Sterling Environmental Engineering, P.C.

NEW YORK STATE BROWNFIELD CLEANUP PROGRAM

NORTHEAST TREATERS OF NEW YORK, LLC
ATHENS, NY
SITE #C420029

REMEDIAL WORK PLAN ADDENDUM

Prepared for:

Northeast Treaters of New York, LLC
796 Schoharie Turnpike
Athens, New York 12015

Prepared by:

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CERTIFICATION

I, Mark Millspaugh, certify that I am a New York State registered professional engineer and that this Remedial Work Plan Addendum was prepared in accordance with all applicable statues and regulations and is in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities will be performed in accordance with the DER-approved work plan and any DER-approved modifications.

Professional Seal:

Mark P. Millspaugh, P.E.
NY PE 059182

LIST OF ACRONYMS

Acronym	Definition
As	Arsenic
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
CAMP	Community Air Monitoring Plan
CCA	Chromated Copper Arsenate
CFR	Code of Federal Regulations
COCs	Contaminants of Concern
Cr	Chromium
DCP	Dust Control Plan
DER-10	Division of Environmental Remediation/Technical Guidance for Site Investigation and Remediation
EWP	Excavation Work Plan
HASP	Health and Safety Plan
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PPM	Parts Per Million
RD	Remedial Design
RI	Remedial Investigation
RWP	Remedial Work Plan
SCGs	Standards, Criteria and Guidance
SCOs	Soil Cleanup Objectives
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SWPPP	Stormwater Pollution Prevention Plan
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION AND PURPOSE

This Remedial Work Plan (RWP) Addendum has been prepared by Sterling Environmental Engineering, P.C. (STERLING) on behalf of Northeast Treaters of New York, LLC (hereinafter "Northeast Treaters") for Brownfield Cleanup Program (BCP) Site #C420029 (hereinafter "the Site"). The Site is limited to the easternmost developed portion of the Northeast Treaters property located at 796 Schoharie Turnpike in the Town of Athens, Greene County, New York. The location of the Northeast Treaters Property is presented on Figure 1. Figure 2 presents an aerial view of the facility and the boundaries of the Site.

This RWP Addendum provides a summary of predesign investigation activities and other Site-related activities and developments occurring after the submission of the June 1, 2015 RWP (revised October 2, 2015). Additionally, this RWP Addendum expands on the preferred remedial design described in the October 2, 2015 RWP to address impacted surface soil and sediment identified by predesign investigations.

1.1 Project Description

Northeast Treaters operates a pressure treated wood manufacturing facility located on the north side of the Schoharie Turnpike in the Town of Athens, New York. The facility was originally constructed in the mid-1970s. Northeast Treaters seeks to modernize the existing plant in order to remain competitive, energy-efficient and current with environmental, health and safety standards. The key elements associated with the proposed facility modernization include:

- Installing a protective cover over the existing drip pad and Site soils impacted above industrial use Soil Cleanup Objectives (SCOs);
- Constructing a new 88 ft. x 200 ft. (17,600 square feet) drip pad and Process Building over a portion of the existing drip pad;
- Installing modern and efficient pressure treating equipment over a containment structure;
- Consolidating existing bulk storage activities in the Process Building, inside an improved secondary containment structure;
- Constructing a new 31.5 ft. x 50 ft. (1,575 square feet) office to replace the existing offices;
- Limited Site grading in the immediate vicinity of the Process Building;
- Constructing a lumber storage yard east of the new Process Building;
- Stormwater drainage improvements; and
- Implementing a plan to manage stormwater during the construction process.

1.2 Facility Background

A description of the facility background is provided in Section 1.2 of the October 2, 2015 RWP.

1.3 Site and Property Description

Figure 2 presents an aerial view of property and Site boundaries. Prior to entering the BCP, the Northeast Treaters property consisted of approximately 13.17 acres on the north side of the Schoharie Turnpike in the Town of Athens. Upon entering the BCP, the Northeast Treaters Site was restricted to approximately 1.68 acres of the easternmost portion of the Northeast Treaters property.

In June 2015, Northeast Treaters purchased the eastern adjacent property to gain direct control of impacted surface soil identified by the Remedial Investigation (RI). The acquired property is approximately 24.02 acres and consists of more than 20 acres of undeveloped woodland and a single-family dwelling, located on the southeastern portion of the acquired property. Following the acquisition of the eastern adjacent property, a lot line adjustment was performed to add approximately 19.01 acres of undeveloped woodland to Northeast Treater's existing 13.17 acre property (totaling 32.18 acres) and to set apart the single family dwelling on a 5.01 acre parcel located to the southeast of the Northeast Treaters facility property and along the Schoharie Turnpike. On July 14, 2015, an application to amend the Brownfield Cleanup Agreement (BCA) was submitted to the NYSDEC to add approximately 2.22 acres of undeveloped woodland to the initial BCP Site. The NYSDEC approved the amendment request on July 31, 2015.

The current BCP Site is limited to approximately 3.9 acres of the Northeast Treaters facility property as shown on Figure 2. The Site consists of approximately 1.68 acres of developed land to the west and approximately 2.22 acres of undeveloped woodland to the north and east.

1.3.1 Land Use

A zoning map, a summary table of permitted uses, and lot requirements established by the Town of Athens Zoning Code is provided as Appendix A. Approximately 13.17 acres of the developed portion of the Northeast Treaters facility property, including approximately 1.68 acres of the developed portion of the Site, is zoned and currently used as an industrial property (i.e., the LI-2 District). Approximately 19.01 acres of the undeveloped portion of the Northeast Treaters property, including approximately 2.22 acres of the undeveloped portion of the Site, is currently zoned Rural Residential (i.e., the Ru District).

Northeast Treaters is seeking to rezone the additional 19.01 acres of undeveloped facility property added to the parcel via the approved lot line adjustment from Rural Residential to Light Industrial. This 19.01 acres includes the undeveloped 2.22 acres added to the BCP Site A completed petition to rezone the additional 19.01 acres of undeveloped land from Rural Residential to Light Industrial was submitted by Northeast Treaters to the Town of Athens on October 5, 2015. Upon completion of remedial activities, the Site will continue to be used for manufacturing and storage of treated wood products and will remain industrial.

The general remedial program provisions set forth at 6 NYCRR §375-1.8(f)(9) authorize the New York State Department of Environmental Conservation (NYSDEC) to consider land use in selecting site remedies provided there is "reasonable certainty associated with such use" and identify a host of factors that may be considered in making such an assessment. The BCP regulations at 6 NYCRR §375-3.8(a)(2) specifically provide that the selection of a remedy at a BCP site "will take into account the current, intended, and reasonably anticipated future land uses of the site and its surroundings." In distinguishing among sites for purposes of establishing cleanup requirements, NYSDEC considers the "primary" use of the site. For example, a site may be classified as "industrial" if "the primary purpose" of the site is "manufacturing, production, fabrication or assembly processes and ancillary services" (6 NYCRR §375-1.8(g)(2)(iv)).

In the present case, the use at the Site currently is primarily industrial. Going forward, the entire BCP application is premised on the applicant constructing a new manufacturing plant, with an anticipated useful life of approximately 30 years. The construction of the plant is being financed with long term debt secured by the entire Site. The intended future use of the Site as an industrial wood treatment facility aligns with the visions of the July 2007 Greene County Comprehensive Economic Development Plan to expand the Athens Industrial Park.

While the Athens Zoning Code allows some uses (either as of right or with Site Plan Approval or a Special Use Permit) in the LI-2 District that are not strictly industrial, none of those uses are anticipated by Northeast Treaters for the Site. In order to conduct less restrictive use (residential or commercial), the applicant would need to eliminate all or a portion of the manufacturing activity and subdivide out the vacant parcel. The subdivided parcel would have to meet the requirements for frontage, road access, onsite water and septic. Based upon a review of the subdivision requirements and applicable codes, counsel for Northeast Treaters has concluded that the possibility of permitting a residential or commercial use at the Site is remote because it would be unlikely that the area of the site would meet requirements for frontage and road access once the parcel is subdivided.

1.3.2 Physical Site Conditions

Physical conditions of the Site and the surrounding area are described in Sections 1.3.2 through 1.3.4 of the October 2, 2015 RWP.

2.0 SUMMARY OF SITE CONDITIONS

2.1 Previous Investigations

A discussion of previous investigations conducted at the Northeast Treaters property and results of the RI are provided in Sections 2.1 and 2.2, respectively, of the October 2, 2015 RWP.

2.2 Predesign Sampling Investigation

On June 8, 2015, STERLING submitted a Predesign Sampling Work Plan on behalf of Northeast Treaters to address data gaps identified following the completion of the RI Report. Analytical results associated with predesign sampling investigations are provided as Appendix B.

Samples collected during predesign sampling investigations were analyzed for total chromium and total arsenic via United States Environmental Protection Agency (USEPA) Method 6010C. Soil samples were not analyzed for hexavalent chromium, because available sample data indicates that detections of hexavalent chromium above unrestricted use SCOs are largely associated with detections of total arsenic and trivalent chromium above unrestricted use SCOs. Detections of total chromium will be evaluated against SCOs established for trivalent chromium as existing investigative data for the Site shows that detections of total chromium largely represent concentrations of trivalent chromium.

2.2.1 Surface and Subsurface Soil Investigation

The initial investigation of perimeter surface and subsurface soil sampling performed during the RI is summarized in Section 2.2.4 of the October 2, 2015 RWP. A surface and subsurface soil investigation was conducted by STERLING on June 16, 2015 and July 23, 2015 in accordance with the Predesign Sampling Work Plan to more clearly define the limits of impacted soil between the Processing Building and the undeveloped woodland area located along the north and east portion of the Site. Sample results are presented in Figure 3.

During Predesign Sampling, sufficient data was collected to delineate a northern and eastern extent of impacted soil between the Process Building and the adjacent woodland area as shown on Figure 3. As

noted above, the BCA was amended to include areas with surface soil impacted with Site Contaminants of Concern (COCs) above restricted-residential use SCOs.

Additional soil samples were not collected to the west of OSS-20 as there is an operational facility operated by Northeast Treaters located in this area. Historically, finished lumber products treated with Chromated Copper Arsenate (CCA) have been stored in this area west of the BCP site between 1979 and 2003. The storage area has since been capped, limiting the exposure to potentially impacted soils.

2.2.2 Facility Catch Basin Investigation

The initial facility catch basins investigation performed during the RI is summarized in Section 2.2.6 of the October 2, 2015 RWP. In addition, STERLING sampled accessible and previously unsampled catch basins at the Northeast Treaters property on July 23, 2015 for arsenic and chromium. Sample results are presented in Figure 4. The goal of the sampling was to evaluate the distribution of arsenic and chromium beyond the Site to assess the origin of these compounds, if present.

The catch basins at the Northeast Treaters facility drain to the facility's retention pond located near the facility's western property boundary. The catch basins sampled on July 23, 2015 are located to the west of the Site. Those catch basins collect stormwater from an area that had historically been used for raw material and CCA-treated lumber (finished product) storage. The Northeast Treaters property has a long history as a wood treatment facility and the details of historical operations and the potential transient sources of arsenic and chromium (i.e., stored lumber) prior to the acquisition of the property by Northeast Treaters are not fully documented. Northeast Treaters has advised that the area to the west of the BCP Site in the vicinity of sample locations CB-07, CB-08, CB-10, CB-11, CB-12, and CB-15 was traditionally used to store lumber treated with CCA. In these areas, small quantities of treatment chemicals would wash off of the lumber during rain events. By comparison, the area west and south of the BCP Site (in the vicinity of sample locations CB-16 and CB-17) was historically used for white (untreated) lumber storage. It would be reasonable to expect that the arsenic and chromium levels in the sediment in the catch basins would reflect the storage of finished product versus the storage of raw material, with higher levels found in CB-07, CB-08, CB-10, CB-11, CB-12 and CB-15.

