REMEDIAL DESIGN REPORT

Tee Bird Country Club - RD
(NYSDEC Site Number 546028)

NYSDEC STANDBY ENGINEERING CONTRACT
Work Assignment #D007625-17

PREPARED FOR
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 BROADWAY
ALBANY, NEW YORK 12233

Prepared by

One International Boulevard
10th Floor
Mahwah, NJ 07495

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LIST OF ACRONYMS

6NYCRR	Title 6 of the Official Compilation of New York Codes, Rules and Regulations
amsl	above mean sea level
bgs	below ground surface
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulations
DOT	Department of Transportation
FER	Final Engineering Report
IHWD	Inactive Hazardous Waste Disposal
HASP	Health and Safety Plan
HDR	Henningson, Durham, and Richardson Architecture and Engineering P.C.
HMR	Hazardous Materials Regulations
mg/kg	milligram per kilogram
ND	non-detect
NOI	notice of intent
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCBs	polychlorinated biphenyls
ppb	parts per billion
ppm	parts per million
PM	particulate matter
PPE	personal protective equipment
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
SCGs	standards, criteria and guidance
SCOs	soil cleanup objectives
SMP	Site Management Plan
TSCA	Toxic Substance Control Act
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

Henningson, Durham, and Richardson Architecture and Engineering, P. C. (HDR) was retained by the New York State Department of Environmental Conservation (NYSDEC) to prepare the remedial design for the Tee-Bird Country Club Site (site #546028) located in the Town of Moreau, Saratoga County, New York. The work is being accomplished under Contract D007625. This Remedial Design Report was prepared to provide the design methodologies and supporting documents for the remedial design. The remedial design was prepared in accordance with the Record of Decision (ROD) issued for the site in March 2013.

1.1 Site Location and Description

The Tee-Bird Country Club Site is located at 30 Reservoir Road in the Town of Moreau, Saratoga County, New York. The site is bordered to the north by woods, to the west by several residences located along Burt Road, to the east farm lands and woods, and to the south by woods, farmland and a small cemetery. The property consists of a public 18-hole golf course, with a club house building, a maintenance building, a small open-air food stand, and a cart shed. The buildings are situated around a paved and unpaved parking area located in the north-central part of the property near Reservoir Road. The site is currently zoned commercial. Currently the golf course is not in operation and is not expected to be in operation at the time of the remedial action. Figure 1 shows the site location.

The property generally slopes gently to the southeast towards an existing pond and small stream. A NYSDEC mapped wetland exists along the stream that drains the pond. The wetland begins approximately 750 feet downstream of the pond.

Elevations on the property range from 280 feet above mean sea level (amsl) at the northwest corner of the property, along Burt Road, to approximately 200 feet amsl at the southeast corner of the property. The parking area generally slopes gently southeast towards the pond. The pond is approximately 0.4 acres and is man-made. The on-site stream is designated as Class C(T) which identifies it as a waterway for which the existing or expected best usage is supporting fisheries and is suitable for non-contact activities. The “T” designation indicates the stream may support a trout population.

1.2 Site Ownership

The site is currently owned by Mr. Dan Irwin of Fort Edward, NY. The site is being remediated by the NYSDEC under the Inactive Hazardous Waste Disposal (IHWD) Program.

1.3 Site History / Past Activities

Circa 1977, before the driveway and parking lot was paved, waste oils contaminated with polychlorinated biphenyls (PCBs) were sprayed on the surface for dust control. The detection of PCBs and pesticides in the soil led to the site being classified as a Class 3 Inactive Hazardous Waste Disposal Site (No. 546028) in 1984. The NYSDEC entered into an Order on Consent with Tee-Bird that required the driveway and parking lot to be paved. Based on the soil boring logs from the RI, the cap consists of approximately two to three inches of asphalt underlain by three to four inches of gravel. Following the installation of the cap, NYSDEC performed site inspections and collected additional soil samples in 1984, 1989, and 1990. The additional investigation sampling revealed site wide PCB concentrations under and beyond the paved areas greater than applicable standards, criteria and guidance (SCGs) values. This led to the site being reclassified to Class 2 in March 2005.

1.4 Selected Remedy

The ROD specified the implementation of excavation and off-site disposal to remove soils impacted with PCBs above the CP/51 Presumptive Remedy for PCB contaminated soils. The presumptive remedy requires the removal of surface soils with total PCB concentrations greater than one mg/kg and subsurface soils with total PCB concentrations greater than 10 mg/kg. Subsurface soils are defined as soils deeper than 12 inches below the surface for commercial and industrial uses or soils directly beneath permanent structures, pavement or similar cover systems.

Following excavation the site will be restored with clean fill meeting the requirements of Title 6 of the Official Compilation of New York Codes, Rules and Regulations (6NYCRR) Part 375-6.7(d). Areas will then be capped using either a 12 inch vegetative cap consisting of six inches of clean backfill and six inches of soil sufficient to maintain vegetative growth or eight inches of clean backfill and four inches of gravel. Beneath the cap a demarcation layer will be laid consisting of orange construction fence or similar material to delineate the remaining contaminated soils from the clean backfill.

2.0 NATURE AND EXTENT OF CONTAMINATION

The contaminant of concern is PCBs which was detected above the soil cleanup objective for a commercial use in the surface soil of one mg/kg and subsurface soil of 10 mg/kg. The area contaminated with PCBs includes subsurface soil beneath and immediately adjacent to the paved parking lot. Concentrations of PCBs range between 0.1 mg/kg to 553 mg/kg. The depth of

contamination is limited to approximately 2-3 feet deep. The distribution pattern and decreasing concentration of contamination with depth is consistent with the historical practices of surface application of waste oils for dust control.

2.1 Summary of Remedial Investigations

A Remedial Investigation (RI) was conducted by Alpha Geoscience from 2009 to 2010. During the investigation, samples were collected from beneath the asphalt cap and adjacent to the cap. Ten soil cores and twelve soil samples were collected beneath the asphalt cap and a total of 59 soil samples from 20 locations beyond the limit of the cap. Samples were composited over depth intervals of 0 to 1 foot, 1 to 2 feet, and 2 to 3 feet. Samples collected below the asphalt cap were collected relative to the bottom of the gravel sub-base beneath the pavement. In addition to soil cores three surface samples were collected from 0 to 2 inches (SS-21A, SS-23A, and SS-25A) and four deep soil borings (SB-1 through SB-4) were sampled continuously to a total depth of 20 feet (SB-1), 25 feet (SB-2 and SB-3) and 15 feet (SB-4). One soil sample from each boring, representing the upper four to six feet in the borings was submitted for PCBs analysis. Samples were analyzed by York Analytical Laboratories, Inc. using USEPA Method 8082 for PCBs. The locations of samples along with the results are shown on Figure 2.

2.2 Design Investigations

Based on sample results from the RI, three locations (SS-1, SS-3, and SS-5) have PCB results in excess of 50 mg/kg that will require disposal to an EPA approved disposal facility under the Toxic Substance Control Act (TSCA) found at 40 CFR §761. The TSCA regulations require the collection of in situ characterization samples to delineate the limit of TSCA regulated waste. Characterization samples were collected on May 6 and July 28, 2015. The first round of sampling included the collection of 24 (12 primary and 12 contingency) soil samples. Four primary samples were collected around each of the three sample locations with results in excess of 50 mg/kg at a distance of approximately 10 feet. Four contingency samples for each location were collected at the same time approximately 10 feet from the primary samples. Contingency samples were only analyzed if the primary sample result was in excess of 50 mg/kg. After the first round of characterization sampling two (SS-3 and SS-5) of the three areas were delineated. A second round of sampling to delineate the final area (SS-1) was completed on July 28. During the second sampling event two primary and four contingency samples were collected. The two primary samples were collected 10 feet from the failing sample (C-6). The two contingency samples were collected at 10 feet and 20 feet respectively from the primary sample. Sample locations and results are shown on Figure 3. The area around SS-1 was delineated after the second sampling event.

Soil borings were advanced using a geo-probe to a depth 24 inches. Soil cores were recovered in dedicated acetate liners contained inside the macro-core tube. Samples were collected at depths between 6 to 12 inches below the ground surface (bgs) which is approximately 0 to 6 inches below the existing grave sub-base. Samples were biased to the depth exhibiting the greatest contamination based on odor or staining. Soil boring logs describing soil description, sample depth, and evidence of contamination were prepared and are included as Appendix A.

Samples were packed in coolers with ice and shipped overnight to Hampton-Clarke, Inc. for PCB analysis by USEPA Method 8082. Soil samples were transferred directly from the acetate liner used to obtain the sample to an appropriate sample jar supplied by the laboratory. Soil samples were analyzed for total PCBs and were submitted to Hampton-Clarke Inc., a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory under chain of custody protocol, via overnight delivery for sample analysis. Sampling analytical results and data usability summary reports (DUSR) from the data validator are included as Appendix B.

3.0 DESIGN SCOPE

The remedial design for this project includes the following:

- Removal and off-site disposal of soil (bulk remediation waste) having concentrations of PCBs greater than or equal to 50 mg/kg to a EPA approved TSCA incinerator or TSCA chemical waste landfill as bulk remediation waste;
- Removal and off-site disposal of soil (bulk remediation waste) having concentrations of PCBs less than 50 mg/kg to a state approved municipal or non-municipal non-hazardous waste landfill;
- Collection of confirmation samples for PCB analysis;
- Final restoration of excavated areas; and
- Site restoration.

3.1 Health and Safety

The contractor will be responsible for preparing and implementing a health and safety plan (HASP). The HASP will meet the requirements of 29 CFR 1926.65 and specification SPEC 00003 in Section X of the contract documents. The plan will include programs for accident prevention, personnel protection, medical surveillance, site control and decontamination, emergency response and contingency plan, and air monitoring.

3.2 Community Air Monitoring Plan

The requirements for a community air monitoring plan (CAMP) have been included in specification Section SPEC00003 in Section X of the contract documents. The contractor will be responsible for preparing a plan showing the sample and meteorological station locations, wind direction, and off-site receptor locations. This plan will then be reviewed and approved by the engineer prior to implementation. The CAMP will ensure the protection of the off-site community during the activities at the site. The requirements of the CAMP will be prepared in accordance with the New York State Department of Health (NYSDOH) Generic CAMP and will include real time monitoring for particulates at the downwind perimeter of the work zone. Continuous air monitoring will be required for all ground intrusive activities which includes soil/waste excavation and handling and soil sampling. During nonintrusive activities periodic monitoring for particulates are required as outlined in the NYSDOH Generic CAMP.

3.3 Mobilization and Site Preparation

The contractor will be responsible for contracting a company to perform a geophysical survey to locate and mark in the field all underground utilities including but not limited to water, sanitary, gas, and communications prior to any excavating activities. All existing underground utilities will be properly protected during the remedial activities. All sample locations along with the limit of excavation shown on the Contract Drawings will be located and staked out by a New York State Licensed Land Surveyor prior to beginning work.

The area within the limit of excavation will be grubbed and stripped of pavement, vegetation, shrubs, and structures. Existing ground cover on the property consists mainly of asphalt and grassed areas. The asphalt will be removed and disposed off-site unless approved to be recycled off-site by the Department. Vegetation removed will be transported off-site and disposed at an approved disposal facility. It is not anticipated that vegetation will be contaminated with levels of PCBs greater than or equal to 50 mg/kg because these areas are outside the limits of the parking area where spraying of waste oils occurred and any contamination is likely the result of contaminant migration from storm water runoff. In addition, samples collected outside the limit of the paved areas during the RI were below 50 mg/kg.

Temporary facilities will be provided by the contractor and will include a field office having electricity, lighting, water, sanitary, and telecommunication services including internet service. Access roads and parking areas will also be provided. A construction trailer designated as the security office will be provided and clearly marked where visitors can sign in and receive the required health and safety training prior to entering the construction site.

3.4 Erosion and Sediment Controls

Soil erosion and sediment controls (SESCs) will be installed at the site where necessary to prevent the migration of sediment into non contaminated areas and environmentally sensitive areas. The controls anticipated for use include but are not limited to: the installation of silt fence around the area of disturbance, hay bales and diversion berms to control storm water flow, and catch basin inlet protection. Additional controls to prevent the migration of sediment may be employed if necessary.

At a minimum the contractor will install silt fence along the entire east perimeter of the excavation area and along the southwest perimeter of the excavation area. Silt fencing will be supplemented with straw bales and/or diversion berms/swales as necessary to prevent migration of sediment from the construction disturbance. Gravel access roads will be used for the movement of vehicles, equipment and material throughout the Site. A stone construction entrance will be installed at the Site entrance to prevent tracking of soils onto Reservoir Road. Additionally loading areas will be provided outside the contaminated areas to reduce the need for de-conning trucks and the potential for tracking sediments onto Reservoir Road. A decontamination station will be provided and utilized, as needed, as discussed in Section 3.6 below. In the event any sediment is tracked from the Site onto Reservoir Road, the road will be cleaned immediately.

Clean soil stock piles will be constructed with perimeter silt fence and covered when not in use. Details of soil erosion and sediment control measures are provided in the contract drawings. SESC measures will meet the requirements of the New York State Standards for Soil Erosion and Sediment Controls (the Blue Book), August 2005.

Silt fence and other erosion control measures will be inspected on a weekly basis and after storm events with rainfall amounts of 0.5 inches or greater. Sediment will be removed from the silt fence once the height of the sediment is six inches. Erosion control features observed to be damaged or in need of repair will be repaired immediately.

All SESC measures will be constructed and maintained in accordance with the Blue Book. Temporary control devices to be used for erosion and sediment control will be installed and maintained by the contractor until permanent protection is established at project completion.

3.5 Decommission Groundwater Monitoring Wells

There are three (3) groundwater monitoring wells located on the site identified as MW-1, MW-2, and MW-3. All three of these monitoring wells will be decommissioned in accordance with

NYSDEC's guidance document *CP-43: Groundwater Monitoring Well Decommissioning Procedures*.

3.6 Excavation and Soils Management

Soils with contaminants above the soil cleanup criteria will be excavated and transported off-site for disposal. The anticipated limit of soils requiring off-site disposal are shown on the Contract Drawings on Sheet 02C-2. The total excavation area is estimated to be 47,000 square feet (1.08 acres) with a total volume of approximately 2,710 cubic yards.

