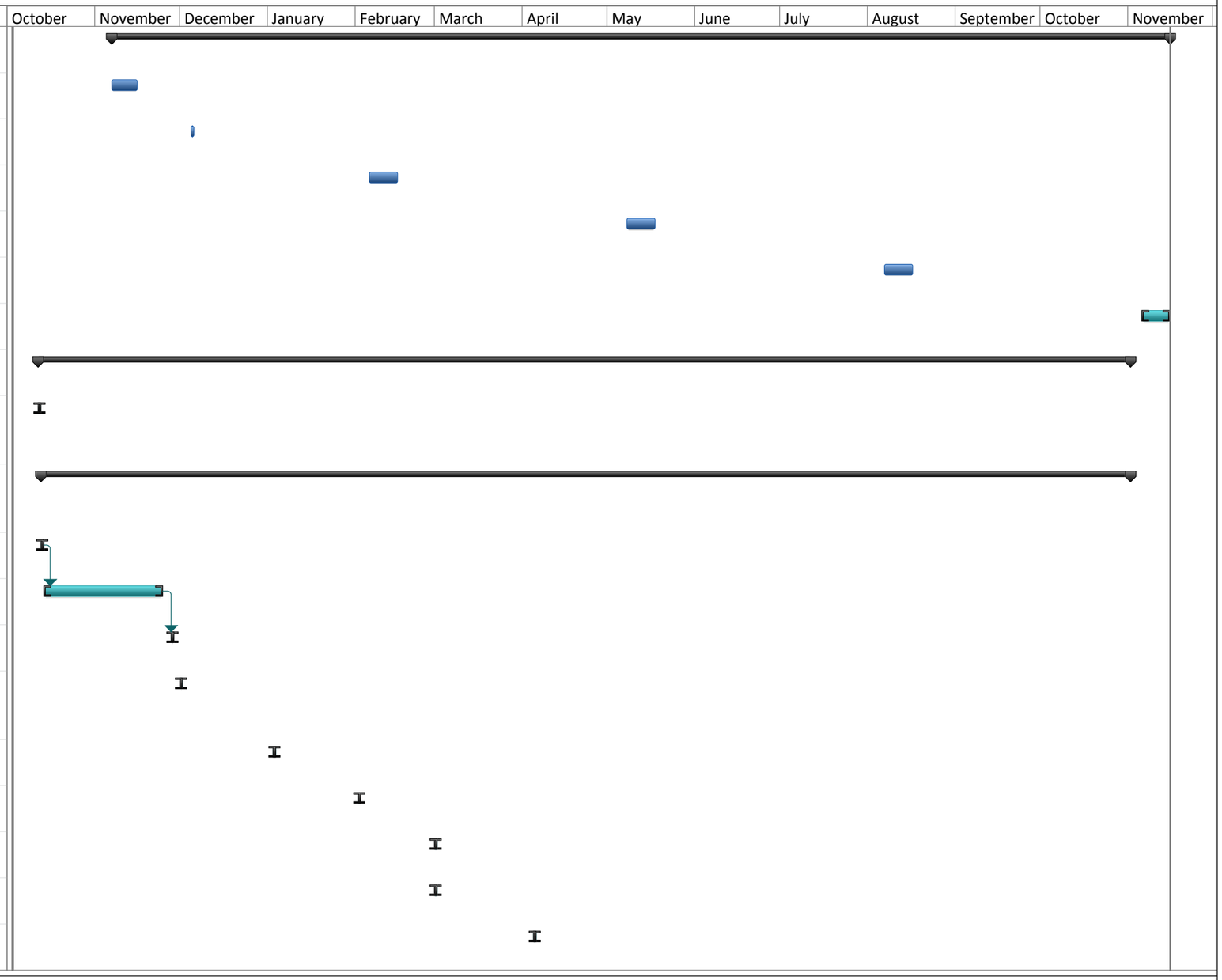
Appendix B

Revised Project Schedule

Appendix B: Proposed Supplemental Investigation Schedule
Turk Hill Park Site
1000 Turk Hill Road, Fairport, New York

