Utility Assessment and Site Feasibility Study

Sunrise State Park

East Haddam, Connecticut

December 2010

FUSS & O'NEILL
Disciplines to Deliver

146 Hartford Road
Manchester, CT 06040

Project No. 2010 0950 A10

FUSS & O'NEILL

Table of Contents

Utility Assessment and Site Feasibility Study
Sunrise State Park

FUSS & O'NEILL

Table of Contents

Utility Assessment and Site Feasibility Study
Sunrise State Park

Executive Summary

On behalf of the State of Connecticut Department of Environmental Protection, Fuss & O'Neill, Inc. has completed a feasibility study to assess existing utilities and identify areas of environmental concern at Sunrise State Park in East Haddam, Connecticut. In addition, Fuss & O'Neill EnviroScience, LLC conducted a screening of hazardous materials in existing buildings, including asbestos, lead based paint, and PCB-containing material. These investigations were conducted to facilitate potential development of the approximately 144-acre parcel, which was formerly occupied by a summer vacation resort from 1912 through 2008. The State of Connecticut purchased the facility upon the closure of the Sunrise Resort and wishes to maximize the potential of the property as an attractive and beneficial public destinatation. The property's prime waterfront location and accessibility via Route 151 provide opportunities for a wide range of uses.

The park currently contains eighty-two structures in varying conditions and is served by a network of on-site utilities. Consistent with the nature of the historic use of the Site as a summer resort, most utilities on site appear to be intended for summer seasonal use. Isolated components of the overall infrastructure system, including existing water supply wells, components of selected sub-surface septic disposal systems, and portions of the electrical distribution network may have some value in a re-development scheme if they can be logically incorporated into the new use. Proposed re-use will be subject to applicable permit and testing requirements.

The environmental screening revealed several Areas of Environmental Concern on the parcel that are a result of the Site's historic use as a public vacation resort. These areas are associated with storage tanks, electrical transformers, septic structures, and resort maintenance and operations areas. The Areas of Environmental Concern warrant further investigation prior to re-development and may require some off-site disposal of controlled materials.

The hazardous materials screening revealed some asbestos containing materials in components of existing buildings on site, common to the time period during which many of the buildings were constructed or renovated. It also revealed generally low levels of lead within some of the paints used on buildings, although none that resulted in hazardous levels of lead waste after Toxic Characteristic Leachate Procedure analysis. Although some potential PCB-containing fixtures were identified on site, PCBs were not found in samples of window caulking.

This Feasibility Study, in conjunction with the *Historic Assessment* prepared by the CTDEP and the *Hazardous Materials Survey Report* prepared by Fuss & O'Neill EnviroScience, LLC, provides a clearer, more comprehensive picture of the Site's historic use and existing conditions than previously available. The document will allow potential developers to quickly become familiar with the Site, while simultaneously providing the State of Connecticut with clearly defined set of recommendations for more focused, cost-effective evaluations to further understand site constraints and development potential.

1 Introduction

Fuss &O'Neill, Inc. has been retained by the Connecticut Department of Environmental Protection (CTDEP) to conduct a utility assessment and site feasibility study at Sunrise State Park located in East Haddam, Connecticut. The purpose of this study is to summarize known existing conditions to facilitate the future development of the parcel. As part of this study, Fuss & O'Neill conducted an environmental screening of the park as well as an asbestos and lead survey of the structures on the Site. A photographic record of pertinent site features (organized by the section in which they are referenced) is provided as *Appendix A*.

2 Site Information

2.1 Site Description and Physiographic Setting

Sunrise State Park (herein referred to as "the Site") is located on the western side of Leesville Road/Route 151 in a residential zone of East Haddam, Connecticut (Middlesex County). The 144-acre Site shares a common boundary line with the 300-acre Machimoodus State Park to the southeast and the Salmon River to the west, and benefits from approximately 4,700 feet of river frontage. The main entrance to the property is from State Route 151 to the northeast. A portion of a United States Geological Survey (USGS) topographic map showing the site location is provided as *Figure 1*, and an overall site layout map is included as *Sheet GI-401*.

Sunrise State Park is the newest of five state parks located within East Haddam, among Gillette Castle State Park, Devil's Hopyard State Park, Machimoodus State Park, and Brainard Homestead State Park. East Haddam has a population of 8,941 (2009 estimate, City-Data.com) and is located approximately 25 miles southeast of Hartford, approximately 17 miles northeast of New London, and fourteen miles north of the confluence of the Connecticut River and Long Island Sound.

Prior to its acquisition by the State of Connecticut in 2008, the Site was formerly used as a summer vacation resort and conference meeting center. This facility incorporated an extensive campus with the capacity to support multiple outings and events simultaneously. Services consisted of housing, food service, recreation, exercise, dining, laundry, and community conferencing. Today, many of the former resort buildings and structures are still present, but are currently unused. A site layout map including buildings, driveways, and other major features is included as *Figure 2*.

The 144 acres of the property can be described to be approximately 45 percent developed and 55 percent wooded. "Developed" generally refers to the areas that have been built upon, mowed, and used for service, maintenance and storage. "Undeveloped" land is almost completely forested.

Currently, there are eighty-two (82) buildings and structures located on the Site. The structures are of varying age and condition with some structures pre-dating the Site's use as a resort destination. These structures were guest cabins, dining and recreational facilities and support

structures for the resort's operations. The newest structures appear to have been constructed in the 1970's. Nearly every building on Site is served by one or more on-site utilities, including domestic water, sub-surface septic wastewater disposal, and electricity. An assessment of existing site utilities is summarized in *Section 3* of this document.

A number of above-ground storage tanks, sanitary drywells, and other features of environmental interest are located throughout the Site. A screening of the property for areas of environmental concern is summarized in *Section 4* of this document.

2.2 Site History

The Town of East Haddam was a popular summer destination during the first half of the twentieth century. The Site operated as a resort facility from 1916 through 2008 and was one of approximately two dozen resorts located within the town. During that time the resort operated under a number of owners and experienced significant growth. At its peak in popularity, the resort served 4,000 guests on a weekly basis.

The State of Connecticut completed an extensive review of the history of the Site prior to its purchase of the facility in 2008. For a complete history of the Site, please refer to the report entitled *Sunrise Resort, Historic Assessment* prepared by the CTDEP, and dated October 2008, which is incorporated into this report by reference. Additionally, a summary of existing buildings on site, including building name (as they were commonly known during the resort era), building number, and former use is attached as *Table 1-1*.

The subject property can be generally divided into areas as they were historically known during the operation of the resort facility:

- Echo Village includes buildings with historic value in the northeastern portion of the Site, including the Samuel Elmore Place ("Toll House") built in 1770, and the I. Chapman Jr. Place ("White House"), built in 1820. These and several other more modern buildings are clustered in the portion of the developed property closest to Route 151.

- The Club House/Office Area includes the main administration building, dance hall, main pool, playgrounds, baseball field, and hotel "cabanas" clustered adjacent to the main parking fields in the developed center of the property.

- The Folly Area includes guest and staff cabins in the northernmost portion of the developed site, and is in the vicinity of the Barbeque Pavilion, tennis courts, multi-purpose recreational building known as "The Frog", and the only known winterized building on site known as "The Apartment".

- The Single Cabin/Double Cabin Area incorporates the main cluster of guest buildings on site, also including several staff cabins. This area, built around the rim of one of the major hills on site, is south of the Folly Area and east of the Club House/Office Area.

- The Waterfront Cottages line the northern portion of the property's frontage along the east bank of the Salmon River. This area included guest cabins built landward of the waterfront perimeter access road, west of the Single Cabin/Double Cabin Area.

- The Waterfront Pavilion Area included the Main Dining Hall and outdoor pavilions in the southwest corner of the developed site. This area is clustered at the bottom of the main hill on site, and may be accessed from the Waterfront Cottage Area to the north, the Arthur's Paradise and the Motel Area to the southeast, and the Club House/Office Area to the east.

- The Motel Area includes one single-story guest room building and two double-story guest room buildings, in addition to a Mini-Golf Course, Spa Area, and adjacent recreational fields. This area is in the southern portion of the developed site, west of Echo Village, east of Arthur's Paradise, and south of the Club House/Office Area.

- Arthur's Paradise includes the maintenance buildings and facilities for operation of the historic resort. A Maintenance Garage, storage Quonset Hut, and debris piles comprise this area west of the Motel Area and southeast (uphill) of the Waterfront Pavilion Area.

- The Campground Area is located south of the Motel Area and is accessed by bridge over the large wetland system and intermittent watercourse.

Each of these general areas may be found labeled on the attached figures and sheets. Where appropriate, these areas are referenced in the discussion for clarity.

2.3 Topography and Site Geology

The topography of the Site slopes towards the west to the Salmon River (USGS, 1967). The elevation ranges from 160 feet above sea level by the entrance road at Route 151 down to five feet above sea level at the edge of the river. This vertical change in elevation of roughly 155 feet over the horizontal distance of 1,050 feet yields an average slope of approximately 15 percent. The regional topography similarly slopes towards the Salmon River.

The forested areas are in the southern portion of the parcel, abutting Machimoodus State Park. In the southern portion, slopes are steeper and the highest elevation can be seen at elevation 205 dropping to about elevation five at the river, which is a loss of 200 vertical feet over a horizontal distance of approximately 800 feet yielding an average slope of 25 percent. This area also encompasses a stream that drains two ponds on the Machimoodus parcel and flows just below the abandoned corral before draining into the Salmon River. The very hilly terrain is a mix of both deciduous and coniferous trees.

Surficial material at the Site is mapped as two types of unconsolidated material. The western portion of the Site consists of the Salmon River deposits, which are approximately three to fifteen feet of locally cross-bedded thin to thick-bedded sand, silty-sand and gravel. The eastern portion of the Site is mapped as till to a depth of approximately ten feet. Till in the eastern portion of the Site is anticipated to be underlain by bedrock (O'Leary, 1975).

Test holes were excavated at the Site by Angus McDonald/Gary Sharpe and Associates, Inc. in 2007 to determine the feasibility of constructing septic systems to support a large residential development on the property. At a majority of the test hole locations, soil to a depth of approximately two feet below the ground surface consisted of a very fine to coarse-grained sandy loam. The sandy loam was underlain by fine to medium-grained sand coarsening to either coarse sand or pebbles. Groundwater was encountered in test holes along Leesville Road/Route 151 at depths between two and eight feet below the ground surface. Groundwater was not encountered in the other test hole locations on site. A summary of test hole results is included as *Appendix B*.

Bedrock beneath the Site is mapped as Hebron Gneiss, which is a gneiss consisting of a dark-grey schist interlayered with a fine to medium-grained calc-silicate gneiss (Rodgers, 1985). Depth to bedrock is estimated to be approximately ten feet in the eastern portion of the Site. Depth of bedrock in the western portion of the Site is unknown.

2.4 Site Hydrogeology

The quality of groundwater beneath the Site is classified by the CTDEP as GA (CTDEP, 1993). Groundwater classified as GA is defined by CTDEP as groundwater within the area of existing private water-supply wells or an area with the potential to provide water to public or private water-supply wells. The CTDEP presumes that groundwater in such an area is, at a minimum, suitable for drinking or other domestic uses without treatment. The designated uses for Class GA groundwater are as existing private and potential public or private supplies of water suitable for drinking without treatment and as baseflow for hydraulically-connected surface water bodies (CTDEP, 1996).

The direction of groundwater flow within the surficial geological unit is influenced by a number of factors, including the physical characteristics of the geological unit (such as particle size), the local topography, the presence of surface water bodies, the depth to bedrock, and the type of aquifer. For an unconsolidated, unconfined aquifer, groundwater generally flows in the direction of the greatest topographic gradient. Based on USGS mapping and field observations of the local topography and surface water hydrology, the inferred groundwater flow direction is generally to the west towards the Salmon River.

Five inland wetland areas are located on the Site, which may locally influence lateral and vertical groundwater flow in areas adjacent to the wetlands. An unnamed tributary of the Salmon River runs through the Motel Area, south of The Spa Building (#59) and the Maintenance Building (#66). Groundwater was encountered during the excavation of six test holes at depths ranging from 2.3 feet to 7.8 feet below the ground surface by Angus McDonald/Gary Sharpe and Associates, Inc. in 2007. Six groundwater observation wells, installed by Angus McDonald/ Gary Sharpe and Associates in 2008 for continued groundwater measurement, were observed in the vicinity of the Maintenance Building (#66) (Appendix A, Photo 2-1). At the time of

inspection, the wells were locked and measurements of depth to groundwater could not be obtained.

The nearest surface water body, the Salmon River, abuts the Site to the west (USGS, 1967). The aforementioned unnamed tributary that runs through the central portion of the Site connects with the Salmon River to the west. The Salmon River is classified by the State of Connecticut as B/A. Such inland surface waters may not be suitable for the following designated uses: existing or proposed drinking water supply, fish and wildlife habitat, recreational use (may be restricted), agricultural and industrial supply, and other purposes (CTDEP, 2002).

The unnamed tributary that flows through the Site is not specifically classified by the State of Connecticut and, therefore, is Class A (CTDEP, 1993). Such inland surface waters are known or presumed to be suitable for drinking-water supply (CTDEP, 2002).

2.5 Wetlands and Regulated Areas

2.5.1 Description of Existing Wetlands

On-site wetlands were delineated in April of 2007 by Richard Snarski, Soil Scientist, and mapped on an A-2 boundary survey prepared by Angus McDonald/Gary Sharpe & Associates, Inc. (Angus McDonald, 2008) via GPS data collection. Neither a wetlands delineation report nor a wetlands function and value report are known to have been prepared.

For the purposes of this report, mapped wetlands are identified on the attached figures and sheets as Wetlands A, B, C, D, and E. Wetland soils were interpreted based upon a review of NRCS soil mapping and knowledge of the Site.

- Wetland A is an isolated 0.21 acre wetland area located near the entrance of the Site. Unmapped as wetland soil by the NRCS, this wetland has formed in an area of Charlton-Chatfield soils. It is likely that this soil is either an Aquent (recently formed, poorly drained soil) or an Aquept (i.e., Ridgebury, Leicester, Whitman soil series).

- Wetland B is a 4.75 acre wetland area between Echo Village, the Motel Area and Machimoodus State Park. This soil is unmapped by the NRCS, but is likely an Aquept (i.e., Ridgebury, Leicester, Whitman soil series). These soils are poorly drained and formed in till soils in depressions and drainage ways.

- Wetland C is a 1.28 acre perennial watercourse that flows west from Wetland B to the Salmon River. Some adjacent wetlands may be present; however, the predominant regulated area is a watercourse.

- Wetland D is a 8.00 acre wetland area located along the Salmon River, consisting of alluvial and floodplain soils. NRCS maps the areas to the north and south as Suncook and Pootatuck soil series, respectively.

- Wetland E is an isolated 0.45 acre wetland area in the southern portion of the Site. Unmapped as wetland soil by the NRCS, this wetland has formed in an area of Merrimac soils. It is likely that this soil is either an Aquent (recently formed, poorly drained soil) or an Aquept (i.e., Walpole soil series)

Combined, these areas total approximately 14.69 acres. A description of each of the wetland areas is provided in attached *Table 2-1*.

Also notable is a small unnamed stream that drains several ponds on the Machimoodus State Park property and then flows for approximately one half mile on the property generally to the west and northwest to discharge to the Salmon River. This stream flows for the most part through the wooded portion of the property.

During the site inspection the wetland areas were viewed for evidence of dumping or other impacts from past Site activities.

2.5.2 Regulated Areas

Removal of debris from a wetland area or modifications to infrastructure within the Upland Review Area may result in a Regulated Activity that will require a permit from the East Haddam Wetlands Commission.

- A "Regulated Activity" is defined in the Town wetland regulations as any operation within or use of a wetland or watercourse involving removal or deposition of material, or any obstruction, construction, alteration or pollution, of such wetlands or watercourses.

- The "Upland Review Area" is defined in the Town wetland regulations as any area one hundred (100) feet (lateral distance) from wetlands or watercourses, or within four hundred (400) feet (lateral distance) from a vernal pool.

2.5.3 Endangered Species

A survey of the National Diversity Database (NDDB) was conducted to determine the proximity of the Site to any known NDDB areas. As depicted in *Figure 3*, almost the entirety of the property lies within designated NDDB areas. A complete list of the corresponding species may be obtained via formal request to the CTDEP Wildlife Division.

2.5.4 Recommendations

We recommend that a Wetlands Functions and Values Report be prepared by a qualified professional for all wetland areas identified on site, including a screening for vernal pools. Such a report will help identify potential impact to ecosystems and other sensitive environmental receptors, including threatened and endangered species in the vicinity.

Additionally, we recommend that a formal request be submitted to the CTDEP Wildlife Division for confirmation of NDDB Areas, and to obtain guidance on measures to be taken in consideration of potential development activities to minimize impact to sensitive wildlife areas.

3 Utility Assessment

On November 19th, 2010, Fuss & O'Neill conducted a site investigation to identify utilities serving the former resort facility. Evidence of domestic water, electrical, sub-surface sanitary and limited storm drainage utilities were found during the investigation. This information, along with information obtained during an interview with former Resort Manager Mr. James Johnson on the same day, was compiled to generate a plan depicting the approximate (or inferred) locations of the historic utilities systems. This *Existing Site Utilities Plan* is attached as *Sheet CU-101*.

Consistent with the historic use of the Site as a summer resort, most former utility services and supply lines appear to be intended for seasonal use, having been temporarily decommissioned for the colder months of the year. Additionally, since the nearest public water and sanitary sewer systems are located four miles to the south in East Haddam Village, water and wastewater utilities were found to be served by on-site infrastructure.

East Haddam is not currently served by natural gas distribution infrastructure. Therefore, hot water and fuel-dependent equipment on site was served by individual oil, diesel, or propane storage tanks. Many of the buildings were observed to contain a dedicated hot water heater, air conditioner, and in several places, a dedicated or shared fuel tank.

A discussion of utilities observed, including existing conditions and potential for reuse, is included below by utility type.

3.1 Domestic Wells and Water Distribution Systems

3.1.1 Wells and Water Supply

Most buildings on site, including guest and staff cabins, appear to be directly supplied with potable water for drinking, food preparation, and lavatory purposes. Domestic water was supplied to the resort via private wells on site. Six possible well locations were identified:

- Two at-grade wellhouses with the floor were identified along the eastern bank of the Salmon River (Well #1 is located south of the Waterfront Pavilion Area and Well #2 is located north of the Waterfront Cottages). These wellhouses are located less than 100 feet from the edge of the watercourse (*Appendix A*, Photos 3-1 and 3-2).

- One above-grade enclosed wellhouse (Well #3) was identified south of the Motel Area and adjacent to the Campground Area (*Appendix A*, Photo 3-3).

- One wellpoint (Well #4) was located south of the White House in Echo Village and is adjacent to an above-ground 3,000 gallon water storage tank (*Appendix A*, Photo 3-4).

- One or possibly two concrete-encased wellpoints (Wells #5A and #5B) were identified on the northern edge of the large wetland system west of Echo Village (*Appendix A*, Photos 3-5 and 3-6).

The locations of the wells can be found on the *Site Utilities Plan (Sheet CU-101).*

3.1.2 Water Distribution System

In general, water from the wellhouses and wellpoints was pumped uphill to holding tanks at the upper elevations, and distributed back downhill to the various buildings and facilities. Based on discussion with Mr. Johnson, and through select field verification, water supply is believed to follow the following configuration:

- Well #1 reportedly pumped water uphill past Arthur's Paradise and the Motel Area, joining with Well #3.
- Well #2 reportedly pumped water uphill to a holding tank/junction wellhouse in the Folly Area.
- These two legs reportedly combined with Wells #4, #5A, and #5B before confluence at a central distribution point.
- The Campground Area is reportedly served via direct connection from Well #4.

Source lines from the wellhouses and wellpoints were not found, indicating that these lines may be buried. However, water supply to many cabins and buildings in the western portions of the Site appears to be distributed by flexible piping found on the ground surface. This observation is consistent with the historic use of the Site as a summer facility, with the lines drained at the end of the resort's operating season.

With little or no groundcover insulation, cold weather use of the distribution piping on or near the ground surface would not be practical. In addition, protection of this system from damage during any demolition or construction phase is not prudent or practical. Moreover, connection points at many of the cabins are exposed in open-air locations, owing to the raised-foundation construction that is typical of hillside cabins. In general, water supply to the Waterfront Cottages, Single Cabin/Double Cabin Area, Campground Area, and possibly the Waterfront Pavilion Area do not appear practical for cold weather use.

However, water distribution piping to Echo Village, the Club House/Main Office Area, and possibly the Motel Area and "The Apartment" in the Folly Area may be far enough below grade to allow cold-weather re-use. Additionally, the water source piping from the wellhouses and wellpoints may also be at an acceptable frost-protection depth.