Two categories of impacted soils (bulk remediation waste) exist on site. Soils impacted with PCBs greater than or equal to 50 mg/kg are must be disposed of to an EPA approved TSCA disposal facility in accordance with 40 CFR Part 761.61(a)(5)(i)(B)(2)(iii). Soils impacted with PCBs less than 50 mg/kg shall be managed in accordance with §761.61(a)(5)(i)(B)(2)(ii) which requires disposal to a state approved municipal or non-municipal non-hazardous waste landfill. Alternatively the soils may be decontaminated to a concentration of less than 1 mg/kg of PCBs and returned to the site for disposal in accordance with §761.61(a)(5)(i)(B)(3). The contractor has the option to transport soils with PCBs up to 45 mg/kg to the ESMI Burn Plant in Fort Edward NY for thermal treatment and reusing treated soils for backfill.

Soils impacted with PCBs with concentrations greater than or equal to 50 mg/kg will be excavated and directly loaded into trucks for off-site disposal. Approximately 315 cubic yards of soil is estimated to be shipped off-site to an EPA approved TSCA disposal facility. Directly loading soils with PCBs greater than or equal to 50 mg/kg reduces the potential for cross contaminating areas with PCB concentrations less than 50 mg/kg and reduces the requirements for collecting, treating, and disposing of storm water runoff that may come in contact with stockpiled soils. In the event the contractor chooses to stockpile, the soils will be stockpiled on a geo-membrane of sufficient thickness and strength to withstand equipment traffic surrounded by a six inch berm. The geo-membrane will be protected by a layer of sand covered by a geo-textile. A drainage collection system will be provided to prevent storm water from collecting inside the bermed area. Storm water in contact with impacted soils will be sampled for total PCBs and either treated and discharged or disposed off-site to an approved treatment and disposal facility.

Soils with PCBs less than 50 mg/kg can be stockpiled prior to be being loaded into trucks for off-site disposal. Truck pads will be located outside the limit of excavation to reduce the need for decontaminating them before leaving the site. Stockpiled soil will be kept within the limit of the excavation and will be encircled with either silt fence or a six inch berm to prevent contaminated

soil from migrating. When not in use the stockpile will be covered with a geo-membrane and sand bags or other measures will be used to anchor the cover in place.

Loading areas should be provided outside the contaminated areas to reduce the need for decontamination of trucks before leaving the site. Although loading outside the contamination area will reduce the need for decontamination, a decontamination station will still be provided. Each vehicle will be visually inspected after loading for any evidence of contaminated soil on the sides of the truck or tires. If contaminated soils are observed on the truck, the vehicle will be decontaminated with hand tools and a coarse brush prior to exiting the loading pad. The truck will then go to an area designated as a decontamination pad where the truck and tires will be washed with low pressure hoses. Water will be collected and either treated onsite or disposed off-site to a permitted disposal facility.

Equipment used for excavating contaminated soils will be decontaminated in the decontamination station in the contamination reduction zone. At a minimum two separate decontamination events of the excavation equipment are anticipated. The first decontamination event is expected to occur after removal of soils with PCB concentrations greater than or equal to 50 mg/kg. After decontaminating the equipment a wipe sample will be collected to confirm decontamination. The sample result will be analyzed under an expedited turn around time (24 hours) because results will be needed before the contractor can proceed with excavating the areas impacted with PCBs less than 50 mg/kg. Equipment will be considered appropriately decontaminated if the PCBs surface concentration is less than or equal to 10 µg/100 cm^2 as measured by the standard wipe test. After passing results have been received and approved by the engineer the contractor may begin excavating the soils with less than 50 mg/kg PCBs. Upon completion of these areas, the second decontamination will occur. Wipe samples will be collected of the second decontamination to confirm equipment has been satisfactorily decontaminated.

3.7 Water Management

The depth to groundwater is generally between 7-10 feet below ground surface (bgs) which is well below the bottom of the excavation. Groundwater is not anticipated to be encountered or require collection during the excavation activities, since the anticipated maximum excavation depth is no more than three feet bgs.

Stormwater will be diverted with the use of temporary berms and diversion ditches around excavated areas. Any water collected in excavations will be pumped to temporary storage tanks and then transported off-site for disposal.

Decontamination water will be collected in drums or temporary storage tanks and sampled to characterize the water before being transported off-site for disposal.

3.8 Waste Characterization and Disposal

All waste generated at the site will be characterized prior to proper disposal. Types of waste anticipated include used personal protective equipment (PPE), asphalt, and materials associated with decontamination, and contaminated soils.

The soils will be classified based on the concentration of total PCBs. Soils having PCBs concentrations greater than or equal to 50 mg/kg will require off-site disposal to an EPA approved TSCA disposal facility. Soils having PCBs concentrations less than 50 mg/kg can be disposed to a state approved municipal or non-municipal non-hazardous waste disposal facility. Based on the in situ characterization results from samples collected in 2015, approximately 315 tons of impacted soils are estimated for off-site disposal to an EPA approved TSCA waste disposal facility. The tonnage is based on a conversion factor of 1.5 tons per cubic yard and includes a 10% contingency. The remaining 4,155 tons are to be disposed at a municipal or non-municipal non-hazardous solid waste landfill or thermally treated at the ESMI burn plant in Fort Edward, NY. The contractor has the option to use soils treated to less than 1 mg/kg of PCBs for reuse as backfill.

Used PPE that comes in contact with contaminated soil will be handled pursuant to §761.61(a)(5)(v). PPE will be collected in drums meeting the requirements of the Department of Transportation (DOT) Hazardous Materials Regulations (HMR) promulgated at 49 CFR parts 171 through 180 and disposed off-site to a municipal or non-municipal non-hazardous waste disposal facility.

Aqueous wastes generated during the construction activities will require sampling prior to disposal off-site. If total concentrations of PCBs are less than 50 parts per million (ppm) the water can be shipped off-site to a treatment and disposal facility. Water containing less than 3 parts per billion (ppb) PCBs or other criteria specified by the NYSDEC can be discharged to surface water if a NYSDEC discharge permit pursuant to 6NYCRR Part 750 is obtained. Water with concentrations of PCBs greater than or equal to 50 ppm will be disposed at an incinerator that complies with §761.70 pursuant to §761.60(a).

3.9 Confirmation Sampling

Once the contractor has achieved the depth and limit of excavation shown on the Contract Drawings the overseeing engineer will inspect the bottom and sidewalls for evidence of

contamination. If there is no evidence of contamination (no odor or sheen) the engineer will direct the contractor to collect confirmation samples. However, if evidence of contamination exists, the engineer will direct the contractor to expand the excavation before collecting the confirmation samples. In general the contractor will be asked to dig vertically or horizontally in approximate six inch intervals. The engineer will then inspect the area for evidence of contamination. This process will continue until the engineer determines there is no evidence of contamination and a confirmation sample may be collected.

Confirmation samples will be collected by the contractor using disposable spoons and bowls. Both bottom and sidewall samples will be required. Bottom samples will be collected based on a grid of 20 feet by 20 feet (400 square feet) and sidewall samples will be collected every 30 linear feet along the perimeter of the excavation. Bottom samples will be collected from 0 to 3 inches at the bottom of the excavation. Sidewall samples will be collected from 0 to 3 inches below the vegetative layer, which will be approximately four to six inches below the ground surface. Based on the known release pattern and results of samples collected during the RI the surface soils are expected to be the most heavily impacted and thus the most representative of contamination levels.

Soil samples will be shipped to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory under chain of custody protocol, via overnight delivery for total PCBs sample analysis. Sample results should be analyzed by the laboratory under an expedited turn around time (24 to 48 hours) in order to reduce the time the excavation will remain open.

The engineer will review the results of the samples collected to verify the cleanup levels have been met. Based on the sample results the Engineer will determine whether the area can be backfilled or additional excavation will be necessary. If additional excavation is necessary the engineer will direct the contractor to follow the same procedures as discussed above until a clean sample is received and the area can be backfilled.

3.10 Backfill and Site Restoration

Upon completion of the excavation and receipt of confirmatory samples meeting the soil cleanup objectives, the excavation areas will be backfilled with clean imported material or thermally treated soil meeting the requirements of 6NYCRR Part 375 Table 375-6.8(b) for commercial use. Backfill will be sampled by the contractor at the source of the backfill and at the rate specified in the contract documents. Approximately 2,200 loose cubic yards of backfill is anticipated to be imported to restore disturbed areas. Based on the amount it is anticipated that seven discrete

samples will be collected and analyzed for volatile organic compounds (VOCs) and two composite samples will be collected and analyzed for semi volatile organic compounds (SVOCs), metals, PCBs, pesticides, and herbicides. In addition to backfill the contractor will also import topsoil to restore vegetative areas. Approximately 230 cubic yards of topsoil is expected to be imported. Samples for topsoil will include the collection of two discrete samples for VOCs analysis and one composite sample for metals, PCBs, pesticides, herbicides and SVOCs analyses. The sample results will be submitted to the engineer and the Department for review and approval. Once analytical testing results have been approved, the engineer will direct the contractor that he may deliver the backfill to the site. The contractor will then lay down the demarcation layer and then transport the approved soil and backfill the site. Backfill will be placed using a maximum of 12 inch lifts and compacting between lifts.

After backfilling, areas will be restored with either vegetation or gravel. Existing paved areas will be restored with gravel and adjacent lawn areas with vegetation as shown on the contract drawings. The gravel cover will consist of four inches of gravel. The vegetative cover will consist of six inches of topsoil and grass seed mixture specified in Section 02930 – Site Restoration of the specifications.

4.0 PERMITS, AUTHORIZATIONS, AND ACCESS

4.1 Site Access

NYSDEC will be responsible for obtaining site access agreements needed to complete the work.

4.2 Toxic Control Substance Act Requirements

The site cleanup is regulated under 40 CFR §761 and requires the preparation of a Self-Implementing Cleanup Plan and notification to be submitted to the EPA Regional Administrator, the Director of the State environmental protection agency, and the Director of the county or local environmental protection agency at least 30 days prior to the date that the cleanup will begin. The Self-Implementing Cleanup Plan was submitted by the NYSDEC on September 24 to the EPA along with a cover letter stating the purpose of the submission signed by the entity responsible for conducting the cleanup. A response was received on October 19, 2015 requesting changes that were incorporated into this final design. The letter has been included as Appendix C.

4.3 Local Permits

The Town of Moreau Municipal Code was reviewed to identify any permits that will be required to complete the work. Based on the review three chapters were identified as potentially applicable to the construction activity:

- Chapter 100. Noise.
- Chapter 117. Signs.
- Chapter 120. Stormwater Management and Erosion and Sediment Control

The following permits or requirements will need to be met to be in compliance with the Town of Moreau Municipal Code:

- Noise: Construction activities will not be permitted between the hours of 11:00 p.m. and 7:00 a.m. No permit or approvals are required.
- Temporary Sign: A temporary sign can be installed without a permit. The sign will not exceed a combined total of six square feet in area and will not be illuminated. The proposed project sign has a total square footage of 32 square feet and will require a permit from the town. The contractor shall be responsible for obtaining the permit.
- Stormwater Permit: The total site disturbance will be approximately 2 acres which will require a land development activity permit from the Town unless waived. The contractor will be responsible for obtaining the land development activity. Along with the application, a stormwater pollution prevention plan (SPPP) will be required to be submitted to the Building Inspector for review and approval. A SPPP has been prepared and is included as Appendix C. This plan will be submitted by the contractor along with the required permit application prior to beginning work.

4.4 State Permits

The total site disturbance will be approximately 2 acres. Land disturbances of one acre or more typically require coverage under the General Permit for Stormwater Associated with Construction Activities (GP-0-15-002). However, because this is a construction activity being completed under the Inactive Hazardous Waste Disposal Regulations the only action required is to file a Notice of Intent (NOI) to NYSDEC's central office. Although a permit is not required the construction activities will still need to comply with the requirements of the general permit. A completed NOI has been included in Appendix D which will need to be submitted by the contractor a minimum of five days prior to the start of construction.

5.0 SCHEDULE

This section provides a preliminary schedule for the activities necessary to complete the remedial design. The actual sequence will be determined by the contractor and will be submitted once proposed.

5.1 Construction Sequence

1. Obtain Permits: The contractor is responsible for obtaining all permits required to complete the work.

2. Underground Utility Location: The contractor will have all underground utilities located prior to any earth disturbances, including boring installation.

3. Mobilization and Temporary Facilities: The contractor will mobilize equipment and setup temporary facilities.

4. Erosion Control Measures: All erosion control measures shown on the contract drawings in addition to any other measures the contractor deems to be necessary will be installed. Measures will include but are not limited to silt fence, hay bales, or diversion ditches to prevent storm water from entering open excavations.

5. Excavation & Disposal: The contractor will complete the excavation to the limit and depths shown on the contract documents. Soils with PCBs greater than or equal to 50 mg/kg will be direct loaded onto to trucks for disposal prior to beginning the excavation of soils with PCBs less than 50 mg/kg. Stockpiling will be limited to areas designated by the engineer and will depend on the areas of the site requiring soil removal. Stockpiling of contaminated materials on site should be minimized as much as practicable.

6. Sampling & Backfilling: Once excavation is complete and confirmation sample results are received showing the area meets the cleanup criteria the contractor will backfill the areas to meet the pre-existing conditions. The site will then be restored with gravel or vegetation.

7. Demobilization: At the completion of the work the contractor will remove all temporary facilities and restore all disturbed areas.

5.2 Preliminary Construction Schedule

The duration of excavation is estimated to take approximately 4 to 6 weeks with a total project duration of 36 weeks. A summary of the major construction activities is provided below.