That assumption is consistent with the results from the catch basin sampling. Sampling results indicate that the northern stormwater line (i.e. sample locations CB-01, CB-07 and CB-08) contains elevated concentrations of arsenic and chromium that increase with increasing distance from the Site (ranging from 28 to 39 parts per million (ppm) of arsenic and 30 to 87 ppm of chromium). The highest concentrations of arsenic and chromium in the northern stormwater line were detected at sample location CB-08, which is approximately 300 feet west of the Site. The only known source of arsenic and chromium west of the Site was from the storage of finished product.

The conclusion that the storage of finished product is the source of arsenic and chromium west of the BCP Site is further supported by the results of sediment samples from the southern stormwater line. The southern stormwater line (i.e. sample locations CB-16 and CB-17) is not in a location that could potentially be impacted by the BCP Site because stormwater from the BCP Site does not reach this stormwater line. Sample locations CB-16 and CB-17 had the lowest concentrations of arsenic and chromium, although chromium was detected at 27 ppm at sample location CB-16. As previously stated, the area west and south of the BCP Site (in the vicinity of sample locations CB-16 and CB-17) was historically used for white (untreated) lumber storage. Nonetheless, during the 40 years of operations, the location of raw materials and finished product storage varied and it is possible that the slightly elevated concentrations of chromium may have been due to the limited storage of finished product in this area.

The middle stormwater line (i.e. sample locations CB-10 through CB-15) has several catch basins with arsenic and chromium concentrations ranging between 11 and 100 ppm and 5 and 40 ppm, respectively. As previously noted, the area to the west of the BCP Site in the vicinity of sample locations CB-10, CB-11, CB-12, and CB-15 was traditionally used to store treated lumber. This history is reflected in the arsenic and chromium concentrations detected at these sample locations. The highest concentrations of arsenic and chromium in this stormwater line were detected at sample location CB-10, immediately west of the BCP Site in the area that was used for the storage of treated wood.

2.2.3 Stormwater Basin and Drainage Swale Investigation

On August 17, 2015, STERLING conducted a sampling investigation of the Northeast Treaters facility stormwater basin. The sampling investigation was conducted in accordance with the August 14, 2015 Stormwater Basin Sampling Work Plan and as a component of the predesign sampling. Sample results are presented in Figure 5.

Data obtained during the Stormwater Basin Sampling Investigation indicate that the sediment in the stormwater basin and the downstream drainage swale contains chromium and arsenic above background concentrations. The concentrations of chromium and arsenic ranged between 39 to 320 ppm and 26 to 210 ppm respectively. The highest concentration of chromium and arsenic was detected in sample SB-2 obtained from the floor of the stormwater basin in the approximate location where the stormwater collection system discharges to the stormwater basin. The lowest concentration of chromium and arsenic was detected in sample DS-2 obtained from sediment within the downgradient drainage swale near the approximate location of the Northeast Treaters western property line. These data show that detections of chromium and arsenic decrease with increasing distance from the stormwater basin at downstream drainage locations.

Based on the location of the facility's State Pollutant Discharge Elimination System (SPDES) outfall location, discussions with representatives of Northeast Treaters, and observations made during the Stormwater Basin and Drainage Swale Investigation, drainage from the pond flows to the south and discharges to a roadside drainage swale which flows east to west.

2.3 Contaminant Mobility

Arsenic and chromium have been identified as COCs at the Site and no additional COCs were identified by predesign sampling investigations. Contaminant mobility at the Site is discussed in Section 2.3 of the October 2, 2015 RWP.

Predesign investigation activities identified the potential for impacted soils to migrate through the facility's stormwater collection system and discharge to the facility's stormwater basin. The potential exists for sediment in the stormwater basin to migrate to the downstream drainage swale. No additional migration of Site related COCs was identified by predesign investigation activities.

2.4 Exposure Analysis

The human health risk associated with Site COCs depends upon the potential for a person to be exposed to soil or groundwater containing these metals. Exposure can only occur when a mechanism, or exposure pathway, exists. Potential exposure pathways are summarized in Table 1, and are evaluated in Section 2.4 of the October 2, 2015 RWP.

Predesign investigation activities identified the potential for onsite workers and trespassers to become exposed to sediment and surface soil impacted by Site COCs in the location of the facility's stormwater basin and downgradient swale. The potential for human receptors to become exposed to sediment within the stormwater basin is remote because the basin contains water year-round and recreational activities are prohibited in this area. The potential for human exposure to sediment within the facility catch basins is remote because facility catch basins are covered by storm grates and are inaccessible during routine facility operations. The facility Storm Water Pollution Prevention Plan includes provisions for annual cleaning of the stormwater system by flushing water into the most upgradient catch basin of each storm sewer line. Accordingly, the preferred remedial measure will not focus on preventing human exposure to impacted sediment located within the stormwater basin because this exposure is remote under current conditions. Measures to minimize the migration of impacted sediment located within the stormwater basin were considered in the screening and evaluation of remedial alternatives.

The potential for human receptors to become exposed to sediment within the downgradient drainage swale is remote due to the limited use of the Site as an industrial facility. However, the potential exists for trespassers and onsite workers to be exposed to impacted sediment in the downgradient drainage swale. For these reasons, surface soil and sediment in the downgradient swale was considered in the screening and evaluation of remedial alternatives, and the preferred remedial measure will minimize and/or eliminate this exposure.

2.5 Analytical Data Variability

Uncertainty for soil and sediment arsenic analytical data occurs as the result of the inherent uncertainties of the analytical method and the composition of the media. For instance, the calibration verification recoveries need to be within 10% of the actual value, the laboratory control sample must be within 30%, and the matrix spike must be within 25%. Valid and acceptable analytical data may have an uncertainty of plus or minus 25% because of these inherent analytical uncertainties. The uncertainty of analytical data can increase when factoring in the effects of the heterogeneity of soil and sediment samples.

Due to analytical data variability, a detected arsenic concentration in soil equivalent to the unrestricted use SCO of 13 ppm has a range of error of 3.25 ppm (i.e., 9.75 ppm to 16.25 ppm). Similarly, a detected arsenic value of 16 ppm has a range of error of 4 ppm such that the actual value may be between 12 and 20 ppm.

3.0 REMEDIAL ACTION OBJECTIVES

An in depth discussion of remedial action objectives is provided in Section 3.0 of the October 2, 2015 RWP. No new remedial action objectives were identified based on additional data gathered during predesign investigations. Remedial action objectives are summarized as follows:

1) Minimize exposure (inhalation, ingestion, and dermal contact) to soils and sediment containing unacceptable levels of chromium and arsenic.

2) Maintain or further minimize the potential for groundwater quality and/or surface water quality degradation resulting from movement of metals from fill material to infiltrating rainwater or runoff.

3) Stabilize impacted soils to control stormwater migration, wind erosion, dust generation, and infiltration.

Predesign investigation activities indicate that the undeveloped woodland portion of the Site, the facility stormwater basin, and some of the facility catch basins contain impacted soil or sediment above unrestricted use SCOs that are not addressed by the October 2, 2015 RWP. Section 5.0 of this RWP Addendum provides an in-depth analysis of remedial alternatives to address impacts identified by predesign investigation activities.

4.0 REMEDIAL TECHNOLOGY SCREENING PROCESS

In accordance with DER-10 Section 4.3, an initial screening was performed to develop a list of remedial technologies potentially applicable to the Site conditions, contaminants, and contaminated media. Applicable technologies undergo a detailed analysis of alternatives. A discussion of the applicable remedial technologies and the results of the initial screening process is provided in Section 4.1 of the October 2, 2015 RWP.

4.1 Development of Remedial Alternatives

In accordance with DER-10 Section 4.3, preliminary alternatives were evaluated against the criteria of effectiveness and implementability, and subsequently the technologies described in Section 4.1 were combined to develop five (5) remedial alternatives identified in the October 2, 2015 RWP. Alternative No. 2, Capping and Institutional Controls, and Alternative No. 4, In-Situ Treatment, remain unchanged from the description and analysis presented in the October 2, 2015 RWP and are not provided in this RWP Addendum. Alternative No. 1; No Further Action, is presented below for purpose of comparison with other remedial alternatives, and Alternative No. 3; Excavation and Offsite Disposal, and Alternative No. 5; Consolidation, Capping, and Institutional Controls have been revised to reflect changes in the Site and proposed remedial measures. These three revised remedial alternatives are described and evaluated in the following sections.

4.1.1 Alternative 1: No Further Action

The No Further Action alternative allows contaminated soil and sediment to be left in place. This alternative may include institutional controls, such as land use restrictions, to minimize human contact with contaminated media. Signs can be posted to warn construction or utility workers to contact NYSDEC before excavating. Impacted soil and sediment will not be addressed under this alternative.

4.1.2 Alternative 3: Excavation and Offsite Disposal

In addition to the remedial program outlined in the October 2, 2015 RWP, Alternative 3 includes excavation and offsite disposal of soil and sediment impacted above unrestricted use SCOs from the undeveloped woodland portion of the Site, the facility stormwater basin and downgradient swale, and facility catch basins.

Excavation in the undeveloped woodland will be conducted using conventional earthmoving equipment, such as backhoes, excavators and front-end loaders. An estimated six (6) inches of surface soil would be removed. Approximately one (1) foot of impacted sediment will be dredged from the stormwater basin and approximately one (1) foot of sediment would be excavated from the downgradient drainage swale using a large excavator. Impacted sediment will be removed from facility catch basins using a vac truck or equivalent method. Impacted soil and sediment removed from the Northeast Treaters property will be disposed in accordance with Federal and State regulations and guidance.

For cost estimating purposes, it is assumed that post-excavation samples will be collected from the bottom of the excavation in the undeveloped woodland area at the rate of one (1) sample per 900 square feet in accordance with DER-10 subdivision 5.4(b)5. The samples will be analyzed for total arsenic and total chromium.

Excavating impacted soil at the Northeast Treaters property will eliminate potential exposure routes to future receptors and unrestricted use SCOs will be achieved. Under this remedy, no institutional controls will be required at the Site following remedial activities.

4.1.3 Alternative 5: Consolidation, Capping and Institutional Controls

Alternative 5 consists of consolidating impacted soil and sediment, capping and institutional controls.

In addition to the remedial program outlined in the October 2, 2015 RWP, Alternative 5 will involve clearing the undeveloped woodland area impacted by Site COCs above unrestricted use SCOs and removing soil and sediment impacted above unrestricted use SCOs from the drainage swale downgradient of the facility's stormwater basin, and facility catch basins as described in Alternative 3. Impacted soil and sediment removed from the aforementioned areas will be consolidated and placed in the cleared woodland area. Following consolidation, a protective cover will be installed over the former woodland area in accordance with DER-10 requirements.

Following remediation of the Site, the capped area will be used by the facility for storage of lumber and industrial equipment. Institutional controls will be implemented to further manage the protective cover. Specifically, deed restrictions will be imposed at the Site to disallow future construction or other disturbance within the capped area without prior approval from the NYSDEC.

Consolidation and capping of impacted soils, combined with appropriate stormwater runoff controls, will: 1) minimize potential contact with contaminated surface soil; 2) minimize migration of sediment from the stormwater basin; and 3) stabilize surface soil to control wind erosion and dust generation.

5.0 DETAILED EVALUATION OF ALTERNATIVES

5.1 Individual Analysis of Alternatives

This section presents an evaluation of the remedial alternatives described in Section 4.0. The purpose of the evaluation is to identify the advantages and disadvantages of each alternative and evaluate the extent to which each alternative meets the remedial objectives. Each alternative was evaluated using the criteria set forth in 6 NYCRR §375-1.8(f), as follows:

- Overall Protectiveness of Public Health and the Environment
- Compliance with SCGs
- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility and Volume through Treatment
- Short-Term Impact and Effectiveness
- Implementability
- Cost Effectiveness
- Land Use

Community and State acceptance are also considered through the receipt and review of public comments. The NYSDEC Decision Document for the Site will address community and State acceptance.