3.1.3 Water Supply Quality

Records obtained from the former owners indicate water quality is generally acceptable. The last round of physical testing done in support of the public water system (PWS) was performed in August of 2008. Copies of the test results are included in *Appendix C*. The files indicate that one violation of public health codes was reported at the Site for failure to monitor total fecal coliform and physical parameters during the period from July 1 through September 30, 2001.

Sunrise Resort maintained a Public Water System during its operation; the system was classified as a Transient Non-Community Public Water System (CT0410164). Public water systems are regulated by the Connecticut Department of Public Health (CTDPH) under one of three types of classifications:

- "Community Water Systems", which serve at least 25 residents throughout the year
- "Non-transient, Non-Community Systems" which, are not community systems and regularly serve at least 25 of the same people over six months of the year at places like schools and office buildings; and
- "Transient Non-Community Systems" which do not meet the definition of a non-transient, non-community water system such as restaurants, parks, etc. Permit approvals from CTDPH will be required to re-instate the potable well network at the Site as a public water system.

3.1.4 Permitting and Document Research

A search of available files and an interview with the former Site owner revealed that construction data and performance data for the wellfield is not available. Mr. Chris Roy with the CTDPH reported during a telephone interview that files for the facility are incomplete. The department's files indicate there is one six-inch diameter drilled well of unknown depth, age and yield on-site. It is unclear as to which well is recorded with the department.

Well depth, casing depth, static water level elevation, stabilized water level elevation, sustained yield and zone-of-influence data are parameters that will be needed to evaluate the capacity of the well field. These data will also be required to complete CTDEP and CTDPH permit applications. It is not known if the wells are screened in bedrock or unconsolidated material. Withdrawal may occur through an open-borehole (bedrock) or through a well screen (unconsolidated material). The former owner reported the two wells located in close proximity to the Salmon River produced the greatest yields; however, it is not certain that these wells will meet current health codes.

The Site does not appear on the on-line CTDEP list of Registered and Permitted Diversions. The CTDEP Inland Water Resources Division regulates activities that cause, allow or result in the withdrawal from, or the alteration, modification or diminution of, the instantaneous flow of the waters of the state. In general, a permit is required to conduct activities that result in the alteration of surface water flows, and withdrawals of surface and ground water exceeding 50,000 gallons in any 24-hour period. Diversions existing on or before July 1, 1982, which were

registered with the CTDEP on or before July 1, 1983, do not require a permit. However, since the Site does not appear on the CTDEP list of Registered Diversion, it is likely that a CTDEP Inland Wetlands Permit will be required if the cumulative proposed withdrawal of the Site wellfield exceeds 50,000 gallons per day.

3.1.5 Recommendations

The PWS registered for the Site may be re-activated in support of future uses; however, testing of the water and system components will be required. Before initiating the CTDEP or CTDPH permit processes, we recommend the following tasks be completed to evaluate the potential for success in obtaining CTDEP and CTDPH approvals to reinstate the existing wellfield for use as a water supply.

- Remove the pumps from the wells and inspect the equipment.
- Upgrade the well-heads to comply with current health codes.
- Perform a down-hole video inspection to assess the integrity of the well casing and borehole/well screen.
- Perform a six hour yield test at each well to determine a target pumping rate to achieve a stable drawdown as defined in Section 19-13-B51K of the Regulations of Connecticut State Agencies.
- At the completion of the yield test, collect a water quality sample from each well and analyze the sample for the parameters listed in Section D of the *CTDPH Well Water Quality and Quantity Suitability Application*.

To evaluate the potential success for the existing wellfield to receive permit approvals from CTDEP and CTDPH, the information obtained from completion of the above tasks would then be used to:

- Fill out the CTDPH *Public Water System Well Site Approval Application*.
- Evaluate the data with respect to determining if the wells are in a useable condition, meet the CTDPH water quality criteria, and meet the required separating distances established for the future anticipated target pumping rates.

To confirm viability of the water system distribution system, a sub-surface investigation including magnetic tracing or possibly test pit excavation may be conducted to determine the depth and ultimately, the level of frost protection available for the system. A thorough examination of the condition of the pipe is also recommended in light of the unknown age of the network and the fact it has been inactive since 2008.

The tasks identified above should be considered the minimum level of due diligence that will be required for permit approvals. It will be important early in the design process to determine if the existing well network meets the requirements of the future development. Due to the close

proximity of wetlands and the Salmon River to the existing water supplies, a regulatory concern that will need to be addressed in the permit applications is the potential for induced surface water infiltration to occur as a result of pumping. This may be determined through a simultaneous pumping test of all of the Site wells at the stabilized pumping rates. The test would occur for a 36 hour or 72 hour period. The test duration would be based on the well field target pumping rate.

In addition to monitoring stabilized drawdown in the pumping wells, monitoring of water levels in observation wells and surface water would also likely be required by the regulators to assess well interferences and potential impacts to surface water/wetlands. This will be reviewed in reference to the seven-day consecutive low flow with a ten year return frequency (7Q10) for the Salmon River to assess potential impact on habitats, wetlands and other sensitive environmental features.

3.2 Subsurface Disposal Systems

Wastewater from all buildings on the property was disposed of via several types of on-site subsurface septic systems. Systems included cesspools ("drywells"), septic holding tanks, leaching fields, and wetwell/forcemain configurations. A summary of observed and reported uses of subsurface septic systems are discussed below:

- The Single Cabin/Double Cabin Area, Waterfront Cottages, several of the more modern buildings in Echo Village, and the single-story motel in the Motel Area were served by individual or shared drywells.

- The Waterfront Pavilion Area drained to a central wetwell west of the open-air seating area adjacent to the Main Dining Hall (*Appendix A,* Photo 3-7). Effluent from this wetwell was pumped uphill to a drywell behind the Maintenance Building in Arthur's Paradise. (*Appendix A,* Photo 3-8) This wetwell was observed to contain debris, with the pump itself disconnected and removed from its mounting.

- The Club House/Main Office Area drained to a leaching field downgradient of the Main Office and another downgradient of the main pool and cabanas.

- The two-story motels, outdoor restroom building, and Spa in the Motel Area drained to several leaching fields in the surrounding grassed areas.

- The Folly Area appears to drain to several septic tanks and drywells, possibly draining to unknown leaching fields.

- The White House in Echo Village appears to drain to a dedicated leaching field to the east.

- The Main Pool north of the office building was filtered by a triple tank system, and was drained for the winter periods via gravity drains in the pool bottom. The actual drain path is unconfirmed, but reportedly drains into the storm piping running down the

central valley and ultimately into the Salmon River. Alternatively, pool water could have drained into the leaching field behind the cabanas.

- The Main Dining Hall in the Waterfront Pavilion Area was used to prepare daily meals for the resort. As such, this building was equipped with a grease interceptor, which separated fats, oils, and grease from wastewater prior to draining to the pumping wetwell.

3.2.1 Permitting and Document Research

A review of the Chatham Health district files did not produce any information pertaining to sizing or permitting of the on-site subsurface septic systems. Additionally, a review of the CTDEP files only yielded P-5 determinations, indicating that no subsurface septic system exceeds a daily capacity of 5,000 gallons per day. The relatively low capacities of the on-site systems may limit the potential future uses contributing wastewater flows, and should be considered when siting future development.

A review of test boring reports and of test hole results from subsurface investigations conducted by Angus McDonald/Gary Sharpe & Associates on April 25, 2007 and March 5-7, 2008, respectively, revealed significant depths of highly permeable materials (sands and gravels) within the potential leaching field cross sections. Therefore, it appears that the property in general has high potential to support septic leaching fields, possibly with considerable capacities. The aforementioned test boring reports and a summary of test hole results are attached as *Appendix B*.

3.2.2 Recommendations

Due to the nature of construction, reuse of existing drywells serving individual cabins or buildings may be impractical. Excavation efforts and costs to exhume, inspect, and test these systems may exceed those required to directly replace or upgrade these systems with larger, more centralized leaching fields. Therefore, reuse of subsurface septic systems in the Single Cabin/Double Cabin Area and the Waterfront Cottage Area may not be practical.

Additionally, septic force-mains or gravity drain lines on or just below the existing ground surface may not meet public health codes for coverage requirements. A specific example observed is the 4" PVC force main discharging effluent from the wetwell in the Waterfront Pavilion Area to the drywell(s) in Arthur's Paradise.

The following sub-surface septic systems may be considered for a more detailed investigation either because the system may have a larger capacity, or because the system will serve a specific building intended for possible re-use:

- The leaching fields near the White House, Toll House, and Echo Lodge in Echo Village.
- The leaching fields downgradient of the Main Office Building and Main Pool.

- The septic tank and possible leaching fields near the Barbeque Pavilion and The Apartment in the Folly Area.

- The leaching fields in the grass fields in the Motel Area.

Many of the presumed individual subsurface septic structures (particularly the drywells and leaching fields) that were indicated by the State were not able to be field verified during the site visit. Nor were many of the design and permitting parameters that may determine potential re-use.

Should the larger sub-surface systems be considered for potential re-use, we would recommend a more detailed investigation of these structures involving inspection and assessment of the interior conditions of the septic structures in question. If the inspected structures appear to be in good condition, more intensive investigations and tests may be warranted. These additional tests may include:

- Internal inspection of leaching field piping via closed circuit television (CCTV).

- Conducting a dye test to determine effectiveness of leaching field.

Additionally, if potential development scenarios would require a subsurface disposal system with a capacity of 5,000 gallons per day or greater, we would first recommend a pre-application meeting with CTDEP wastewater personnel to discuss system requirements.

3.3 Electrical and Telecommunications

Electricity is provided to the Site via Connecticut Light and Power (CL&P) distribution lines along Route 151. Primary service lines originating from CL&P Pole #3509 on Route 151 bring electrical power westerly into the property. This service line splits into several directions from CL&P Pole #13 on property owned by The Elm Camp Company, Inc. Layouts of the electrical runs described below are depicted on the attached *Site Utilities* Plan, including field-located pole numbers.

The northern component splits into two sub-components at CL&P Pole #22:

- The first sub-component travels north towards the Folly Area, turning west past The Apartment and down the perimeter access road to Well #2. This sub-component appears to serve the Folly Area and the Waterfront Cottages.

- The second sub-component travels west past the Main Pool and down the central valley past the Double Cabins, supplying power to the Waterfront Pavilion Area. This sub-component appears to serve the Club House/Main Office Are, recreational fields, Single Cabin/Double Cabin Area, and the Waterfront Pavilion Area.

The southern component splits into two sub-components at CL&P Pole #3328:

- The first sub-component travels west down the perimeter access road past Arthur's Paradise to Well #1. This sub-component appears to serve Arthur's Paradise.
- The second sub-component travels south past the Motel Area to Well #3. This sub-component appears to serve the Motel Area and the Campground Area

A secondary component splits from the main line near CL&P Pole #15, adjacent to the White House:

- This component travels parallel to the main distribution line and appears to serve the light poles along the main access drive and parking fields.
- Echo Village appears to be served directly from this or the main distribution line.

Service connections to individual buildings on site are of questionable integrity. Electrical wiring that serves the individual Waterfront Cottages, Single Cabins, Double Cabins, and several of the outlying buildings in the Folly Area, Motel Area, and Echo Village is secured to trees, buildings, or aging secondary utility poles in poor condition. Re-use of this wiring in a potential development scenario would not be practical. In addition, protection of this system from damage during any demolition or construction phase is not prudent or practical.

The major buildings on site also appear to have been provided telecommunications service. A private phone box was discovered outside of the main office containing a printed list of property phone extensions (*Appendix A*, Photo 3-9). No other information regarding on-site telecommunications was available.

3.3.1 Permitting and Document Research

Layouts, bearings and distances of known fixed easements on the property can be found on the Class-A-2 boundary survey previously prepared by Angus McDonald/Gary Sharpe and Associates Inc., entitled *Property Survey Plan Prepared for the State of Connecticut Department of Environmental Protection, Leesville Road – Conn. Route 51, East Haddam, Connecticut, Date: May 20, 2008*.

3.3.2 Recommendations

Primary electrical infrastructure, including utility poles capable of supporting distribution lines appear to be available to most, if not all, developed areas of the property. The main sub-components of the electrical distribution system appear to cover the entirety of the developed Site, ultimately providing electrical power to wells at the terminus of all but one service line. This infrastructure appears to be in a potentially re-usable condition, or at least with minimal replacement.

However, most private lines serving individual cabins and lighting-dedicated utility poles do not appear to conform to current installation standards. Reuse of this infrastructure, including electrical wiring and utility poles, may not be practical due to the lack of design life apparent to remain in existing conditions. Remaining electrical components including transformers and switch gear appear to be antiquated and in need of upgrades and replacement.

3.4 Stormwater Drainage Systems

3.4.1 Description of Drainage Systems

The Site lies entirely within the watershed for the Salmon River. The river is a popular recreational destination for boaters and paddlers in southern Connecticut and was a significant attraction for the summer resorts in East Haddam.

In general, rainfall from the Site appears to run off to wooded or otherwise undeveloped surfaces on the property. Roof gutters and downspouts (where employed) generally discharge directly to the surrounding ground surface, and few, if any, stormwater structures can be observed on site.

Of particular exception is a stormwater drainage line (with several inter-spliced catch basins) collecting stormwater along the central valley from Main Pool cabanas in the Club House/Main Office Area to the Waterfront Pavilion Area. Even though the last recordable rainfall had been several days prior, running water could be heard flowing through this line at the time of inspection. The outfall of this piping reportedly discharges directly to the Salmon River.

3.4.2 Recommendations

A more detailed inspection of this drainage line and its suspected outfall at the Salmon River is recommended, as possible groundwater conditions, including contribution of footing/under drains in the upper buildings may be of interest in future development.

Any new development or significant rehabilitation of the park could easily incorporate Low Impact Design (LID) criteria for storm drainage. As previously mentioned, subsurface investigation revealed significant quantities of highly permeable material on Site, of high potential to promote stormwater infiltration. Additionally, the Site contains ample open space to facilitate dispersion and/or infiltration of runoff. Implementation of LID could eliminate the need for extensive piping systems.

4 Building and Environmental Assessment

4.1 Areas of Environmental Concern

On November 16, 2010 Daniel Jahne, a Licensed Environmental Professional, performed site reconnaissance to identify Areas of Environmental Concern (AOC). As defined by Standard Practice for Environmental Site Assessments E 1527-05 developed by the American Society for Testing and Materials (ASTM, 2005), AOC means:

> *…the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.*

4.1.1 Identification of AOCs

The reconnaissance screening of the Site included the physical observation of grounds, buildings, and other structures. The results of the inspection revealed the following AOCs in connection with the Site:

Table 4-1
Index of AOCs

AOC No.	Description	Photo No.
AOC-01	Above Ground Storage Tanks (ASTs)	(4-1)
AOC-02	Pole-Mounted Transformers	(4-2)
AOC-03	Suspected Underground Storage Tank (UST) at Building #69	n/a
AOC-04	Suspected UST at Building #53	(4-3)
AOC-05	Suspected UST at Building #55	(4-4)
AOC-06	Suspected UST at Building #78	(4-5)
AOC-07	Abandoned UST at Building #79	(4-6)
AOC-08	Maintenance Garage Building #66	(4-7 thru 4-10)
AOC-09	Apartment Building #79	(4-6)
AOC-10	Dry Wells/Dug Wells	(4-11)
AOC-11	Main Dining Hall Building #53	n/a
AOC-12	Barbeque Hall Building 78A&B	n/a
AOC-13	Debris Areas	(4-12 thru 4-13)
AOC-14	Septic System	n/a

The locations of the AOCs are shown on *Sheets ENV-101 and ENV-102*. A summary table describing each AOC and the associated potential release mechanism that might result in negative impacts to the subsurface if a release had occurred is attached as *Table 4-2*. Photographs of the AOCs are provided in *Appendix A*.

4.1.2 Property Transfer Law

The State of Connecticut Property Transfer Law, described in Sections 22a-134a through 22a-134e of the Connecticut General Statutes, requires the disclosure of environmental conditions when certain real properties and/or businesses are transferred. The law applies only to those properties that are deemed to be "establishments" as defined under the law. As defined by the Transfer Act (Sections 22a-134a et seq. of the Connecticut General Statutes, as amended), an establishment is:

> *…any real property at which or any business operation from which (A) on or after November 19, 1980, there was generated, except as the result of remediation of polluted soil, groundwater or sediment, more than one hundred kilograms of hazardous waste in any one month, (B) hazardous waste generated at a different location by another person or municipality was recycled, reclaimed, reused, stored, handled, treated, transported or disposed of, (C) the process of dry cleaning was conducted on or after May 1, 1967, (D) furniture stripping was conducted on or after May 1, 1967, or (E) a vehicle body repair facility is or was located on or after May 1, 1967.*

With regard to disposal of the materials at the maintenance garage, the Generator (or the entity assuming responsibility for the waste) should be aware that disposing of more than 100 kilograms of hazardous waste in one month will potentially qualifying the Site as an "establishment" that could be subject to meeting the requirements of the Property Transfer Law if the Site is ever sold. Part of the obligations of a Certifying Party to a Property Transfer Law filing is performing a formal investigation and cleanup of the Site to achieve compliance with the Connecticut Remediation Standard Regulations.

4.1.3 Recommendations

For AOCs identified as suspected UST areas (AOC-03, AOC-04, AOC-05, AOC-06) we recommend that a ground-penetrating radar survey (GPR) be completed to confirm that a UST is present. The ages of the USTs are unknown and the tanks may be beyond their expected life capacity. We recommend that identified USTs be removed and properly disposed of off-site. Confirmatory sampling of the tank graves should be performed in accordance with the Connecticut Underground Storage Tank Closure Guidance Document published by CTDEP.

The AOCs identified as the highest priority for further investigation consist of AOC-07, AOC-8, AOC-09, AOC-11, AOC-12, and AOC-14. These AOCs represent areas where past activities were associated with daily operation of the resort facilities. The potential for a release from these AOCs is therefore expected to be the highest. We recommend that limited subsurface soil sampling be performed at these AOCs to determine if a release has occurred. Constituents of concern (COCs) consist primarily of petroleum compounds and aromatic and chlorinated volatile organic compounds.

The maintenance garage (AOC-08) is the highest priority AOC that was identified at the Site. In addition, to the COCs identified above, the garage COCs consist of pesticides/herbicides, lead from acid batteries, semi-volatile organic compounds, and polychlorinated biphenyl's. As further described in *Table 4-2*, numerous containers and drums containing potentially hazardous materials are present at this AOC. Several of the containers are in poor condition. Staining is present on the ground surface in the vicinity of the containers.

We recommend that the containers and drums of the chemicals at the maintenance garage be removed and properly disposed of at a permitted facility. Due to the poor condition of some of the containers, over pack of the contents may need to be performed by the contractor. Some of the material may be required to be disposed of as a hazardous waste. If material is disposed of as a hazardous waste, waste manifests will be submitted and filed at CTDEP by the Generator.

4.2 Asbestos, Lead Based Paint and Hazardous Materials Survey

4.2.1 Introduction

During November and December of 2010, State of Connecticut Licensed Asbestos and Certified Lead Paint Inspectors of Fuss & O'Neill EnviroScience, LLC (EnviroScience) performed a hazardous materials survey of the eighty two buildings on site. This inspection consisted of an asbestos inspection, screening for lead-based paint, lead-based paint waste characterization, assessment of PCB-containing ballasts and possible mercury hazards, and a PCB-containing caulking and glazing compound materials survey.

4.2.2 Asbestos Inspection

During the asbestos inspection, suspected asbestos containing materials (ACM) were separated into three categories identified by the United States Environmental Protection Agency (USEPA):

- Thermal System Insulation (TSI) includes all materials used to prevent heat loss or gain or water condensation on mechanical systems. Examples of TSI are pipe insulation, boiler insulation, duct insulation, and mudded insulation on pipe fittings.

- Surfacing ACM includes all ACM that is sprayed, troweled, or otherwise applied to an existing surface. Surfacing ACM is commonly used for fireproofing, decorative, and acoustical applications.

- Miscellaneous materials include all ACM not listed in thermal or surfacing, such as linoleum, vinyl asbestos flooring, and ceiling tiles.

Materials that were sampled were analyzed by Polarized Light Microscopy (PLM). If suspect ACM was not sampled, it was assumed to contain asbestos.

The USEPA defines any material that contains greater than one percent (>1%) asbestos utilizing PLM as being an ACM. Materials that are identified as "none detected" are specified as not containing asbestos.