- Obtain Permits: 60 working days
- Mobilization & Site Preparation: 5 working days
- Excavation: 20 working days
    - Includes confirmatory sample collection and receipt of results
- Site Restoration: 5 working days
- Final Contractor Submittals: 30 working days
- NYSDEC Final Submittals: 60 working days

6.0 POST CONSTRUCTION PLANS

6.1 Final Engineering Report

After the remedial action has been completed a Final Engineering Report (FER) will be prepared to document the implementation of the remedial action. The FER will be prepared in accordance with Section 5.8 of DER-10 and will be certified by a NYS Licensed Professional Engineer. The FER will include a description of the remedy as constructed, a discussion of any problems encountered during construction along with their resolution, a description of any changes to the design, quantities and concentrations of contaminants removed, a listing of waste streams along with quantities of waste, and restoration activities. The FER will include documentation of all waste manifests or waste disposal tickets and results of all analysis.

6.2 Site Management Plan

A Site Management Plan (SMP) will be prepared to ensure continued safe reuse of the property after the remedial action has been completed. The SMP will address the site management for the site and will include information such as a description of the engineering and institutional controls, the inspection and maintenance requirements for the vegetative and asphalt cap, procedures to follow when the cap is breached for utility repairs or other activities, restrictions placed on the property that will limit the future reuse of the site, and periodic review and reporting requirements.

6.3 As-Built Survey

Final restoration will be documented by an as-built drawing. The drawing will include the location of the gravel and vegetative caps, the location of all soils removed indicating the

surveyed limits of the excavation and location of all documentation samples. Information will be certified by a NYS licensed engineer.

6.4 Institutional Controls

Remaining soils on site will be contaminated with PCBs having concentrations at levels requiring the execution of an environmental easement to restrict future development of the site to a commercial use. The environmental easement will include a metes and bounds description of the portion of the property that will be subject to the restrictions prepared by a NYS licensed surveyor. A draft environmental easement map has been included as Appendix E.

7.0 CERTIFICATION

I THOMAS CONNORS *certify that I am currently a NYS registered professional engineer and that this Remedial Design Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.*

Signature: 

Date: 11/11

Name: THOMAS CONNORS

License No.: 73520

8.0 REFERENCES

6 NYCRR Part 375, Environmental Remediation Programs, December 14, 2006.

40 CFR Part 761 Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.

NYSDEC, November 2009. CP-43: Groundwater Monitoring Well Decommissioning Policy.

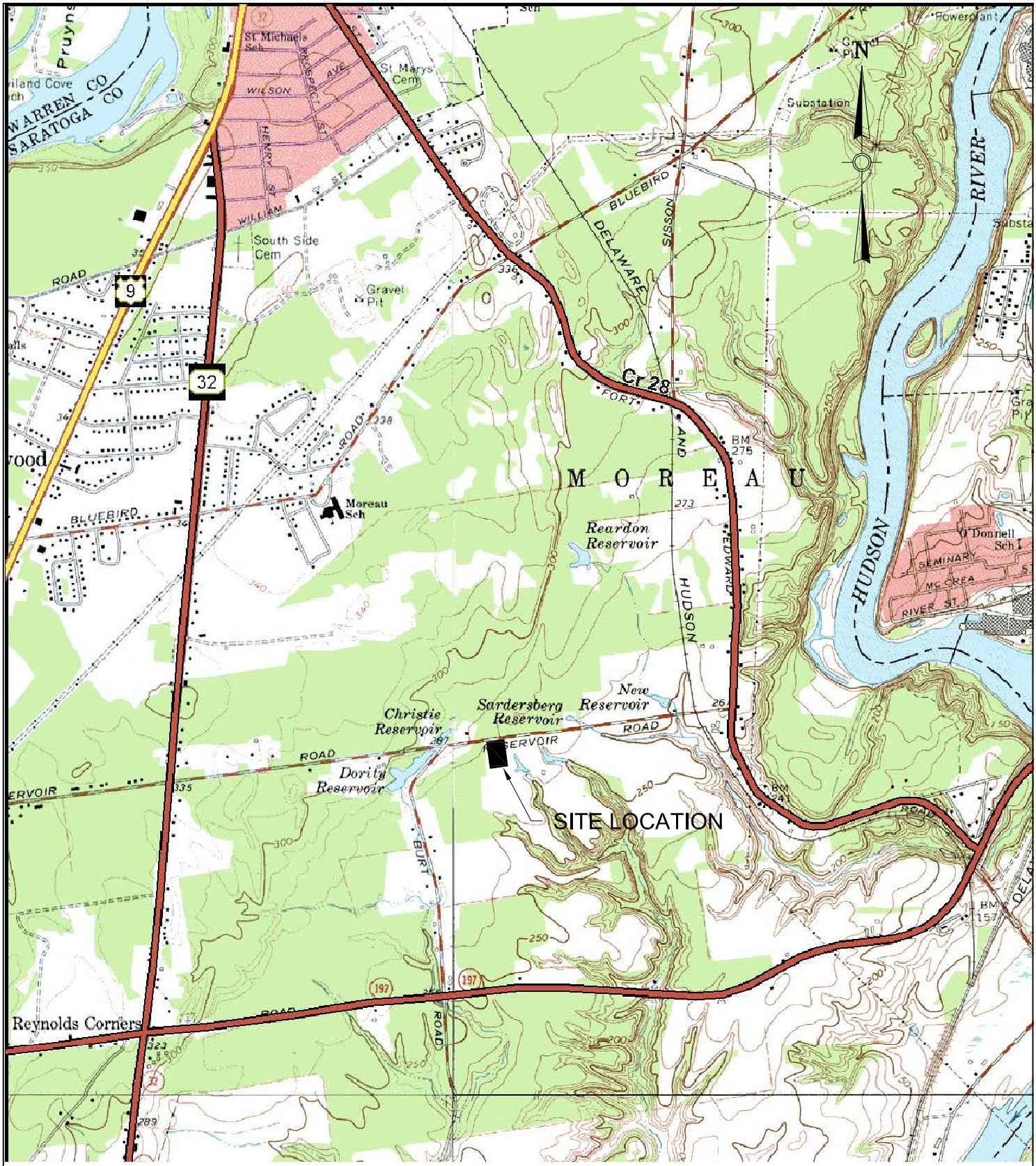
NYSDEC, May 2010. DER-10 / Technical Guidance for Site Investigation and Remediation.

NYSDEC, October 2010. CP-51 / Soil Cleanup Guidance.

NYSDEC, March 2013. Record of Decision, Tee-Bird Country Club, State Superfund Project, Moreau, Saratoga County, Site No. 546028.

Alpha Geoscience, August 2011. Remedial Investigation Report, Tee Bird Country Club – North Course, Moreau, New York, NYSDEC Site #546028.

Delaware Engineering, P.C., February 2012. Draft Feasibility Study Report, T-Bird Country Club, NYSDEC Site #546028.



TEE BIRD COUNTRY CLUB
LOCATION MAP

DATE

OCTOBER 2015

FIGURE

1

SS-11	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SS-9	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	*44.6*	ND	ND

SS-15	0'-1'	1'-1.5'	1.5'-2'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SS-14	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SS-13	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SS-8	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	*38*	0.04	ND

SS-18	0'-0.5'	0.5'-1'	1'-2'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SS-6	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	5.28	ND	ND

SS-20	0'-1'	1'-1.5'	1.5'-2.5'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SS-5	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	*74.4*	3.07	0.25

C-3P	1'-1.5'
	5/6/15
Total PCBs	0.48

SS-22	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SS-23A	0-2''
	6/30/10
Total PCBs	ND

C-14P	0.8'-1.1'
	7/28/15
Total PCBs	*100*

C-14	0.6'-1.3'
	7/28/15
Total PCBs	*58*

C-14C	0.6'-1.6'
	7/28/15
Total PCBs	*1.8*

SS-23	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	0.12	ND	ND

SB-1	5'-6'
	12/15/09
Total PCBs	ND

C-6P	0.7'-1.4'
	5/6/15
Total PCBs	*980*

SS-1	0'-1'	1'-2'	2'-3'
	8/19/09	8/19/09	8/19/09
Total PCBs	*544*	0.71	ND

C-7P	1'-1.4'
	5/6/15
Total PCBs	0.89

C-9	0.8'-1.3'
	5/6/15
Total PCBs	*4.1*

C-10P	0.5'-1'
	5/6/15
Total PCBs	*3.7*

C-9P	0.7'-1.2'
	5/6/15
Total PCBs	*4300*

SS-3	0'-1'	1'-2'	2'-3'
	8/19/09	8/19/09	8/19/09
Total PCBs	*553*	0.41	0.04

SS-25	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	*10.2*	1.63	0.2

SS-25A	0-2''
	6/30/10
Total PCBs	ND

C-11P	1.1'-1.6'
	5/6/15
Total PCBs	*11*

C-12P	1'-1.75'
	5/6/15
Total PCBs	0.32

SS-27	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SS-28	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	0.05	ND

SB-4	4'-5'	5'-6'
	12/15/09	12/15/09
Total PCBs	1.01	0.05

SS-2	0'-1'	1'-2'	2'-2.5'	2.5'-3'
	8/19/09	8/19/09	8/19/09	8/19/09
Total PCBs	*39.4*	1.18	0.04	0.1

SS-29	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SS-30	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SB-2	4'-5'
	12/15/09
Total PCBs	ND

C-8	0.65'-1.25'
	5/6/15
Total PCBs	*3.5*

C-8P	0.45'-0.9'
	5/6/15
Total PCBs	*1500*

SS-26	0'-1'	1'-2'	2'-3'
	12/15/09	12/15/09	12/15/09
Total PCBs	0.16	ND	ND

SS-4	0'-1'	1'-2'	2'-3'
	8/19/09	8/19/09	8/19/09
Total PCBs	0.15	ND	ND

C-6	0.6'-1.3'
	5/6/15
Total PCBs	*830*

SB-3	4'-5'
	12/15/09
Total PCBs	ND

C-13P	0.75'-1.1'
	7/28/15
Total PCBs	*270*

C-13	0'-1.2'
	7/28/15
Total PCBs	*9.8*

C-4P	1'-1.5'
	5/6/15
Total PCBs	8.1

C-1P	0.5'-1.2'
	5/6/15
Total PCBs	*5.1*

C-2P	0.75'-1.6'
	5/6/15
Total PCBs	*15*

SS-21	0'-1'	1'-2'	2-2.5'
	12/14/09	12/14/09	12/14/09
Total PCBs	*13.1*	*36.4*	*30.4*

SS-21A	0-2''
	6/30/10
Total PCBs	0.364

SS-7	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	*8.38*	0.17	ND

SS-19	0'-1'	1'-2'	2'-2.5'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SS-16	0'-1'	1'-1.5'	1.5'-2'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SS-17	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	ND	ND	ND

SS-12	0'-1'	1'-2'	2'-3'
	12/14/09	12/14/09	12/14/09
Total PCBs	0.05	ND	ND

SS-10	0'-1'	1'-1.5'	1.5'-2'
	12/14/09	12/14/09	12/14/09
Total PCBs	*7.47*	ND	ND

SS-24	0'-1'	1'-1.5'
	12/14/09	12/14/09
Total PCBs	0.43	ND

C-5P	1'-1.5'
	5/6/15
Total PCBs	1.2

N

LEGEND

- SOIL BORING
- SEDIMENT SAMPLES
- SURFACE SAMPLE
- MONITORING WELL
- CHARACTERIZATION SAMPLE COLLECTED BY HDR

PCBs POLYCHLORINATED BIPHENYLS
ND NON DETECT
MG/KG MILLIGRAMS PER KILOGRAM

SAMPLE ID | SAMPLE DEPTH | SAMPLE DATE

SS-1	0'-1'	1'-2'	2'-3'
	8/19/09	8/19/09	8/19/09
Total PCBs	*544*	0.71	ND

BOLD, UNDERLINE, AND ITALICIZED TEXT – GREATER THAN SOIL CRITERIA
COMPOUND NOT DETECTED

NOTE:
1. SOIL CRITERIA IS 1 MG/KG OF PCBs FOR SURFACE SOILS (0–12 INCHES) AND 10 MG/KG FOR SUBSURFACE SOILS (>12 INCHES). SUBSURFACE SOILS CAN ALSO INCLUDE SOILS COVERED BY STRUCTURES SUCH AS PAVEMENT, BUILDINGS OR SIMILAR COVER.
2. SAMPLES COLLECTED IN 2009 WERE THE RESULT OF A REMEDIAL INVESTIGATION CONDUCTED BY ALPHA GEOSCIENCE. SAMPLE DEPTHS SHOWN WITHIN THE DRIVEWAY/PARKING AREA ARE RELATIVE TO THE BOTTOM OF THE GRAVEL SUB–BASE BENEATH THE PAVEMENT. SAMPLE LOCATIONS SHOWN ARE APPROXIMATE AND ARE BASED ON FIGURE 4 OF THE REMEDIAL INVESTIGATION REPORT PREPARED BY ALPHA GEOSCIENCE.
3. SAMPLES COLLECTED IN 2015 WERE COLLECTED BY HDR AND WERE LOCATED USING A HAND HELD GPS UNIT. SAMPLE DEPTHS ARE RELATIVE TO THE TOP OF THE GROUND SURFACE.