5.1.1 Alternative 1: No Further Action

Overall Protectiveness of Public Health and the Environment. Alternative 1 is somewhat protective of human health through the use of institutional measures (i.e. land use restrictions) to prevent human contact with the contaminants that will remain at the Northeast Treaters property; however, the potential for human exposure to soil and sediment impacted by Site COCs will remain. Exposure routes will remain for onsite workers or potential trespassers by inhalation or direct contact with impacted dust, soil or sediment.

Compliance with SCGs. Chemical-Specific SCGs and Site-specific cleanup levels will not be achieved in impacted soil and sediment. Alternative 1 will not eliminate existing exposure routes and will therefore not be completely protective of human health and environment.

Long-Term Effectiveness and Permanence. Alternative 1 does not provide long-term effectiveness and permanence.

Reduction of Toxicity, Mobility and Volume Through Treatment. Implementation of Alternative 1 will not result in a reduction of toxicity, mobility or volume of contamination present at the Site.

Short-Term Impact and Effectiveness. Alternative 1 does not provide short-term effectiveness.

Implementability. Institutional controls, such as land use restrictions, are easily implemented.

Cost Effectiveness. Estimated capital costs for Alternative 1 are presented in Table 2.

Land Use. Alternative 1 does not alter the current land use of the Northeast Treaters property; however, institutional controls will limit future land use.

5.1.2 Alternative 3: Excavation and Offsite Disposal

Overall Protectiveness of Public Health and the Environment. Alternative 3 includes remediation through excavation and offsite disposal of impacted soil and sediment. This alternative eliminates potential transport of contaminants via runoff, or erosion and the potential direct exposure to impacted soil and sediment. Soil excavation creates the potential for exposure to impacted soil by onsite workers and remediation personnel via ingestion, inhalation and dermal contact of airborne dust during the implementation of the remedial action. Dredging creates the potential to exacerbate the migration of impacted sediment beyond the stormwater basin. Appropriate measures to prevent exposure, erosion, and migration of impacted soil and sediment is specified in the Site's Excavation Work Plan (EWP).

Compliance with SCGs. Alternative 3 achieves chemical-specific SCGs and Site-specific cleanup levels by removing impacted soil and sediment from the Northeast Treaters property, and will therefore comply with applicable SCGs.

Long-Term Effectiveness and Permanence. Alternative 3 provides long-term effectiveness and permanence by excavating and removing impacted soil and sediment for offsite disposal.

Reduction of Toxicity, Mobility and Volume Through Treatment. Alternative 3 will reduce the volume of impacted soil by excavating and removing it for offsite disposal.

Short-Term Impact and Effectiveness. Alternative 3 is immediately effective, in that the potential for human exposure to surface soil will be eliminated. Implementation of Alternative 3 will result in the potential for exposure to onsite workers and the environment. Controls, to be described in the EWP, will be implemented during the remedy to reduce the risk of exposure.

Implementability. Excavation and dredging are commonly applied remedial technologies; however, excavating surface soil in a woodland environment is not readily implementable without first clearing the area. Offsite transport and disposal of excavated soil and sediment may be logistically difficult and cost-prohibitive. Alternative 3 is not compatible with Site redevelopment plans or schedule and therefore is not considered implementable.

Cost Effectiveness. Estimated capital costs for Alternative 3 are presented in Table 3. The cost of Alternative 3 far exceeds the marginal utility and benefit of achieving unrestricted use SCOs within the boundaries of an industrial property that is reasonably anticipated to remain an industrial property in the future. Therefore, Alternative 3 is not cost effective.

Land Use. Alternative 3 allows unrestricted land use at the Northeast Treaters property. The developed portion of the Northeast Treaters property is currently restricted by local zoning to industrial use.

5.1.3 Alternative 5: Consolidation, Capping and Institutional Controls

Overall Protectiveness of Public Health and the Environment. Alternative 5 eliminates the most direct exposure by removing impacted soil and offsite sediment and capping them under a protective cover within the boundaries of the Site. The protective cover is also protective of groundwater by minimizing stormwater contact with underlying impacted soils. Alternative 5 is protective of human health through the implementation of deed restrictions to prevent human contact with impacted soil that will remain onsite below the protective cover.

Compliance with SCGs. Chemical-Specific SCGs and Site-specific cleanup levels will not be achieved in onsite soils. Alternative 5 will be protective of human health and environment by eliminating exposure routes.

Long-Term Effectiveness and Permanence. Alternative 5 eliminates exposure to impacted soils by future onsite workers. Institutional controls ensure that the capped areas and drainage controls are properly maintained and will prevent future disturbance or construction within the capped area without prior approval of NYSDEC and use of proper protective control and safety measures. However, deed restrictions will restrict the future use of the Site which may affect future facility expansion plans or the anticipated expansion of the Athens Industrial Park.

Reduction of Toxicity, Mobility and Volume Through Treatment. Alternative 5 reduces mobility of stormwater sediment by removing it from the stormwater basin and drainage swale and placing it under a protective cover. Impacted surficial soils will also be protected from erosion by wind and water via a protective cover. No reduction in toxicity or volume will be achieved as impacted soils will be consolidated under the protective cover.

Short-Term Impact and Effectiveness. Alternative 5 is immediately effective, in that the potential for worker exposure to surface soil will be eliminated once the cap is complete. Soil disturbance at the Site

could temporarily result in potential exposure for onsite workers through dust inhalation. However, exposure to dust will be controlled by real-time air monitoring as specified in the EWP and Community Air Monitoring Plan (CAMP). Institutional controls will be implemented to restrict future construction or other disturbance of the Site's protective cover.

Implementability. Alternative 5 is readily implementable and aligns with the goals of planned facility upgrades. Deed restrictions and institutional controls will be arranged by the owner.

Cost Effectiveness. Estimated capital costs for Alternative 5 are presented in Table 4. Long-term monitoring and maintenance costs include cap inspections and maintenance. A protective cover consisting of asphalt pavement was assumed for cost estimation purposes.

Land Use. Alternative 5 does not alter the current land use of the Site and is consistent with the anticipated future land use of the Site as an industrial property.

5.2 Comparative Analysis of Alternatives

Each of the remedial alternatives was individually evaluated with respect to the eight (8) criteria in Section 5.1. In this section the comparative performance of the alternatives is discussed where common elements exist among alternatives. A summary of the evaluation of alternatives is provided in Table 5. Alternative 2 and Alternative 4 remain unchanged from the October 2, 2015 RWP and are not included in the comparative analysis section below, but are included in Table 5.

5.2.1 Overall Protectiveness of Public Health and the Environment

Alternative 1 provides the least protection of human health, as the existing exposure to impacted media will remain. However, institutional controls may be implemented to prevent the disturbance of the stormwater basin. Alternative 3 provides the greatest long-term protection of human health as it removes impacted media identified by predesign investigations. Alternative 5 is protective of public health and the environment; however, institutional controls will be required to maintain the protective cover and to minimize exposure to impacted media that will remain onsite. Alternatives 3 may temporarily increase suspended sediment in the stormwater pond and create the potential for migration of impacted sediment to downstream areas during dredging activities.

5.2.2 Compliance with SCGs

Alternatives 1 and 5 will not result in compliance with chemical-specific SCGs or Site-specific cleanup levels. Alternative 1 will not eliminate the existing exposure of impacted soil by onsite workers. Alternative 5 will effectively eliminate the exposure to impacted soil by onsite workers by utilizing a protective cover. Alternative 3 will result in complete compliance with SCGs and Site-specific cleanup levels.

5.2.3 Long-Term Effectiveness and Permanence

Alternative 1 provides the least long-term effectiveness and permanence. Alternative 3 will provide the greatest permanence and long-term effectiveness as impacted fill will be removed and disposed offsite. Alternative 5 provides a comparable degree of permanence and long-term effectiveness; however, Alternative 5 will require institutional controls to remain effective in the long-term.

5.2.4 Reduction of Toxicity, Mobility and Volume Through Treatment

Alternative 1 will not result in a reduction of toxicity, mobility or volume of impacted media identified by predesign investigations. A complete reduction of volume will only be achieved through Alternative 3 because impacted media identified by predesign investigations will be removed and disposed offsite in accordance with Federal and State regulations and guidance. Alternative 5 will achieve a reduction of toxicity, mobility and volume of impacted media located offsite (i.e. stormwater sediment) but these media will be relocated to the Site under a protective cover and will remain on the Northeast Treaters property.

5.2.5 Short-Term Impact and Effectiveness

No positive short-term impacts will result from the implementation of Alternative 1. Alternatives 3 and 5 are immediately effective, in that the potential for human exposure to impacted sediment and surface soils will be eliminated.

5.2.6 Implementability

Incorporating remedial measures into the proposed facility upgrades provides for a greater degree of implementability. Alternative 1 is the easiest alternative to implement; however, Alternative 1 does not meet the remedial objectives and is not compatible with the planned facility redevelopment. Alternative 3 is implementable with conventional methods but will require that the undeveloped area be cleared to remove impacted surface soils. The schedule to implement Alternative 3 is not compatible with the planned facility redevelopment. Alternative 5 is readily implementable and aligns with the goals of planned facility upgrades.

5.2.7 Cost Effectiveness

The capital costs for each alternative vary with cleanup objective. Tables 2 through 4 provide a summary of the costs.

The lowest cost is associated with the no Further Action alternative, but no positive human health or environmental impacts are associated with this alternative. Alternative 3 is the least cost effective because the capital cost far exceeds the marginal environmental benefits gained by achieving unrestricted use SCOs within the boundaries of an industrial property that is reasonably anticipated to remain an industrial property in the future. Alternative 5 is the most cost effective of the alternatives.

5.2.8 Land Use

A description of the Site is provided in Section 1.3. The developed portion of the Northeast Treaters property is currently zoned industrial and it is anticipated it will remain an industrial property as described in the Greene County Comprehensive Economic Development Plan, dated July 2007. The undeveloped woodland area of the Northeast Treaters property is currently zoned Rural Residential. Northeast Treaters has submitted a petition to change the zoning of the undeveloped woodland area to Light Industrial to support facility operations.

The alternatives described herein will not alter the industrial use of the developed portion of the Northeast Treaters property. Alternatives 1 and 5 will restrict the land use of approximately 2.2 acres of undeveloped woodland to commercial and/or industrial activities. Only Alternative 5 supports the planned facility upgrades by expanding the Northeast Treaters' outdoor storage yard.

5.3 Preferred Remedial Alternative

A subjective ranking of alternatives is provided as Table 5. Based on the subjective ranking of alternatives, Alternative 5 is the preferred alternative.

Based on the current and intended use of the property, the owner's development plans, and NYSDEC recommendation, the preferred remedy for the Site and impacted offsite areas identified by predesign investigations is Alternative 5. Alternative 5 consists of excavation, consolidation and capping of impacted soil and sediment. Dredging of the stormwater basin will not be conducted as part of the preferred remedy due to the comparatively high capital costs and the inherent risk of mobilizing potentially impacted sediment within, and downstream of, the stormwater basin. Human exposure to basin sediment is remote because the basin contains water year-round.

Under the preferred remedy, sediment will be removed from the existing catch basins and the material reused onsite under a protective cover. In addition, impacted sediment and surface soil will be removed from the drainage swale downgradient of the stormwater basin and an engineered drainage swale will be installed to further minimize sediment migration by promoting sedimentation of stormwater sediment. Stormwater discharge will be controlled and monitored pursuant to the Site Management Plan (SMP) in addition to the monitoring requirements of the facility's SPDES Multi-Sector General Permit (MSGP). In the event that soil or sediment cannot be consolidated and reused onsite below the protective cover, it will be disposed offsite in accordance with local, State and Federal regulations and guidance.

As part of the SMP, Northeast Treaters will develop and implement a NYSDEC approvable closure plan for the facility's stormwater basin. The plan will at a minimum comply with the current applicable and relevant regulatory standards. The disposition of sediment in the basin will be determined at closure and the basin will be closed in accordance with the closure plan following NYSDEC approval of the closure plan.

The preferred remedy will: 1) minimize human exposure to surface soils; 2) minimize potential migration of impacted stormwater sediment and 3) stabilize and cover surficial soil to control wind erosion and dust generation.