This screening revealed some ACMs in components of existing buildings on site. All ACM were quantified in linear and square footage, depending on the nature of the material. The asbestos content, quantities, and locations of ACM identified by bulk sample analysis are summarized in the attached *Table 4-3, Summary of Results Table – Hazardous Materials Survey.*

4.2.3 Lead-Based Paint Screening

A direct reading X-ray fluorescence (XRF) analyzer was used to perform the lead based paint screening. The purpose of this screening was twofold:

- First, to ascertain the lead content of paints within various interior and exterior building components representing the painting history of the buildings. This will allow the future demolition or renovation contractor to understand his responsibilities under Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.62, *Lead Exposure in Construction*.

- Second, to determine if the Toxicity Characteristic Leachate Procedure (TCLP) analysis was required for lead waste characterization of debris to be generated from buildings to be demolished. OSHA has not established a level of lead in a material below which 29 CFR 1926.62 does not apply. The CTDEP requires the TCLP analysis of toxic level lead ($\geq$1.0 mg/cm2) containing building debris to be generated from building demolition for waste disposal purposes. TCLP results greater than or equal to 5.0 mg/l of lead are considered hazardous lead waste.

This screening revealed low levels of lead within some of the paints used on buildings, although none that exceeded hazardous levels of lead waste. The lead testing and TCLP results are summarized in the attached *Table 4-3, Summary of Results Table – Hazardous Materials Survey*.

4.2.4 PCB-Containing Fluorescent Ballasts and Mercury-Containing Lamps, Thermometers and Switches

Typical ballasts were examined in-place on their fixtures for evidence of "No PCB" labels or for manufacturer's information that could be used to determine the PCB content. If labels or other information could be used to determine the existence of PCBs, the ballasts were assumed to contain PCBs, and were included in the inventory.

Suspected mercury containing fluorescent lamps, thermometers, and mercury switches were inventoried in-place.

Inventory results for PCB-containing (or suspected) fluorescent ballasts, mercury containing lamps, thermometers and switches are summarized in the attached *Table 4-3, Summary of Results Table – Hazardous Materials Survey*.

4.2.5 PCB-Containing Caulking and Glazing

EnviroScience collected bulk samples of building materials to be analyzed for PCBs. Sampling involved removal of bulk product materials consisting of exterior window caulking and glazing using hand tools. The tool utilized to collect samples was properly decontaminated prior to sample collection and following the collection of each individual sample according to USEPA guidelines to prevent cross-contamination of samples. Each sample was placed in containers, labeled, and delivered to a laboratory in bulk form using proper chain of custody. Samples were analyzed at Phoenix Environmental Laboratories, Inc. located in Manchester, CT. The analytical method for analysis included extraction method 3540C and analysis method SW846 8082.

The USEPA regulates materials containing greater than 50 parts per million (ppm). However, if PCB concentrations greater than 1 ppm are present in a material, it must be demonstrated (proven) that the materials containing greater than 50 ppm PCBs are an "Excluded PCB Product". For this circumstance, an Excluded PCB Product would be a product legally manufactured or used prior to October 1, 1984. The results of the caulking and glazing PCB analysis are summarized in the attached *Table 4-3, Summary of Results Table – Hazardous Materials Survey*.

4.2.6 Recommendations

In summary, the hazardous materials screening revealed some ACMs in components of existing buildings on site. It also revealed low levels of lead within some of the paints used on buildings, although none that exceeded hazardous levels of lead waste per TCLP analysis. Potential PCB-containing fixtures were identified, but samples of window caulking were not determined to contain PCBs.

Fuss & O'Neill EnviroScience recommends that the aforementioned ACMs, lead based paints, and PCB-containing materials be safely removed from the property in accordance with OSHA standards, and properly disposed of off-site at a licensed disposal facility. This can be completed prior to demolition, or in conjunction with demolition activities as discussed in the Fuss & O'Neill EnviroScience report entitled *Hazardous Materials Survey Report, Sunrise Resort, 121 Leesville Road, Moodus, Connecticut*, Dated December 2010, and included by reference.

5 Site Development Considerations

5.1 Zoning and Permitted Uses

According to the Town of East Haddam, CT Zoning Map, the subject property lies within Zone "R" (Resort/Residential), and partially within overlay Zone "FP" (Floodplain Overlay). Bulk Standards for uses within zone "R" are listed in table form below:

Table 5-1
Bulk Standards Table

District	Minimum Lot Area	Minimum Lot Area	Minimum Front Yard	Minimum Side & Rear Yard (each)	Maximum Coverage	Lot Impervious Surface Cover
R	1 acre	150 ft.	30 ft.	25 ft.	10%	20%

The Floodplain Overlay Zone is subject to additional restrictions on use of property within the zone.

Additional items of particular note:

- Minimum floor area per family dwelling - 800 sq. ft.
- In any zone, the setback from a lake, pond, river, perennial stream or other body of water shall be a minimum of 50 feet from the high water mark
- The East Haddam Inland / Wetlands Commission regulations require review of any activity proposed within 100 feet from any wetlands soil, flood plain, or watercourse or 400 feet from an identified vernal pool.

5.2 Floodplain Review

According to current Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Number 09007C0163G, Effective Date August 28, 2008, the majority of the property lies outside of areas subject to inundation by floods of a statistical 500-year occurrence. However, portions of the Waterfront Pavilion Area and Waterfront Cottage Area fronting the Salmon River appear to lie within "Zone X", which is delineated as an area within the estimated 500-year flood plain, and to a lesser extent, "Zone AE", which is delineated as an area within the estimated 100-year flood plain. The aforementioned flood plain limits are included for convenience on the *Existing Site Utilities Plan (Sheet CU-101).*

Earthwork or certain development activities of qualifying magnitude occurring within either the 100-year or 500-year flood plain are subject to review and approval by the United States Army Corps of Engineers. Such activities include addition or removal of earthen fill, construction of permanent or temporary structures, utility infrastructure, and access roads.

6 Recommendations and Next Steps

This Feasibility Study, in partnership with the *Historic Assessment* prepared by the CTDEP and the *Hazardous Materials Survey Report* prepared by Fuss & O'Neill EnviroScience, LLC, provides a clearer, more comprehensive picture of the Site's historic use and existing conditions than previously available. The document will allow potential developers to quickly become familiar with the Site, while simultaneously providing the State of Connecticut with clearly defined set of recommendations for more focused, cost-effective evaluations to further understand site constraints and development potential.

Fuss & O'Neill recommends the following specific actions be taken to further refine knowledge of the Site for potential development:

- Preparation of a Wetlands Functions and Values Report by a qualified professional for all wetland areas identified on site, including a screening for vernal pools.

- Investigation of sub-surface on-site domestic water distribution systems (e.g., test pits, magnetic tracing).

- Inspection of septic disposal structure interiors, possibly followed by
    - Inspection of leaching field condition via CCTV.
    - Performance of a dye test.

- Inspection and testing of domestic wells including:
    - Inspection of domestic well equipment.
    - Upgrading wellheads to DPH standards.
    - Performance of a CCTV inspection of well borings.
    - Performance of a 6-hour yield test per well.
    - Water quality sampling and analyzing of water per well.
    - Performance of simultaneous pumping tests for all wells on site.

- Inspection of the suspected stormwater drainage lines (e.g., test pits, CCTV).

- Removal and off-site disposal of ASTs and USTs.

- Removal and disposal of containers and drums of chemicals in Maintenance Garage.

- Performance of a Phase I ESA in Areas of Concern

- Removal and disposal of ACM, lead based paint, and PCB-suspected materials from on-site buildings either before or during demolition, as appropriate.

7 References

Angus McDonald, May 2008, Property Survey Plan, Leesville Road Route 151, East Haddam, CT.

American Society for Testing and Materials, 2005, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process: ASTM Practice E 1527-05.

City-Data.com (http://www.city-data.com/city/East-Haddam-Connecticut.html)

Connecticut Department of Environmental Protection, 1982, The Atlas of Public Water Supply Sources and Drainage Basins of Connecticut; CTDEP Natural Resources Center.

Connecticut Department of Environmental Protection, 1993, Water Quality Classifications for the Connecticut River and Southcentral Coastal Basins; CTDEP, Bureau of Water Management; adopted February 1993.

Connecticut Department of Environmental Protection, 1997, Leachate and Wastewater Discharge Sources for the Connecticut River and Southcentral Coastal Basins; CTDEP Water Management Bureau.

Connecticut Department of Environmental Protection, 2002, Water Quality Standards; CTDEP, 2002.

Connecticut Department of Environmental Protection, 2009, Environmental Information for Connecticut, 2003 Edition, updated December 2009.

Connecticut Department of Environmental Protection, 2007, Site Characterization Guidance Document; September 2007.

O'Leary, Dennis W., 1975, The Surficial Geology of the Moodus Quadrangle, Connecticut; United States Department of the Interior, U.S. Geological Survey, in cooperation with the State of Connecticut Geological and Natural History Survey.

Rodgers, J., 1985, Bedrock Geological Map of Connecticut; CTDEP, Natural Resources Center, Connecticut Geological and Natural History Survey, in cooperation with the United States Department of the Interior, U.S. Geological Survey.

Stone, J. R., Schafer, J. P., London, E. H. and Thompson, W. B., 1992, Surficial Materials Map of Connecticut; prepared in cooperation with CTDEP, Geological and Natural History Survey.

United States Geological Survey, 1967, Moodus Quadrangle Connecticut-Middlesex County, 7.5-Minute Series Topographic Map; United States Department of the Interior, U.S. Geological Survey, 1967, Photorevised 1984.

8 Limitations of Work Product

This document was prepared for the sole use of the Connecticut Department of Environmental Protection, the only intended beneficiaries of our work. Those who may use or rely upon the report and the services (hereafter "work product") performed by Fuss & O'Neill, Inc. and/or its subsidiaries or independent professional associates, sub-consultants and subcontractors (collectively the "Consultant") expressly accept the work product upon the following specific conditions.

1. Consultant represents that it prepared the work product in accordance with the professional and industry standards prevailing at the time such services were rendered.

2. The work product may contain information that is time sensitive. The work product was prepared by Consultant subject to the particular scope limitations, budgetary and time constraints and business objectives of the Client which are detailed therein or in the contract between Consultant and Client. Changes in use, tenants, work practices, storage, Federal, state or local laws, rules or regulations may affect the work product.

3. The observations described and upon which the work product was based were made under the conditions stated therein. Any conclusions presented in the work product were based solely upon the services described therein, and not on scientific or engineering tasks or procedures beyond the scope of described services.

4. In preparing its work product, Consultant may have relied on certain information provided by state and local officials and information and representations made by other parties referenced therein, and on information contained in the files of state and/or local agencies made available at the time of the project. To the extent that such files which may affect the conclusions of the work product are missing, incomplete, inaccurate or not provided, Consultant is not responsible. Although there may have been some degree of overlap in the information provided by these various sources, Consultant did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this project. Consultant assumes no responsibility or liability to discover or determine any defects in such information which could result in failure to identify contamination or other defect in, at or near the Site. Unless specifically stated in the work product, Consultant assumes no responsibility or liability for the accuracy of drawings and reports obtained, received or reviewed.

5. If the purpose of this project was to assess the physical characteristics of the Site with respect to the presence in the environment of hazardous substances, waste or petroleum and chemical products and wastes as defined in the work product, unless otherwise noted, no specific attempt was made to check the compliance of present or past owners or operators of the Site with Federal, state, or local laws and regulations, environmental or otherwise.

6. If water level readings have been made, these observations were made at the times and under the conditions stated in the report. However, it must be noted that fluctuations

in water levels may occur due to variations in rainfall, passage of time and other factors and such fluctuations may effect the conclusions and recommendations presented herein.

7. Except as noted in the work product, no quantitative laboratory testing was performed as part of the project. Where such analyses have been conducted by an outside laboratory, Consultant has relied upon the data provided, and unless otherwise described in the work product has not conducted an independent evaluation of the reliability of these tests.

8. If the conclusions and recommendations contained in the work product are based, in part, upon various types of chemical data, then the conclusions and recommendations are contingent upon the validity of such data. These data (if obtained) have been reviewed and interpretations made by Consultant. If indicated in the work product, some of these data may be preliminary or screening-level data and should be confirmed with quantitative analyses if more specific information is necessary. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time and other factors.

9. Chemical analyses may have been performed for specific parameters during the course of this project, as described in the work product. However, it should be noted that additional chemical constituents not included in the analyses conducted for the project may be present in soil, groundwater, surface water, sediments or building materials at the Site.

10. Ownership and property interests of all documents, including reports, electronic media, drawings and specifications, prepared or furnished by Consultant pursuant to this project are subject to the terms and conditions specified in the contract between the Consultant and Client, whether or not the project is completed.

11. Unless otherwise specifically noted in the work product or a requirement of the contract between the Consultant and Client, any reuse, modification or disbursement of documents to third parties will be at the sole risk of the third party and without liability or legal exposure to Consultant.

12. In the event that any questions arise with respect to the scope or meaning of Consultant's work product, immediately contact Consultant for clarification, explanation or to update the work product. In addition, Consultant has the right to verify, at the party's expense, the accuracy of the information contained in the work product, as deemed necessary by Consultant, based upon the passage of time or other material change in conditions since conducting the work.

13. Any use of or reliance on the work product shall constitute acceptance of the terms hereof.

Tables

FUSS & O'NEILL

Table 1-1
Summary of Existing Buildings

BUILDING NAME	BUILDING NUMBER	BUILDING USE
Single Cabins – 1 window	Buildings 1-9	Guest Cabin
Double Cabins – 2 windows	Buildings 10-23	Guest Cabin
By Salmon River:		
Riverview	Building 24	Guest Cabin
Ambassador	Building 25	Guest Cabin
Astor	Building 26	Guest Cabin
Red Riding Hood	Building 27	Guest Cabin
Copley Plaza	Building 28	Guest Cabin
Dixie	Building 29	Guest Cabin
Saint & Sinner	Building 30	Guest Cabin
Bostonian	Building 31	Guest Cabin
Ritz	Building 32	Guest Cabin
Staff Cabins:		
Spice Box	Building 33	Staff Cabin
Caribe	Building 34	Staff Cabin
Mid-Hill	Building 35	Staff Cabin
Empire State	Building 36	Staff Cabin
Hi Hubbers & Grand Junction	Buildings 37-38	Guest Cabin
Shenandoah	Building 39	Guest Cabin
The Den	Building 40	Guest Cabin
Tumble Inn	Building 41	Guest Cabin
No Name	Building 42	Guest Cabin
Stag	Building 43	Guest Cabin
Dungeon	Building 44	Guest Cabin
Outlook	Building 45	Guest Cabin
Echo Village:		
Coffee House	Building 46	Guest Cabin
Tea House	Building 47	Guest Cabin
Coco Villa	Building 48	Guest Cabin
Trade Winds	Building 49	Guest Cabin
Mountain View	Building 50	Guest Cabin
Fagan's Folly	Building 51	Guest Cabin
The Frog Building	Building 52	Served breakfast, youth activities
The Main Dining Hall	Building 53	Restaurant with commercial

FUSS & O'NEILL

Table 1-1
Summary of Existing Buildings

BUILDING NAME	BUILDING NUMBER	BUILDING USE
		kitchen
Coolers	Building 54 a & b	Cold food storage
Bathrooms by River	Building 55	Men's and Women's bathrooms
Garage behind apartment	Building 56	Single car garage
Quonset Hut	Building 57	Storage for maintenance area
Wading Pool	Building 58	Youth activity area
Spa	Building 59	Exercise equipment, hot tubs
Games		
New Motels	Buildings 60-62	Guest Rooms
Old Motel	Building 63	Guest Rooms
Broken Building	Building 64	Unknown
Maintenance Storage Bldg	Building 65	Storage for maintenance area
Maintenance Buildings	Building 66	Garage for tools and equipment
Bathrooms by Motels	Building 67	Men's and Women's bathrooms
Miniature Golf Hut	Building 68	Houses equipment for mini-golf
Main Office Building	Building 69	Main office, snack shop, recreation area with dance floor and stage
3-Sided shelter	Building 70	Covered area for ping-pong tables
Picnic Pavilion	Building 71	Covered picnic shelter
Picnic Pavilion	Building 72	Covered picnic shelter
Picnic Pavilion	Building 73	Covered picnic shelter
Pool Building	Building 74	Houses pool mechanicals, lockers, and men's and women's bathrooms
Large Pavilion	Building 75	Covered picnic shelter
Large Pool	Building 76	Swimming pool
Small Pool	Building 77	Swimming pool
Barbeque Hall	Building 78 a & b	Commercial kitchen and seating area for outdoor barbeques
Apartment Building	Building 79	Only winterized building on the property; has an apartment and area for snack machines
White House	Building 80	Guest rooms
Echo Center	Building 81	Community room
Toll House	Building 82	Community room
Former Sunrise Resort Sign	Building 83	Former main entrance sign (Removed)

SOURCE: Connecticut Department of Environmental Protection, Request for Proposals, Sunrise State Park, Utility Assessment and Site Feasibility Study, July 21, 2010

FUSS & O'NEILL

Table 2-1
Wetland Summary Table

Wetland Map ID	Area	Location Description	Notes
A	0.21-acres	In the eastern portion of the Site, west of Leesville Rd./Route 151, north of Echo Farm Rd., and south of an unnamed access entrance road into the park	Wetland observed to be in good condition with no evidence of impacts from past activities other than it is periodically mowed.
B	4.75-acres	Central portion of the Site, extending south to a pond on the adjacent property (Machimoodus State Park), northwestward following a stream going towards the Salmon River	One drilled well and several monitoring wells are located north of this area.
C	1.28-acres	South-central portion of the Site along the Machimoodus State Park property boundary, just south of a park access road leading to Building #57 (Quonset Hut), which is a storage for maintenance area	Debris (including paint cans) dumping was observed near this wetland area
D	8.00-acres	Along the bank of the Salmon River in the western portion of the Site, west of Buildings #25 through #32 (Guest Cabins)	One drilled well, two above-ground storage tanks and a vent and fill pipe for a suspected underground storage tank was noted east of this wetland area
E	0.45-acres	Southwestern corner of the Site, Crosses property boundary into Machimoodus State Park	Debris (including paint cans and scrap metal) dumping was observed near this wetland area

FUSS & O'NEILL

TABLE 4-2
Areas of Environmental Concern (AOCs)
Sunrise State Park
East Haddam, Connecticut

AOC		Description	Potential Release Mechanism
AOC-01	Above-ground Storage Tanks (ASTs)	At least twelve ASTs were observed throughout the property during the Site visit (Photo 4-1). The majority of the ASTs were 275-gallon fuel oil storage tanks. No significant staining was observed beneath the tanks. ASTs were located adjacent to the following Site buildings: • Building #80 – Guest Rooms ("White House") • Building #48 – Guest Cabin ("Coco Villa") • Building #59 – Spa • Building #65 – Maintenance Storage Building • Building #66 – Maintenance Building • Building #43 – Guest Cabin ("Stag") • Building #25 – Guest Cabin ("Ambassador") • Building #29 – Guest Cabin ("Dixie") • Building #78a&b – Barbeque Hall • Building #56 – Garage Behind Apartment • Building #79 – Apartment Building • Building #62 – Guest Rooms ("New Motels")	Although a release of hazardous material and/or petroleum to the shallow soil and groundwater may have occurred due to overfills, tank or dispenser leaks, there was no staining of the ground surface beneath the ASTs, indicating that a release at AOC-01 is unlikely. The ASTs appeared to be in relatively good condition (no significant rusting or holes).

FUSS & O'NEILL

TABLE 4-2
Areas of Environmental Concern (AOCs)
Sunrise State Park
East Haddam, Connecticut

AOC		Description	Potential Release Mechanism
AOC-02	Pole-mounted Transformers	Seven pole-mounted transformers were observed on the Site (Photo 4-2). Five of the poles had three transformers and two of the poles had only one transformer. Pole-mounted transformers were adjacent to the following areas and/or Site buildings: • Entrance to the Park along Echo Farm Road • Building #68 – Miniature Golf Hut • Building #58 – Along the road adjacent to the Wading Pool • North of Building #59a-d – Spa • Building #45 – Guest Cabin • Building #69 – Main Office Building • Building #78a&b – Barbeque Hall	Prior to the 1970s, transformer oil commonly contained PCBs for thermal stability and insulating properties. The US EPA initiated the Toxic Substances Control Act in 1976 to regulate the manufacture, use and disposal of PCBs and PCB-containing fluids. Since the Site was historically occupied by the Sunrise Resort prior to the 1970s, it is likely that the transformers contain PCB-oil. Leaks from the transformers would have impacted the ground surface directly below each pole.
AOC-03	Suspected Underground Storage Tank (UST) #1	Evidence of a UST was noticed outside the northwestern wall of the Main Office Building (Building #69).	A release of hazardous material and/or petroleum to the shallow soil and groundwater may have occurred due to overfills or tank or dispenser leaks.
AOC-04	Suspected Underground Storage Tank (UST) #2	A vent pipe for a suspected UST exists just north of the Main Dining Hall (Building #53) (Photo 4-3).	A release of hazardous material and/or petroleum to the shallow soil and groundwater may have occurred due to overfills or tank or dispenser leaks.