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

HDR

ISSUE	DATE	DESCRIPTION
4	10/19/2015	REVISED FINAL DESIGN
3	09/11/2015	REVISED FINAL DESIGN
2	9/3/2015	EPA DRAFT NOTIFICATION PACKAGE
1	12/12/2014	DRAFT FINAL DESIGN

PROJECT MANAGER S. KLING
PROJECT NUMBER 147 - 235818

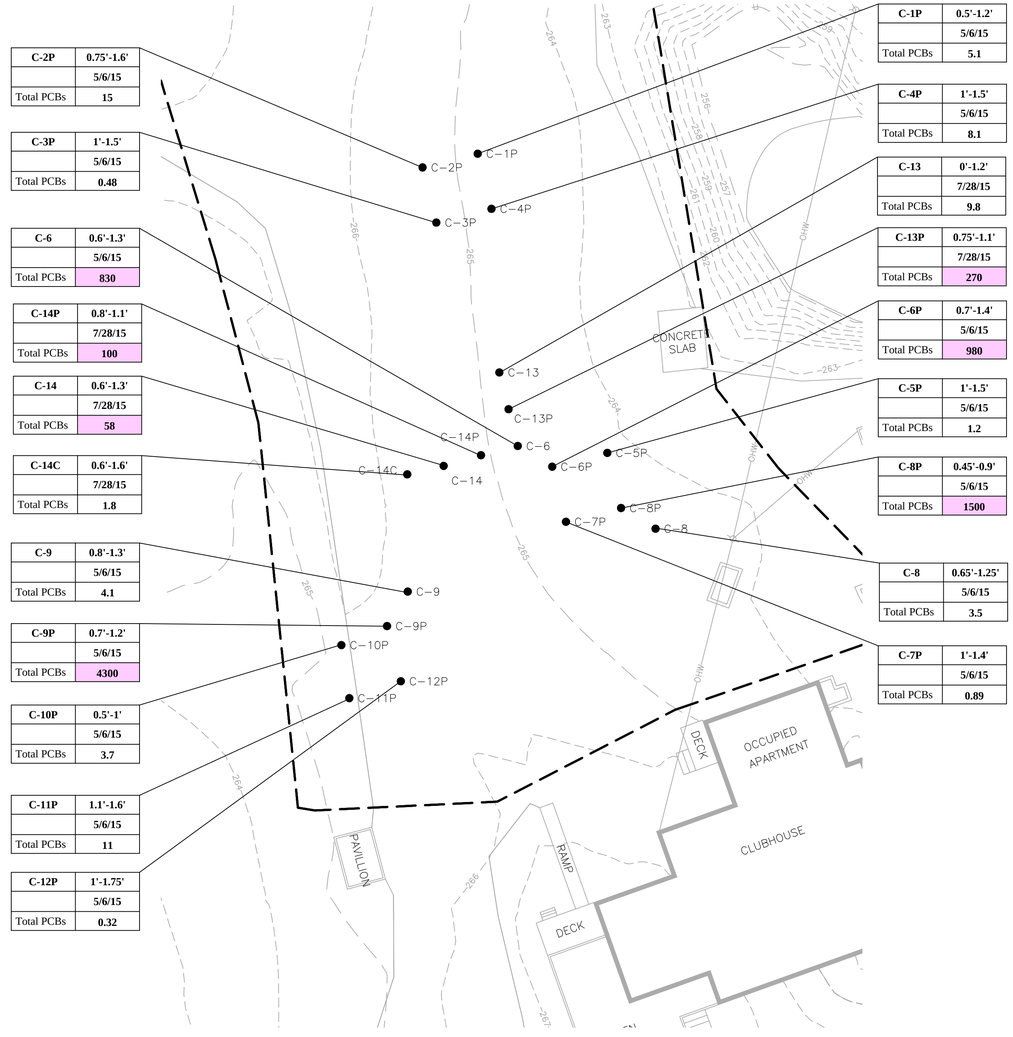
TEE-BIRD COUNTRY CLUB
NYSDEC SITE NO. 546028
TOWN OF MOREAU, SARATOGA COUNTY

ANALYTICAL SUMMARY

0 40' 80'

FILENAME 01C-01.dwg
SCALE 1"= 40'

SHEET 2



C-2P	0.75'-1.6'
	5/6/15
Total PCBs	15

C-3P	1'-1.5'
	5/6/15
Total PCBs	0.48

C-6	0.6'-1.3'
	5/6/15
Total PCBs	830

C-14P	0.8'-1.1'
	7/28/15
Total PCBs	100

C-14	0.6'-1.3'
	7/28/15
Total PCBs	58

C-14C	0.6'-1.6'
	7/28/15
Total PCBs	1.8

C-9	0.8'-1.3'
	5/6/15
Total PCBs	4.1

C-9P	0.7'-1.2'
	5/6/15
Total PCBs	4300

C-10P	0.5'-1'
	5/6/15
Total PCBs	3.7

C-11P	1.1'-1.6'
	5/6/15
Total PCBs	11

C-12P	1'-1.75'
	5/6/15
Total PCBs	0.32

C-1P	0.5'-1.2'
	5/6/15
Total PCBs	5.1

C-4P	1'-1.5'
	5/6/15
Total PCBs	8.1

C-13	0'-1.2'
	7/28/15
Total PCBs	9.8

C-13P	0.75'-1.1'
	7/28/15
Total PCBs	270

C-6P	0.7'-1.4'
	5/6/15
Total PCBs	980

C-5P	1'-1.5'
	5/6/15
Total PCBs	1.2

C-8P	0.45'-0.9'
	5/6/15
Total PCBs	1500

C-8	0.65'-1.25'
	5/6/15
Total PCBs	3.5

C-7P	1'-1.4'
	5/6/15
Total PCBs	0.89

N

LEGEND

- LIMIT OF EXCAVATION
- C-1 SAMPLE LOCATION

SAMPLE ID — SAMPLE DEPTH — SAMPLE DATE

C-8P	0.45'-0.9'
	5/6/15
Total PCBs	1500

PINK HIGHLIGHT – GREATER THAN TSCA CRITERIA (50 MG/KG)

NOTES:

1. SAMPLES WERE COLLECTED BY HDR ON MAY 6 & JULY 28, 2015.
2. SAMPLES WERE COLLECTED BELOW THE EXISTING CAP (6–8 INCHES BELOW GROUND SURFACE) AT THE INTERVAL WITH THE GREATEST EVIDENCE OF CONTAMINATION.

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

HDR

ISSUE	DATE	DESCRIPTION
3	10/19/2015	REVISED FINAL DESIGN
2	09/11/2015	REVISED FINAL DESIGN
1	9/4/2015	DRAFT EPA NOTIFICATION PACKAGE

PROJECT MANAGER S. KLING

PROJECT NUMBER 147 - 235818

TEE-BIRD COUNTRY CLUB
NYSDEC SITE NO. 546028
TOWN OF MOREAU, SARATOGA COUNTY

CHARACTERIZATION SAMPLING RESULTS

0 20' 40'

FILENAME 01C-03.dwg

SCALE 1"=20'

SHEET 3

Appendix A – Boring Logs

HDR | ONE COMPANY *Many Solutions*

FIELD BORING LOG

Boring C-1P
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0.6-1.2	2	ND	0.67' Medium brown sandy soil/fill, fine gravel present 0.17' Gravel bed - find to med gravel 0.67' Layer of silt and sand - Staind? Black to gray, grades to orangish brown 0.5' Firm gray mottled clay (orangeish brown silt spots throughout)	9:12 AM C-1P-0.6-1.2-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY *Many Solutions*

FIELD BORING LOG

Boring	**C-2P**
SURFACE ELEV	TBD
DATUM	
SHEET	1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler

MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0.75-1.6	2	ND	0.5' Fill - Medium, Clayey Sand and Fine Gravel Blackish to brown black fine sand in silt with some clay (trace) 0.4' of Homogenous Medium gray - fine wet sand at 1.6 ft bgs 0.17' of firm gray clay at bottom of spoon - mottled orange-brown silt spots	9:40 AM C-2P-0.75-1.6-20150506 DUPE collected here
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY *Many Solutions*

FIELD BORING LOG

Boring C-3P
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	1-1.5	2	ND	0.5' Fill - Medium, Clayey Sand and Fine Gravel at 0.5' bgs homogenous very fine dark brown to blackish brown clayey very fine sand with some organics present. 0.17' of clayey silt at bottom of sample	9:40 AM C-3P-1-1.5-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY *Many Solutions*

FIELD BORING LOG

Boring	**C-4P**
SURFACE ELEV	TBD
DATUM	
SHEET	1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler

MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	1-1.5	1.25	ND	0.5' Fill - Medium, Clayey Sand and Fine Gravel 0.5' of fine to coarse gravel and sand on top of clay 0.67' of mottled brown soft clay/ silt within	9:00 AM C-4P-1-1.5-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods	Proportions	Blows per 1' Compaction	Pocket Pen. (Clays only)	Strata Descriptions	
WOH - Weight of Hammer	And - Equal	0 - 10 - Loose	< 0.5 - Soft	F - Fill	
BOH - Bottom of Hole	Sandy - 31 - 49%	11 - 29 - Med. Compact	0.5 - 1.0 - Medium	O - Organic Deposits	
NS - No Split Spoon Sample	Some - 13 - 30%	30 - 50 - Compact	1.0 - 4.0 - Stiff	S - Predominantly Sand	
S___ - Split Spoon Sample	Trace - 1 - 12%	> 50 - V. Compact	> 4.0 - Hard	M - Predominantly Silt	
U___ - Undisturbed Sample		50/6" - Refusal		C - Predominantly Clay	

HDR | ONE COMPANY *Many Solutions*

FIELD BORING LOG

Boring C-5P
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	1-1.55	2	ND	1.0' of Fill - Medium sand and medium-fine gravel 0.5' of medium brown fill with wood chips 0.5' of what appears to be asphalt stain followed by gravel base Sample collected below gravel, above clay Depth of clay is 1.55'-2' - it is firm, gray, mottled with orange brown spots	11:12 C-5P-1-1.55-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods	Proportions	Blows per 1' Compaction	Pocket Pen. (Clays only)	Strata Descriptions
WOH - Weight of Hammer	And - Equal	0 - 10 - Loose	< 0.5 - Soft	F - Fill
BOH - Bottom of Hole	Sandy - 31 - 49%	11 - 29 - Med. Compact	0.5 - 1.0 - Medium	O - Organic Deposits
NS - No Split Spoon Sample	Some - 13 - 30%	30 - 50 - Compact	1.0 - 4.0 - Stiff	S - Predominantly Sand
S___ - Split Spoon Sample	Trace - 1 - 12%	> 50 - V. Compact	> 4.0 - Hard	M - Predominantly Silt
U___ - Undisturbed Sample		50/6" - Refusal		C - Predominantly Clay

HDR | ONE COMPANY *Many Solutions*

FIELD BORING LOG

Boring C-6P
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0.7-1.4	1.9	ND	0.17' remnant asphalt staining 0.5' sandy fill material with fine to medium gravel, as found throughout site 0.34' of orange black brown sandy silt with trace clay present 0.5' firm gray clay with orange brown silt mottling	11:22 C-6P-0.7-1.4-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY *Many Solutions*

FIELD BORING LOG

Boring C-7P
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	1-1.4	1.9	ND	0-0.6' bgs apparent fill, as noted in other borings 0.6'-1' bgs Clayey silt, dark black to brown, as noted in other borings 1'-1.4' bgs grayish green fine sand with clay 1.4'-1.8' bgs firm gray clay - mottled with orange brown silt, as noted in other borings	11:36 C-7P-1-1.4-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY *Many Solutions*

FIELD BORING LOG

Boring C-8P
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0.45-0.9	2	ND	0.58' of Fill - Medium sand and medium-fine gravel 0.34' gravel base or fill which is stained from asphalt in the top two inces. 0.5' clayey silt, blackish brown 0.67' of firm gray clay, mottled with orange brown silt spots	11:30 C-8P-0.45-0.9-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY Many Solutions

FIELD BORING LOG

Boring C-9P
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0.7-2	2	ND	0'-0.7' bgs Fill - Medium sand and medium-fine gravel 0.7'-1.75' bgs dark brown to black clayey silt 1.75-2' bgs Rust colored silt to very fine sand	13:15 C-9P-0.7-2-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY Many Solutions

FIELD BORING LOG

Boring C-10P
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0.5-1	1.35	ND	0.5' fill, as noted in other samples 0.5'-0.9' bgs dark brown silt to very fine sand 0.9-1.35' bgs orang brown sandy silt, moist	13:23 C-10P-0.5-1-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY Many Solutions

FIELD BORING LOG

Boring C-11P
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	1.1-1.6	1.65	ND	0'-0.2' soil and organics 0.2'-0.35' possible asphalt staining 0.35'-0.7' bgs fill material, as noted in other borings 0.7'-1.65' bgs dark brown to black clayey silt, grading to orangish brown clayey silt at the bottom of the sample.	13:44 C-11P-1.1-1.6-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

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FIELD BORING LOG

Boring C-12P
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	1-1.75	1.75	ND	0.42' of dark brown-to-black sandy silty with some small clay nodules present 0.08' of rust colored sandy silt 0.5' gray-to-dark brown (stained?) silt (sandy) 0.17' of clayey silt red-black-brown dark	13:35 C-12P-1-1.75-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY *Many Solutions*

FIELD BORING LOG

Boring C-1
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	1-1.7	2.5	ND	0.5' Fill - Brown sand- Medium to Coarse Black fine to medium sand with silt 1.0' of dense clay. Mottled grey with orange to brown spots	10:00 AM C-1-1-1.7-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

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FIELD BORING LOG

Boring C-2
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0.85-1.7	2	ND	0.5' Fill - Brown sand- Medium to Coarse 0.85' of black silty sand with some black clay and a 0.17' lighty grey, mottled clay layer	10:20 AM C-2-0.85-1.7-20150506
2						1
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods	Proportions	Blows per 1' Compaction	Pocket Pen. (Clays only)	Strata Descriptions	
WOH - Weight of Hammer	And - Equal	0 - 10 - Loose	< 0.5 - Soft	F - Fill	
BOH - Bottom of Hole	Sandy - 31 - 49%	11 - 29 - Med. Compact	0.5 - 1.0 - Medium	O - Organic Deposits	
NS - No Split Spoon Sample	Some - 13 - 30%	30 - 50 - Compact	1.0 - 4.0 - Stiff	S - Predominantly Sand	
S___ - Split Spoon Sample	Trace - 1 - 12%	> 50 - V. Compact	> 4.0 - Hard	M - Predominantly Silt	
U___ - Undisturbed Sample		50/6" - Refusal		C - Predominantly Clay	

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FIELD BORING LOG

Boring C-3
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0.6-1.3	2	ND	0.34' inches Fill - Medium sand and medium-fine gravel 0.67' inches- Dark Brown and Black/Brown Silt with a 0.17' layer approx 0.85' below ground surface	10:32AM C-3-0.6-1.3-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

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FIELD BORING LOG

Boring C-4
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0.65-1.2	1.6	ND	0.58' of Fill - Medium sand and medium-fine gravel 0.34' in of dark greysh brown claeyey silt with fine gravel inclusions 1.15' - 1.9' clay	10:45 C-4-0.65-1.2-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