Onsite management of contaminated soil has been endorsed by the NYSDEC for properties impacted by heavy metals, such as orchard land. On those sites, impacted soil is capped under roads and parking areas, or covered so that human exposure to the soil is minimized. These remedial measures are commonly employed.

The preferred remedy addresses the potential offsite migration of Site-related COCs and areas on the Site where soil sampling demonstrates COCs exceed the NYSDEC industrial use SCOs. It also addresses areas of offsite contamination that pose the greatest potential for further offsite migration and/or human exposure (i.e., the offsite catch basins and drainage swale). Capping contaminated soil beneath a protective cover will eliminate human exposure pathways, erosion of surface soil, and potential offsite migration of impacted sediment. Institutional controls will be employed to further prevent future exposure.

6.0 REMEDIAL DESIGN ADDENDUM

6.1 General Description of Preferred Remedial Action

This Remedial Design (RD) Addendum was prepared based upon impacted media identified by predesign investigations and the preferred alternative. Under the preferred alternative, a Track 4 cleanup track is used for the remediation of the Site and offsite areas impacted by Site COCs. The extent of the remedy is provided as Figure 6. The remedial design plans described herein will be used by Northeast Treaters and BCI Construction, Inc. (BCI) to implement and complete the remedy.

The general RD Addendum provides for:

- Cleaning of facility catch basins;
- Excavation and consolidation of impacted surface soil and sediment in the drainage swale downgradient of the stormwater basin;
- Consolidation and capping of impacted soils and sediment within the boundaries of the Site; and
- Installation of an aesthetic landscape berm for noise abatement and as a visual barrier.

6.1.1 Facility Catch Basin Cleaning

Impacted sediment will be removed from facility catch basins identified on Figure 6 using a vac truck or equivalent method. Impacted sediment will be consolidated within the boundaries of the Site with other soil and/or sediment impacted by Site COCs and a protective cover will be placed over impacted media as shown in Figure 6.

6.1.2 Stormwater Basin and Downgradient Drainage Swale

To remedy chromium and arsenic impacts identified by the Stormwater Basin Sampling Investigation in the downstream drainage swale and, as an additional engineering control, an engineered drainage swale will be constructed to reduce suspended sediment in effluent water leaving the Northeast Treaters property. This remedy will be implemented as part of the preferred remedy. Accumulated sediment will be excavated along the swale from an area approximately six (6) feet wide and from current ground surface to a depth of approximately one (1) foot below grade to remove impacted sediment identified during the August 17, 2015 sampling investigation.

Confirmatory post-excavation samples consisting of four (4) soil samples at approximately equidistant intervals along the centerline of the excavation, and two (2) corresponding sidewall samples on either side of each centerline sample at a depth of six (6) to twelve inches, will be collected to confirm removal of impacted sediment following excavation of impacted material. One (1) surface sample (i.e. 0 – 2") will be collected adjacent to the most downgradient edge of excavation to characterize baseline conditions at this location. These soil samples will be analyzed for total arsenic, total chromium and hexavalent chromium via USEPA Method 6010C. The concentration of trivalent chromium will be inferred based on detected concentrations of total chromium and hexavalent chromium. Analytical results will be compared to unrestricted and site-specific soil clean-up objectives.

An engineered drainage swale will be constructed in the completed excavation between the southern discharge point of the stormwater basin and the western boundary of the Northeast Treaters property. The

excavation will then be lined with course gravel to reduce suspended sediment in effluent water. Other sediment reduction features, such as a sediment trap will be incorporated into the drainage swale design, as appropriate. The SMP will include provisions for periodic monitoring and visual inspections of the downstream swale to monitor the effectiveness of the engineered drainage swale.

Sediment excavated for the construction of the engineered drainage swale will be staged at stockpile areas located on the Site as designated in the EWP. Stockpiled sediment will be reused onsite below a protective cover or disposed in accordance with local, State and Federal regulations and guidance with other impacted soil generated during remediation activities at the BCP Site.

As part of the SMP, Northeast Treaters will develop and implement a NYSDEC approvable closure plan for the facility's stormwater basin. The plan will at a minimum comply with the current applicable and relevant regulatory standards. At the time of closure, the closure plan will be updated to incorporate the then current applicable and relevant regulatory standards. In addition to the closure plan, the SMP will include a monitoring plan to confirm the effectiveness of the basin in removing chromium and arsenic from the discharge.

6.1.3 Installation of Protective Cover

Consistent with the October 2, 2015 RWP, a protect cover will be installed in accordance with DER-10 requirements over impacted media as shown in Figure 6. Impacted soil that is not placed below the protective cover and within the boundaries of the Site will be disposed of at the City of Albany Landfill pursuant to the October 19, 2015 Contained-In Determination approval letter issued by the NYSDEC.

6.1.4 Noise Abatement and Aesthetic Berm Installation

The Town of Athens encourages commercial and industrial businesses to incorporate landscape berms and buffers as part of site design development plans. Accordingly, site plans submitted to the Town by Northeast Treaters include a noise abatement and aesthetic visual berm be installed between the proposed storage yard expansion and adjacent properties. The berm also is included as part of the RD Addendum as shown on Figure 7. The design of the berm will incorporate media impacted by Site COCs (i.e. soil, sediment, and concrete). An impermeable geotextile will be placed over impacted media and below a protective cover to minimize stormwater infiltration.

The consolidation of impacted media within the Site will be conducted pursuant to the USEPA Area of Contamination Policy. Further, the reuse of impacted media aligns with the concepts of DER-31 *Green Remediation* because onsite beneficial reuse minimizes truck travel for disposal which saves energy, reduces emissions, reduces localized noise, and reduces vibration and wear and tear on roads.

6.2 Project Organization

The remedial action described herein will be completed by a qualified remedial contractor. The hours for operation during the implementation of the preferred remedial remedy will be from 6 AM to 5 PM, Monday through Friday and potentially on Saturday.

The Northeast Treaters facility is a fenced property with gated entrances. The Site will be physically delineated during remedial activities.

6.3 Excavation Work Plan (EWP)

During construction and remediation activities, onsite soils will be managed in accordance with the EWP provided as Appendix G of the October 2, 2015 RWP. The EWP outlines the methods and procedures, work sequence, and construction management practices to complete soil excavation, consolidation, relocation and disposal in an environmentally responsible fashion, and in conformance with applicable local, state, and federal regulations.

6.4 Health and Safety Plan (HASP)

A Health and Safety Plan (HASP) is provided as Appendix H of the October 2, 2015 RWP in accordance with 40 CFR 1910 and 1926. The Site HASP addresses general construction health and safety issues and the potential health and safety concerns associated with exposure to airborne dust and Site specific COCs (i.e. chromium and arsenic) in soil.

6.5 Community Air Monitoring Plan (CAMP)

The CAMP developed for the remediation project is based on the Generic CAMP prepared by the NYSDOH. The CAMP provides for real time particulate monitoring at the upwind and downwind perimeter of the work area. The CAMP is provided as Appendix I of the October 2, 2015 RWP.

6.6 Dust Control Plan (DCP)

A Dust Control Plan (DCP) is provided as Appendix J of the October 2, 2015 RWP. Dust management during invasive onsite work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated onsite water truck for road wetting. The truck will be equipped with a water cannon or hose capable of spraying water directly onto off-road areas including excavations, stockpiles and staging areas.
- Clearing and grubbing of larger sites will be performed in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- Onsite roads will be limited in total area to minimize the area required for water truck sprinkling.
- Wetting of concrete saw cuts to suppress dust.

6.7 Stormwater Management

The facility is subject to a Multi-Sector General Permit and associated Storm Water Pollution Prevention Plan (SWPPP). A copy of the existing SWPPP is provided as Appendix K of the October 2, 2015 RWP.

Sediment and erosion control measures will be implemented during the construction of the storage yard expansion to ensure the compliance with substantive stormwater requirements. The facility SWPPP will be revised to incorporate stormwater impacts, if any, and maintenance requirements associated with the storage yard expansion area.

6.8 Site Management Plan (SMP)

Permanent use restrictions and institutional controls will be implemented for the soil consolidation and capped area in accordance with the BCA. These restrictions will include, but not be limited to the following: (1) restrictions on the use of groundwater as potable water, if determined necessary by NYSDEC; (2) maintenance of the cap and aesthetic berm; and (3) restrictions limiting future use to

industrial activity. Such will be set forth in the SMP to be furnished to the NYSDEC following construction. The details of the deed restrictions will be as required by NYSDEC protocol.

As part of the SMP, Northeast Treaters will develop and implement a NYSDEC approvable closure plan for the facility's stormwater basin. The plan will at a minimum comply with the current applicable and relevant regulatory standards. At the time of closure, the closure plan will be updated to incorporate the then current applicable and relevant regulatory standards. In addition to the closure plan, the SMP will include a monitoring plan to confirm the effectiveness of the basin in removing chromium and arsenic from the discharge. The stormwater basin closure plan will be utilized when the stormwater basin is permanently closed and no longer in operation.

7.0 IMPLEMENTATION SCHEDULE

The tasks required to complete the subsequent development of the Site are provided as Appendix C.

7.1 Reporting

Written progress reports will be submitted to the NYSDEC on the 10th day of each month. A Final Engineering Report will be prepared by STERLING and submitted to the NYSDEC at the conclusion of all activities required by the RWP.

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TABLES

Table 1

Potential Exposure Pathways
Northeast Treaters of New York, LLC
Athens, New York

Potential Receptor	Exposure Route, Contaminated Media, and Point of Exposure	Pathway Selected for Evaluation (Yes/No)	Reason for Selection or Exclusion
Offsite Residential/Offsite Workers	Ingestion, inhalation or dermal contact with offsite soils.	Yes	Surface soils and sediment contain concentrations of chromium and arsenic above unrestricted use SCOs.
Offsite Residential/Offsite Workers	Ingestion of groundwater offsite.	No	Analytical data indicate that Site related contaminants have not impacted groundwater.
Onsite Residential	Ingestion, inhalation or dermal contact with onsite soils.	No	The Town of Athens does not permit residential development and use at the Site.
Onsite Residential	Ingestion of groundwater onsite.	No	Residential development and use is not permitted at the Site. Analytical data indicate that Site related contaminants have not impacted groundwater.
Onsite workers	Ingestion, inhalation or dermal contact with onsite soils.	Yes	Surface soils contain concentrations of chromium and arsenic above unrestricted use SCOs.
Onsite workers	Ingestion of groundwater onsite	No	Analytical data indicate that Site related contaminants have not impacted groundwater. The Site currently utilizes bottled water for drinking purposes.
Trespassers / Visitors	Ingestion, inhalation or dermal contact with onsite soils.	Yes	Surface soils contain concentrations of chromium and arsenic above unrestricted use SCOs. The Site is partially fenced in a rural area and therefore the potential for trespassers is unlikely.
Trespassers / Visitors	Ingestion of groundwater onsite	No	Analytical data indicate that Site related contaminants have not impacted groundwater.

Table 2
Cost Estimate for Alternative 1:
No Action Alternative
Northeast Treaters of NY, LLC
BCP #C420029

Item #	Description	Estimated Quantity	Units	Unit Price (materials and labor)	Estimated Amount
CAPITAL COSTS					
				Total Capital Cost:	$0.00
				Engineering Design, Permitting and Certification (25%):	$0.00
				Legal and Administration (5%):	$0.00
				Contingency (20%):	$0.00
				Subtotal Cost:	$0.00
OPERATION AND MAINTENANCE COSTS (30 YEAR)					
1	Annual ECIC Certification	1	LS	$2,500.00	$2,500.00
				Total Annual O&M Cost:	$2,500.00
				Contingency (20%):	$500.00
				Subtotal Annual Cost:	$3,000.00
2	30-Year Total Present Worth Cost of O&M:				$37,227.12
				Total Estimated Cost:	$37,227.12

Notes:

- Cost estimate is based on STERLING's experience in the project area and vendor estimates using 2015 dollars.
- This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding site investigation and the anticipated scope of the remedial alternative.
- Changes in cost estimates are likely to occur as a result of new information and data collected during progess of the remedial alternative.
- This cost estimate is expected to be within -20% to +50% of the actual project cost.
- Utilization of this cost estimate information beyond the stated purpose is not recommended.