ID	Task Name	Duration	Start	Finish	Predecessors
1	**Phase 2**	**268 days**	**Mon 11/7/16**	**Wed 11/15/17**	
2	MW sampling Q4 - 2016	7 days	Mon 11/7/16	Tue 11/15/16	
3	SSDS Annual Inspection	1 day	Mon 12/5/16	Mon 12/5/16	
4	MW sampling Q1 - 2017	8 days	Mon 2/6/17	Wed 2/15/17	
5	MW sampling Q2 - 2017	8 days	Mon 5/8/17	Wed 5/17/17	
6	MW sampling Q3 - 2017	8 days	Mon 8/7/17	Wed 8/16/17	
7	MW sampling Q4 - 2017	8 days	Mon 11/6/17	Wed 11/15/17	
8	**Supplemental Investigation**	**276 days**	**Wed 10/12/16**	**Wed 11/1/17**	
9	NYSDEC Approval of Supplemental Investigation Work Plan	1 day	Wed 10/12/16	Wed 10/12/16	
10	**Water Interconnectivity Study**	**275 days**	**Thu 10/13/16**	**Wed 11/1/17**	
11	Apply for NYS Canal Permit	1 day	Thu 10/13/16	Thu 10/13/16	
12	NYS Canal Approval	30 days	Fri 10/14/16	Thu 11/24/16	11
13	Install Data Loggers	1 day	Mon 11/28/16	Mon 11/28/16	12
14	Groundwater Elevation Gauging - Initial	1 day	Thu 12/1/16	Thu 12/1/16	
15	GW Elevation Gauging - M1	1 day	Tue 1/3/17	Tue 1/3/17	
16	GW Elevation Gauging - M2	1 day	Thu 2/2/17	Thu 2/2/17	
17	GW Elevation Gauging - M3	1 day	Wed 3/1/17	Wed 3/1/17	
18	GW Elevation Gauging - M3	1 day	Wed 3/1/17	Wed 3/1/17	
19	GW Elevation Gauging - M4	1 day	Wed 4/5/17	Wed 4/5/17	