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FIELD BORING LOG

Boring C-5
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	1-1.9	2	ND	1.0' of Fill - Medium sand and medium-fine gravel 0.75' of dark grayish brown claeyey silt 0.25' of wet clayey silt orange to grayish brown	11:49 C-5-1-1.9-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY *Many Solutions*

FIELD BORING LOG

Boring C-6
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0.6-1.3	1.85	ND	0'-0.85' bgs Fill - Medium sand and medium-fine gravel 0.85'-1.35' bgs dark orange fine sand 1.35'-1.6' bgs Clay, firm, as noted in other borings	12:03 C-6-0.6-1.3-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY Many Solutions

FIELD BORING LOG

Boring C-7
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0.9-1.7	1.7	ND	0.9' Fill Material, as noted in other borings 0.9' - 1.7' clayey silt, black to dark brown	12:20 C-7-0.9-1.7-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY *Many Solutions*

FIELD BORING LOG

Boring C-8
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0.65-1.25	1.65	ND	0-0.65' bgs fill material, as noted in other borings 0.65'-1.25' bgs same dark brown to black clayey silt material noted in other borings 1.3'-1.7' bgs Clay, firm gray, mottled	11:58 C-8-0.65-1.25-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY Many Solutions

FIELD BORING LOG

Boring C-9
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample: Recov. (ft.)	Geoprobe Sample: PID	Sample Description	Remarks
0	1	0.8-1.3	1.55	ND	0.4' fill, as noted in other borings 0.4'-1.55' dry, black sandy silt grading to orangish brown clayey silt	14:10 C-9-0.8-1.3-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY Many Solutions

FIELD BORING LOG

Boring C-10
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	1.1-1.6	1.7	ND	0.5' organics and soil 0.5-1.7' bgs medium brown sandy silt grades to firm gray clay mottled with orangish brown silt.	14:25 C-10-1.1-1.6-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods	Proportions	Blows per 1' Compaction	Pocket Pen. (Clays only)	Strata Descriptions
WOH - Weight of Hammer	And - Equal	0 - 10 - Loose	< 0.5 - Soft	F - Fill
BOH - Bottom of Hole	Sandy - 31 - 49%	11 - 29 - Med. Compact	0.5 - 1.0 - Medium	O - Organic Deposits
NS - No Split Spoon Sample	Some - 13 - 30%	30 - 50 - Compact	1.0 - 4.0 - Stiff	S - Predominantly Sand
S___ - Split Spoon Sample	Trace - 1 - 12%	> 50 - V. Compact	> 4.0 - Hard	M - Predominantly Silt
U___ - Undisturbed Sample		50/6" - Refusal		C - Predominantly Clay

HDR | ONE COMPANY Many Solutions

FIELD BORING LOG

Boring C-11
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	1-1.6	2	ND	0-0.6' bgs soil and organics 0.6-2.0' bgs mottled clay. Softer grading to firm.	14:21 C-11-1-1.6-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

HDR | ONE COMPANY Many Solutions

FIELD BORING LOG

Boring C-12
SURFACE ELEV TBD
DATUM
SHEET 1 **OF** 1

PROJECT NAME Tee Bird

SITE LOCATION Ballston Spa, NY **DATE** 6-May-2015 **DRILLER NAME / COMPANY** ADT - Mike, Tyler
MONITORING INSTRUMENTATION **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample: Recov. (ft.)	Geoprobe Sample: PID	Sample Description	Remarks
0	1	0.75-1.4	2	ND	0'-0.3' bgs fill, as noted in other borings 0.3'-0.9' black to dark brown clayey silt 0.9'-2' moist grading to wet sandy silt. Dark brown grading to orangish brown.	14:04 C-12-0.75-1.4-20150506
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
Some - 13 - 30%
Trace - 1 - 12%

Blows per 1' Compaction
0 - 10 - Loose
11 - 29 - Med. Compact
30 - 50 - Compact
> 50 - V. Compact
50/6" - Refusal

Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

FIELD BORING LOG

Boring	**C-13P**
SURFACE ELEV	TBD
DATUM	
SHEET	1 **OF** 1

PROJECT NAME Tee-Bird

SITE LOCATION Moreau, NY **DATE** 28-Jul-2015 **DRILLER NAME / COMPANY** ADT

MONITORING INSTRUMENTATION PPM RAE **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample: Recov. (ft.)	Geoprobe Sample: PID	Sample Description	Remarks
0	1	0-2	2		0-0.8 - wood chips + Fill material - fine gravel + orange brown sand 0.8-0.9 Staining 0.35-0.8 Sampled 0.8-2.0 clay - firm - dry	C-13P-0.35-0.8-20150728 1049 0.35-0.8
2	2					
4	3					
6	4					
8	5					
	6					
	7					
	8					
	9					
	10					

NOTES:

WOR - Weight of Rods	Proportions	Blows per 1' Compaction	Pocket Pen. (Clays only)	Strata Descriptions
WOH - Weight of Hammer	And - Equal	0 - 10 - Loose	< 0.5 - Soft	F - Fill
BOH - Bottom of Hole	Sandy - 31 - 49%	11 - 29 - Med. Compact	0.5 - 1.0 - Medium	O - Organic Deposits
NS - No Split Spoon Sample	Some - 13 - 30%	30 - 50 - Compact	1.0 - 4.0 - Stiff	S - Predominantly Sand
S___ - Split Spoon Sample	Trace - 1 - 12%	> 50 - V. Compact	> 4.0 - Hard	M - Predominantly Silt
U___ - Undisturbed Sample		50/6" - Refusal		C - Predominantly Clay

FIELD BORING LOG

Boring	**C-14P**
SURFACE ELEV	TBD
DATUM	
SHEET	1 **OF** 1

PROJECT NAME Tee-Bird

SITE LOCATION Moreau, NY **DATE** 28-Jul-2015 **DRILLER NAME / COMPANY** ADT

MONITORING INSTRUMENTATION PPM RAE **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID	Sample Description	Remarks
0	1	0-2	1.5		0.4' fill material fine + med gravel w/ fine + med sand 0.5-0.7' staining "gravel base" area 0.7-~1.1' Orange-brown sand clay firm	C-14P-0.8-1.1-20150728 10:11 0.8-1.1
2	2					
4	3					
6	4					
8	5					
	6					
	7					
	8					
	9					
	10					

NOTES:

WOR - Weight of Rods	Proportions	Blows per 1' Compaction	Pocket Pen. (Clays only)	Strata Descriptions
WOH - Weight of Hammer	And - Equal	0 - 10 - Loose	< 0.5 - Soft	F - Fill
BOH - Bottom of Hole	Sandy - 31 - 49%	11 - 29 - Med. Compact	0.5 - 1.0 - Medium	O - Organic Deposits
NS - No Split Spoon Sample	Some - 13 - 30%	30 - 50 - Compact	1.0 - 4.0 - Stiff	S - Predominantly Sand
S___ - Split Spoon Sample	Trace - 1 - 12%	> 50 - V. Compact	> 4.0 - Hard	M - Predominantly Silt
U___ - Undisturbed Sample		50/6" - Refusal		C - Predominantly Clay

FIELD BORING LOG

Boring	**C-13**
SURFACE ELEV	TBD
DATUM	
SHEET	1 **OF** 1

PROJECT NAME Tee-Bird

SITE LOCATION Moreau, NY **DATE** 28-Jul-2015 **DRILLER NAME / COMPANY** ADT

MONITORING INSTRUMENTATION PPM RAE **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample: Recov. (ft.)	Geoprobe Sample: PID	Sample Description	Remarks
0	1	0-2	1.7		0-0.9 Fill - no gravel layer apparent 0.9-1.1 staining 1.25-1.7 Clay - firm dry	C-13-0-1.2-20150728 11:00 0-1.2'
2	2					
4	3					
6	4					
8	5					
	6					
	7					
	8					
	9					
	10					

NOTES:

	Proportions	Blows per 1' Compaction	Pocket Pen. (Clays only)	Strata Descriptions
WOR - Weight of Rods	And - Equal	0 - 10 - Loose	< 0.5 - Soft	F - Fill
WOH - Weight of Hammer	Sandy - 31 - 49%	11 - 29 - Med. Compact	0.5 - 1.0 - Medium	O - Organic Deposits
BOH - Bottom of Hole	Some - 13 - 30%	30 - 50 - Compact	1.0 - 4.0 - Stiff	S - Predominantly Sand
NS - No Split Spoon Sample	Trace - 1 - 12%	> 50 - V. Compact	> 4.0 - Hard	M - Predominantly Silt
S___ - Split Spoon Sample		50/6" - Refusal		C - Predominantly Clay
U___ - Undisturbed Sample				

FIELD BORING LOG

Boring	**C-14**
SURFACE ELEV	TBD
DATUM	
SHEET	1 **OF** 1

PROJECT NAME Tee-Bird

SITE LOCATION Moreau, NY **DATE** 28-Jul-2015 **DRILLER NAME / COMPANY** ADT

MONITORING INSTRUMENTATION PPM RAE **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample: Recov. (ft.)	Geoprobe Sample: PID	Sample Description	Remarks
0	1	0-2	2		Fill gravel, fine to med sand, concrete pieces 0.6' Sand fine to med orangish brown no staining apparent 1.6-2' clay - firm gray + orange interbedded	C-14-0.6-1.3-20150728 947 0.6-1.3
2	2					
4	3					
6	4					
8	5					
	6					
	7					
	8					
	9					
	10					

NOTES:

WOR - Weight of Rods
WOH - Weight of Hammer
BOH - Bottom of Hole
NS - No Split Spoon Sample
S___ - Split Spoon Sample
U___ - Undisturbed Sample

Proportions
And - Equal
Sandy - 31 - 49%
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30 - 50 - Compact
> 50 - V. Compact
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Pocket Pen. (Clays only)
< 0.5 - Soft
0.5 - 1.0 - Medium
1.0 - 4.0 - Stiff
> 4.0 - Hard

Strata Descriptions
F - Fill
O - Organic Deposits
S - Predominantly Sand
M - Predominantly Silt
C - Predominantly Clay

FIELD BORING LOG

Boring	**C-13C**
SURFACE ELEV	TBD
DATUM	
SHEET	1 **OF** 1

PROJECT NAME Tee-Bird

SITE LOCATION Moreau, NY **DATE** 28-Jul-2015 **DRILLER NAME / COMPANY** ADT

MONITORING INSTRUMENTATION PPM RAE **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample: Recov. (ft.)	Geoprobe Sample: PID	Sample Description	Remarks
0	1	0-2	2		0-0.5' - Fill light brown fine sand + gravel 0.5 gravel base 0.5-0.8' gravel 0.8-1.4' staining on clay.	C-13C-0.75-1.4-20150728 11:30 0.75-1.4
2	2				0.75-2 Dark brown silty clay/firm clay Sampled section was moist.	
4	3					
6	4					
8	5					
	6					
	7					
	8					
	9					
	10					

NOTES:

WOR - Weight of Rods	Proportions	Blows per 1' Compaction	Pocket Pen. (Clays only)	Strata Descriptions
WOH - Weight of Hammer	And - Equal	0 - 10 - Loose	< 0.5 - Soft	F - Fill
BOH - Bottom of Hole	Sandy - 31 - 49%	11 - 29 - Med. Compact	0.5 - 1.0 - Medium	O - Organic Deposits
NS - No Split Spoon Sample	Some - 13 - 30%	30 - 50 - Compact	1.0 - 4.0 - Stiff	S - Predominantly Sand
S___ - Split Spoon Sample	Trace - 1 - 12%	> 50 - V. Compact	> 4.0 - Hard	M - Predominantly Silt
U___ - Undisturbed Sample		50/6" - Refusal		C - Predominantly Clay

FIELD BORING LOG

Boring	**C-14C**
SURFACE ELEV	TBD
DATUM	
SHEET	1 **OF** 1

PROJECT NAME Tee-Bird

SITE LOCATION Moreau, NY **DATE** 28-Jul-2015 **DRILLER NAME / COMPANY** ADT

MONITORING INSTRUMENTATION PPM RAE **HDR FIELD INSPECTOR** BAF

Depth (ft.)	Sample No.	Sample Depth (ft)	Geoprobe Sample Recov. (ft.)	Geoprobe Sample PID		Remarks
0	1	0-2	1-7'		Sandy Fill with fine to med gravel and sand fine to med Fine gravel base - some staining apparent, sampled below gravel End gravely, dry, clay-firm, interlayed orange and gray 2"	C-14C-0.6-1.6-20150728 0900 0.6-1.6
2	2					
4	3					
6	4					
8	5					
	6					
	7					
	8					
	9					
	10					

NOTES:

WOR - Weight of Rods	Proportions	Blows per 1' Compaction	Pocket Pen. (Clays only)	Strata Descriptions
WOH - Weight of Hammer	And - Equal	0 - 10 - Loose	< 0.5 - Soft	F - Fill
BOH - Bottom of Hole	Sandy - 31 - 49%	11 - 29 - Med. Compact	0.5 - 1.0 - Medium	O - Organic Deposits
NS - No Split Spoon Sample	Some - 13 - 30%	30 - 50 - Compact	1.0 - 4.0 - Stiff	S - Predominantly Sand
S___ - Split Spoon Sample	Trace - 1 - 12%	> 50 - V. Compact	> 4.0 - Hard	M - Predominantly Silt
U___ - Undisturbed Sample		50/6" - Refusal		C - Predominantly Clay

Appendix B – Characterization Sample Results and DUSR
(Included as a CD)

Appendix C – EPA Response to Notification Letter

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
2890 WOODBRIDGE AVENUE
EDISON, NEW JERSEY 08837-3679

OCT 19 2015

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Article No. 7001 0320 0004 7788 8551

Ms. Kelly Duval
New York State Department of Environmental Conservation
Division of Environmental Remediation
Region 5
232 Golf Course Road
Warrensburg, New York 12885

Re: Notification of PCB Self-Implementing Cleanup and Disposal
Tee Bird Country Club Site

Dear Ms. Duval:

The U.S. Environmental Protection Agency (EPA) is in receipt of your notification for a planned self-implementing on-site cleanup and disposal of PCB remediation waste, submitted pursuant to the regulations at 40 CFR § 761.61(a).