FUSS & O'NEILL

TABLE 4-2
Areas of Environmental Concern (AOCs)
Sunrise State Park
East Haddam, Connecticut

AOC		Description	Potential Release Mechanism
AOC-05	Suspected Underground Storage Tank (UST) #3	The vent and fill pipe for a UST were observed south of a structure adjacent to the Salmon River containing bathroom facilities (Building #55). This is south of the Guest Cabins located along the Salmon River (Photo 4-4).	A release of hazardous material and/or petroleum to the shallow soil and groundwater may have occurred due to overfills or tank or dispenser leaks.
AOC-06	Suspect Underground Storage Tank (UST) #4	The kitchen located inside this building was powered by a gas electric generator. Cut copper tubes characteristic of a UST were observed beneath the ground surface, therefore a UST is suspected to be located just west of the Barbeque Hall (Building #78a&b) (Photo 4-5).	A release of hazardous material and/or petroleum to the shallow soil and groundwater may have occurred due to overfills or tank or dispenser leaks.
AOC-07	Abandoned Underground Storage Tank (UST)	A gasoline UST was reportedly abandoned in-place beneath Building #79 (Apartment Building (Photo 4-6)). The material and method used to abandon the tank in-ground is unknown.	A release of hazardous material and/or petroleum to the shallow soil and groundwater may have occurred due to overfills or tank or dispenser leaks.
AOC-08	Maintenance Garage (Building #66)	This building is used as a garage for tools and equipment. During the Site visit, the following items were stored in the maintenance garage: approximately forty 5-gallon containers, one 55-gallon drum of oil, fifty 1-gallon paint containers, one drum of oil, fertilizer, heating oil sludge, paint, gas, batteries and transmission fluid (Photos 4-7, 4-8 4-9). A floor drain was observed in the garage bay area (Photo 4-10). Five monitoring wells are located in the areas north and west (downgradient) of the garage.	There is the potential that hazardous material has impacted the shallow soil in this area as a result of spillage from containers. The floor drain within the garage bay may have provided a pathway for which contaminants to have impacted shallow soil beneath the structure.

FUSS & O'NEILL

TABLE 4-2
Areas of Environmental Concern (AOCs)
Sunrise State Park
East Haddam, Connecticut

AOC		Description	Potential Release Mechanism
AOC-09	Apartment Building (Building #79)	Laundry facilities were located within this structure. A washer within this building reportedly discharges to floor drains/sumps. There is a suspected dry well outside the northern corner of the building that may have contained wash wastewater (Photo 4-6).	Hazardous material and/or petroleum products may have been discharged to the floor drains or sumps at this AOC. Cracks in the drainage piping or the dry well structure may have resulted in a release of these materials to the environment.
AOC-10	Dry Wells/Dug Wells	Nine dry wells or septic tanks were observed throughout the property (Photo 4-11). Several of the dry wells were reported to be filled in and several were possibly a dug well. Since the ground was covered with leaves during the Site visit, there is the possibility that more exist but were not visible at the time of inspection.	It is unknown whether hazardous material and/or petroleum products were discharged to the on-site drywells or dug wells. Cracks in the well structures may have resulted in a release of these materials to the environment.
AOC-11	Main Dining Hall (Building #53)	This building was used as a restaurant with a commercial kitchen. Floor drains are located in the kitchen area. An above-ground storage tank is located in the basement of this building.	Waste from the kitchen or dining area may have been discharged to the floor drains as the result of spillage or leaking containers. Cracks in the drainage system may have provided a pathway for which contaminants to impact the soil and/or groundwater beneath this building.

FUSS & O'NEILL

TABLE 4-2
Areas of Environmental Concern (AOCs)
Sunrise State Park
East Haddam, Connecticut

AOC		Description	Potential Release Mechanism
AOC-12	Barbeque Hall (Building #78a&b)	A commercial kitchen and seating area for outdoor barbeques comprises this area. Floor drains are located within this structure.	Waste from the kitchen or dining area may have been discharged to the floor drains as the result of spillage or leaking containers. Cracks in the drainage system may have provided a pathway for which contaminants to impact the soil and/or groundwater beneath this building.
AOC-13	Debris Areas	Two debris dumping areas are located adjacent to the two inland wetland areas in the southwestern corner of the Site (Wetland D and E). Debris observed includes paint cans, tires, a concrete pipe and metal pieces (Photos 4-12, 4-13).	There is the potential that hazardous material has impacted the shallow soil in this area as a result of spillage from containers.
AOC-14	Septic System and Associated Leach Field	A septic system reportedly exists in the grassed area located west of the youth wading pool and Building #58.	There is a potential that potentially hazardous materials consisting of pool chemicals or cleaning fluids were discharged to the septic system and have impacted soil and groundwater quality in the leaching fields.

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDINGS TO BE DEMOLISHED

(Per preliminary CTDEP assessment)

BUILDING # 1-21 (Guest Cabins-Single and Double)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Building 1-21	Sheetrock/Joint Compound	2% Chrysotile	1,160 SF	1130WT006C
EXTERIOR				
Exterior	Window Glazing	2% Anthophyllite	2540 LF	1130WT005A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 3.5			
TCLP (mg/kg)	0.009*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 22 (Guest Cabins-Single and Double)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Building 22 Bathroom	Sheet Vinyl Flooring	20% Chrysotile	20 SF	1130WT007A
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 3.5			
TCLP (mg/kg)	0.009*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 23 (Guest Cabins-Single and Double)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Building 23 Bathroom	Sheet Vinyl Flooring	20% Chrysotile	20 SF	1130WT007A
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 3.5			
TCLP (mg/kg)	0.009*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

BUILDING # 24 (Riverview)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 4.4			
TCLP (mg/kg)	1.02*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 25 (Ambassador)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 1.60			
TCLP (mg/kg)	1.02*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

BUILDING # 26 (Astor)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 2.2			
TCLP (mg/kg)	1.02*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 27 (Red Riding Hood)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.30			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	None Detected			

N/A- Not Applicable

BUILDING # 28 (Copley Plaza)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.40			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	None Detected			

N/A- Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 29 (Dixie)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 1.5			
TCLP (mg/kg)	1.02*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

BUILDING # 30 (Saint and Sinner)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.40			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	None Detected			

N/A- Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 31 (Bostonian)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.30			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	None Detected			

N/A- Not Applicable

BUILDING # 32 (Ritz)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Unit #2 Center	Vinyl sheet flooring	6% Chrysotile	20 SF	11-24-SM-32-03A
Unit # 3 North	Vinyl sheet flooring	30% Chrysotile	20 SF	11-24-SM-32-03A
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 2.4			
TCLP (mg/kg)	1.02*			
PCB Window Glazing(mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 33 (Spice Box)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Unit 3,6,8	1x1 Green/Gray Floor Tile	5% Chrysotile	60SF	1202WT-11A
Unit 2	9x9 Vinyl Floor Tile	2% Chrysotile	20SF	1202WT-05A
EXTERIOR				
Roof	Penetration Flashing	20 % Chrysotile	1SF	1202WT-37A
OTHER MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.30			
TCLP (mg/kg)	N/A			
PCB Window Glazing(mg/kg	None Detected			

N/A- Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 34 (Caribe)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Unit 1,3,4	Carpet Glue	2%	375SF	1202WT-04A
Unit5,6	9x9 White Floor Tile	5% Chrysotile	504SF	1202WT-01A
Unit 2,7,8	Carpet Glue	5% Chrysotile	375SF	1202WT-13A
Unit 1,2,3,4	Vinyl Sheet Flooring	20% Chrysotile	80SF	1202WT-19A
EXTERIOR				
Roof	Penetration Flashing	20 % Chrysotile	1SF	1202WT-37A
Shed	Burner Interface Gasket-on Water Heater	30% Chrysotile	1SF	1202WT-41A
OTHER MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 2.8			
TCLP (mg/kg)	1.02*			
PCB Window Glazing(mg/kg	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 35 (Mid Hill)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Carpet Glue	Unit 1,2,3,4	5% Chrysotile	500SF	1202WT-13A
EXTERIOR				
Roof	Penetration Flashing	20 % Chrysotile	1SF	1202WT-37A
OTHER MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.50			
TCLP (mg/kg)	N/A			
PCB Window Glazing(mg/kg	None Detected			

N/A- Not Applicable

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 36 (Empire State)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Unit 1,2,7,8	Carpet Glue	2%	500F	1202WT-04A
Unit 2,3,5,6,7,8	Vinyl Sheet Flooring	20% Chrysotile	100SF	1202WT-15A
Unit 1	Vinyl Sheet Flooring	5% Chrysotile	20SF	1202WT-16A
Unit 4	1x1 Vinyl Flooring	5% Chrysotile	20SF	1202WT-18A
Unit 3,4,5, 6	Carpet Glue	2% Chrysotile	500SF	1202WT-13A
Unit 7,8	9x9 Cracked Pattern Tan Floor tile	2% Chrysotile	40 SF	1202WT-33A
EXTERIOR				
Roof	Penetration Flashing	20 % Chrysotile	1SF	1202WT-37A
OTHER MATERIALS				
Fluorescent Bulbs	8			
PCB-Ballast	8			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.30			
TCLP (mg/kg)	N/A			
PCB Window Glazing(mg/kg	None Detected			

N/A- Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 37 (Hi Hubbards)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Unit # 1	9" X 9" Tan floor tile	5% Chrysotile	20 SF	11-29-SM-37/38-04A
Unit # 2	9" X 9" Green and tan floor tile	4% Chrysotile	20 SF	11-29-SM-37/38-06A
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.50			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	None Detected			

N/A- Not Applicable

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 38 (Grand Junction)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Building 38	Sheetrock/Joint Compound	2% Chrysotile	100 SF	1130WT006C
EXTERIOR				
Exterior	Window Glazing	2% Anthophyllite	10 LF	1130WT005A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.50			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	None Detected			

N/A- Not Applicable

BUILDING # 39 (Shenandoah)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.02			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	None Detected			

N/A- Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 40 (The Den)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 2.8			
TCLP (mg/kg)	0.044*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

BUILDING # 41 (Tumble Inn)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	4			
PCB-Ballast	4			
Lead-Based Paint Range (mg/cm2)	0.00 – 2.8			
TCLP (mg/kg)	0.044*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 42 (No Name)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Unit 5	9x9 White Floor tile	5 % Chrysotile	390 SF	1201WT16A
Unit 5	Red/Green Floor Tile	8 % Chrysotile	390 SF	1201WT18A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	8			
PCB-Ballast	4			
Lead-Based Paint Range (mg/cm2)	0.00 – 2.8			
TCLP (mg/kg)	0.044*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 43 (Stag)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Unit 5,6	9x9 White Floor tile	5 % Chrysotile	390 SF	1201WT16A
Unit 5,6	Red/Green Floor Tile	8 % Chrysotile	390 SF	1201WT18A
Unit 2	Sheet Vinyl Flooring	35 % Chrysotile	30 SF	1201WT03A
Unit 43 Shower Room	Glue Daubs (on shower walls)	12 % Chrysotile	120 SF	1201WT27A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	8			
PCB-Ballast	4			
Lead-Based Paint Range (mg/cm2)	0.00 – 2.8			
TCLP (mg/kg)	0.044*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 44 (Dungeon)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Unit 1	Sheet Vinyl Flooring	15% Chrysotile	30 SF	1201WT09A
Unit 1	Sheet Vinyl Flooring	20% Chrysotile	30 SF	1201WT11A
Unit 5,6	9x9 White Floor Tile	5% Chrysotile	480 SF	1201WT16A
Unit 5,6	9x9 Tan Floor tile (under 9x9 white floor tile)	6 % Chrysotile	480 SF	1201WT28A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	8			
PCB-Ballast	4			
Lead-Based Paint Range (mg/cm2)	0.00 – 2.8			
TCLP (mg/kg)	0.044*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 45 (Outlook)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Unit 5,6	9x9 White Floor Tile	5% Chrysotile	480 SF	1201WT16A
Unit 5	1x1 Floor Tile	4 % Chrysotile	30 SF	1201WT31A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	8			
PCB-Ballast	4			
Lead-Based Paint Range (mg/cm2)	0.00 – 2.5			
TCLP (mg/kg)	0.044*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

BUILDING # 46 (Coffee House)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
EXTERIOR				
Exterior window glazing	Window Glazing	1.25% Chrysotile	150 LF	11-17-SM-47-03C
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 1.3			
TCLP (mg/kg)	0.149*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 47 (Tea House)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Throughout	Light fixture backing paper	40% Chrysotile	3.5 SF	11-17-SM-47-06A
EXTERIOR				
Exterior window glazing	Window Glazing	1.25% Chrysotile	150 LF	11-17-SM-47-03C
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.20			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	None Detected			

N/A – Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 48 (Coco Villa)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Bathroom	Vinyl sheet flooring	40% Chrysotile	30 SF	11-17-SM-47-02A
EXTERIOR				
Exterior window glazing	Window Glazing	1.25% Chrysotile	150 LF	11-17-SM-47-03C
Exterior	Chimney flashing tar	8% Chrysotile	3 LF	11-17-SM-48-06A
Exterior	Chimney flue cement	10% Chrysotile	1 SF	11-17-SM-48-07A
Exterior	Hot water tank burner interface gasket	45% Chrysotile	1 SF	11-17-SM-48-08A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 3.8			
TCLP (mg/kg)	0.149*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 49 (Trade Winds)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Throughout	Light fixture backing paper	40% Chrysotile	1 SF	11-17-SM-47-06A
EXTERIOR				
Exterior window glazing	Window Glazing	1.25% Chrysotile	150 LF	11-17-SM-47-03C
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 2.6			
TCLP (mg/kg)	0.149*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 50 (Mountain View)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Throughout	Light fixture backing paper	40% Chrysotile	1 SF	11-17-SM-47-06A
EXTERIOR				
Exterior window glazing	Window Glazing	1.25% Chrysotile	80 LF	11-17-SM-47-03C
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 2.7			
TCLP (mg/kg)	0.149*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 51 (Fagan's Folly)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
Exterior window glazing	Window Glazing	1.25% Chrysotile	100 LF	11-17-SM-47-03C
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 5.9			
TCLP (mg/kg)	0.149*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

Guard Shack (Top of Driveway)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
Exterior window glazing	Window Glazing	1.25% Chrysotile	50 LF	11-17-SM-47-03C
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.1			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

Pool Change House (Next to # 77 Pool)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
Exterior window glazing	Window Glazing	1.25% Chrysotile	8 LF	11-17-SM-47-03C
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.5			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

BUILDING # 52 (Frog)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.05			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	None Detected			

N/A – Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 53 (Main Dining Hall)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Men's and women's bathroom	Vinyl sheet flooring under ceramic tile	20% Chrysotile	64 SF	11-23-SM-53-12A
Hallway next to bathrooms	9" X 9" floor tile under carpet	10% Chrysotile	40 SF	11-23-SM-53-13B
Kitchen/ice cream area and 2nd floor	Wall plaster ceiling (one coat system)	3% Chrysotile	1200 SF	11-23-SM-53-23B 11-23-SM-53-27C
Kitchen and bakery area (behind stoves/ovens)	Transite wall board	22% Chrysotile	300 SF	11-23-SM-53-25A
Bathroom 2nd floor, Basement and Exterior	Light fixture backing paper	50% Chrysotile	8SF	11-23-SM-53-35B
Basement, boiler room and under office North west	TSI- Aircell pipe insulation	48% Chrysotile	250 LF	11-23-SM-53-36A
Basement, boiler room and under office South east	Mudded elbows	45% Chrysotile	25 EA	11-23-SM-53-37A
Basement, boiler room and basement north west	Chimney flue cement	40% Chrysotile	2 SF	11-23-SM-53-38B
Basement boiler room	Boiler section gaskets material	40% Chrysotile	120 LF	11-23-SM-53-40B
Basement boiler room	Boiler fire brick	40% Chrysotile	4SF	11-23-SM-53-41A
Basement boiler room	Burner interface cement	15% Chrysotile	4SF	11-23-SM-53-42A
EXTERIOR				
Exterior	Chimney flashing tar used for patching repair, A/C condenser stand	4% Chrysotile	150 SF	11-23-SM-53-48A
Exterior	Built up rolled roofing on flat roofs	2% Chrysotile	2700 SF	11-23-SM-53-49A

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 53 (Main Dining Hall)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
Exterior	Perimeter flashing tar on built up rolled roofing	5% Chrysotile	250 LF	11-23-SM-50-50A
Exterior window glazing	Window Glazing	2.25% Chrysotile	2175 LF	11-22-SM-53-55B
High voltage Shed, behind dining hall	Transite panel/ arch flash protectors (3 cabinets)	25% Chrysotile	10 SF	11-23-SM-53-58B
High voltage shed, behind dining hall	Chimney flashing tar used on poles	4% Chrysotile	2 SF	11-23-SM-53-48A
Bunk house behind dining hall	Chimney flashing tar used on poles	4% Chrysotile	3 SF	11-23-SM-53-48A
Bunk house behind dining hall	Window Glazing	2.25% Chrysotile	275 LF	11-22-SM-53-55B
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	126			
PCB-Ballast	6			
Lead-Based Paint Range (mg/cm2)	0.00 – 4.6			
TCLP (mg/kg)	0.149			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 54 (Coolers A & B)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.40			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	None Detected			

N/A – Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 55 (Bathrooms by River)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
Exterior	Light fixture backing paper	50% Chrysotile	1 SF	11-23SM-53-35A
Exterior	Vent flashing tar/pole at electrical connection	4% Chrysotile	1 SF	11-23SM-53-48A
EXTERIOR				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	4			
PCB-Ballast	2			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.20			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	None Detected			

N/A – Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 56 (Garage Behind Apartments)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.10			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

BUILDING # 57 (Quonset Hut)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Interior/exterior	Window glazing on 2 windows and 32 loose stored windows	1.25 % Chrysotile	120 SF	11-23-SM-57-01B
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.40			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 58 (Youth Activity Area)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No interior asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.20			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

BUILDING # 59 (Spa)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Bathroom ceiling and boiler room	Transite panel board	30% Chrysotile	140 SF	11-18-SM-59-03A
EXTERIOR				
Exterior	Chimney flashing and patching cement	8% Chrysotile	50 LF	11-18-SM-81-10A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	25			
PCB-Ballast	4			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.20			
TCLP (mg/kg)	N/A			
PCB Window Glazing (mg/kg)	None Detected			

N/A – Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 60-61 (New Motels)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Throughout building 60-61	Brown wall panel mastic	1.75% Chrysotile	11000 SF	11-19-SM-60/61-03C
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 1.0			
TCLP (mg/kg)	0.011*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 62 (Hotel)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Throughout all 10 units	Brown wall panel mastic	1.75% Chrysotile	35000 SF	12-2-SM-62-06A
Throughout all 10 units	Black mirror mastic	5% Chrysotile	60 SF	12-2-SM-62-08A
Units 12-16 ground floor	Interior foundation mastic/damproofing	5% Chrysotile	1150 SF	12-2-SM-62-11A
EXTERIOR				
Exterior	Penetration/vent flashing tar	8% Chrysotile	5 SF	12-2-SM-62-15A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 1.0			
TCLP (mg/kg)	0.011*			
PCB Window Glazing (mg/kg)	None Detected			

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 63 (Old Hotel)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Throughout all 8 units	9" X 9" floor tile under carpet	5% Chrysotile	3040 SF	11-18-SM-63-02A
Basement	Chimney flue cement	15% Chrysotile	2 SF	11-18-SM-63-21A
EXTERIOR				
Exterior	Chimney flashing tar	8% Chrysotile	3 LF	11-18-SM-63-24A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 1.2			
TCLP (mg/kg)	0.011*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 64 (Broken Building)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Basement east	Brown glue daubs associated with 18" wall tiles	4% Chrysotile	150 SF	11-23-SM-64-06A
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 1.5			
TCLP (mg/kg)	0.011*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 65 (Maintenance Storage Building)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	10			
PCB-Ballast	5			
Lead-Based Paint Range (mg/cm2)	0.00 – 1.7			
TCLP (mg/kg)	0.011*			
PCB Window Glazing (mg/kg)	None Detected			

* Passed TCLP test with reading < 5.0 mg/l of lead

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDINGS NOT TO BE DEMOLISHED

(Per preliminary CTDEP assessment)