Assumptions:

Item 1 Annual cost estimate includes all post monitoring and reporting.

Item 2 Present worth is estimated based on a 7% beginning-of-year discount rate (adjusted for inflation). "Year zero" for present worth calculations is 2015.

Table 3
Cost Estimate for Alternative 3:
Excavation and Offsite Disposal
Northeast Treaters of NY, LLC
BCP #C420029

Item #	Description	Estimated Quantity	Units	Unit Price (materials and labor)	Estimated Amount
Excavation and Disposal of Impacted Soil					
1	Clearing and Grubbing	2.2	acre	$3,000.00	$6,600.00
2	Excavate and Load Soil	3200	ton	$5.00	$16,000.00
3	Transport and Dispose of Soil (as Solid Waste)	3200	ton	$75.00	$240,000.00
Excavation and Disposal of Impacted Sediment					
4	Dredge Stormwater Basin	225	CY	$200.00	$45,000.00
5	Excavate for Engineered Drainage Swale	94	ton	$5.00	$470.00
6	Transport and Dispose of Sediment (as Solid Waste)	500	ton	$75.00	$37,500.00
Clean Facility Catch Basins					
7	Remove and Dispose of Impacted Sediment	6	each	$500.00	$3,000.00
				Total Capital Cost:	$348,570.00
				Engineering Design, Permitting and Certification (25%):	$87,142.50
				Legal and Administration (5%):	$17,428.50
				Contingency (20%):	$69,714.00
				Subtotal Cost:	$522,855.00
OPERATION AND MAINTENANCE COSTS (30 YEAR)					
8	Mowing and Fertilization	1	LS	$1,000.00	$1,000.00
				Total Annual O&M Cost:	$1,000.00
				Contingency (20%):	$200.00
				Subtotal Annual Cost:	$1,200.00
9	30-Year Total Present Worth Cost of O&M:				$14,890.85
				Total Estimated Cost:	$537,745.85

Notes:

- Cost estimate is based on STERLING's experience in the project area and vendor estimates using 2015 dollars.
- This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding site investigation and the anticipated scope of the remedial alternative.
- Changes in cost estimates are likely to occur as a result of new information and data collected during progess of the remedial alternative.
- This cost estimate is expected to be within -20% to +50% of the actual project cost.
- Utilization of this cost estimate information beyond the stated purpose is not recommended.

Table 3 (Cont.)
Cost Estimate for Alternative 3:
Excavation and Offsite Disposal
Northeast Treaters of NY, LLC
BCP #C420029

Assumptions:

Item 1 Cost estimate includes all labor, equipment, and materials necessary to clear and grub 2.2 acres of undeveloped woodland.

Item 2 Cost estimate includes all labor, equipment, and materials necessary to excavate top 6" of native soil.

Item 3 Transport and Disposal to Town of Albany Landfill as Solid Waste.

Item 4 Cost estimate includes all labor, equipment, and materials necessary to dredge facility stormwater basin.

Item 5 Cost estimate includes all labor, equipment, and materials necessary to excavate and stockpile soil and sediment from the drainage swale between the stormwater basin outlet and Northeast Treaters western property line.

Item 6 Transport and Disposal to Town of Albany Landfill as Solid Waste.

Item 7 Cost estimate includes all labor, equipment, and materials necessary to remove and dispose of catch basin sediment.

Item 8 Cost estimate includes all labor, equipment, and materials necessary to maintain undeveloped woodland area following clearing and grubbing.

Item 9 Present worth is estimated based on a 7% beginning-of-year discount rate (adjusted for inflation). "Year zero" for present worth calculations is 2015.

Table 4
Cost Estimate for Alternative 5:
Consolidation, Capping and Institutional Controls
Northeast Treaters of NY, LLC
BCP #C420029

Item #	Description	Estimated Quantity	Units	Unit Price (materials and labor)	Estimated Amount
Excavation and Disposal of Impacted Soil					
1	Clearing and Grubbing	2.2	acre	$3,000.00	$6,600.00
2	Asphalt Pavement	95840	sq. ft	$3.00	$287,520.00
Excavation and Disposal of Impacted Sediment					
3	Excavate for Engineered Drainage Swale	94	ton	$5.00	$470.00
Clean Facility Catch Basins					
4	Remove and Consolidate Impacted Sediment	6	each	$450.00	$2,700.00
				Total Capital Cost:	$297,290.00
				Engineering Design, Permitting and Certification (25%):	$74,322.50
				Legal and Administration (5%):	$14,864.50
				Contingency (20%):	$59,458.00
				Subtotal Cost:	$445,935.00
OPERATION AND MAINTENANCE COSTS (30 YEAR)					
5	Annual ECIC Certification	1	LS	$2,500.00	$2,500.00
6	Bi-Annual Asphalt Sealing	95840	sq. ft	$0.25	$23,960.00
				Total Annual O&M Cost:	$2,500.00
				Contingency (20%):	$500.00
				Subtotal Annual Cost:	$3,000.00
7	30-Year Total Present Worth Cost of O&M:				$255,452.74
				Total Estimated Cost:	$701,387.74

Notes:

- Cost estimate is based on STERLING's experience in the project area and vendor estimates using 2015 dollars.
- This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding site investigation and the anticipated scope of the remedial alternative.
- Changes in cost estimates are likely to occur as a result of new information and data collected during progess of the remedial alternative.
- This cost estimate is expected to be within -20% to +50% of the actual project cost.
- Utilization of this cost estimate information beyond the stated purpose is not recommended.

Table 4 (Cont.)
Cost Estimate for Alternative 5:
Consolidation, Capping and Institutional Controls
Northeast Treaters of NY, LLC
BCP #C420029

Assumptions:

Item 1 Cost estimate includes all labor, equipment, and materials necessary to clear and grub 2.2 acres of undeveloped woodland.

Item 2 Cost estimate includes all labor, equipment, and materials necessary to pave impacted media. Asphalt pavement is both part of Site redevelopment and part of the selected remedy (protective cover).

Item 3 Cost estimate includes all labor, equipment, and materials necessary to excavate and stockpile soil and sediment from drainage swale between the stormwater basin outlet and Northeast Treaters western property line.

Item 4 Cost estimate includes all labor, equipment, and materials necessary to remove and consolidate catch basin sediment.

Item 5 Annual cost estimate includes all post construction monitoring and reporting.

Item 6 Cost estimate includes all labor, equipment, and materials necessary to bi-annually seal the pavement of the area of impacted soil.

Item 7 Present worth is estimated based on a 7% beginning-of-year discount rate (adjusted for inflation). "Year zero" for present worth calculations is 2015.

Table 5

Subjective Ranking and Evaluation of Alternatives
Northeast Treaters of New York, LLC
Athens, New York

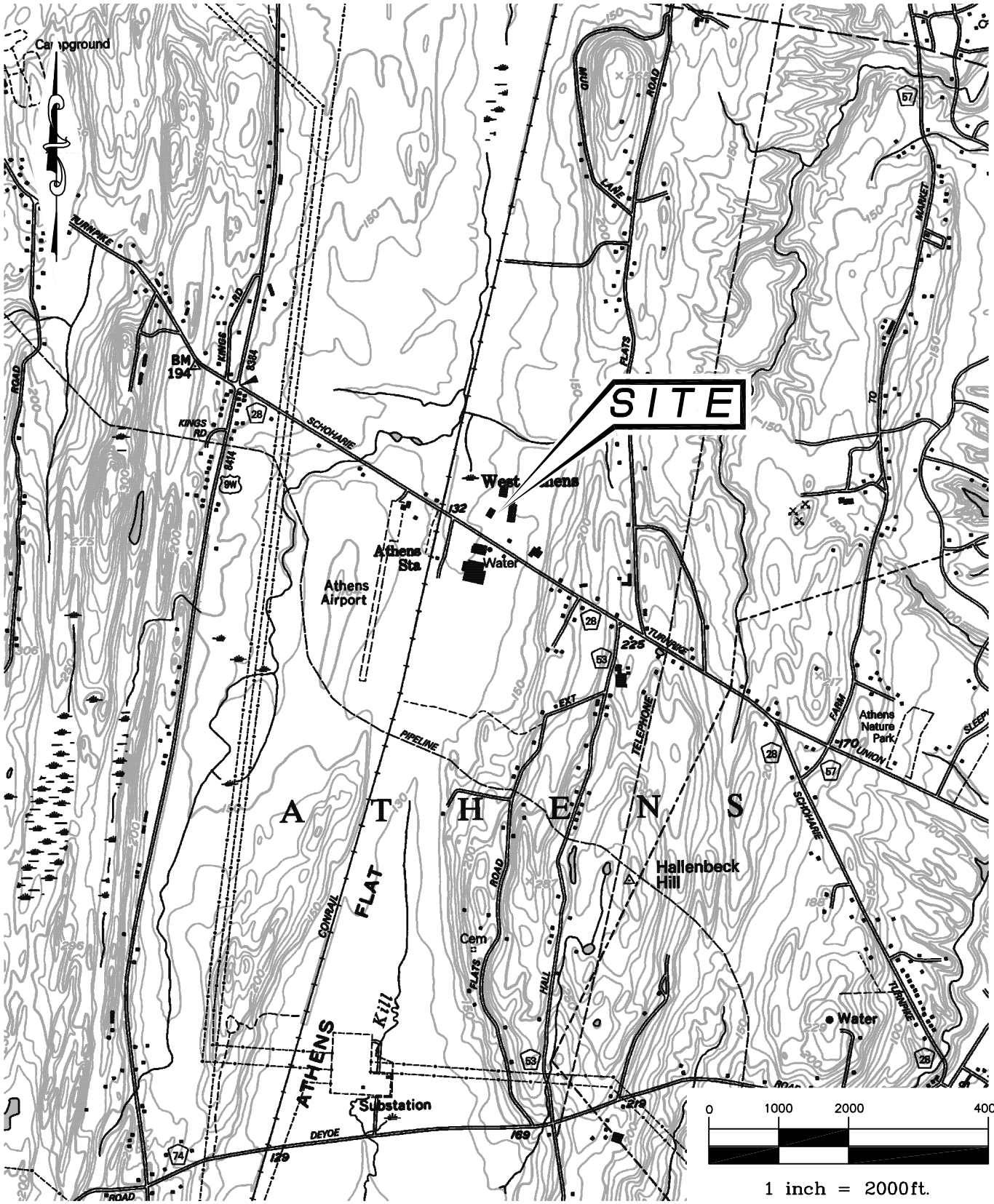
	Remedial Alternative No.				
Evaluation Criteria	**1**	**2**	**3**	**4**	**5**
Protection of Human Health and the Environment	1	2	3	2	2
Standards, Criteria, and Guidance (SCGs)	1	2	3	2	2
Long-Term Effectiveness and Permanence	1	2	3	2	3
Reduction of Toxicity, Mobility and Volume of Contamination	1	2	3	2	2
Short-Term Impact and Effectiveness	1	3	3	2	3
Implementability	1	2	1	1	3
Cost Effectiveness	1	2	1	1	3
Land Use	2	2	3	2	3
TOTALS	**9**	**17**	**20**	**14**	**21**

1 = does not meet the indicated evaluation criteria.

2 = meets most, but not all of the indicated evaluation criteria.

3 = meets or exceeds the indicated evaluation criteria.

FIGURES



MAP REFERENCE: NYSDOT HUDSON NORTH QUADRANGLE, 1995.

STERLING

Sterling Environmental Engineering, P.C.

24 Wade Road ♦ Latham, New York 12110

SITE LOCATION MAP

NORTHEAST TREATERS

SCHOHARIE TURNPIKE

TOWN OF ATHENS GREENE CO., N.Y.

PROJ. No.: 2014-08	DATE: 4/21/14	SCALE: 1" = 2000'	DWG. NO. 2014-08001	FIGURE 1

LEGEND

PROPERTY LINE

BCA AREA

0 125 250 500

1 inch = 250 ft.