Project: Appendix B - Supplement
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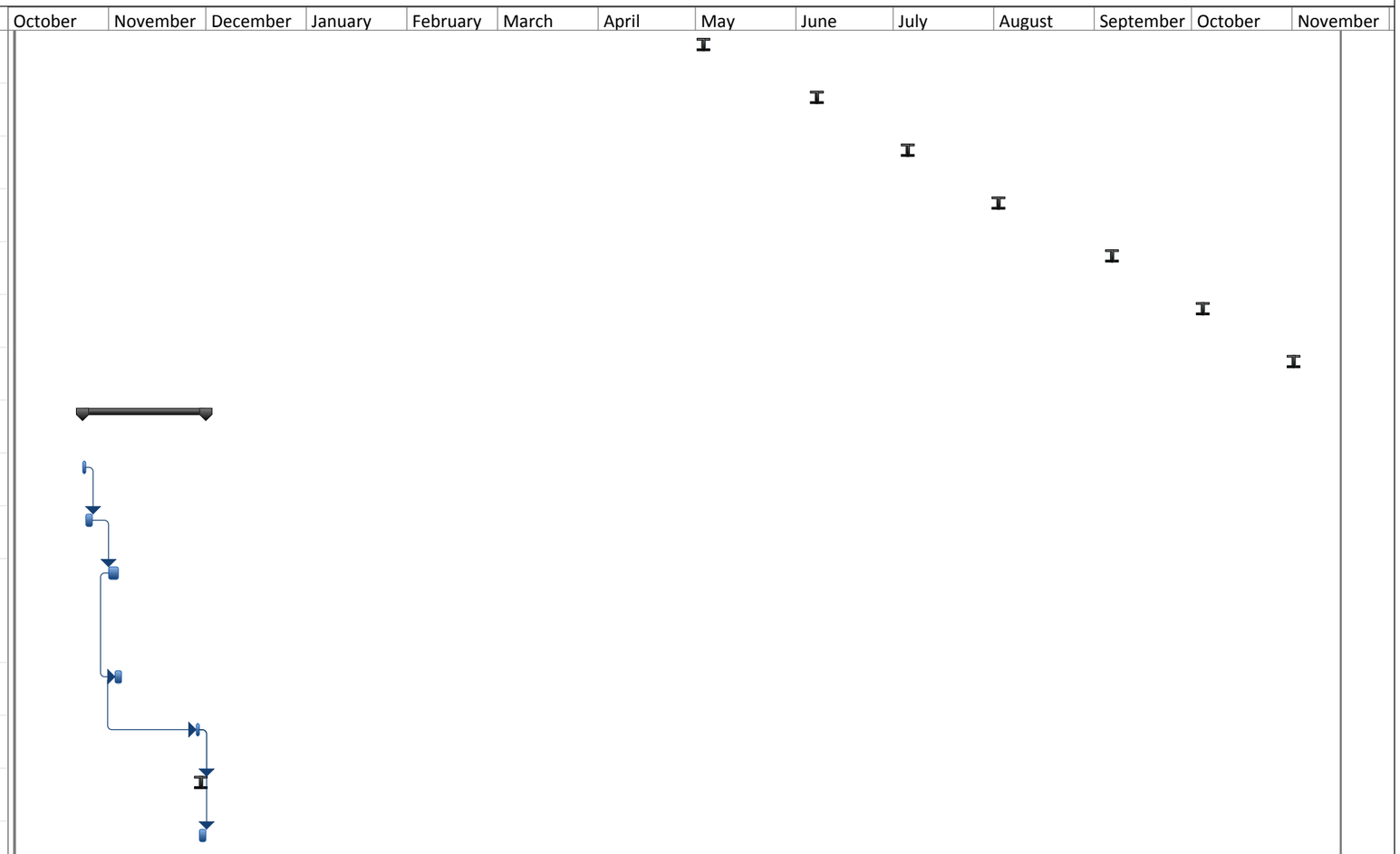
Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline			
Split	External Tasks	Inactive Summary	Manual Summary	Progress			
Milestone	External Milestone	Manual Task	Start-only				
Summary	Inactive Task	Duration-only	Finish-only				

Appendix B: Proposed Supplemental Investigation Schedule
Turk Hill Park Site
1000 Turk Hill Road, Fairport, New York

ID	Task Name	Duration	Start	Finish	Predecessors
20	GW Elevation Gauging - M5	1 day	Wed 5/3/17	Wed 5/3/17	
21	GW Elevation Gauging - M6	1 day	Wed 6/7/17	Wed 6/7/17	
22	GW Elevation Gauging - M7	1 day	Wed 7/5/17	Wed 7/5/17	
23	GW Elevation Gauging - M8	1 day	Wed 8/2/17	Wed 8/2/17	
24	GW Elevation Gauging - M9	1 day	Wed 9/6/17	Wed 9/6/17	
25	GW Elevation Gauging - M10	1 day	Wed 10/4/17	Wed 10/4/17	
26	GW Elevation Gauging - M11	1 day	Wed 11/1/17	Wed 11/1/17	
27	**MW-9S Delineation**	**28 days**	**Mon 10/24/16**	**Wed 11/30/16**	
28	GPR	1 day	Mon 10/24/16	Mon 10/24/16	
29	Pre-Clearing Locations	2 days	Tue 10/25/16	Wed 10/26/16	28
30	Advance Soil Borings and Install Overburden Monitoring Wells	3 days	Tue 11/1/16	Thu 11/3/16	29
31	Monitoring Well Development	2 days	Thu 11/3/16	Fri 11/4/16	30SS+2 days
32	Monitoring Well Sampling - Initial	1 day	Mon 11/28/16	Mon 11/28/16	31SS+14 days
33	Survey	1 day	Tue 11/29/16	Tue 11/29/16	32
34	Slug Test	2 days	Tue 11/29/16	Wed 11/30/16	32



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Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline			
Split	External Tasks	Inactive Summary	Manual Summary	Progress			
Milestone	External Milestone	Manual Task	Start-only				
Summary	Inactive Task	Duration-only	Finish-only				