BUILDING # 66 (Maintenance Building)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No asbestos detected				
EXTERIOR				
Exterior	Transite pipe with space heater exhaust	10% Chrysotile 15%n Crocidolite	1 SF	11-19-SM-66-01A
Exterior roof	Galbestos corrugated roofing	Assumed	3600 SF	Assumed
Covered garage area	Transite board	30% Chrysotile	150 SF	11-19-SM-66-05A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	15 (stored)			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.30			
PCB Window Glazing (mg/kg)	None Detected			

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 67 (Bathrooms by Motels)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Bathrooms men's & women's	Black mirror mastic	10% Chrysotile	8 SF	11-18-SM-67-04A
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	15 (stored)			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.20			
PCB Window Glazing (mg/kg)	None Detected			

BUILDING # 68 (Mini Golf Hut)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No asbestos detected in building				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	9			
PCB-Ballast	3			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.30			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 69 (Main Office Building)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Snack shop	Light fixture paper	405% Chrysotile	6 SF	11-17-SM-46-06A
Snack shop	Transite wall panel behind sink	20% Chrysotile	8 SF	12-3-SM-69-02A
Dance hall	Black sink anti condensate (portable bar)	5% Chrysotile	4SF	12-3-SM-69-06A
EXTERIOR				
Exterior	Penetration/ vent flashing tar	10% Chrysotile	10 SF	12-3-SM-69-14A
Exterior (front entrance)	Built up roofing and flashing tars	Assumed	1780 SF	Assumed
Exterior (front entrance)	Transite ceiling panels	30% Chrysotile	1780 SF	11-29-SM-78-10A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	104			
PCB-Ballast	53			
Mercury Switches	3			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.90			
PCB Window Glazing (mg/kg)	None Detected			

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 70 (Ping Pong Covered Area)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	10			
PCB-Ballast	5			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.03			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

BUILDING # 71 (Picnic Pavilion)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	10			
PCB-Ballast	5			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.03			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 72 (Picnic Pavilion)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.02			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

BUILDING # 73 (Picnic Pavilion)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.01			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 74(Pool Building)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Basement	Mechanical piping flange gaskets	40% Chrysotile	100 EA	12-03-SM-74-04A
Basement	Transite wall panel behind electrical panel	20% Chrysotile	110 SF	12-03-SM-74-07A
Front lobby/ hallway behind stairs	Vinyl sheet flooring under 12" tile and plywood sub floor (may have 9" green/gray under both materials positive for asbestos)	20% Chrysotile	350 SF	12-3-SM-74-11A 12-3-SM-74-12A
Men's and women's shower room/bathrooms	9" X 9" green/gray floor tile	20% Chrysotile	750 SF	12-3-SM-74-12A
Men's and women's bathrooms(south side)	4" ceramic wall tile adhesive	Assumed	500 SF	Assumed
Men's and women's bathrooms(south side)	Ceramic floor tile adhesive	Assumed	400 SF	Assumed
Men's and women's bathrooms(south side)	Black mirror mastic	Assumed	60 SF	Assumed
EXTERIOR				
Exterior	Penetration/ vent flashing tar	8% Chrysotile	5 SF	12-2-SM-62-15A
Exterior	Vapor barrier under siding	Assumed	4700 SF	Assumed
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	34			
PCB-Ballast	19			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.40			
PCB Window Glazing (mg/kg)	None Detected			

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 75 (Large Pavilion)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.03			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

BUILDING # 76 (Large Pool)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.06			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 77 (Small Pool)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
No asbestos detected				
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.08			
PCB Window Glazing (mg/kg)	N/A			

N/A – Not Applicable

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 78 A & B (Barbeque Hall)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Rear kitchen	Hot water tank burner interface gasket	70% Chrysotile	1 SF	11-29-SM-78-03A
EXTERIOR				
Exterior	Penetration/ Chimney flashing tar	10% Chrysotile	14 LF	11-18-SM-78-06B
Exterior	Ceiling tiles(transite board) covered area	30% Chrysotile	1700 SF	11-29-SM-78-10A
Rear kitchen area (south)	Asbestos paper associated with ovens/warming ovens	75% Chrysotile	5 SF each unit 10 units 50SF	11-29-SM-78-13A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	47			
PCB-Ballast	33			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.40			
PCB Window Glazing	None Detected			

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 79 (Apartment Building)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Unit 1A	Sink Undercoating gasket	5% Chrysotile	3 SF	1130WT19A
Rear kitchen/printing area	Transite board	Assumed	550 SF	Assumed
EXTERIOR				
Exterior	Window glazing (Metal Windows)	3% Chrysotile	840 LF	1130WT09A
Exterior-Flat Roof	Perimeter Flashing	10% Chrysotile	105 LF	1130WT20A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	40			
PCB-Ballast	20			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.50			
PCB Window Glazing	None Detected			

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 80 (White House)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Basement	Boiler section gasket	35% Chrysotile	250 LF	11-16-SM-80-13A
Basement	Loose packing on boiler sections	40% Chrysotile	50 SF	11-16-SM-80-14A
Basement	Hot water burner interface gasket	60% Chrysotile	1 SF	11-16-SM-80-15B
EXTERIOR				
No exterior asbestos detected				
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	1			
PCB-Ballast	1			
Mercury Switches	1			
Lead-Based Paint Range (mg/cm2)	0.00 – 6.0			
PCB Window Glazing	None Detected			

FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

BUILDING # 81 (Echo Center)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Bathroom	White floor tile under carpet	1% Chrysotile	36 SF	11-17-SM-81-07B
Boiler room	Transite panel board	40% Chrysotile	120 SF	11-17-SM-81-10A
Boiler room	Chimney flue cement	25% Chrysotile	4 SF	11-17-SM-81-11A
Boiler room	HVAC flex duct connector (side of unit)	40% Chrysotile	2 SF	11-16-SM-81-12A
Boiler room	Furnace burner interface gasket	35% Chrysotile	1 SF	11-16-SM-80-21A
EXTERIOR				
Exterior	Chimney flashing tar	20% Chrysotile	12 LF	11-17-SM-81-17A
Exterior	Window glazing	20% Chrysotile	650 LF	11-17-SM-81-17A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	0			
PCB-Ballast	0			
Mercury Switches	1			
Lead-Based Paint Range (mg/cm2)	0.00 – 0.30			
PCB Window Glazing	None Detected			

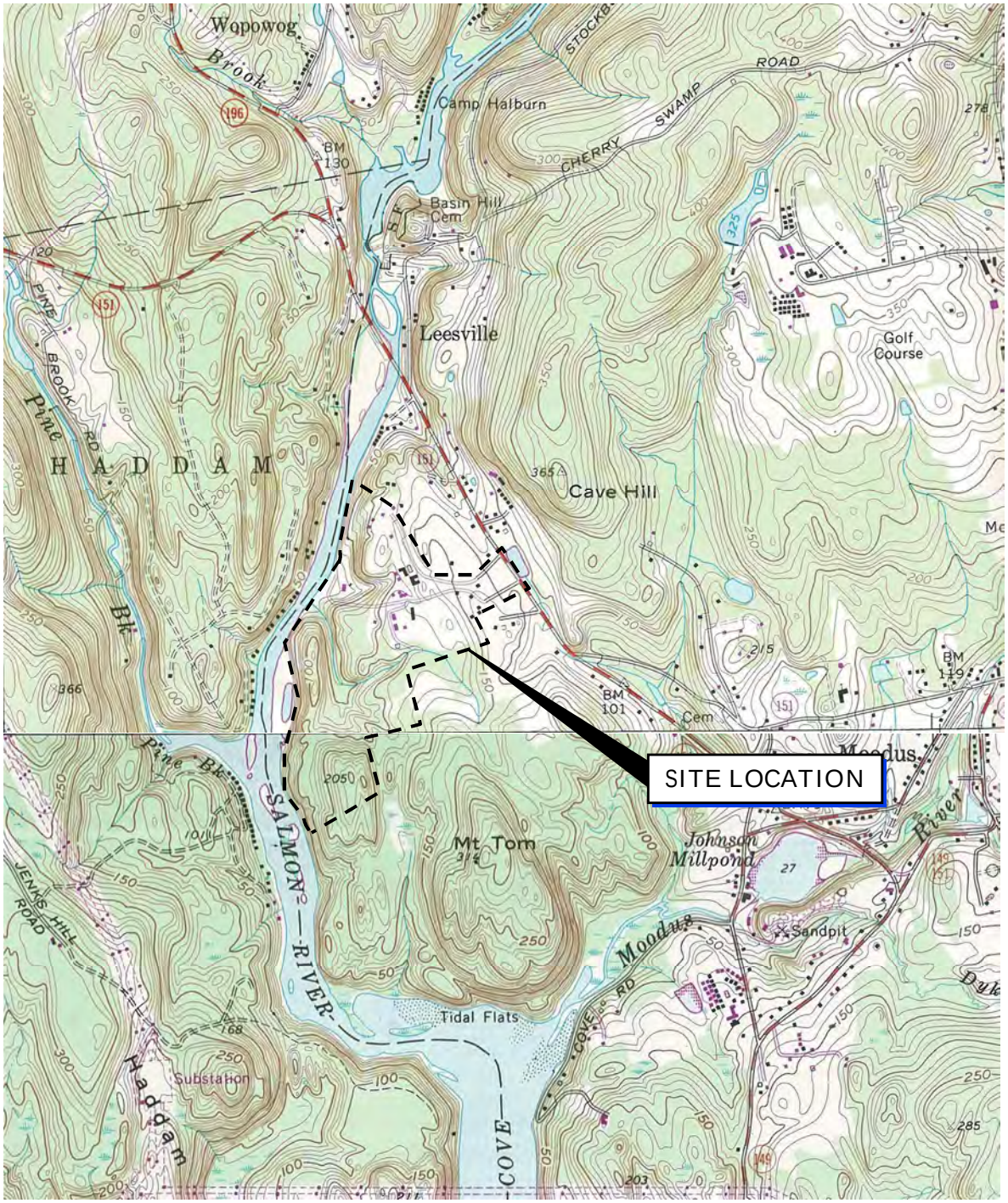
FUSS & O'NEILL

Table 4-3
Summary of Results Table - Hazardous Materials Survey

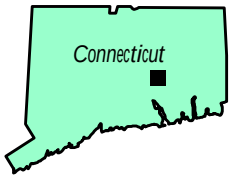
BUILDING # 82 (Toll House)

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Bathrooms, under carpet	9" X 9" White stone pattern floor tile	1.5% Chrysotile	100 SF	11-16-SM-82-07A
OTHER HAZARDOUS/REGULATED MATERIALS				
Fluorescent Bulbs	4			
PCB-Ballast	2			
Lead-Based Paint Range (mg/cm2)	0.00 – 4.6 0.00 – 0.30			
PCB Window Glazing	None Detected			

Figures



MAP REFERENCE:
THIS MAP WAS PREPARED FROM THE FOLLOWING
7.5 MINUTE SERIES TOPOGRAPHIC MAPS:
MOODUS, CONN. 1967 REVISED 1984
DEEP RIVER, CONN. 1961 REVISED 1971



Quadrangle Location

0 1000 2000
GRAPHIC SCALE
SCALE: 1"=2000'

FUSS & O'NEILL
Disciplines to Deliver
146 HARTFORD ROAD, MANCHESTER, CONNECTICUT 06040
860-646-2469 www.FandO.com

SITE LOCATION MAP
SUNRISE STATE PARK
EAST HADDAM CONNECTICUT

PROJ. No: 20100950A10
DATE: DEC. 2010

FIGURE 1

G:\P2010\0950\A10\SITE LOC MAP.PPT

SUNRISE STATE PARK

LEESVILLE ROAD / ROUTE 151
EAST HADDAM, CONNECTICUT

SITE LAYOUT PLAN
FIGURE 2

GENERAL AREA DESCRIPTIONS

ECHO VILLAGE
Includes buildings with historic value, including the Samuel Elmore Place ("Toll House") built in 170, and the I. Chapman Jr. Place ("White House"), built in 1820. These and several other more modern buildings are clustered in the portion of the developed property closest to Route 151.

CLUB HOUSE / OFFICE AREA
Includes the main administration building, dance hall, main pool, playgrounds, baseball field, and hotel "cabanas" clustered adjacent to the main parking fields in the developed center of the property.

FOLLY AREA
Includes guest and staff cabins in the northernmost portion of the developed site, and are in the vicinity of the Barbeque Pavilion, tennis courts, multi-purpose recreational building known as "The Frog", and the only known winterized building on site known as "The Apartment".

SINGLE CABIN / DOUBLE CABIN AREA
Incorporates the main cluster of guest buildings on site, also including several staff cabins. This area, built around the rim of one of the major hills on site, is south of the Folly Area and east of the Club House/Office Area.

WATERFRONT COTTAGES
Line the northern portion of the property's frontage along the Salmon River. This area included guest cabins built landward of the waterfront perimeter access road, west of the Single Cabin/ Double Cabin Area.

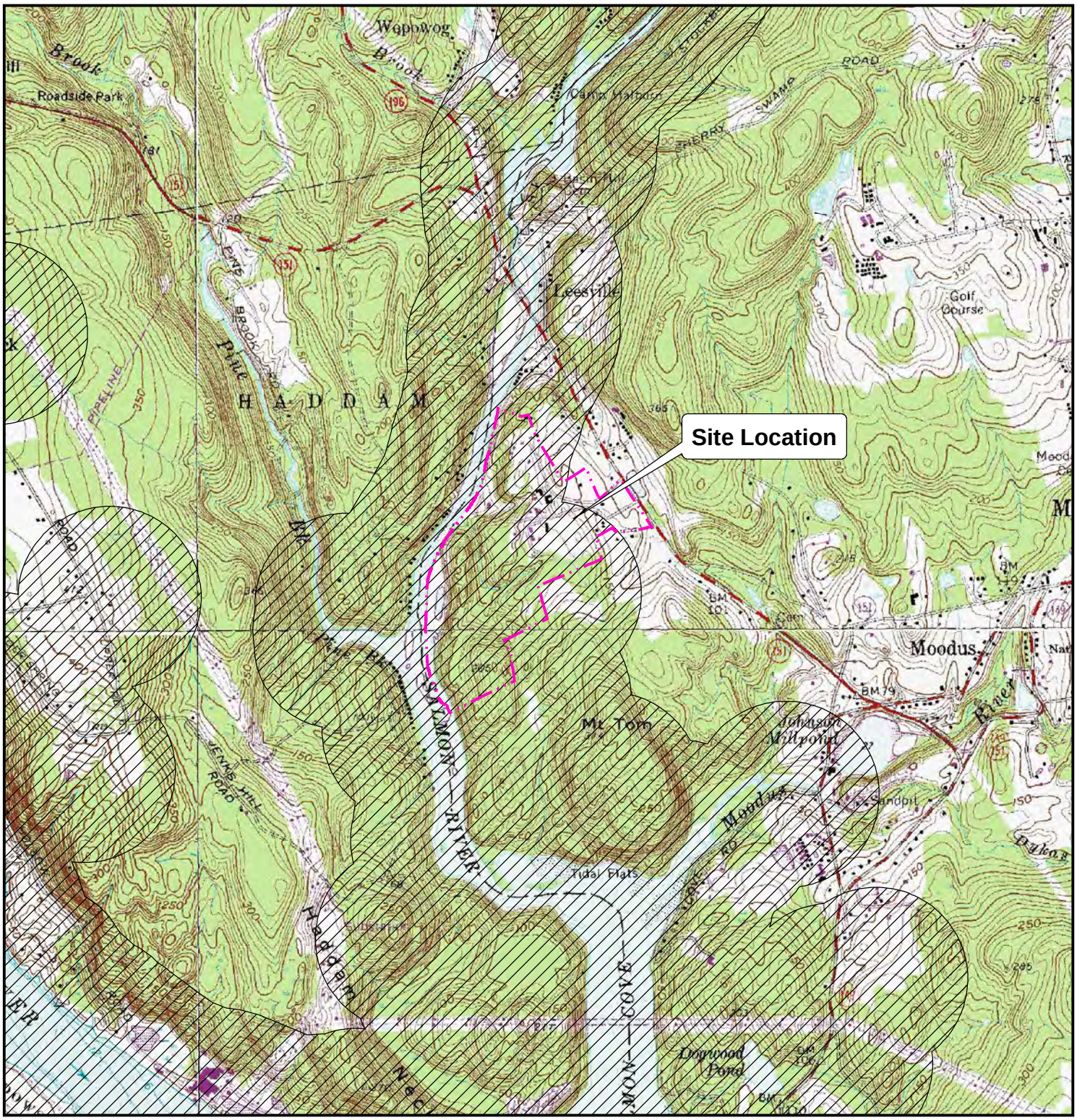
WATERFRONT PAVILION AREA
Includes the Main Dining Hall and outdoor pavilions in the southwest corner of the developed site. This area is clustered at the bottom of the main hill on site, and may be accessed from the Waterfront Cottage Area to the north, the Arthur's Paradise and the Motel Area to the southeast, and the Club House/Office Area to the east.

MOTEL AREA
Includes one single-story guest room building and two double-story guest room buildings, in addition to a Mini-Golf Course, Spa Area, and adjacent recreational fields. This area is in the southern portion of the developed site, west of Echo Village, east of Arthur's Paradise, and south of the Club House/Office Area.

ARTHUR'S PARADISE
Includes the maintenance buildings and facilities for operation of the historic resort. A Maintenance Garage, storage Quonset Hut, and debris piles comprise this area west of the Motel Area and south (uphill) from the Waterfront Pavilion Area.

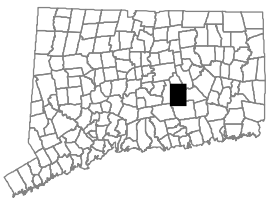
CAMPGROUND AREA
Located south of the Motel Area and was accessed by bridge over the large wetland system and intermittent watercourse.

FUSS & O'NEILL



Legend

- Sunrise Property
- Natural Diversity Database Areas



MAP REFERENCES:
"State and Federal Listed Species and Significant Natural Communities Map" Prepared By: Connecticut Department of Environmental Protection
Date: Dec. 2010

USGS 7.5 Minute Topographic Maps:
Middle Haddam (1984) Moodus (1984), Haddam (1971), Deep River (1971)

N

G:\P2010\0950\A10\NDDB\NDDB_Mapping.mxd

0 1,000 2,000
Feet
Scale 1" = 2000'

www.FandO.com
FUSS & O'NEILL
Disciplines to Deliver
146 Hartford Road Manchester, CT 06040 860.646.2469

Natural Diversity Database Areas

Sunrise Resort
East Haddam, Connecticut

FIGURE 3

December 2010

Appendix A

Photographic Log of Select Utilities and Environmental Areas of Concern

FUSS & O'NEILL

Appendix A
Photographic Log – Select Utilities and AOCs

Photo 2-1 – Observation Well

Photo 3-1 – Well #1

FUSS & O'NEILL

Appendix A
Photographic Log – Select Utilities and AOCs

Photo 3-2 – Well #2

Photo 3-3 – Well #3

Appendix A
Photographic Log – Select Utilities and AOCs

Photo 3-4 – Well #4

Photo 3-5 – Well #5A

Appendix A
Photographic Log – Select Utilities and AOCs

Photo 3-6 – Well #5B

Photo 3-7 – Septic Pumping Wetwell

Appendix A
Photographic Log – Select Utilities and AOCs

Photo 3-8 – Exposed Septic Forcemain

Photo 4-1 – AOC-01 (Example AST)

FUSS & O'NEILL

Appendix A
Photographic Log – Select Utilities and AOCs

Photo 4-2 – AOC-02 (Pole-Mounted Transformers)

Photo 4-3 – AOC-04 (Suspected UST Vent Pipe)

FUSS & O'NEILL

Appendix A
Photographic Log – Select Utilities and AOCs

Photo 4-4 - AOC-05 (Suspected UST Vent Pipe)

Photo 4-5 - AOC-06 (Suspected UST)

Appendix A
Photographic Log – Select Utilities and AOCs

Photo 4-6 - AOC-07 (Suspected UST)

Photo 4-7 - AOC-08 (Maintenance Garage)

Appendix A
Photographic Log – Select Utilities and AOCs

Photo 4-8 - AOC-08 (Maintenance Garage)

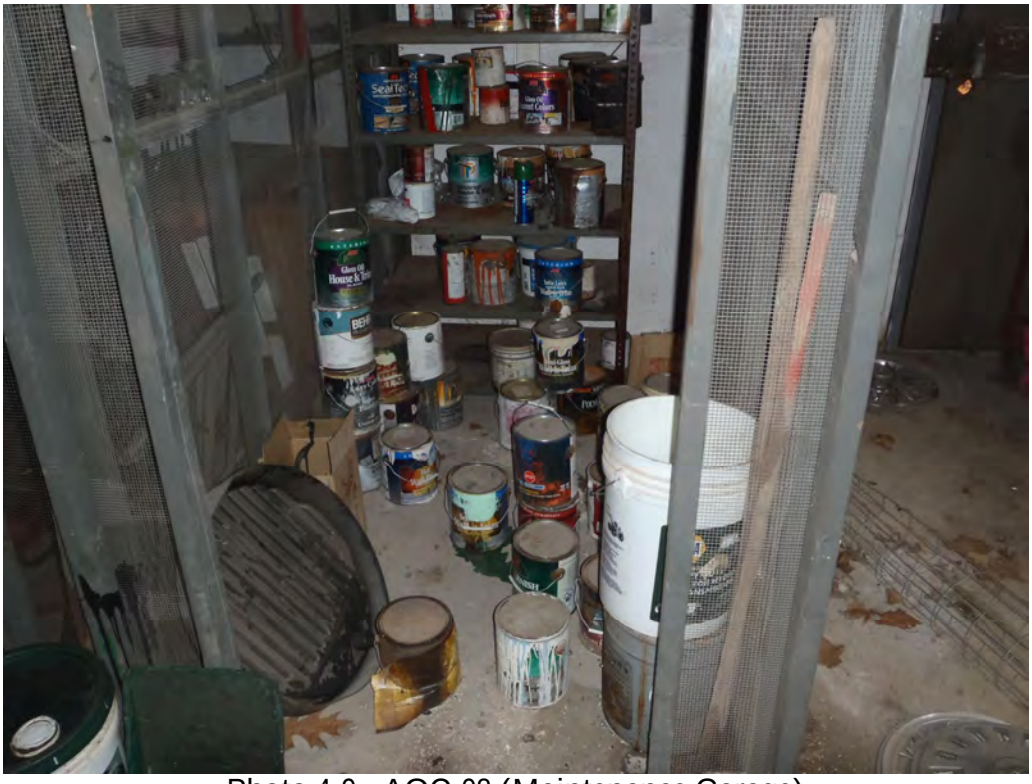


Photo 4-9 - AOC-08 (Maintenance Garage)

Appendix A
Photographic Log – Select Utilities and AOCs

Photo 4-10 - AOC-08 (Maintenance Garage Floor Drain)

Photo 4-11 - AOC-10 (Sample Drywell)

Appendix A
Photographic Log – Select Utilities and AOCs

Photo 4-12 - AOC-13 (Debris Area)

Photo 4-13 - AOC-13 (Debris Area)

Appendix B

Summary of Test Boring and Test Hole Results
(Obtained from Angus McDonald/Gary Sharpe & Associates, Inc.)