S:\Drawings\2014-08 - Northeast Treaters of New York - Athens NY\From Terry\2014-08031Properties.dwg SWEETT 11/23/2015 3:45 PM

STERLING

Sterling Environmental Engineering, P.C.

24 Wade Road ♦ Latham, New York 12110

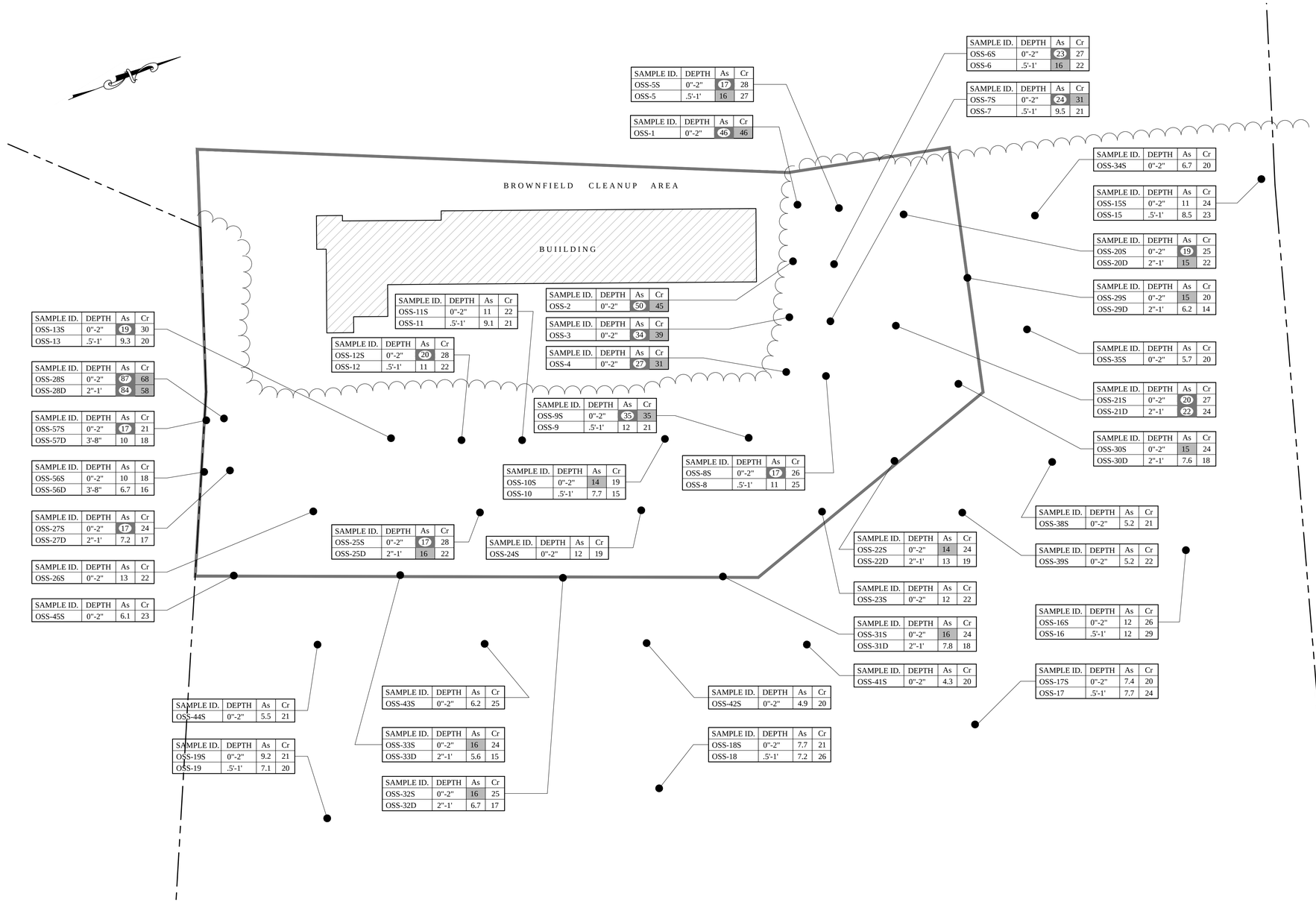
SUBJECT PROPERTY
AND SITE MAP

NORTHEAST TREATERS

SCHOHARIE TURNPIKE

TOWN OF ATHENS GREENE CO., N.Y.

PROJ. No.: 2014-08	DATE: 10/16/15	SCALE: 1" = 250'	DWG. NO. 2014-08031	FIGURE 2



SAMPLE ID.	DEPTH	As	Cr
OSS-5S	0"-2"	17	28
OSS-5	.5'-1'	16	27

SAMPLE ID.	DEPTH	As	Cr
OSS-1	0"-2"	46	46

SAMPLE ID.	DEPTH	As	Cr
OSS-6S	0"-2"	23	27
OSS-6	.5'-1'	16	22

SAMPLE ID.	DEPTH	As	Cr
OSS-7S	0"-2"	24	31
OSS-7	.5'-1'	9.5	21

SAMPLE ID.	DEPTH	As	Cr
OSS-34S	0"-2"	6.7	20

SAMPLE ID.	DEPTH	As	Cr
OSS-15S	0"-2"	11	24
OSS-15	.5'-1'	8.5	23

SAMPLE ID.	DEPTH	As	Cr
OSS-20S	0"-2"	19	25
OSS-20D	2"-1'	15	22

SAMPLE ID.	DEPTH	As	Cr
OSS-29S	0"-2"	15	20
OSS-29D	2"-1'	6.2	14

SAMPLE ID.	DEPTH	As	Cr
OSS-35S	0"-2"	5.7	20

SAMPLE ID.	DEPTH	As	Cr
OSS-21S	0"-2"	20	27
OSS-21D	2"-1'	22	24

SAMPLE ID.	DEPTH	As	Cr
OSS-30S	0"-2"	15	24
OSS-30D	2"-1'	7.6	18

SAMPLE ID.	DEPTH	As	Cr
OSS-11S	0"-2"	11	22
OSS-11	.5'-1'	9.1	21

SAMPLE ID.	DEPTH	As	Cr
OSS-12S	0"-2"	20	28
OSS-12	.5'-1'	11	22

SAMPLE ID.	DEPTH	As	Cr
OSS-2	0"-2"	50	45

SAMPLE ID.	DEPTH	As	Cr
OSS-3	0"-2"	34	39

SAMPLE ID.	DEPTH	As	Cr
OSS-4	0"-2"	27	31

SAMPLE ID.	DEPTH	As	Cr
OSS-9S	0"-2"	35	35
OSS-9	.5'-1'	12	21

SAMPLE ID.	DEPTH	As	Cr
OSS-8S	0"-2"	17	26
OSS-8	.5'-1'	11	25

SAMPLE ID.	DEPTH	As	Cr
OSS-10S	0"-2"	14	19
OSS-10	.5'-1'	7.7	15

SAMPLE ID.	DEPTH	As	Cr
OSS-13S	0"-2"	19	30
OSS-13	.5'-1'	9.3	20

SAMPLE ID.	DEPTH	As	Cr
OSS-28S	0"-2"	87	68
OSS-28D	2"-1'	84	58

SAMPLE ID.	DEPTH	As	Cr
OSS-57S	0"-2"	17	21
OSS-57D	3'-8"	10	18

SAMPLE ID.	DEPTH	As	Cr
OSS-56S	0"-2"	10	18
OSS-56D	3'-8"	6.7	16

SAMPLE ID.	DEPTH	As	Cr
OSS-27S	0"-2"	17	24
OSS-27D	2"-1'	7.2	17

SAMPLE ID.	DEPTH	As	Cr
OSS-26S	0"-2"	13	22

SAMPLE ID.	DEPTH	As	Cr
OSS-45S	0"-2"	6.1	23

SAMPLE ID.	DEPTH	As	Cr
OSS-25S	0"-2"	17	28
OSS-25D	2"-1'	16	22

SAMPLE ID.	DEPTH	As	Cr
OSS-24S	0"-2"	12	19

SAMPLE ID.	DEPTH	As	Cr
OSS-22S	0"-2"	14	24
OSS-22D	2"-1'	13	19

SAMPLE ID.	DEPTH	As	Cr
OSS-23S	0"-2"	12	22

SAMPLE ID.	DEPTH	As	Cr
OSS-31S	0"-2"	16	24
OSS-31D	2"-1'	7.8	18

SAMPLE ID.	DEPTH	As	Cr
OSS-41S	0"-2"	4.3	20

SAMPLE ID.	DEPTH	As	Cr
OSS-38S	0"-2"	5.2	21

SAMPLE ID.	DEPTH	As	Cr
OSS-39S	0"-2"	5.2	22

SAMPLE ID.	DEPTH	As	Cr
OSS-16S	0"-2"	12	26
OSS-16	.5'-1'	12	29

SAMPLE ID.	DEPTH	As	Cr
OSS-17S	0"-2"	7.4	20
OSS-17	.5'-1'	7.7	24

SAMPLE ID.	DEPTH	As	Cr
OSS-44S	0"-2"	5.5	21

SAMPLE ID.	DEPTH	As	Cr
OSS-19S	0"-2"	9.2	21
OSS-19	.5'-1'	7.1	20

SAMPLE ID.	DEPTH	As	Cr
OSS-43S	0"-2"	6.2	25

SAMPLE ID.	DEPTH	As	Cr
OSS-33S	0"-2"	16	24
OSS-33D	2"-1'	5.6	15

SAMPLE ID.	DEPTH	As	Cr
OSS-32S	0"-2"	16	25
OSS-32D	2"-1'	6.7	17

SAMPLE ID.	DEPTH	As	Cr
OSS-42S	0"-2"	4.9	20

SAMPLE ID.	DEPTH	As	Cr
OSS-18S	0"-2"	7.7	21
OSS-18	.5'-1'	7.2	26

NOTES

ALL VALUES IN MG/KG

LOCATIONS OSS-1 THROUGH OSS-4 SAMPLED ON 4/15/2015

LOCATIONS OSS-5 THROUGH OSS-19 SAMPLED ON 4/20/2015

LOCATIONS OSS-20 THROUGH OSS-45 SAMPLED ON 6/16/2015

LOCATIONS OSS-56 AND OSS-57 SAMPLED ON 7/23/2015

SAMPLES OBTAINED FROM LOCATIONS OSS-14 AND OSS-46 THROUGH OSS-55 WERE NOT ANALYZED AND ARE NOT SHOWN

LEGEND

APPROXIMATE BCA BOUNDARY LINE

PROPERTY LINE

EDGE OF WOODS

APPROXIMATE SOIL SAMPLE LOCATION

As = ARSENIC
Cr = CHROMIUM
LIGHT GRAY INDICATES EXCEEDANCE OF UNRESTRICTED USE SOIL CLEANUP OBJECTIVES
DARK GRAY INDICATES EXCEEDANCE OF INDUSTRIAL USE SOIL CLEANUP OBJECTIVES

As	Cr
13 mg/kg	30 mg/kg
16 mg/kg	1500 mg/kg

0 10 20 40 80
1" = 40'

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SUMMARY OF CHROMIUM AND ARSENIC DETECTIONS AT OSS SAMPLE LOCATIONS
NORTHEAST TREATERS
SCHOHARIE TURNPIKE
TOWN OF ATHENS GREENE COUNTY, NY

PROJ. No.: 2014-08	DATE: AUG. 19, 2015	SCALE: 1" = 40'	DWG. NO. 2014-08029	FIGURE 3

LEGEND

- APPROXIMATE BCA BOUNDARY LINE
- PROPERTY LINE
- CB — STORMWATER LINE
- PREVIOUSLY SAMPLED STORMWATER SEDIMENT LOCATIONS
- STORMWATER SEDIMENT SAMPLE LOCATIONS

NOTES

1) ALL RESULTS ARE IN MG/KG.
2) CB-01 WAS SAMPLED ON APRIL 15, 2015.
   CB-08 WAS SAMPLED ON APRIL 20, 2015.
   CB-10 THROUGH CB-17 WERE SAMPLED ON JULY 23, 2015.