This proposed self-implementing cleanup plan does not meet all the requirements at 40 CFR § 761.61(a). Provided that you address the following requirements, then you would be able to proceed with the cleanup as per your notification with these deficiencies corrected.

- As an alternative to 40 CFR § 761.61(a)(6), which specifies verification sampling in accordance with 40 CFR § 761 Subpart O, a verification sampling frequency of at least one sample per 400 ft^2 would be acceptable for determining compliance with the PCB cleanup standards.

- The notification states that the PCB contamination occurred in the 1970's. The PCB disposal rules do not apply to waste that is currently <50 parts per million (ppm) that was disposed of, spilled, or otherwise released into the environment prior to April 18, 1978. If that is not the case, please note that bulk PCB remediation waste is regulated at concentrations <50 ppm. The disposal options for bulk PCB remediation waste with concentrations less than 50 ppm, as set out in 40 CFR § 761.61(a)(5)(v)(A), include a state

approved municipal or non-municipal non-hazardous waste landfill in addition to a hazardous waste or TSCA disposal facility.

- Unless the contamination pre-dates April 18, 1978, areas where PCB contamination at ≤ 10 ppm remain in place will require a cap and deed restriction compliant with 40 CFR §761.61(a)(7) and 40 CFR §761.61(a)(8) for high occupancy use. A cap will not be required for low occupancy use, however, a deed restriction will still be required.

- Please note that remediation equipment must be decontaminated in accordance with 40 CFR § 761.79.

Please note that this letter does not constitute an approval which is not a regulatory requirement for a self-implementing PCB remediation. The New York State Department of Environmental Conservation (NYSDEC) is responsible for complying with all applicable PCB regulations.

Any proposed changes or alterations to the scope or schedule of the cleanup, or major timetable shifts once the cleanup is underway, must be submitted in writing to EPA at least 14 days prior to implementation of the changes. In addition, please provide a status and/or final report summarizing the cleanup within one year of the date of this letter. If at that time, the cleanup remains ongoing, please provide quarterly status updates until such time as a final report can be submitted. The final report must include, where relevant, a certification regarding any required deed restriction, per 40 CFR § 761.61(a)(8)(i)(B).

Please address all future submissions to the Regional Administrator, EPA Region 2, but mail these submissions to my attention at the address above. If you have any questions, please contact Vivian Chin, of my staff, at 732-906-6179 or at chin.vivian@epa.gov.

Sincerely,

John Gorman, Chief
Pesticides and Toxic Substances Branch

cc: Shannon Kling
HDR Inc.

Appendix D – SPPP

STORMWATER POLLUTION PREVENT PLAN

Tee Bird Country Club - RD
(NYSDEC Site Number 546028)

NYSDEC STANDBY ENGINEERING CONTRACT
Work Assignment #D007625-17

PREPARED FOR
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 BROADWAY
ALBANY, NEW YORK 12233

Prepared by

One International Boulevard
10th Floor
Mahwah, NJ 07495

October 2015

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LIST OF FIGURES

LIST OF ATTACHMENTS

1.0 INTRODUCTION

Henningson, Durham, and Richardson Architecture and Engineering, P. C. (HDR) was retained by the New York State Department of Environmental Conservation (NYSDEC) to prepare the remedial design for the Tee-Bird Country Club Site (site #546028) located in the Town of Moreau, Saratoga County, New York. The work is being accomplished under Contract D007625. The remedial design includes the excavation and disposal of 2,710 cubic yards of soil contaminated with polychlorinated biphenyls (PCBs). After excavating and removing the soils the site will be backfilled with clean soil and restored to its original conditions.

1.1 Site Location and Description

The Tee-Bird Country Club Site is located at 30 Reservoir Road in the Town of Moreau, Saratoga County, New York. The site is bordered to the north by woods, to the west by several residences located along Burt Road, to the east farm lands and woods, and to the south by woods, farmland and a small cemetery. The property consists of a public 18-hole golf course, with a club house building, a maintenance building, a small open-air food stand, and a cart shed. The buildings are situated around a paved and unpaved parking area located in the north-central part of the property near Reservoir Road. The site is currently zoned commercial. Currently the golf course is not in operation and is not expected to be in operation at the time of the remedial action. A site location map has been included as Figure 1.

The property generally slopes gently to the southeast towards an existing pond and small stream. A NYSDEC mapped wetland exists along the stream that drains the pond. The wetland begins approximately 750 feet downstream of the pond.

Elevations on the property range from 280 feet above mean sea level (amsl) at the northwest corner of the property, along Burt Road, to approximately 200 feet amsl at the southeast corner of the property. The parking area generally slopes gently southeast towards the pond. The pond is approximately 0.4 acres and is man-made. The on-site stream is designated as Class C(T) which identifies it as a waterway for which the existing or expected best usage is supporting fisheries and is suitable for non-contact activities. The “T” designation indicates the stream may support a trout population.

1.2 Project Description

Circa 1977, before the driveway and parking lot were paved, waste oils contaminated with PCBs were sprayed on the surface for dust control. The detection of PCBs and pesticides in the soil led to the site being classified as a Class 3 Inactive Hazardous Waste Disposal Site (No. 546028) in 1984. The NYSDEC entered into an Order on Consent with Tee-Bird and approved a remedy consisting of a cap with approximately 18-inches of gravel sub-base and asphalt. Following the installation of the cap, NYSDEC performed site inspections and collected additional soil samples in 1984, 1989, and 1990. The additional investigation sampling revealed site wide PCB

concentrations under and beyond the paved areas greater than applicable standards, criteria and guidance (SCGs) values. This led to the site being reclassified to Class 2 in March 2005.

The Record of Decision (ROD) specified the implementation of excavation and off-site disposal to remove soils impacted with PCBs above the CP/51 Presumptive Remedy for PCB contaminated soils. The presumptive remedy requires the removal of surface soils with total PCB concentrations greater than one mg/kg and subsurface soils with total PCB concentrations greater than 10 mg/kg. Subsurface soils are defined as soils deeper than 12 inches below the surface for commercial and industrial uses or soils directly beneath permanent structures, pavement or similar cover systems.

The project involves the excavation and removal of soils with contaminants above the soil cleanup criteria. The anticipated limit of soils requiring off-site disposal are shown on the Contract Drawings on Sheet 02C-2. The total excavation area is estimated to be 47,000 square feet (1.08 acres) with a total volume of approximately 2,710 cubic yards. The total area of disturbance including construction staging areas will be approximately 2.0 acres. Proposed construction activities are shown on Figure 2 and on the construction drawings included as Attachment A.

Following excavation the site will be restored with clean fill meeting the requirements of Title 6 of the Official Compilation of New York Codes, Rules and Regulations (6NYCRR) Part 375-6.7(d). Areas will then be capped using either a 12 inch vegetative cap consisting of eight inches of clean backfill covered with either four inches of topsoil and seeded or four inches of gravel.

1.3 Soils and Topography

Drawing 01C-1 (Attachment A) shows the existing topography and structures for the site. Slopes across the developed portion range between 0 to 3 percent. The developed area is generally covered with buildings or paved parking areas. The parking area is sloped to convey runoff to the existing stream that runs east along the driveway.

According to the U.S. Department of Agriculture, Natural Resources Conservation Service's (NRCS) online soil map, the native soils on the currently developed portion of the site are Rhinebeck silt loam with slopes ranging from 0 to 3%. Soil information for the Site is shown on Figure 3 and summarized in Table 1.

Table 1: Soils

Soil Type, Symbol, % Slope Range	Hydrologic Soil Group (HSG)	Texture	Soil Erosion "T" Factor (tons/acre/yr.)	Percent of Project Area
Rhinebeck silt loam, 0 to 3 percent slopes	C/D	Silt Loam	5	100%

1.4 Receiving Water Bodies

The property generally slopes gently to the southeast towards the existing man-made pond and small stream. The pond is approximately 0.4 acres and is man-made. The on-site stream is designated as Class C(T), which identifies it as a waterway for which the existing or expected best usage is supporting fisheries and is suitable for non-contact activities. The "T" designation indicates the stream may support a trout population.

A NYSDEC mapped wetland exists along the stream that drains the pond. The wetland begins approximately 750 feet downstream of the pond. The wetland is identified on the NYSDEC Freshwater Wetland Online Mapper as F-7 and is a Class II Wetland. Wetland classifications are based on the benefits and values provided by each wetland and are defined in 6NYCRR Part 664.5. Per NYS regulations, permits to disturb Class II wetlands shall only be issued if it is determined that the proposed activity satisfies a pressing economic or social need that clearly outweighs the loss of or detriment to the benefit(s) of the Class II Wetland. The proposed construction will not disturb the wetland or its associated buffer area.

A map showing the location of these features is shown on Figure 4.

1.5 Permit Requirements

Construction associated with this project is being completed by the NYSDEC under the Inactive Hazardous Waste Disposal Program. As such, construction activities are exempt from obtaining the General Permit for Stormwater Associated with Construction Activities (GP-0-15-002). A Notice of Intent (NOI) will still be filed with the NYSDEC Central Office for information purposes only. A copy of the general permit has been included as Attachment B and the completed NOI has been included as Attachment C.

Although not subject to the general permit, the SPPP shall be kept current so that at all times it accurately reflects the erosion and sediment control practices being implemented at the site in accordance with Part III.A.4 of GP-0-15-002. At a minimum the SPPP shall be amended:

- Whenever the current provision prove to be ineffective in minimizing pollutants in stormwater discharges from the site;

- Whenever there is a change in design, construction or operation at the construction site that has or could have an effect on the discharge of pollutants; and
- To address issues or deficiencies identified during an inspection.

A revision log has been included in Attachment D which can be used to keep the SPPP current. If substantive revisions are made to the SPPP during construction (e.g., the scope of the project changes significantly or an increase in the disturbance area), which were not reflected in the original NOI, the contractor shall promptly submit such facts or information to the NYSDEC.

2.0 EROSION AND SEDIMENT CONTROL

2.1 Construction Sequence

Construction activities are anticipated to begin in the Spring of 2016 and are expected to take four to six months to complete. The exact sequence of construction is dependent on field conditions at the time of construction. A general sequence of construction is provided below:

1. Obtain Permits: The contractor is responsible for obtaining all permits required to complete the work.

2. Underground Utility Location: The contractor shall have all underground utilities located prior to any earth disturbances, including boring installation.

3. Mobilization and Temporary Facilities: Once completing the sampling, the contractor shall mobilize equipment and setup temporary facilities.

4. Erosion Control Measures: All erosion control measures shown on the contract drawings in addition to any other measures the contractor deems to be necessary shall be installed. Measures shall include but are not limited to silt fence, hay bales, or diversion ditches to prevent storm water from entering open excavations.

5. Excavation & Disposal: The Contractor shall complete the excavation to the limit and depths shown on the Contract Documents. Soils with PCB concentrations greater than or equal to 50 mg/kg shall be directly loaded onto trucks for disposal prior to beginning the excavation of soils with PCB concentrations less than 50 mg/kg. Stockpiling will be limited to areas designated by the engineer and will depend on the areas of the site requiring soil removal. Stockpiling of contaminated materials on site should be minimized as much as practicable.

6. Sampling & Backfilling: Once excavation is complete and confirmation sample results received show the area meets the limits for the selected SCOs, the contractor shall backfill the area to meet the existing conditions. The site shall then be restored with gravel or vegetation.

7. Demobilization: At the completion of the work, the contractor shall remove all temporary facilities and restore all disturbed areas.

2.2 Erosion and Sediment Control Practices

An erosion control plan has been prepared for the project in accordance with the New York State Standards and Specifications for Erosion and Sediment Control. The erosion control plan identifies the minimum sediment control measures that will be implemented during construction. Additional controls will be implemented as necessary during construction to prevent sediment and sediment-laden stormwater from leaving the project site. Specific erosion control measures that will be used during construction are discussed in detail below.

2.2.1 Silt Fence

Silt fence will be installed along the down-gradient limits of disturbance, offset five (5) to ten (10) feet from the toe of slope to reduce sediment loss. Silt fence shall be installed parallel to the slope and the fabric properly keyed into the ground. The silt fence shall be installed prior to any site disturbances and shall be left in place until all up gradient areas have been stabilized. Regular maintenance shall be performed to keep the silt fence in good working condition and material shall be removed when bulges appear and/or when sediment reaches a depth of six inches. The silt fence shall be inspected at least once per week and after each rainfall event of 0.5 inches or greater.

2.2.2 Storm Drain Inlet Protection

Inlet sediment traps will be located at all existing storm drain structures adjacent to disturbed areas, to minimize soil loss from entering the storm drainage systems. Inlet sediment traps will consist of gravel bags placed around each inlet during construction. Inlet protection shall be installed prior to disturbing areas that contribute drainage to an inlet structure and shall be left in place until the contributing area has been stabilized. Inlet protection should be inspected weekly and after each rainfall event of 0.5 inches or greater. Repairs and maintenance shall be completed as necessary and all unstable sediment removed and properly disposed.

2.2.3 Construction Entrance

Stabilized construction entrances shall be used at the entrance/exit of disturbed areas that have the potential for tracking sediment on to Reservoir Road. The entrance shall be installed prior to beginning any site disturbance and shall be left in place until restoration activities begin. The entrance shall be inspected at least once per week and shall be maintained in a condition which prevents tracking of sediment. Periodic top dressing with additional aggregate and removal of sediment shall be completed as needed. Any sediment tracked onto Reservoir Road shall be immediately removed.

2.2.4 Dust Control

Dust control methods shall be used to prevent surface and air movement of dust from disturbed areas that may cause off-site nuisance, health hazards, and traffic safety problems. Methods to

be used include vegetative cover and mulch, spraying water, or other means that meet the requirements of the NYS Standards and Specifications for Erosion and Sediment Controls.

2.2.5 Soil Stockpiles

During construction soil will be temporarily stockpiled to access and remove the subsurface sand filter and associated piping and to abandon the chlorine contact tank. Stockpiles shall be located in areas away from the existing drainage system and swales. Stockpiles shall be encircled with silt fence and shall be covered when not in use. During weekly inspections the stockpiles shall be inspected to ensure no sediment runoff is occurring. Any deficiencies noted in the surrounding silt fence shall be repaired upon discovery.