FUSS & O'NEILL

Appendix B
Summary of Test Hole Results

Test Hole Data conducted by Thomas Shuck (ALMGPS) March 5-7,2008, and depicted on *Feasibility Plan, Property of the Elm Camp Company, Incorporated*, Leesville Road – Conn Route 151, East Haddam, CT, Prepared May 23, 2007

Test Hole	Depth	Description
1	0-10”	Topsoil (dark brown- rich in organics)
	10-27”	Medium – coarse loamy sand with silt (medium brown)
	27-47”	Downwards fining silty loam (light gray)
		Water @ 40”(bleeding), Ledge @ 47”, Mottling @ 28”
2	0-14”	Topsoil
	14-35”	Fine sandy loan (some silt)
		Ledge @ 35”, No water, No mottling
3	0-12”	Topsoil
	12-28”	Medium sandy loam
	28-41”	Gray medium sand
		Ledge @ 41”, No water, No mottling
4	0-10”	Topsoil
	10-22”	Medium fine sandy loam (medium brown & some silt)
	22-38”	Light gray silt & fine sand
		Ledge @ 38”, Mottling @ 22”, No water
5	0-11”	Topsoil
	11-28”	Medium fine sandy loam (medium brown & some silt)
		Ledge @ 28”, No water, No mottling
6	0-12”	Topsoil
	12-23”	Medium fine sandy loam (medium brown & some silt)
	23-40”	Sand & silt (light gray)
		Ledge @ 40”, Mottling @ 23”, No water
7	0-8”	Topsoil
	8-16”	Rounded pebble fill mixed with topsoil
	16-29”	Very fine loamy sand with silt (light brown)
		Ledge @ 29”, Mottling @ 15”, Water @ 28”

FUSS & O'NEILL

Appendix B
Summary of Test Hole Results

Test Hole Data conducted by Thomas Shuck (ALMGPS) March 5-7,2008, and depicted on *Feasibility Plan, Property of the Elm Camp Company, Incorporated*, Leesville Road – Conn Route 151, East Haddam, CT, Prepared May 23, 2007

Test Hole	Depth	Description
8	0.29”	Rubble & gravel fill
	29-35”	Topsoil (original)
	35-42”	Fine sandy loam with silt
		Ledge @ 42”, No water, No mottling
9	0-4”	Topsoil (fill)
	4-17”	Gravel & sandy fill
	17-24”	Original topsoil
	24-43”	Fine loamy sand with wilt
	43-49”	Light gray fine sand & silt (moist)
	49-64”	Black medium sand with gravel
		Ledge @ 64”, Mottling @ 34”, Water @ 57”
10	0-14”	Topsoil
	14-28”	Light brown fine sandy loam (some silt)
	28-109”	Fine sand & silt (light gray with some stone mixed)
		Mottling @ 25”, Water @94", No ledge
11	0-4”	Topsoil
	14-28”	Fill (mixed medium sand, gravel, cobbles)
	58-64”	Black topsoil (original) – could be septic
	63-90”	Light gray fine sand & silt
		Water @ 55”, No ledge No mottling, Concrete block @57"
12	0-64”	Boulder & rubble fill
	64-70”	Topsoil dark brown (original)
	70-84”	Light gray fine sand & silt
		Water @ 48”, No ledge, No mottling

FUSS & O'NEILL

Appendix B
Summary of Test Hole Results

Test Hole Data conducted by Thomas Shuck (ALMGPS) March 5-7,2008, and depicted on *Feasibility Plan, Property of the Elm Camp Company, Incorporated*, Leesville Road – Conn Route 151, East Haddam, CT, Prepared May 23, 2007

Test Hole	Depth	Description
13	0-12”	Topsoil
	12-46”	Medium sandy loam with some pebbles & trace silt (light brown)
	46-94”	Coarse sand with pebbles (light brown)
		No ledge, No water, No mottling
14	0-18”	Topsoil
	18-50”	Medium sand coarsening downwards (light brown) & trace silt
	50-89”	Medium sand with stone (light brown)
		No ledge, No water, No mottling
15	0-12”	Topsoil
	12-28”	Medium sandy loam (trace silt) light brown
	28-65”	Coarse light brown sand with stone
		Hit well line (plastic pile) at 47”
16	0-12”	Topsoil
	12-31”	Medium fine sandy loam (some silt)
	31-90”	Coarse sand with pebbles (trace silt & stone) light brown
		No ledge, No water, No mottling
17	0-24”	Topsoil (medium to light brown – washout from up slope)
	24-65”	Medium coarse light orange/tan sand with pebbles
		2” stained red layer of medium sand @ 28”
		No ledge, No water, No mottling
18	0-32”	Topsoil fill (washout from up slope)
	32-94”	Medium sand (light tan/orange)
		2” stained red layer of medium sand @ 42”
		No ledge, No water, No mottling
19	0-20”	Topsoil & rubble fill
		Ledge @ 20”, No water, No mottling

FUSS & O'NEILL

Appendix B
Summary of Test Hole Results

Test Hole Data conducted by Thomas Shuck (ALMGPS) March 5-7,2008, and depicted on *Feasibility Plan, Property of the Elm Camp Company, Incorporated*, Leesville Road – Conn Route 151, East Haddam, CT, Prepared May 23, 2007

Test Hole	Depth	Description
20	0-15”	Topsoil & rubble fill
		Ledge @ 15”, No water, No mottling
21	0-10”	Topsoil
	10-37”	Fine sandy loam with silt (medium brown)
		Ledge @ 37”, No water, No mottling
22	0-9”	Topsoil
	9-25”	Fine sandy loam with silt (medium brown)
		Ledge @ 25”, No water, no mottling
23	0-9”	Topsoil
	9-37”	Fine sandy loam with silt (medium brown)
	37-45”	Medium fine light brown sandy loam
		Ledge @ 45”, No water, No mottling
24	0-9”	Topsoil
	9-19”	Fine sandy loam with silt (medium brown)
		Ledge @ 19”, No water, No mottling
25	0-11”	Topsoil
	11-33”	Medium brown fine sandy loam with silt
	33-69”	Red silty loam
		Ledge @ 86”, No water, No mottling
26	0-17”	Topsoil
		Hit electric wire at 17”
27	0-9”	Topsoil
	9-32”	Fine sandy loam with silt (medium brown)
		Ledge @ 32”, No water, No mottling

FUSS & O'NEILL

Appendix B
Summary of Test Hole Results

Test Hole Data conducted by Thomas Shuck (ALMGPS) March 5-7,2008, and depicted on *Feasibility Plan, Property of the Elm Camp Company, Incorporated*, Leesville Road – Conn Route 151, East Haddam, CT, Prepared May 23, 2007

Test Hole	Depth	Description
28	0-4"	Topsoil
	4-37"	Fine sandy loam with silt (light brown)
	37-51"	Coarse sand with pebbles and stone
	51-67"	Fine sand (light brown)
		Ledge @ 67", No water, No mottling
29		Frozen
30	0-8"	Medium fine light brown sand (no topsoil)
	8-37"	Medium sand
	37-98"	Coarse sand with pebbles & mixed stone
		No ledge, No water, No mottling
31	0-13"	Topsoil
	13-38"	Fine sandy loam – some silt (light brown)
	38-60"	Fine sand (light brown) coarsening downwards (trace stone)
	60-106"	Medium sand & mixed stone
	106-108"	Mixed pebbles and rocks
		No ledge, No water, No mottling
32	0-10"	Topsoil
	10-32"	Light brown fine sandy loam (some silt)
	32-65"	Fine sand (light brown)
		Red stained 1" horizon @ 52"
	65-98"	Medium sand with some pebbles
		No ledge, No water, No mottling

FUSS & O'NEILL

Appendix B
Summary of Test Hole Results

Test Hole Data conducted by Thomas Shuck (ALMGPS) March 5-7,2008, and depicted on *Feasibility Plan, Property of the Elm Camp Company, Incorporated*, Leesville Road – Conn Route 151, East Haddam, CT, Prepared May 23, 2007

Test Hole	Depth	Description
33	0-14”	Topsoil
	14-32”	Light brown fine sandy loam (some silt)
	32-44”	Fine sand (light brown)
	44-88”	Medium – coarse sand
		No ledge, No water, No mottling
34	0-10”	Topsoil
	10-18”	Fine sandy loam some silt (red/brown)
	18-39”	Fine sandy loam some silt (light brown)
	39-45”	Medium sand (light brown)
	45-48”	Orange/red coarse sand
	48-96”	Coarsening (medium to coarse sand with pebbles)
		No ledge, No water, No mottling
35	0-8”	Topsoil
	8-30”	Light brown fine sandy loam (with silt)
	30-38”	Fine sand (light brown) & some silt
	38-97”	Coarsening (medium to coarse sand with pebbles)
		No ledge, No water, No mottling
36	0-11”	Topsoil
	11-45”	Medium brown fine sandy loam (some silt)
	45-59”	Light brown/gray fine sand
	60-91”	Coarsening to coarse sand & pebbles
		No ledge, No water, No mottling

FUSS & O'NEILL

Appendix B
Summary of Test Hole Results

Test Hole Data conducted by Thomas Shuck (ALMGPS) March 5-7,2008, and depicted on *Feasibility Plan, Property of the Elm Camp Company, Incorporated*, Leesville Road – Conn Route 151, East Haddam, CT, Prepared May 23, 2007

Test Hole	Depth	Description
37	0-8”	Topsoil
	8-32”	Light brown fine sandy loan (some silt)
	32-39”	Light gray/brown fine sand
	40”	Red staining of fine sand
	41-80”	Very fine sand
	80-92”	Coarse sand and gravel
		No ledge, No water, No mottling
39	0-8”	Topsoil
	8-29”	Fine sandy loam (some silt) brown
	29-56”	Fine/medium sand (light brown)
	56-69”	Medium to coarse sand (orange)
	69-106”	Coarsening to coarse sand & pebbles (brown)
		No ledge, No water, No mottling
40	0-8”	Sand & gravel fill
	8-20”	Original topsoil
	20-38”	Medium sandy loam (with pebbles & trace silt) light brown
	38-65”	Medium to coarse sand with pebbles
	65-105”	Coarse sand with mixed pebbles & stone
		No ledge, No water, No mottling

FUSS & O'NEILL

Appendix B
Summary of Test Hole Results

Test Hole Data conducted by Thomas Shuck (ALMGPS) March 5-7,2008, and depicted on *Feasibility Plan, Property of the Elm Camp Company, Incorporated*, Leesville Road – Conn Route 151, East Haddam, CT, Prepared May 23, 2007

Test Hole	Depth	Description
41	0-8”	Topsoil
	8-19”	Fine sandy loam (some silt)
	19-38”	Fine sandy loam
	38-40”	Medium sand
	40-52”	Coarse sand with pebbles (light brown)
	52-56”	Coarse sand (red)
	56-88”	Coarse sand (with pebbles) coarsening to pebbles with mixed stone
		No ledge, No water, No mottling
42	0-8”	Topsoil
	8-27”	Very fine sandy loam (some silt)
	27-37”	Fine – medium sand (light brown)
	37-42”	Fine – medium sand (stained red)
	42-48”	Fine – medium sand (light brown)
	48-108”	Coarse sand with pebbles & stone (brown/tan)
		No ledge, No water, No mottling
43	0-11”	Topsoil
	11-29”	Very fine brown sandy loam (some silt)
	29-43”	Medium fine sand (light brown)
	43-55”	Medium – coarse sand (redux brown)
	55-65”	Coarse sand & pebbles (red)
	65-97”	Coarse sand with pebbles & stone
		No ledge, No water, No mottling

FUSS & O'NEILL

Appendix B
Summary of Test Hole Results

Test Hole Data conducted by Thomas Shuck (ALMGPS) March 5-7,2008, and depicted on *Feasibility Plan, Property of the Elm Camp Company, Incorporated*, Leesville Road – Conn Route 151, East Haddam, CT, Prepared May 23, 2007

Test Hole	Depth	Description
44	0-11"	Topsoil
	11-25"	Fine sandy loam (some silt) brown
	25-59"	Medium sand & mixed stone
	59-96"	Medium – coarse sand & pebbles
		No ledge, No water, No mottling
45	0-9"	Topsoil
	9-16"	Coarse brown sandy loam with trace silt
	16-37"	Coarse sand & rocks (brown)
	37-85"	Coarse/medium sand with rock & mixed stone (tan brown)
		No ledge, No water, No mottling
46	0-13"	Topsoil (fill)
		Hit septic @ 18"
47	0-10"	Topsoil
	10-16"	Coarse loam (dark brown)
	16-21"	Medium/coarse sand
	21-40"	Pebbles with sand
	40-42'	Coarse sand (stained red)
	42-87"	Medium sand with cobbles
		No ledge, No water, No mottling

Thomas Lloret DRILLER	**TEST BORING REPORT** **ASSOCIATED BORINGS CO., INC.** **119 MARGARET CIRCLE, NAUGATUCK, CT 06770** **Tel (203) 729-5435 Fax (203) 729-5116**	SHEET 1 OF 2
INSPECTOR	PROJECT NAME: Johnson Sunrise	CME-45B DRILLING EQUIPMENT Angus McDonald/Gary Sharpe
SOILS ENGINEER	PROJECT NUMBER:	CLIENT
Surface Elevation:	LOCATION: East Haddam, Connecticut	
Date Started: 4/25/2007		Hole No. **DW-1**
Date Finished: 4/25/2007		Line & Station
Groundwater Observations		Offset
AT 28 ' AFTER 0 HRS		N Coordinate
AT ' AFTER HRS		E. Coordinate

	Auger	Casing	Sampler	Core Bar
Type	HSA		SS	
Size I. D.	4 1/4 in		2 in	
Hammer			140 lb	Bit
Fall			30 in	

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
												Br. M-F Sand, Tr. F. Gravel
20		20.0 - 22.0	1	24	10	D	5	5	7	5		
											28	Gr. Br. M-F Silty Sand
30		30.0 - 32.0	2	24	14	D	12	15	17	15		
40		40.0 - 40.7	3	7	7	D	40	50/2"	X	X	40.7	

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 40.7 Footage in Rock 0.0 No. of Samples 3 Hole No. DW-1

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret DRILLER	**TEST BORING REPORT** **ASSOCIATED BORINGS CO., INC.** **119 MARGARET CIRCLE, NAUGATUCK, CT 06770** **Tel (203) 729-5435 Fax (203) 729-5116**	SHEET 2 OF 2
INSPECTOR	PROJECT NAME: Johnson Sunrise	CME-45B DRILLING EQUIPMENT Angus McDonald/Gary Sharpe
SOILS ENGINEER	PROJECT NUMBER:	CLIENT
Surface Elevation:	LOCATION: East Haddam, Connecticut	
Date Started: 4/25/2007		Hole No. **DW-1**
Date Finished: 4/25/2007		Line & Station
Groundwater Observations		Offset
AT 28 'AFTER 0 HRS		N Coordinate
AT 'AFTER HRS		E. Coordinate

	Auger	Casing	Sampler	Core Bar
Type	HSA		SS	
Size I. D.	4 1/4 in		2 in	
Hammer			140 lb	Bit
Fall			30 in	

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
											40	WELL INSTALLED @ 40'
												10' 2" PVC SCREEN
												30' 2" PVC RISER
45												STICK-UP PROTECTOR
50												
55												
60												
65												
70												
75												
80												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 40.7 Footage in Rock 0.0 No. of Samples 3 Hole No. DW-1

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret	**TEST BORING REPORT**	SHEET 1 OF 2	
DRILLER	**ASSOCIATED BORINGS CO., INC.**		
	119 MARGARET CIRCLE, NAUGATUCK, CT 06770	CME-45B	
INSPECTOR	**Tel (203) 729-5435 Fax (203) 729-5116**	DRILLING EQUIPMENT	
	PROJECT NAME: Johnson Sunrise	Angus McDonald/Gary Sharpe	
SOILS ENGINEER	PROJECT NUMBER:	CLIENT	
Surface Elevation:	LOCATION: East Haddam, Connecticut		

	Auger	Casing	Sampler	Core Bar	
Type	HSA		SS		Hole No. **DW-2**
Size I. D.	4 1/4 in		2 in		Line & Station
Hammer			140 lb	Bit	Offset
Fall			30 in		N Coordinate
					E. Coordinate

Date Started: 4/30/2007
Date Finished: 4/30/2007
Groundwater Observations
AT 29 'AFTER 0 HRS
AT 'AFTER HRS

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
												Br. C-F Sand and C-F Gravel
20		20.0 - 22.0	1	24	11	D	10	10	19	22		
30		30.0 - 32.0	2	24	10	D	19	21	32	44		
											39	
40		40.0 - 41.5	3	18	14	D	28	37	50	X	41.5	Br. C-F Silty Sand, Some C-F Gravel, Cobbles

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 41.5 Footage in Rock 0.0 No. of Samples 3 Hole No. DW-2

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON
PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret DRILLER	**TEST BORING REPORT** **ASSOCIATED BORINGS CO., INC.** **119 MARGARET CIRCLE, NAUGATUCK, CT 06770** **Tel (203) 729-5435 Fax (203) 729-5116**	SHEET 2 OF 2
INSPECTOR	PROJECT NAME: Johnson Sunrise	CME-45B DRILLING EQUIPMENT Angus McDonald/Gary Sharpe
SOILS ENGINEER	PROJECT NUMBER:	CLIENT
Surface Elevation:	LOCATION: East Haddam, Connecticut	
Date Started: 4/30/2007		Hole No. **DW-2**
Date Finished: 4/30/2007		Line & Station
Groundwater Observations		Offset
AT 29 ' AFTER 0 HRS		N Coordinate
AT ' AFTER HRS		E. Coordinate

	Auger	Casing	Sampler	Core Bar
Type	HSA		SS	
Size I. D.	4 1/4 in		2 in	
Hammer			140 lb	Bit
Fall			30 in	

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
											41.5	
												Refusal - 41.5
												WELL INSTALLED @ 40'
												10' 2" PVC SCREEN
45												30' 2" PVC RISER
												STICK-UP PROTECTOR
50												
55												
60												
65												
70												
75												
80												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 0.0 Footage in Rock 0.0 No. of Samples 0 Hole No. DW-2