0 50 100 200

1 inch = 100 ft.

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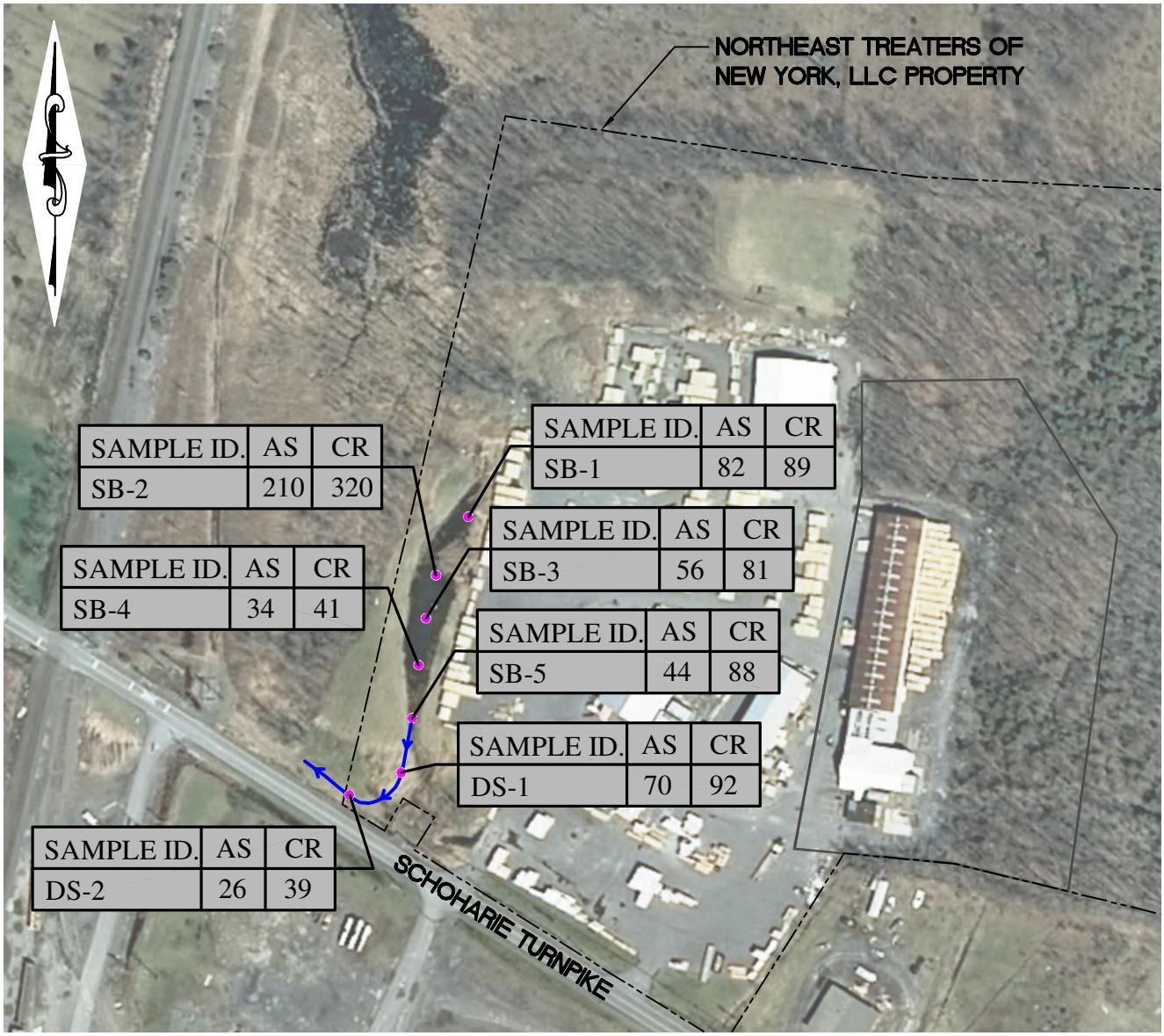
STORMWATER SEDIMENT SAMPLE RESULTS
NORTHEAST TREATERS
SCHOHARIE TURNPIKE
TOWN OF ATHENS GREENE CO., N.Y.

PROJ. No.: 2014-08	DATE: 8/6/2015	SCALE: AS SHOWN	DWG. NO. 2014-08028	FIGURE 4



LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- BROWNFIELD CLEANUP AREA BOUNDARY (APPROX. 3.9 ACRES)
- APPROXIMATE DRAINAGE
- SAMPLE LOCATION

NOTES:

ALL CONCENTRATIONS IN PPM
AS – TOTAL ARSENIC
CR – TOTAL CHROMIUM

MAP REFERENCE: NEW YORK STATEWIDE DIGITAL ORTHOIMAGERY PROGRAM, PHOTOGRAPHY CIRCA 2013

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STORMWATER BASIN SAMPLE RESULTS
NORTHEAST TREATERS
SCHOHARIE TURNPIKE
TOWN OF ATHENS GREENE CO., N.Y.

PROJ. No.: 2014–08	DATE: 10/16/15	SCALE: N.T.S.	DWG. NO. 2014–08042	FIGURE 5

LEGEND:

- CB — CATCH BASIN LOCATIONS
- STORMWATER LINE
- PROPERTY BOUNDARY
- BROWNFIELD CLEANUP AREA BOUNDARY (APPROX. 3.9 ACRES)
- CATCH BASINS TO BE CLEANED(3)

NOTES:

(1) THE ENTIRE BROWNFIELD CLEANUP AREA WILL BE SUBJECT TO INSTITUTIONAL CONTROLS

(2) CATCH BASIN TO BE REMOVED PER FACILITY UPGRADE PLANS

(3) CATCH BASINS WILL BE CLEANED BY REMOVING LOOSE SEDIMENT WITHIN THE CATCH BASIN WITH A VACUUM TRUCK OR SIMILAR METHOD.

(4) IMPACTED SEDIMENT AND SOIL REMOVED FROM FACILITY CATCH BASINS OR EXCAVATED FOR THE ENGINEERED DRAINAGE SWALE MAY BE REUSED WITHIN THE BOUNDARIES OF THE SITE AND BELOW THE PROTECTIVE COVER

0 30 60 120

1 inch = 60 ft.

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EXTENT OF REMEDY
NORTHEAST TREATERS
SCHOHARIE TURNPIKE
TOWN OF ATHENS GREENE CO., N.Y.

PROJ. No.: 2014-08	DATE: 10/15/15	SCALE: 1" = 60'	DWG. NO. 2014-08041	FIGURE 6

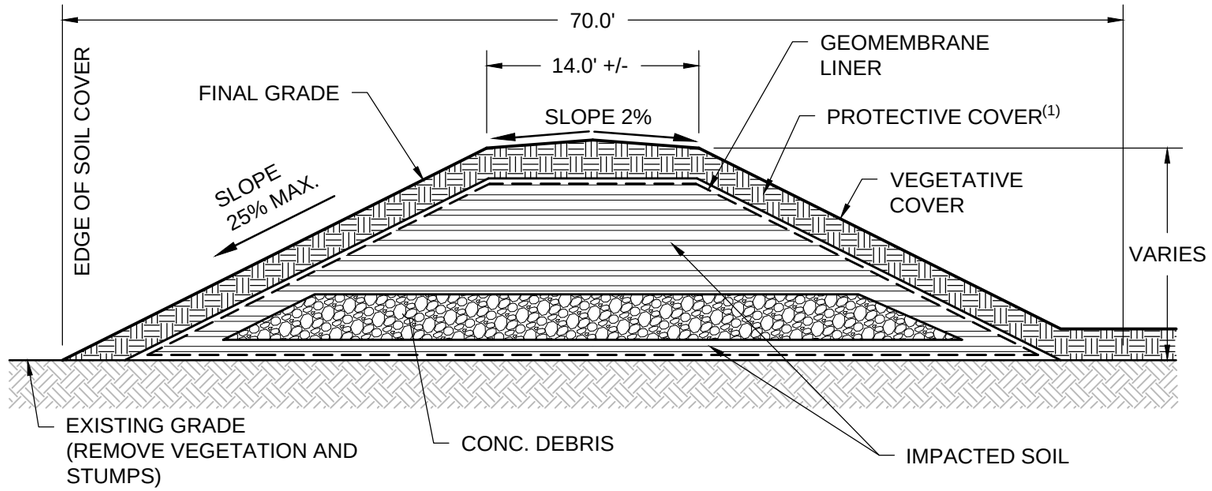
MAP LEGEND

APPROXIMATE LOCATION BCA BOUNDARY LINE

PROPERTY LINE

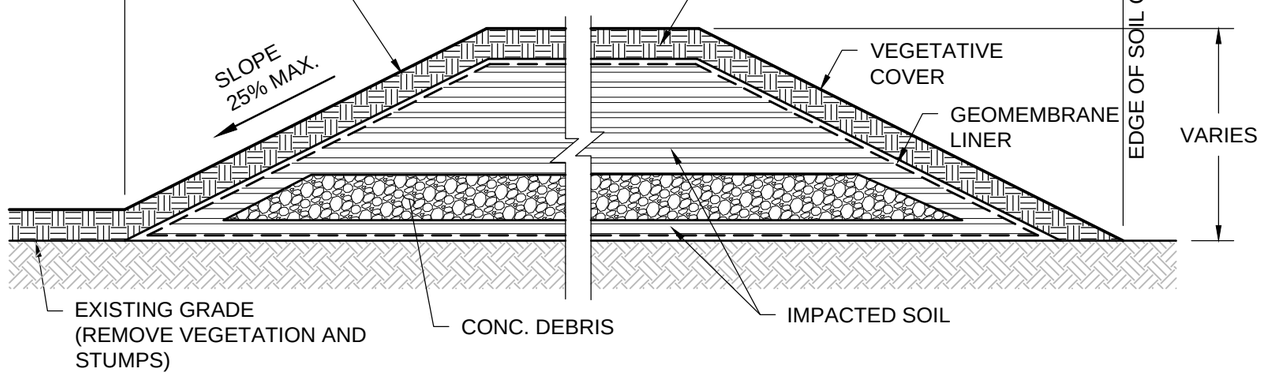
0 50 100 200

1 inch = 100 ft.



CROSS SECTION A-A'

NOT TO SCALE



CROSS SECTION B-B'

NOT TO SCALE

NOTE: (1) IN ACCORDANCE WITH DER-10

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BERM LOCATION AND CROSS SECTIONS
NORTHEAST TREATERS
SCHOHARIE TURNPIKE
TOWN OF ATHENS GREENE CO., N.Y.