2.2.6 Temporary Seeding

Temporary seeding can be used to provide erosion control protection to disturbed areas during a temporary shutdown of construction and/or while waiting for optimal planting time. After seeding the area should be covered with straw mulch at an application rate of 2 tons/acre. In areas subject to wind erosion and/or concentrated stormwater flows the mulch should be anchored. Fertilizer or lime is not typically used for temporary seeding. The seeding schedule shall be as follows:

- Spring/summer or early fall: Ryegrass at 30 lbs/acre
- Late fall or early winter: Certified Aroostook winter rye at 100 lbs/acre.

2.2.7 Winter Operations

Construction activities are expected to be completed before the onset of winter. However, if construction activities continue during the winter months, any access points shall be enlarged and stabilized to provide for snow stockpiling. Snow shall not be stock piled within ten (10) feet of a silt fence and/or perimeter dikes and swales. Silt fence shall be reinforced with perimeter dikes, swales, or other practices resistant to the forces of snow loads. Drainage structures shall be maintained open and free of snow and ice dams. Prior to the onset of winter, all disturbed areas where work has ceased shall be stabilized using temporary seeding and/or mulch.

2.3 Soil Stabilization

The contractor shall initiate soil stabilization measures as soon as practicable where construction activities have temporarily or permanently ceased, but in no case more than 14 days after construction activities have temporary or permanently ceased.

2.4 Operation and Maintenance Requirements

2.4.1 Contractor's Responsibility

The contractor shall be responsible for the proper maintenance and operation of all sediment and erosion control measures implemented at the site. The contractor shall be responsible for correcting all deficiencies noted during the contractor's inspections and deficiencies noted during

a regulatory compliance inspection. In general sediment shall be removed when the design capacity of the measure has been reduced by 50 percent or as otherwise specified above. Collected sediment will be disposed of in accordance with all Federal, State and local regulations. Sediment shall not be disposed of in areas adjacent to existing swales or catch basins.

2.5 Inspection Schedule

Inspections shall be completed in accordance with Part IV.C of GP-0-15-002 as described below.

2.5.1 Qualified Inspector Inspections

Weekly inspections shall be conducted to verify erosion and sediment control measures are maintained and properly working. Inspections shall be documented in a weekly inspection report. An example of the weekly inspection report has been included in Attachment E.

A final inspection shall be completed by a qualified inspector prior to submitting the Notice of Termination (NOT) to the Department. The final inspection shall verify that one of the following conditions is met:

- Total project completion – All construction activity identified in the SPPP has been completed, all disturbed areas have achieved final stabilization (perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established), all temporary erosion control practices have been removed, and all post construction storm water management practices have been constructed in conformance with the SPPP.

- Planned shutdown with partial project completion – All soil disturbance activities have ceased; and all areas disturbed have achieved final stabilization, all temporary structural erosion and sediment control measures have been removed, and all post construction management practices required for the completed portions of the project have been constructed in conformance with the SPPP.

2.5.2 Contractor's Inspections

The contractor shall be responsible for completing daily inspections during soil disturbance activities and weekly inspections to ensure all erosion and sediment controls are properly working. The contractor shall immediately correct any deficiencies noted during an inspection. Documentation of the contractor's inspections is not required to be maintained.

2.6 Pollution Prevention Measures

The contractor shall adhere to the following requirements:

- Solid Waste Disposal: Collect solid waste on a daily basis. No waste or unused materials shall be buried, dumped, or disposed on site.
- Fuel and Chemical Handling: Measures shall be taken to prevent chemicals, fuels, oils, greases, herbicides, and insecticides from entering drainage ways and the storm drainage system. Waters used in onsite material processing, concrete curing, cleanup, and other wastewater shall not be allowed to enter natural drainage ways or the storm drain system. The contractor shall provide containment around fueling and chemical storage areas.
- Surface Water Protection: Discharges from the construction site shall not contain pollutants at concentrations that produce objectionable films, colors, turbidity, deposits or noxious odors in the receiving storm drainage system.
- Maintenance of Equipment: Equipment used on site must be properly maintained and shall not be leaking any fluids. In the event of a leak the contractor shall repair the equipment and clean up any resulting spill.

2.7 Stormwater Discharges Associated with Industrial Activity

The Site does not have any stormwater discharges associated with industrial activities.

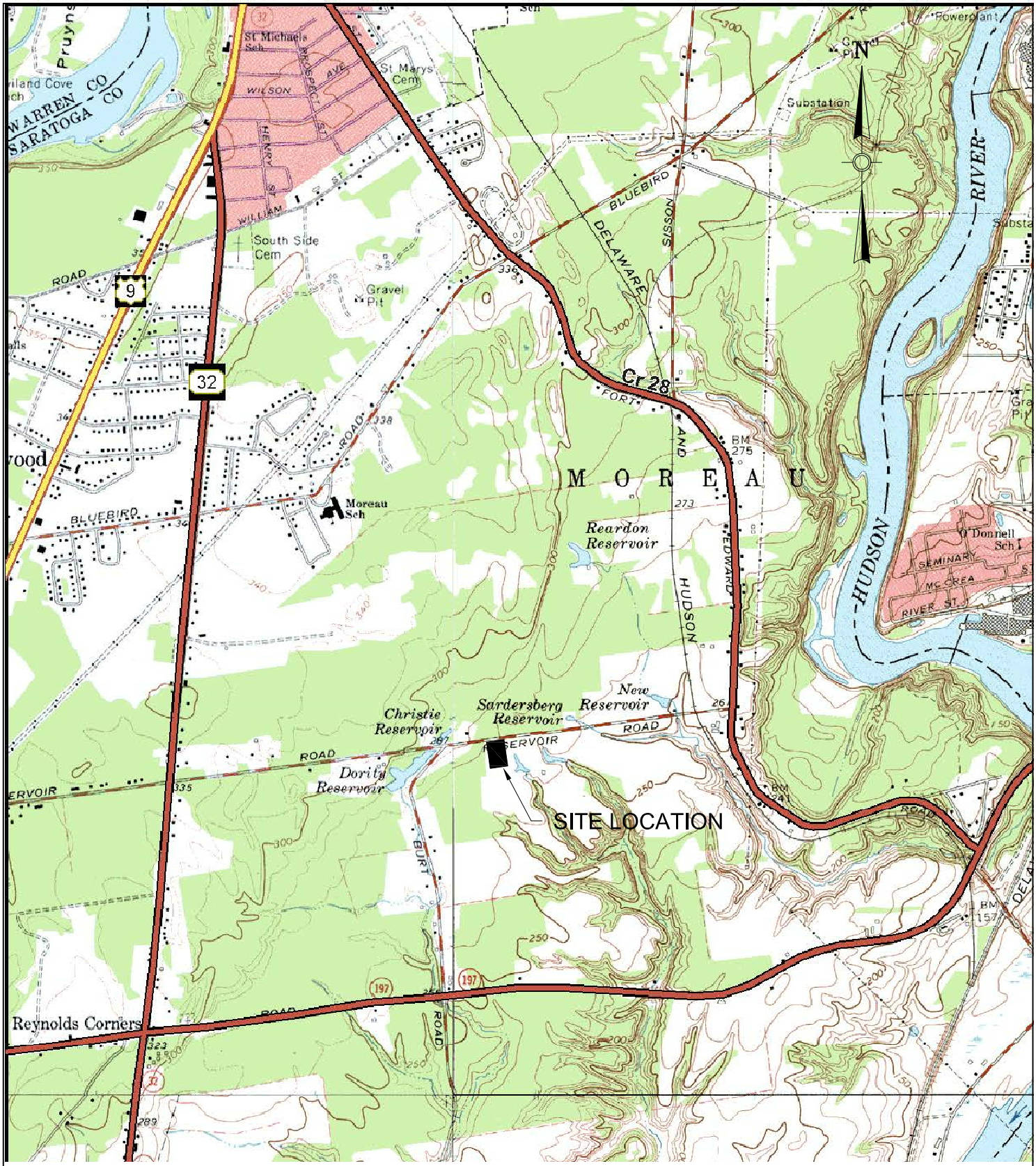
3.0 STORMWATER CERTIFICATIONS

3.1 Preparer Certification

The SPPP preparer certification is located on page 6 of the NOI.

3.2 Contractor/Subcontractor Certification

Prior to the commencement of construction, all contractors and subcontractors who will be responsible for completing soil disturbance activities at the site and/or maintaining the erosion and sediment control practices shall be identified. These contractors and subcontractors shall identify at least one person from their company that will be responsible for implementing the SPPP and required to be present on site during all soil disturbance activities performed by their company. This person shall also be responsible for the contractor inspections required by this SPPP. This individual shall have received four (4) hours of endorsed erosion and sediment control training and shall be identified on the contractor's certification form. Refer to Attachment F for the certification required to be signed by all contractors and subcontractors involved in any soil disturbance activities.



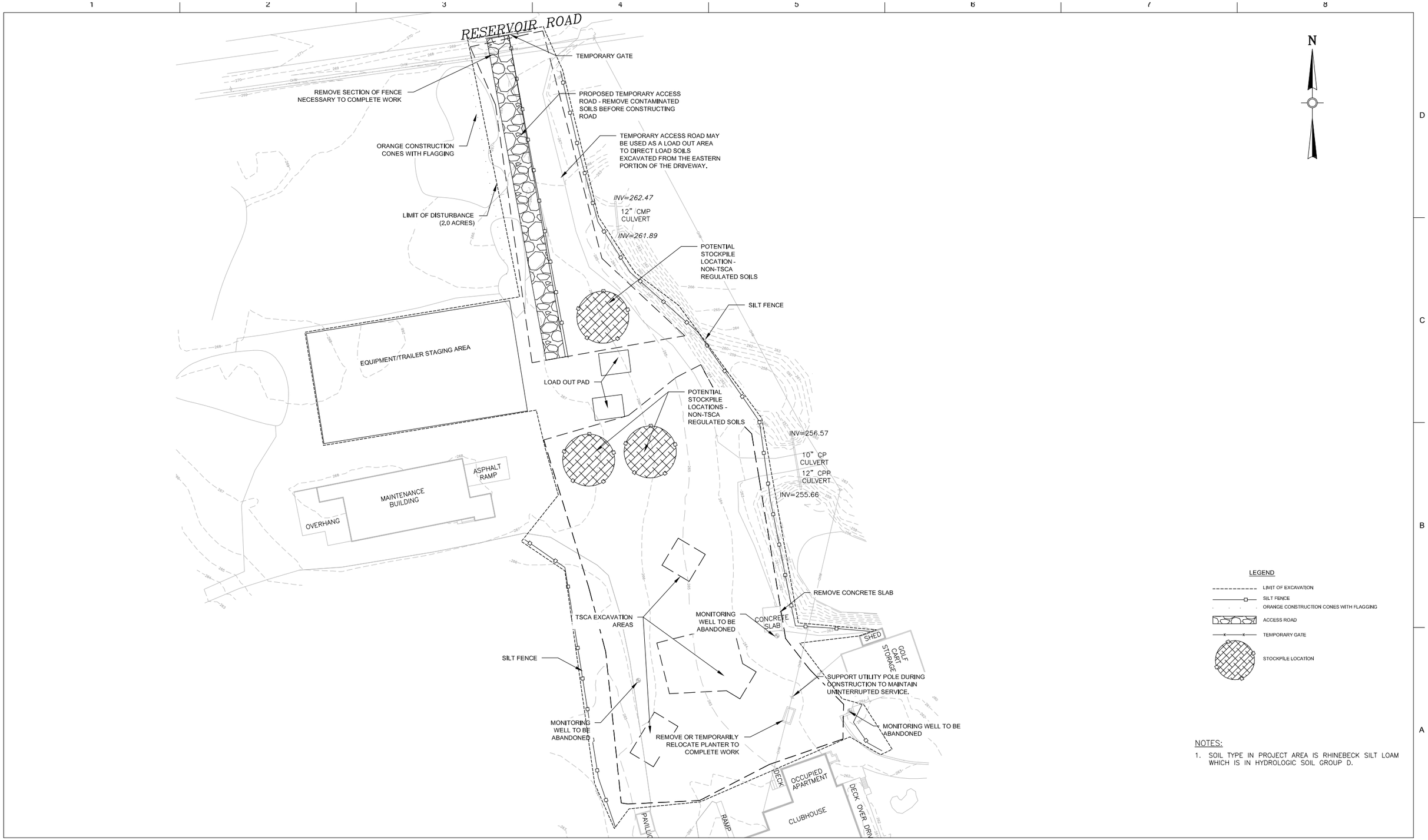
TEE BIRD COUNTRY CLUB
LOCATION MAP

DATE

OCTOBER 2015

FIGURE

1



NOTES:

1. SOIL TYPE IN PROJECT AREA IS RHINEBECK SILT LOAM WHICH IS IN HYDROLOGIC SOIL GROUP D.

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

HDR

ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	S. KLING
PROJECT NUMBER	147 - 235818

SIGNATURE DATE

WARNING: It is a violation of the New York State Education Law for any person unless acting under the direction of a licensed professional engineer, to alter any item on these plans in any way. If alterations to these plans are made, the alterations shall be made in accordance with 145-subsection 7209 of the New York State Education Law.