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret DRILLER	**TEST BORING REPORT** **ASSOCIATED BORINGS CO., INC.** **119 MARGARET CIRCLE, NAUGATUCK, CT 06770** **Tel (203) 729-5435 Fax (203) 729-5116**	SHEET 1 OF 1
INSPECTOR	PROJECT NAME: Johnson Sunrise	CME-45B DRILLING EQUIPMENT Angus McDonald/Gary Sharpe
SOILS ENGINEER	PROJECT NUMBER:	CLIENT
Surface Elevation:	LOCATION: East Haddam, Connecticut	
Date Started: 4/25/2007		Hole No. **DW-3**
Date Finished: 4/25/2007		Line & Station
Groundwater Observations		Offset
AT 27 ' AFTER 0 HRS		N Coordinate
AT ' AFTER HRS		E. Coordinate

	Auger	Casing	Sampler	Core Bar
Type	HSA		SS	
Size I. D.	4 1/4 in		2 in	
Hammer			140 lb	Bit
Fall			30 in	

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
												Br. M-F Sand, Tr. F. Gravel
5												
10												
											14	
15												Gr. Br. M-F Silty Sand
20		20.0 - 22.0	1	24	10	D	13	27	36	31		
25												
30		30.0 - 30.5	2	6	5	D	50	X	X	X		
											32.5	Refusal - 32.5
35												WELL INSTALLED @ 32.5 10' 2" PVC SCREEN 23' 2" PVC RISER STICK-UP PROTECTOR
40												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 32.5 Footage in Rock 0.0 No. of Samples 2 Hole No. DW-3

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret DRILLER	**TEST BORING REPORT** **ASSOCIATED BORINGS CO., INC.** **119 MARGARET CIRCLE, NAUGATUCK, CT 06770** **Tel (203) 729-5435 Fax (203) 729-5116**	SHEET 1 OF 2
INSPECTOR	PROJECT NAME: Johnson Sunrise	CME-45B DRILLING EQUIPMENT Angus McDonald/Gary Sharpe
SOILS ENGINEER	PROJECT NUMBER:	CLIENT
Surface Elevation:	LOCATION: East Haddam, Connecticut	
Date Started: 4/26/2007		Hole No. **DW-4**
Date Finished: 4/26/2007		Line & Station
Groundwater Observations		Offset
AT None ' AFTER 0 HRS		N Coordinate
AT ' AFTER HRS		E. Coordinate

	Auger	Casing	Sampler	Core Bar
Type	HSA		SS	
Size I. D.	4 1/4 in		2 in	
Hammer			140 lb	Bit
Fall			30 in	

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
												Br. M-F Sand, Some M-F Gravel
5												
10												
15												
20		20.0 - 22.0	1	24	10	D	11	17	19	24		
25											26	Br. F. Silty Sand
30		30.0 - 32.0	2	24	11	D	9	13	12	16		
35												
40		40.0 - 42.0	3	24	14	D	9	9	13	10	42	

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 42.0 Footage in Rock 0.0 No. of Samples 3 Hole No. DW-4

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret DRILLER	**TEST BORING REPORT** **ASSOCIATED BORINGS CO., INC.** **119 MARGARET CIRCLE, NAUGATUCK, CT 06770** **Tel (203) 729-5435 Fax (203) 729-5116**	SHEET 2 OF 2
INSPECTOR	PROJECT NAME: Johnson Sunrise	CME-45B DRILLING EQUIPMENT Angus McDonald/Gary Sharpe
SOILS ENGINEER	PROJECT NUMBER:	CLIENT
Surface Elevation:	LOCATION: East Haddam, Connecticut	
Date Started: 4/26/2007		Hole No. **DW-4**
Date Finished: 4/26/2007		Line & Station
Groundwater Observations		Offset
AT None ' AFTER 0 HRS		N Coordinate
AT ' AFTER HRS		E. Coordinate

	Auger	Casing	Sampler	Core Bar
Type	HSA		SS	
Size I. D.	4 1/4 in		2 in	
Hammer			140 lb	Bit
Fall			30 in	

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
45											45	Br. C-F Sand and C-F Gravel
50		50.0 - 52.0	4	24	11	D	17	31	46	34	52	End of Boring - 52.0 WELL INSTALLED @ 50' 10' 2" PVC SCREEN 40' 2" PVC RISER STICK-UP PROTECTOR
55												
60												
65												
70												
75												
80												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 10.0 Footage in Rock 0.0 No. of Samples 1 Hole No. **DW-4**

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret DRILLER	**TEST BORING REPORT** **ASSOCIATED BORINGS CO., INC.** **119 MARGARET CIRCLE, NAUGATUCK, CT 06770** **Tel (203) 729-5435 Fax (203) 729-5116**	SHEET 1 OF 2
INSPECTOR	PROJECT NAME: Johnson Sunrise	CME-45B DRILLING EQUIPMENT Angus McDonald/Gary Sharpe
SOILS ENGINEER	PROJECT NUMBER:	CLIENT
Surface Elevation:	LOCATION: East Haddam, Connecticut	
Date Started: 4/30/2007		Hole No. **DW-5**
Date Finished: 4/30/2007		Line & Station
Groundwater Observations		Offset
AT 31 ' AFTER 0 HRS		N Coordinate
AT ' AFTER HRS		E. Coordinate

	Auger	Casing	Sampler	Core Bar
Type	HSA		SS	
Size I. D.	4 1/4 in		2 in	
Hammer			140 lb	Bit
Fall			30 in	

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
												Br. C-F Sand and C-F Gravel
5												
10												
15												
20		20.0 - 22.0	1	24	5	D	10	17	19	19		
25												
30		30.0 - 32.0	2	24	12	D	9	9	11	17		
35											37	Br. F. Silty Sand
40		40.0 - 42.0	3	24	16	D	11	15	17	15	42	

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 42.0 Footage in Rock 0.0 No. of Samples 3 Hole No. DW-5

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret DRILLER	**TEST BORING REPORT** **ASSOCIATED BORINGS CO., INC.** **119 MARGARET CIRCLE, NAUGATUCK, CT 06770** **Tel (203) 729-5435 Fax (203) 729-5116**	SHEET 2 OF 2
INSPECTOR	PROJECT NAME: Johnson Sunrise	CME-45B DRILLING EQUIPMENT Angus McDonald/Gary Sharpe
SOILS ENGINEER	PROJECT NUMBER:	CLIENT
Surface Elevation:	LOCATION: East Haddam, Connecticut	
Date Started: 4/30/2007		Hole No. **DW-5**
Date Finished: 4/30/2007		Line & Station
Groundwater Observations		Offset
AT 31 ' AFTER 0 HRS		N Coordinate
AT ' AFTER HRS		E. Coordinate

	Auger	Casing	Sampler	Core Bar
Type	HSA		SS	
Size I. D.	4 1/4 in		2 in	
Hammer			140 lb	Bit
Fall			30 in	

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
											42	
45												Refusal - 42.0 WELL INSTALLED @ 40' 10' 2" PVC SCREEN 30' 2" PVC RISER STICK-UP PROTECTOR
50												
55												
60												
65												
70												
75												
80												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 0.0 Footage in Rock 0.0 No. of Samples 0 Hole No. DW-5

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret DRILLER	**TEST BORING REPORT** **ASSOCIATED BORINGS CO., INC.** **119 MARGARET CIRCLE, NAUGATUCK, CT 06770** **Tel (203) 729-5435 Fax (203) 729-5116**	SHEET 1 OF 2
INSPECTOR	PROJECT NAME: Johnson Sunrise	CME-45B DRILLING EQUIPMENT Angus McDonald/Gary Sharpe
SOILS ENGINEER	PROJECT NUMBER:	CLIENT
Surface Elevation:	LOCATION: East Haddam, Connecticut	
Date Started: 4/26/2007		Hole No. **DW-6**
Date Finished: 4/26/2007		Line & Station
Groundwater Observations		Offset
AT None ' AFTER 0 HRS		N Coordinate
AT ' AFTER HRS		E. Coordinate

	Auger	Casing	Sampler	Core Bar
Type	HSA		SS	
Size I. D.	4 1/4 in		2 in	
Hammer			140 lb	Bit
Fall			30 in	

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
												Br. M-F Sand, Some M-F Gravel
5												
10											13	
												Br. M-F Sand
15												
20		20.0 - 22.0	1	24	10	D	5	7	5	5		
25											26	
												Br. C-F Sand and C-F Gravel
30		30.0 - 32.0	2	24	10	D	10	12	24	31		
35												
40		40.0 - 42.0	3	24	9	D	11	17	28	30	42	

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 42.0 Footage in Rock 0.0 No. of Samples 3 Hole No. DW-6

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Thomas Lloret DRILLER	**TEST BORING REPORT** **ASSOCIATED BORINGS CO., INC.** **119 MARGARET CIRCLE, NAUGATUCK, CT 06770** **Tel (203) 729-5435 Fax (203) 729-5116**	SHEET 2 OF 2
INSPECTOR	PROJECT NAME: Johnson Sunrise	CME-45B DRILLING EQUIPMENT Angus McDonald/Gary Sharpe
SOILS ENGINEER	PROJECT NUMBER:	CLIENT
Surface Elevation:	LOCATION: East Haddam, Connecticut	
Date Started: 4/26/2007		Hole No. **DW-6**
Date Finished: 4/26/2007		Line & Station
Groundwater Observations		Offset
AT None ' AFTER 0 HRS		N Coordinate
AT ' AFTER HRS		E. Coordinate

	Auger	Casing	Sampler	Core Bar
Type	HSA		SS	
Size I. D.	4 1/4 in		2 in	
Hammer			140 lb	Bit
Fall			30 in	

DEPTH	Casing blows per foot	SAMPLE DEPTH IN FEET FROM - TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0 - 6	6 - 12	12-18	18-24	STRATA CHANGE: DEPTH, ELEV.	FIELD IDENTIFICATION OF SOIL, REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
												Br. C-F Sand and C-F Gravel
45												
50		50.0 - 52.0	4	24	10	D	19	21	27	25	52	
												End of Boring - 52.0
												WELL INSTALLED @ 50'
55												10' 2" PVC SCREEN
												40' 2" PVC RISER
												STICK-UP PROTECTOR
60												
65												
70												
75												
80												

From Ground Surface to Feet Used Inch Casing Then Inch Casing For Feet

Footage in Earth 10.0 Footage in Rock 0.0 No. of Samples 1 Hole No. DW-6

SAMPLE TYPE CODING: D = DRIVEN C = CORE A = AUGER UP = UNDISTURBED PISTON

PROPORTIONS USED: TRACE = 1-10% LITTLE = 10-20% SOME = 20-35% AND = 35-50%

Appendix C

Summary of Water Quality Results

Columbia Environmental Lab

2 Lakeview Park West
Columbia, CT 06237
(860) 228-0329

Tuesday, August 12, 2008

To: Sunrise Resort
P.O. Box 415
Moodus, CT 06469

Laboratory Report: Water Quality Testing

Lab Sample Number: T8303

Coll.Date	Collected By	Facility (Water System)	PWS ID#	Sampling Location	State Code	Smp Point
8/5/2008	Burrell, Jan	SUNRISE RESORTS	CT0410164	DISTRIBUTION SYSTEM	00600	4

Field Results

Free Chl Res mg/L
0

Laboratory Results

		Laboratory Result	Rptg Units	Lab Rpt Lvl	MCL	EPA Analytical Method	Analysis Completion Date
Dist Total Coliform (DSTC)							
3100	DISTRIBUTION COLIFORM TOTAL	A				Colilert	8/6/2008
3014	DISTRIBUTION E.COLI	A				Colilert	8/6/2008
Dist Physical Parameters (PPS)							
SCL	DISTRIBUTION COLOR	0	CU	n/a		2120B	8/6/2008
SOD	DISTRIBUTION ODOR	0	TON	n/a		2150B	8/6/2008
SPH	DISTRIBUTION PH	7.4	PH	n/a		4500-H+B	8/6/2008
DTRB	DISTRIBUTION TURBIDITY	0.7	NTU	n/a		2130B	8/6/2008

Respectfully Submitted
Columbia Environmental Lab

Laboratory Director
CT Lab# PH-0514

Columbia Environmental Lab

2 Lakeview Park West
Columbia, CT 06237
(860) 228-0329

Friday, April 25, 2008

To: Sunrise Resort
P.O. Box 415
Moodus, CT 06469

Laboratory Report: Water Quality Testing

Lab Sample Number: t8157						
Coll.Date	Collected By	Facility (Water System)	PWS ID#	Sampling Location	State Code	Smp Point
4/12/2008	Burrell, Jan	SUNRISE RESORTS	CT0410164	DISTRIBUTION SYSTEM	00600	4

Field Results

Free Chl Res mg/L
0

Laboratory Results

		Laboratory Result	Rptg Units	Lab Rpt Lvl	MCL	EPA Analytical Method	Analysis Completion Date
Dist Total Coliform (DSTC)							
3100	DISTRIBUTION COLIFORM TOTAL	A				Colilert	4/13/2008
3014	DISTRIBUTION E.COLI	A				Colilert	4/13/2008
Dist Physical Parameters (PPS)							
SCL	DISTRIBUTION COLOR	5	CU	n/a		2120B	4/13/2008
SOD	DISTRIBUTION ODOR	0	TON	n/a		2150B	4/13/2008
SPH	DISTRIBUTION PH	7.0	PH	n/a		4500-H+B	4/13/2008
DTRB	DISTRIBUTION TURBIDITY	2.3	NTU	n/a		2130B	4/13/2008

Lab Sample Number: t8157-n						
Coll.Date	Collected By	Facility (Water System)	PWS ID#	Sampling Location	State Code	Smp Point
4/12/2008	Burrell, Jan	SUNRISE RESORTS	CT0410164	ENTRY POINT	00700	3

Laboratory Results

		Laboratory Result	Rptg Units	Lab Rpt Lvl	MCL	EPA Analytical Method	Analysis Completion Date
Nitrate and Nitrite (NOX)							
1040	NITRATE (AS N)	1.3	MG/L	MDL	10	4500-NO3-D	4/13/2008
1041	NITRITE (AS N)	nd <0.005	MG/L	MDL	1	354.1	4/13/2008

Respectfully Submitted
Columbia Environmental Lab

Laboratory Director
CT Lab# PH-0514

Columbia Environmental Lab

2 Lakeview Park West
Columbia, CT 06237
(860) 228-0329

Friday, April 13, 2007

To: Sunrise Resort
P.O. Box 415
Moodus, CT 06469

Laboratory Report: Water Quality Testing

Lab Sample Number: T7149

Coll.Date	Collected By	Facility (Water System)	PWS ID#	Sampling Location	State Code	Smp Point
4/10/2007	Burrell, Jan	SUNRISE RESORTS	CT0410164	DISTRIBUTION SYSTEM	00600	4

Field Results

Free Chl Res mg/L
0

Laboratory Results

		Laboratory Result	Rptg Units	Lab Rpt Lvl	MCL	EPA Analytical Method	Analysis Completion Date
Dist Total Coliform (DSTC)							
3100	DISTRIBUTION COLIFORM TOTAL	A				Colilert	4/11/2007
3014	DISTRIBUTION E.COLI	A				Colilert	4/11/2007
Dist Physical Parameters (PPS)							
SCL	DISTRIBUTION COLOR	0	CU	n/a		2120B	4/11/2007
SOD	DISTRIBUTION ODOR	0	TON	n/a		2150B	4/11/2007
SPH	DISTRIBUTION PH	7.2	PH	n/a		4500-H+B	4/11/2007
DTRB	DISTRIBUTION TURBIDITY	0.52	NTU	n/a		2130B	4/11/2007

Lab Sample Number: T7149-N

Coll.Date	Collected By	Facility (Water System)	PWS ID#	Sampling Location	State Code	Smp Point
4/10/2007	Burrell, Jan	SUNRISE RESORTS	CT0410164	ENTRY POINT	00700	3

Laboratory Results

		Laboratory Result	Rptg Units	Lab Rpt Lvl	MCL	EPA Analytical Method	Analysis Completion Date
Nitrate and Nitrite (NOX)							
1040	NITRATE (AS N)	1.5	MG/L	MDL	10	4500-NO3-D	4/11/2007
1041	NITRITE (AS N)	nd <0.005	MG/L	MDL	1	354.1	4/11/2007

Respectfully Submitted
Columbia Environmental Lab

Laboratory Director
CT Lab# PH-0514

Sheets

SUNRISE STATE PARK

LEESVILLE ROAD / ROUTE 151
EAST HADDAM, CONNECTICUT

SITE LAYOUT PLAN
SHEET CS-101

GENERAL AREA DESCRIPTIONS

ECHO VILLAGE

Includes buildings with historic value, including the Samuel Elmore Place ("Toll House") built in 170, and the I. Chapman Jr. Place ("White House"), built in 1820. These and several other more modern buildings are clustered in the portion of the developed property closest to Route 151.

CLUB HOUSE / OFFICE AREA

Includes the main administration building, dance hall, main pool, playgrounds, baseball field, and hotel "cabanas" clustered adjacent to the main parking fields in the developed center of the property.

FOLLY AREA

Includes guest and staff cabins in the northernmost portion of the developed site, and are in the vicinity of the Barbeque Pavilion, tennis courts, multi-purpose recreational building known as "The Frog", and the only known winterized building on site known as "The Apartment".

SINGLE CABIN / DOUBLE CABIN AREA

Incorporates the main cluster of guest buildings on site, also including several staff cabins. This area, built around the rim of one of the major hills on site, is south of the Folly Area and east of the Club House/Office Area.

WATERFRONT COTTAGES

Line the northern portion of the property's frontage along the Salmon River. This area included guest cabins built landward of the waterfront perimeter access road, west of the Single Cabin/Double Cabin Area.

WATERFRONT PAVILION AREA

Includes the Main Dining Hall and outdoor pavilions in the southwest corner of the developed site. This area is clustered at the bottom of the main hill on site, and may be accessed from the Waterfront Cottage Area to the north, the Arthur's Paradise and the Motel Area to the southeast, and the Club House/Office Area to the east.

MOTEL AREA

Includes one single-story guest room building and two double-story guest room buildings, in addition to a Mini-Golf Course, Spa Area, and adjacent recreational fields. This area is in the southern portion of the developed site, west of Echo Village, east of Arthur's Paradise, and south of the Club House/Office Area.

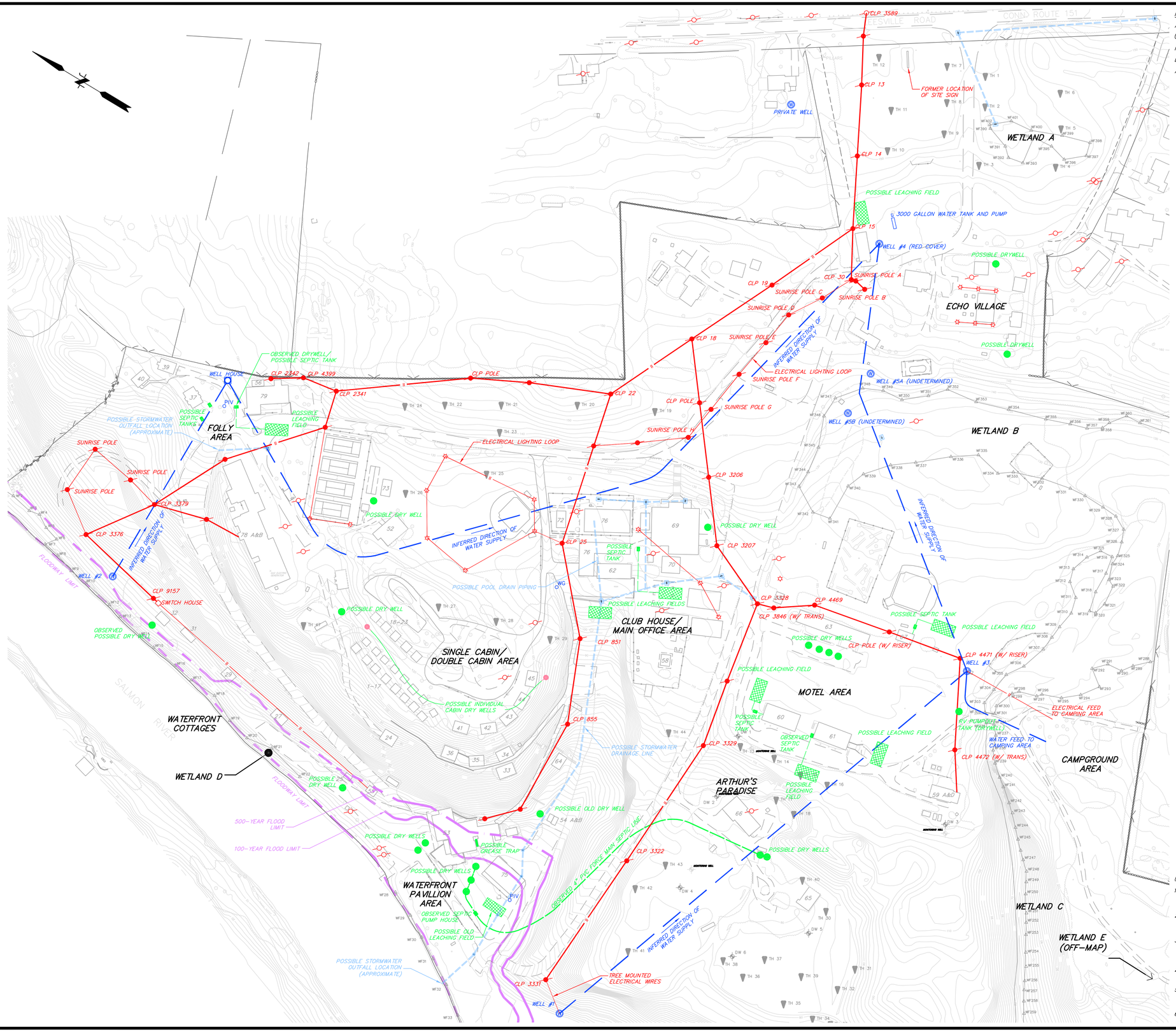
ARTHUR'S PARADISE

Includes the maintenance buildings and facilities for operation of the historic resort. A Maintenance Garage, storage Quonset Hut, and debris piles comprise this area west of the Motel Area and south (uphill) from the Waterfront Pavilion Area.