PROJ. No.: 2014–08	DATE: 9/24/2015	SCALE: AS SHOWN	DWG. NO. 2014–08044	FIGURE 7

APPENDIX A

TOWN OF ATHENS ZONING ORDINANCE ATTACHMENTS

180 Attachment 1

Town of Athens

Table 1
Permitted Uses

KEY:
P = Permitted with no Planning Board or ZBA review
SP = Site plan approval by Planning Board required
SUP = Special use permit by Planning Board required

	District*									
Use	**Rr**	**Ru**	**Ru-1**	**MUC**	**LI-1**	**LI-2**	**Ag**	**OS**	**H**	**Ru-385**
Residential Uses										
Accessory apartment not in principal building	SUP	SUP	SUP	SP/SUP			SUP	SUP	SUP	SUP
Accessory apartment in principal building	P	P	P	SP/SUP			P	P	P	P
Customary residential accessory	P	P	P	P	P	P	P	P	P	P
Dwelling, multifamily	SP/SUP		SP/SUP						SP/SUP	
Dwelling, single-family	P	P	P	SP/SUP			P	P	P	P
Dwelling, two-family	P	P	P				P	P	P	SP/SUP
Manufactured home	P	P	P				P	P	P	P
Senior citizen housing	SP/SUP	SP/SUP	SP/SUP						SP/SUP	SP/SUP
Townhouse	SP/SUP		SP/SUP						SP/SUP	
Business Uses										
Agriculture, forestry, or other natural resource use, not including mine or excavation	P	P			P	P	P	P		P
Adult establishment					SP/SUP	SP/SUP				
Agribusiness	P	P	SP/SUP	SUP	SUP	SUP	P	P	P	P
Auto, boat, mobile home, trailer or RV sales/rental				SP/SUP	SP/SUP	SP/SUP				
Autobody or major repair shop				SP/SUP	SP/SUP	SP/SUP			SP/SUP	

	District*									
Use	**Rr**	**Ru**	**Ru-1**	**MUC**	**LI-1**	**LI-2**	**Ag**	**OS**	**H**	**Ru-385**
Bank				SP/SUP					SP/SUP	
Bed-and-breakfast inn	SP/SUP	SP/SUP	SP				SP/SUP	SP/SUP	SP/SUP	SP/SUP
Camp/campground	SP/SUP	SP/SUP						SP/SUP		
Car wash				SP/SUP	SP/SUP	SP/SUP				
Cell tower	SP/SUP	SP/SUP			SP/SUP	SP/SUP	SP/SUP	SP/SUP		SP/SUP
Customary business accessory		P	SP	P	P	P	P		P	P
Day-care home, family	P	P	P				P	P	P	P
Day care, group	SP/SUP	SP/SUP	SP	SP					SP/SUP	SP/SUP
Easting or drinking establishment				SP/SUP					SP/SUP	
Educational facility		SP	SP/SUP	SP/SUP					SP/SUP	
Equipment or material storage					SP/SUP	SP/SUP				
Excavation and mining, see § 180-41		SP/SUP					SP/SUP	SP/SUP		
Fueling station				SP/SUP	SP/SUP	SP/SUP			SP/SUP	
Golf course		SP/SUP								
Home occupation, major	SP/SUP	SP/SUP	SP	SP	SP/SUP	SP/SUP	SP/SUP	SP/SUP	SP/SUP	SP/SUP
Home occupation, low-impact	P	P	P	P	P	P	P	P	P	P
Hotel/motel			SP/SUP	SP/SUP					SP/SUP	
Horse boarding operation		P					P	P		P
Junkyard, see § 180-44					SP/SUP	SP/SUP				
Kennel			SP/SUP	SP/SUP			SP/SUP	SP/SUP		SP/SUP
Laundromat, dry cleaning, laundry pickup				SP						
Light industrial					SP	SP				
Medical clinic or office			SP	SP					SP/SUP	
Motor vehicle or scrap junkyard					SP/SUP	SP/SIP				
Nature interpretive centers	P	P	P	P	P	P	P	P	P	P
Personal service establishment			SP	SP					SP	
Professional, government, business office			SP	SP					SP/SUP	
Recreational use, indoor	SP/SUP	SP/SUP		SP/SUP				SP/SUP ***		
Recreational use, outdoor	SP/SUP	SP/SUP		SP/SUP				SP/SUP ***		
Religious facility			SP	SP					SP	
Resort		SP/SUP								

	District*									
Use	**Rr**	**Ru**	**Ru-1**	**MUC**	**LI-1**	**LI-2**	**Ag**	**OS**	**H**	**Ru-385**
		(1)								
Retail sales			SP	SP	SP/SUP	SP/SUP			SP	
Riding stable	SUP	P					P	P		P
Roadside stand	P	P	SP	P			P	P	P	P
Sign	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Sit-down eating or drinking establishment			SP	SP					SP	
Storage or deposition of soil, waste material, see § 180-41					SP/SUP	SP/SUP				
Swimming pool	P	P	P	P	P	P	P	P	P	P
Trailer rental/sales				SP/SUP	SP/SUP	SP/SUP				
Warehouse					SP/SUP	SP/SUP				
Water recreation	SP/SUP	SP/SUP					SP/SUP	SP/SUP		SP/SUP
Water storage facility	SP/SUP	SP/SUP		SP/SUP	SP/SUP	SP/SUP	SP/SUP	SP/SUP	SP/SUP	SP/SUP
Wind energy conversion system	SP/SUP	SP/SUP			SP/SUP	SP/SUP	SP/SUP	SP/SUP		SP/SUP

NOTES:

(1) Resorts in the Ru District allowed only as per § 180-59 (Planned Unit Development)

* Allowed uses for any of the Watershed Overlay Districts shall be the same as the base district, except where noted in § 180-30.

*** Recreation use allowed only as defined as passive recreation

180 Attachment 2

Town of Athens

Table 2
Density and Dimensions

Use	Utility Class	Residential Density (number of acres or square feet per dwelling required)*	Lot Area Required Per Nonresidential Use	Minimum Lot Width (feet)	Minimum Front Yard Setback (feet)	Maximum Front Yard Setback (feet)	Minimum Lot Depth (feet)	Minimum Each Side Yard (feet)	Minimum Rear Yard (feet)	Maximum Building Height (feet)	Maximum Percent Parcel Coverage (all lots)
Rr	Class 1	15,100 square feet	20,000 square feet	100	25	N/A	100	15	25	35	30
	Class 2	30,000 square feet	20,000 square feet	125	25	N/A	100	40	25	35	30
	Class 3	65,000 square feet	1 acre	150	25	N/A	100	40	25	35	30
Ru	Class 1	1 DU per 3 acres	20,000 square feet	100	50	N/A	120	30	50	35	30
	Class 2	1 DU per 3 acres	20,000 square feet	100	50	N/A	120	30	50	35	30
	Class 3	1 DU per 3 acres	1 acre	100	50	N/A	120	30	50	35	30
Ru-1	Any class	1 DU per 1 acre	1 acre	75	25	N/A	100	30	50	35	30
MUC	Class 3	130,000 square feet**	1 acre	200	40	N/A	150	25	50	35	60
LI-1	Any class	No residential uses allowed	2 acres	50	100	N/A	200	50	50	45	50
LI-2	Any class	No residential uses allowed	2 acres	50	100	N/A	200	50	50	45	50
Ag	Class 3	1 DU per 10 acres	1 acre	200	75	N/A	150	50	50	35	25
OS	Class 3	1 DU per 5 acres	1 acre	250	75	N/A	175	50	50	35	25

Use	Utility Class	Residential Density (number of acres or square feet per dwelling required)*	Lot Area Required Per Nonresidential Use	Minimum Lot Width (feet)	Minimum Front Yard Setback (feet)	Maximum Front Yard Setback (feet)	Minimum Lot Depth (feet)	Minimum Each Side Yard (feet)	Minimum Rear Yard (feet)	Maximum Building Height (feet)	Maximum Percent Parcel Coverage (all lots)
H	Class 1	10,000 square feet	20,000 square feet	80	25	35	80	20	25	25	40
	Class 2	20,000 square feet	20,000 square feet	80	25	35	80	20	25	25	40
	Class 3	31,500 square feet	1 acre	80	25	35	80	20	25	25	40
Ru-385	Class 1	1 DU per 3 acres	20,000 square feet	100	75	N/A	100	50	50	35	30
	Class 2	1 DU per 3 acres	20,000 square feet	100	75	N/A	100	50	50	35	30
	Class 3	1 DU per 3 acres	1 acre	100	75	N/A	100	50	50	35	30
HLW	Class 3	1 DU per 5 acres	2 acres	200	75	N/A	120	50	50	35	15
GLW	Class 3	1 DU per 5 acres	2 acres	200	75	N/A	120	50	50	35	15
BLW	Class 3	1 DU per 5 acres	2 acres	200	75	N/A	120	50	50	35	15

NOTES:

* Unless the Planning Board allows for application of an average lot size as per § 180-12C, this shall be the minimum lot size.

** Residential uses are allowed as per Table 2, but not encouraged in the Highway Commercial District.

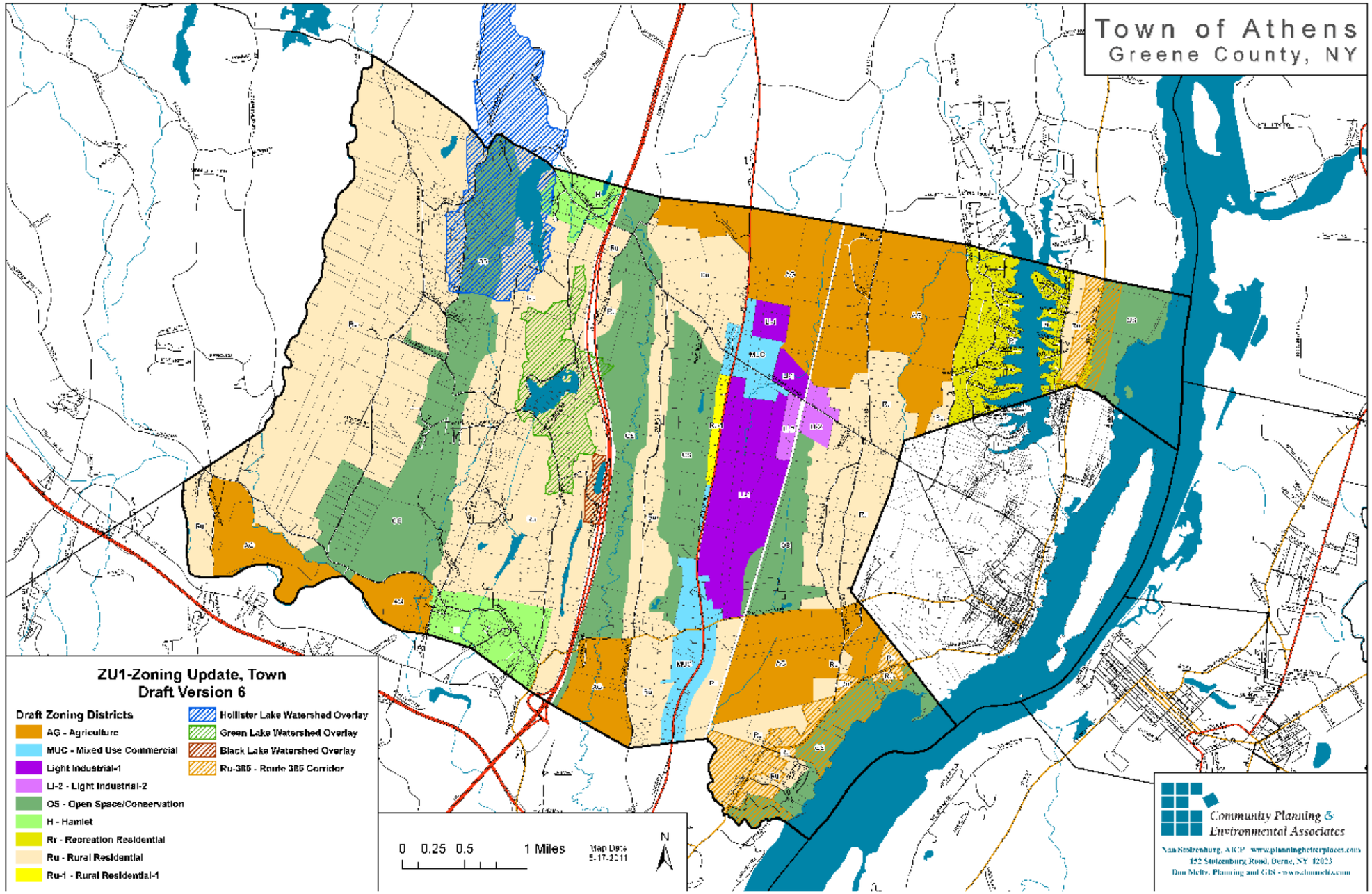
Class 1 = Public utility provided, water and sewer

Class 2 = Either public water or sewer

Class 3 = On-lot water and sewage disposal

N/A = Not applicable

180 Attachment 3



APPENDIX B

ANALYTICAL REPORTS
(PROVIDED ON CD)

APPENDIX C

PROJECT SCHEDULE

Project Schedule (BCP #C420029)
Northeast Treaters of New York, LLC
Athens, New York
(as of 10/22/2015)