TEE-BIRD COUNTRY CLUB
NYSDEC SITE NO. 546028
TOWN OF MOREAU, SARATOGA COUNTY

SITE MAP

0 30' 60'

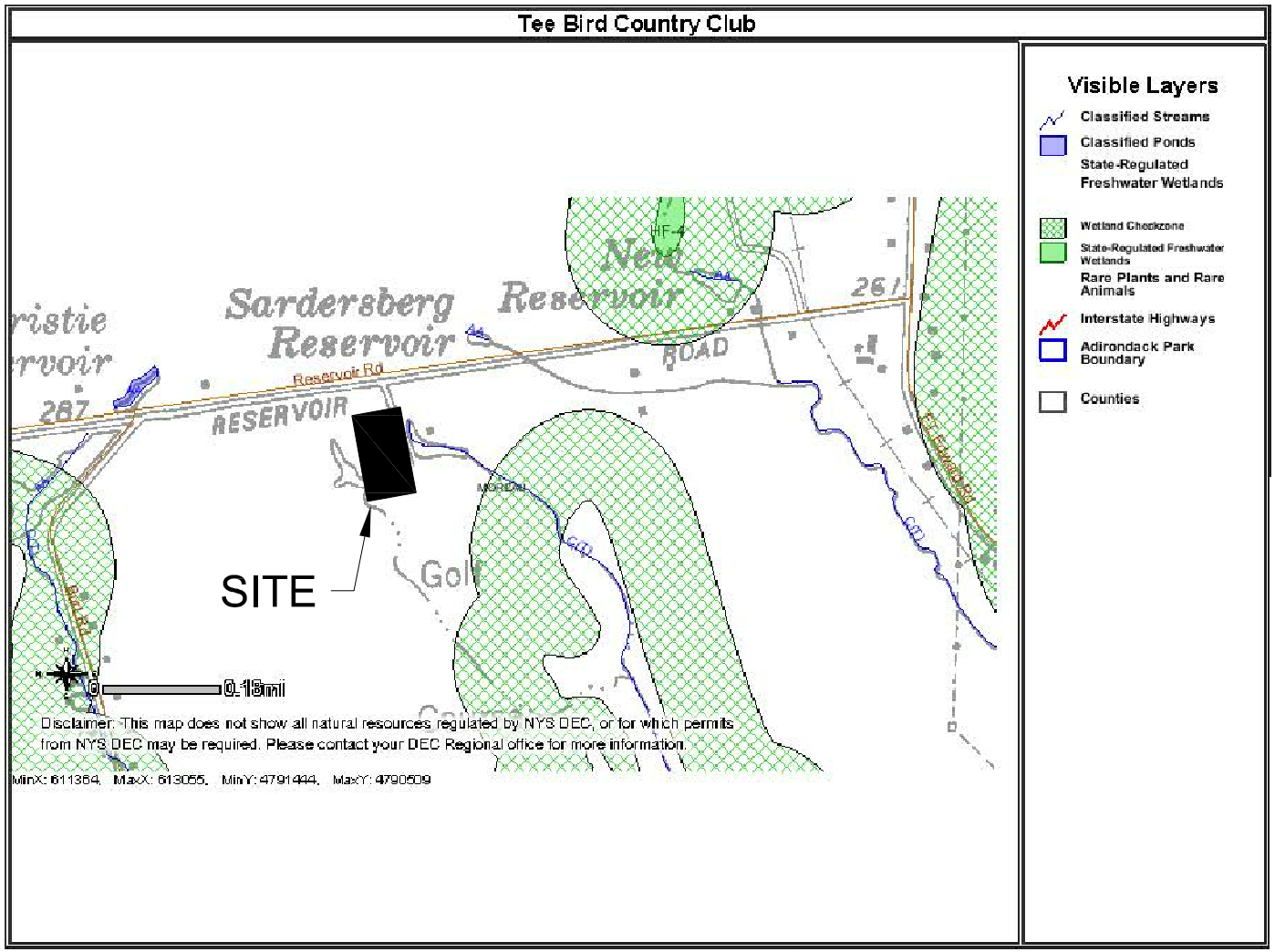
FILENAME	SPPP Site Figure.dwg
SCALE	1"= 30'
SHEET	2

LEGEND:
RhA - RHINEBECK SILT LOAM
W - WATER

TEE BIRD COUNTRY CLUB
SOIL MAP

DATE
OCTOBER 2015

FIGURE
3



N

NOTE: INFORMATION TAKEN FROM THE NYSDEC INTERACTIVE ENVIRONMENTAL RESOURCE MAPPER

TEE BIRD COUNTRY CLUB
RECEIVING WATER BODIES

DATE

OCTOBER 2015

FIGURE

4

Attachment A – Design Drawings
(Include with Final SPPP in Construction Trailer)

Attachment B – GP-0-15-002
(Include with Final SPPP in Construction Trailer)

Attachment C – Notice of Intent

0644089821

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____
(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-15-002

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
NYSDEC

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Duval

Owner/Operator Contact Person First Name
Kelly

Owner/Operator Mailing Address
232 Golf Course Road

City
Warrensburg

State
NY

Zip
12885-____

Phone (Owner/Operator)
518-623-1272

Fax (Owner/Operator)
___-___-____

Email (Owner/Operator)
Kelly.Duval@dec.ny.gov

FED TAX ID
__-_____ (not required for individuals)

Project Site Information

Project/Site Name
Tee Bird Country Club Site No. 546028

Street Address (NOT P.O. BOX)
30 Reservoir Road

Side of Street
○ **North** ● **South** ○ **East** ○ **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Town of Moreau

State NY

Zip 12828-

County Saratoga

DEC Region 5

Name of Nearest Cross Street
Burt Road

Distance to Nearest Cross Street (Feet)
1056

Project In Relation to Cross Street
○ **North** ○ **South** ● **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel
64-2-79

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)
612032

Y Coordinates (Northing)
4779110066333

2. What is the nature of this construction project?

○ **New Construction**

○ **Redevelopment with increase in impervious area**

● **Redevelopment with no increase in impervious area**

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- ○ FOREST
- ○ PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ● COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ○ PARKING LOT
- ○ OTHER

Post-Development Future Land Use

- ○ SINGLE FAMILY HOME — Number of Lots
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ● COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ○ PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ○ OTHER

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
2.02.0	2.02.0	1.81.8	1.81.8

5. Do you plan to disturb more than 5 acres of soil at any one time? ○ **Yes** ● **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
%	%	%	100%

7. Is this a phased project? ○ **Yes** ● **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date	End Date
05/01/2016	08/01/2016

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

Unnamed Stream

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ● Stream / Creek On Site
- ○ Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-15-002? ○ **Yes** ● **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-15-002? ○ **Yes** ● **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ **Yes** ● **No**
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ **Yes** ○ **No**
If Yes, what is the acreage to be disturbed?

.

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ● **No**

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ○ Yes ● No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ● No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ● Yes ○ No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ○ Yes ● No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ○ Yes ○ No

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer

HDR

Contact Name (Last, Space, First)

Kling Shannon

Mailing Address

1 International Boulevard

City

Mahwah

State Zip

NJ 07430 2222

Phone

201 335 3985

Fax

- -

Email

shannon.kling@hdrinc.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-15-002. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name

Shannon

MI

M

Last Name

Kling

Signature

Shannon M Kling

Date

11 / 09 / 2015

25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ● Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ○ Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ○ Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ○ Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ● Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ○ Rock Outlet Protection
- ○ Streambank Protection

Other

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ○ **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ○ **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ○ All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

			.			
			.			**acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)	___.___	and/or	___.___
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)	___.___	and/or	___.___
○ Tree Planting/Tree Pit (RR-3)	___.___	and/or	___.___
○ Disconnection of Rooftop Runoff (RR-4)	___.___	and/or	___.___
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			___.___
○ Rain Garden (RR-6)			___.___
○ Stormwater Planter (RR-7)			___.___
○ Rain Barrel/Cistern (RR-8)			___.___
○ Porous Pavement (RR-9)			___.___
○ Green Roof (RR-10)			___.___
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			___.___
○ Infiltration Basin (I-2)			___.___
○ Dry Well (I-3)			___.___
○ Underground Infiltration System (I-4)			___.___
○ Bioretention (F-5)			___.___
○ Dry Swale (O-1)			___.___
Standard SMPs			
○ Micropool Extended Detention (P-1)			___.___
○ Wet Pond (P-2)			___.___
○ Wet Extended Detention (P-3)			___.___
○ Multiple Pond System (P-4)			___.___
○ Pocket Pond (P-5)			___.___
○ Surface Sand Filter (F-1)			___.___
○ Underground Sand Filter (F-2)			___.___
○ Perimeter Sand Filter (F-3)			___.___
○ Organic Filter (F-4)			___.___
○ Shallow Wetland (W-1)			___.___
○ Extended Detention Wetland (W-2)			___.___
○ Pond/Wetland System (W-3)			___.___
○ Pocket Wetland (W-4)			___.___
○ Wet Swale (O-2)			___.___

Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
○ **Hydrodynamic**	
○ **Wet Vault**	
○ **Media Filter**	
○ **Other**	

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name

Manufacturer

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

. **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ○ **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

. **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

○ **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

☐☐☐.☐☐☐ **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a). ☐☐☐.☐☐☐

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ○ **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

☐☐☐.☐☐☐ **acre-feet**

CPv Provided

☐☐☐.☐☐☐ **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

☐☐☐.☐☐☐ **CFS**

Post-development

☐☐☐.☐☐☐ **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

☐☐☐.☐☐☐ **CFS**

Post-development

☐☐☐.☐☐☐ **CFS**

37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ○ **Yes** ○ **No**

If Yes, Identify the entity responsible for the long term Operation and Maintenance

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ][ ]
- ○ Other [ ]
- ● None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ● **No**
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ○ **Yes** ● **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ○ **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. [N][Y][R][ ][ ][ ][ ][ ][ ]

3547089826

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

First Name: Kelly

MI:

Last Name: Duval

Owner/Operator Signature: Kelly Duval

Date: 11/09/2015

Attachment D – SPPP Revision Log

Stormwater Pollution Prevention Plan Revisions Log

Project Name: Tee Bird Country Club
SPPP Contact: Kelly Duval

Amendment No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

Attachment E – Inspection Reports

Stormwater Construction Site Inspection Report

General Information			
Project Name	Tee Bird Country Club Site No. 546028		
SPDES Tracking No.		**Location**	Town of Moreau
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications	Refer to GP-0-15-002 Attachment A for list of qualifications.		
Describe present phase of construction			
Type of Inspection: ❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event			
Weather Information			
Has there been a storm event since the last inspection? ❑Yes ❑No **If yes, provide:** Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):			
Weather at time of this inspection? ❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds ❑ Other: Temperature:			
Have any discharges occurred since the last inspection? ❑Yes ❑No **If yes, describe:**			
Are there any discharges at the time of inspection? ❑Yes ❑No **If yes, describe:**			

Erosion Control Measures:

	Erosion Control Measures	Installed?	Maintenance Required?	Corrective Action Needed and Notes
1	Silt Fence	❑Yes ❑No	❑Yes ❑No	
2	Hay bales	❑Yes ❑No	❑Yes ❑No	
3	Temporary Seeding	❑Yes ❑No	❑Yes ❑No	
4	Mulch	❑Yes ❑No	❑Yes ❑No	
5	Stabilized Construction Entrance	❑Yes ❑No	❑Yes ❑No	
		❑Yes ❑No	❑Yes ❑No	
		❑Yes ❑No	❑Yes ❑No	
		❑Yes ❑No	❑Yes ❑No	

Stormwater Construction Site Inspection Report

	Erosion Control Measures	Installed?	Maintenance Required?	Corrective Action Needed and Notes
9		❑Yes ❑No	❑Yes ❑No	
10		❑Yes ❑No	❑Yes ❑No	
11		❑Yes ❑No	❑Yes ❑No	
12		❑Yes ❑No	❑Yes ❑No	
13		❑Yes ❑No	❑Yes ❑No	

Overall Site Issues: The qualified inspector shall notify IBM of any corrective actions that need to be taken within one business day of the completion of an inspection. The contractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	❑Yes ❑No	❑Yes ❑No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar methods?	❑Yes ❑No	❑Yes ❑No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	❑Yes ❑No	❑Yes ❑No	
4	Are discharge points and receiving waters free of any sediment deposits?	❑Yes ❑No	❑Yes ❑No	
5	Are storm drain inlets properly protected?	❑Yes ❑No	❑Yes ❑No	
6	Is the construction exit preventing sediment from being tracked into the street?	❑Yes ❑No	❑Yes ❑No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑No	❑Yes ❑No	

Stormwater Construction Site Inspection Report

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑No	❑Yes ❑No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No	❑Yes ❑No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No	❑Yes ❑No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	❑Yes ❑No	❑Yes ❑No	
12	(Other)	❑Yes ❑No	❑Yes ❑No	

Non-Compliance

Describe any incidents of non-compliance not described above:

Stormwater Construction Site Inspection Report

Disturbed Area Sketch

Sketch and describe areas disturbed at time of inspection and areas that have been stabilized since last inspection (include digital photographs with date stamp of practices needing corrective action):

Stormwater Construction Site Inspection Report

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name and title:

_____

Signature:_____

Date:_____

Attachment F – Contractor Certification Forms

CONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Title: Tee Bird Country Club

Owner(s): New York State Dept. of Environmental Conservation

As a contractor/subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SPPP) for any work that you perform on-site. Any person or group who violates any condition of the SPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SPPP. A copy of the SPPP is available for your review at the office trailer.

Each contractor/subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I hereby certify that I understand and agree to comply with the terms and conditions of the SPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that NYSDEC must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

_____

Signature: _____

Title: _____

Date: _____

Trained Contractor Information: In addition to the above you must identify at least one person from your company that will be responsible for implementing the SPPP for this site. This individual shall be known as the *trained contractor* and must meet the training requirements defined in the most current version of the New York State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges Associated with Construction Activities (GP-0-15-002).

Name: _____

Title: _____

SWT#: _____

Issue Date: _____

Appendix E – Draft Environmental Easement Map

LEGEND

- MONITORING WELL
- UTILITY POLE
- TELEPHONE RISER
- OHW — OVERHEAD UTILITY WIRE
- 260 — CONTOUR LINE (1 FT INTERVAL)

NOTES

1. SURVEY COMPLETED SEPT. 24, 2014 BY JOHN DAMIANO, LS.
2. GRID NORTH ESTABLISHED FROM THE NEW YORK STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD83, FEET.
3. VERTICAL DATUM IS NAVD 88.

SCALE
20 10 0 20 FT.

REVISIONS	YEC, INC.	
	WEST NYACK	NEW YORK

TEE BIRD COUNTRY CLUB SURVEY

TOWN OF MOREAU
SARATOGA COUNTY, NEW YORK

DATE:	SCALE:	DRAWN BY:	CHECKED BY:	JOB NO.
OCT, 2014	1" = 20'	MBW	JD	A0493