CAMPGROUND AREA

Located south of the Motel Area and was accessed by bridge over the large wetland system and intermittent watercourse.

FUSS & O'NEILL



NOTE:
ALL UTILITY INFORMATION IS BASED OFF OF AVAILABLE MAPPING, INTERVIEWS WITH PAST OWNERS, AND SELECT FIELD LOCATION. LOCATION AREAS ARE APPROXIMATE.

LEGEND

- DOMESTIC WELL
- WELL HOUSE JUNCTION
- PIV VALVE
- GATE VALVE
- CATCH BASIN
- BUILDING/STRUCTURE
- TEST HOLE
- MONITORING WELL
- BASE MAP UTILITY POLE
- FIELD LOCATED UTILITY POLE
- LIGHT POLE
- SANITARY SEPTIC TANK
- SANITARY DRY WELL
- SANITARY LEACH FIELD
- WETLAND FLAG
- WATER LINE
- OVERHEAD WIRES
- SANITARY SEWER LINE
- STORM DRAINAGE LINE
- FLOODWAY/FLOOD ZONE LIMIT

MAP REFRENCES

1. BASEMAP PROVIDED BY ANGUS McDONALD GARY SHARPE & ASSOCIATES, INC, ELECTRONICLLY TRANSMITTED TO FUSS & O'NEILL ON NOVEMBER 30, 2010.
2. WELL HOUSE, SELECT TORM STRUCTURES, AND NUMBERD UTILITY POLE LOCATIONS DIGITIZED PER FIELD INVESTIGATION CONDUCTIED BY FUSS & O'NEILL PERSONELL ON NOVEMBER 19, 2010.
3. WATER PIPING AND SNITRAY STRUCTURES, PIPING, AND LEACHFIELD LOCATIONS DIGITIZED PER CONVERSATION WITH MR. JAMES JOHNSON ON NOVEMBER 19, 2010, AND IFORMATION PROVIDED BY THE STATE OF CONNECTICUT.
4. BUILDING NUMBERS DIGITIZED PER INVENTORY DOCUMENT PREPARED BY THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION.
5. TEST PIT LOCATIONS AND INFORMATION OBTAINED FROM "FEASIBILITY PLAN" PREPARED BY ANGUS McDONALD GARY SHARPE & ASSOCIATES, INC FOR THE ELM CAMP COMPANY, INCORPORATED DATED MAY 23, 2007.
6. FLOODLINES ARE BASED OFF OF FLOOD INSURANCE MAP PANEL NUMBER 09007C0163G EFFECTIVE DATE AUGUST 28, 2010

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SCALE: HORZ.: 1" = 100'
VERT.:
DATUM: HORZ.:
VERT.:
GRAPHIC SCALE 100 0 50 100

FUSS & O'NEILL
Disciplines to Deliver
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION
EXISTING UTILITY PLAN
SUNRISE RESORT STATE PARK
EAST HADDAM CONNECTICUT

PROJ. No.: 2010 0950.A10
DATE: DECEMBER, 2010

CU-101

File Path: J:\DWG\P2010\0950\A10\Civil\Plan\20100950A10_UTL01.dwg, Layout: CU-101, Plotted: Thu, Dec 23, 2010 - 11:46 AM User: dhayden
MS VIEW: LAYER STATE: Plotter: ACROPLOT.PC3 CTB File: FO 2008 COLOR.CTB

NOTE:
ALL UTILITY INFORMATION IS BASED OFF OF AVAILABLE MAPPING, INTERVIEWS WITH PAST OWNERS, AND SELECT FIELD LOCATION. LOCATION AREAS ARE APPROXIMATE.

LEGEND

- DOMESTIC WELL
- WELL HOUSE JUNCTION
- PIV VALVE
- GATE VALVE
- CATCH BASIN
- BUILDING/STRUCTURE
- BASE MAP UTILITY POLE
- FIELD LOCATED UTILITY POLE
- LIGHT POLE
- SANITARY SEPTIC TANK
- SANITARY DRY WELL
- SANITARY LEACH FIELD
- WATER LINE
- OVERHEAD WIRES
- SANITARY SEWER LINE
- STORM DRAINAGE LINE

AREAS OF CONCERN (AOCs)

AOC-01	ABOVE GROUND STORAGE TANKS (ASTs)
AOC-02	POLE-MOUNTED TRANSFORMERS
AOC-03	SUSPECTED UNDERGROUND STORAGE TANK (UST) AT BUILDING #69
AOC-04	SUSPECTED UST AT BUILDING #53
AOC-05	SUSPECTED UST AT BUILDING #55
AOC-06	SUSPECTED UST AT BUILDING #78
AOC-07	ABANDONED UST AT BUILDING #79
AOC-08	MAINTENANCE GARAGE BUILDING #66
AOC-09	APARTMENT BUILDING #79
AOC-10	DRY WELLS/DUG WELLS
AOC-11	MAIN DINING HALL BUILDING #53
AOC-12	BARBEQUE HALL BUILDING 78A&B
AOC-13	DEBRIS AREAS
AOC-14	SEPTIC SYSTEM

MAP REFRENCES

1. BASEMAP PROVIDED BY ANGUS McDONALD GARY SHARPE & ASSOCIATES, INC, ELECTRONICLLY TRANSMITTED TO FUSS & O'NEILL ON NOVEMBER 30, 2010.
2. WELL HOUSE, SELECT TORM STRUCTURES, AND NUMBERD UTILITY POLE LOCATIONS DIGITIZED PER FIELD INVESTIGATION CONDUCTED BY FUSS & O'NEILL PERSONELL ON NOVEMBER 19, 2010.
3. WATER PIPING AND SNITRAY STRUCTURES, PIPING, AND LEACHFIELD LOCATIONS DIGITIZED PER CONVERSATION WITH MR. JAMES JOHNSON ON NOVEMBER 19, 2010, AND IFORMATION PROVIDED BY THE STATE OF CONNECTICUT.
4. BUILDING NUMBERS DIGITIZED PER INVENTORY DOCUMENT PREPARED BY THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION.
5. TEST PIT LOCATIONS AND INFORMATION OBTAINED FROM "FEASIBILITY PLAN" PREPARED BY ANGUS McDONALD GARY SHARPE & ASSOCIATES, INC FOR THE ELM CAMP COMPANY, INCORPORATED DATED MAY 23, 2007.

No.	DATE	DESCRIPTION	DESIGNER XX/XX	REVIEWER XX
1.				

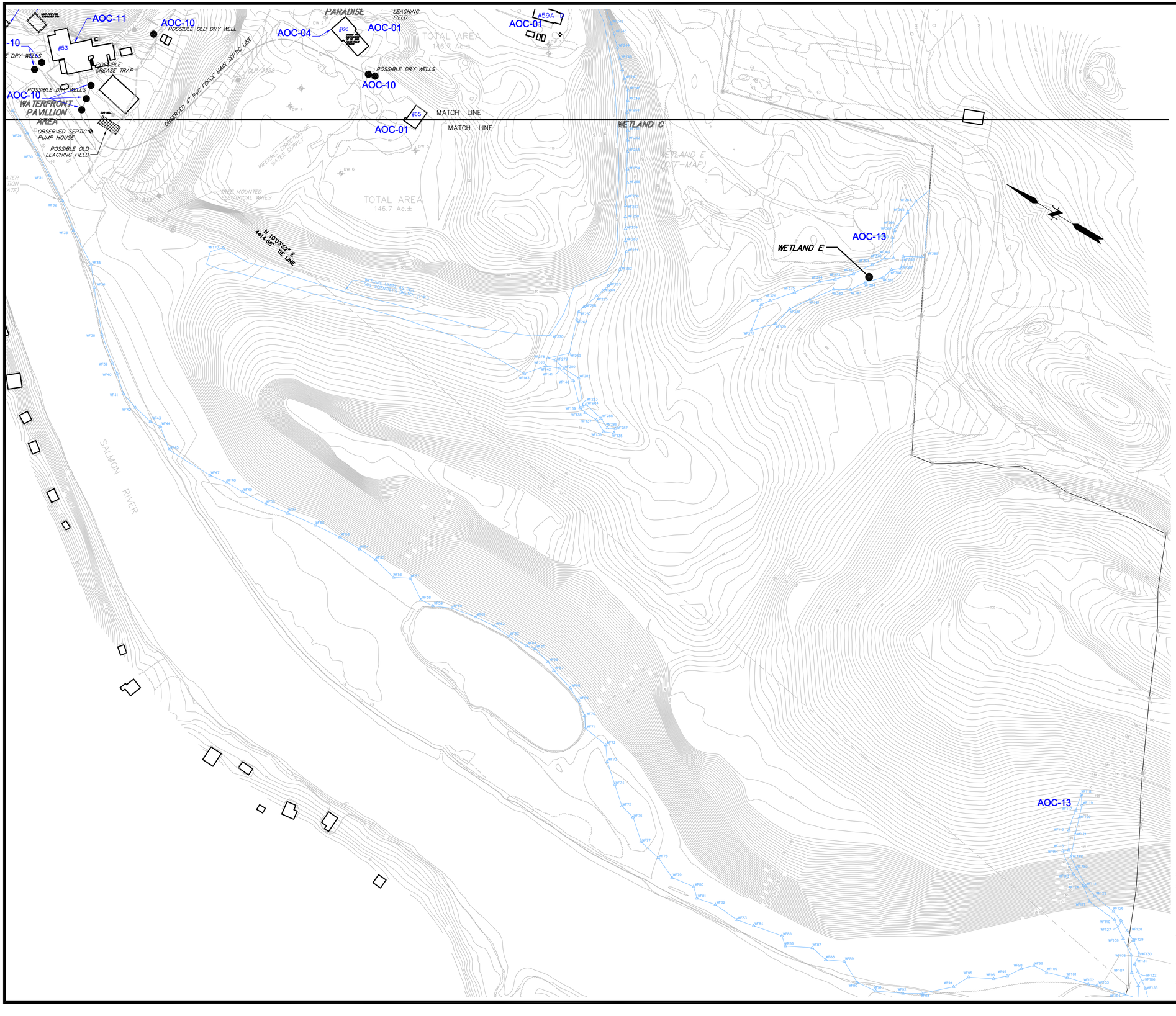
SCALE: HORZ.: 1" = 100' VERT.: DATUM: HORZ.: VERT.: GRAPHIC SCALE 100 0 50 100

FUSS & O'NEILL
Disciplines to Deliver
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.lanbo.com

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL AREAS OF CONCERN
(1 OF 2)
SUNRISE RESORT STATE PARK
EAST HADDAM CONNECTICUT

PROJ. No.: 2010 0950.A10
DATE: DECEMBER, 2010

ENV-101



NOTE:
ALL UTILITY INFORMATION IS BASED OFF OF AVAILABLE MAPPING, INTERVIEWS WITH PAST OWNERS, AND SELECT FIELD LOCATION. LOCATION AREAS ARE APPROXIMATE.

LEGEND

- DOMESTIC WELL
- WELL HOUSE JUNCTION
- PIV VALVE
- GATE VALVE
- CATCH BASIN
- BUILDING/STRUCTURE
- BASE MAP UTILITY POLE
- FIELD LOCATED UTILITY POLE
- LIGHT POLE
- SANITARY SEPTIC TANK
- SANITARY DRY WELL
- SANITARY LEACH FIELD
- WATER LINE
- OVERHEAD WIRES
- SANITARY SEWER LINE
- STORM DRAINAGE LINE

AREAS OF CONCERN (AOCs)

AOC-01	ABOVE GROUND STORAGE TANKS (ASTs)
AOC-02	POLE-MOUNTED TRANSFORMERS
AOC-03	SUSPECTED UNDERGROUND STORAGE TANK (UST) AT BUILDING #69
AOC-04	SUSPECTED UST AT BUILDING #53
AOC-05	SUSPECTED UST AT BUILDING #55
AOC-06	SUSPECTED UST AT BUILDING #78
AOC-07	ABANDONED UST AT BUILDING #79
AOC-08	MAINTENANCE GARAGE BUILDING #66
AOC-09	APARTMENT BUILDING #79
AOC-10	DRY WELLS/DUG WELLS
AOC-11	MAIN DINING HALL BUILDING #53
AOC-12	BARBEQUE HALL BUILDING 78A&B
AOC-13	DEBRIS AREAS
AOC-14	SEPTIC SYSTEM

MAP REFRENCES

1. BASEMAP PROVIDED BY ANGUS McDONALD GARY SHARPE & ASSOCIATES, INC, ELECTRONICLLY TRANSMITTED TO FUSS & O'NEILL ON NOVEMBER 30, 2010.
2. WELL HOUSE, SELECT TORM STRUCTURES, AND NUMBERD UTILITY POLE LOCATIONS DIGITEZED PER FIELD INVESTIGATION CONDUCTIED BY FUSS & O'NEILL PERSONELL ON NOVEMBER 19, 2010.
3. WATER PIPING AND SNITRAY STRUCTURES, PIPING, AND LEACHFIELD LOCATIONS DIGITIZED PER CONVERSATION WITH MR. JAMES JOHNSON ON NOVEMBER 19, 2010, AND IFORMATION PROVIDED BY THE STATE OF CONNECTICUT.
4. BUILDING NUMBERS DIGITIZED PER INVENTORY DOCUMENT PREPARED BY THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION.
5. TEST PIT LOCATIONS AND INFORMATION OBTAINED FROM "FEASIBILITY PLAN" PREPARED BY ANGUS McDONALD GARY SHARPE & ASSOCIATES, INC FOR THE ELM CAMP COMPANY, INCORPORATED DATED MAY 23, 2007.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SCALE:
HORZ.: 1" = 100'
VERT.:
DATUM:
HORZ.:
VERT.:
GRAPHIC SCALE 100 50 0 100

FUSS & O'NEILL
Disciplines to Deliver
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

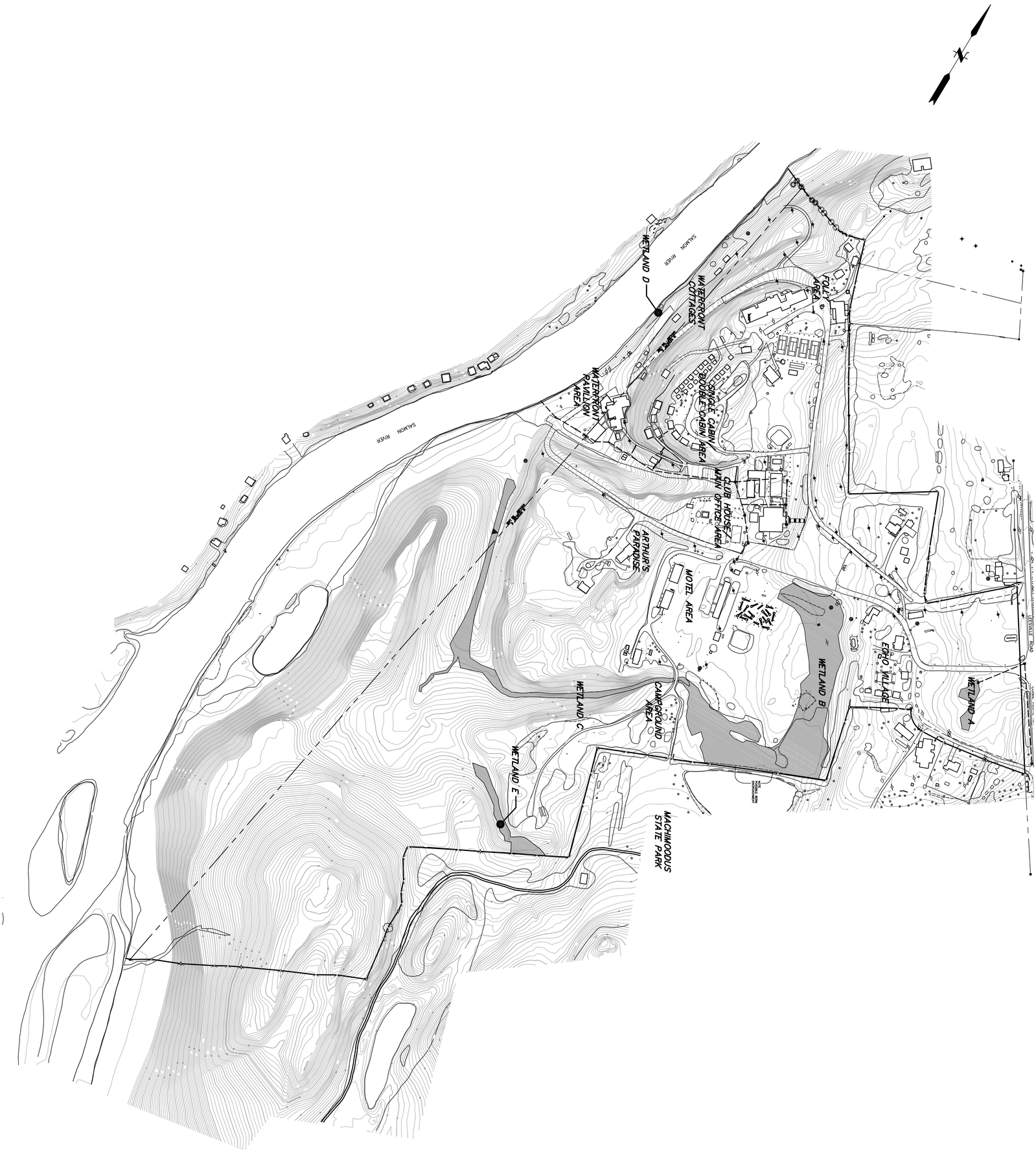
CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL AREAS OF CONCERN
(2 OF 2)
SUNRISE RESORT STATE PARK
EAST HADDAM CONNECTICUT

PROJ. No.: 2010 0950.A10
DATE: DECEMBER, 2010

ENV-102

File Path: J:\DWG\P2010\0950\A10\Civil\Plan\20100950A10_AOC01.dwg, Layout: ENV-102, Plotted: Thu, Dec 23, 2010 - 11:52 AM User: dhayden
MS VIEW: LAYER STATE: Plotter: ACROPLOT.PC3 CTB File: FO 2008 COLOR.CTB

File Path: J:\DWG\P2010\0950\A10\Civil\Plan\20100950A10_UTL01.dwg, Layout: GI-401, Plotted: Thu, Dec 23, 2010 - 11:46 AM User: dhayden
MS VIEW: | LAYER STATE: | Plotter: ACROPLOT.PC3 CTB File: FO 2008 MONO.CTB



GI-401

PROJ. No.: 2010.0950.A10
DATE: DECEMBER, 2010

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION

EXISTING OVERALL SITE PLAN

SUNRISE RESORT STATE PARK

EAST HADDAM CONNECTICUT

FUSS & O'NEILL
Disciplines to Deliver
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

SCALE:
HORZ.: 1" = 100'
VERT.:
DATUM:
HORZ.:
VERT.:
100 50 0 100
GRAPHIC SCALE

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX