

**PHASE I  
ENVIRONMENTAL SITE ASSESSMENT**

**PINEVIEW INDUSTRIAL SITE  
496 ACRES  
COLUMBIA, RICHLAND COUNTY, SC  
S&ME Project No. 1614-12-246.rev1**

Prepared For:

Richland County  
2020 Hampton Street, Suite 4069  
Columbia, South Carolina 29202

Prepared By:



134 Suber Road  
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August 24, 2012



August 24, 2012

Richland County  
2020 Hampton Street, Suite 4069  
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Attention: Mr. Nelson Lindsay, Director of Economic Development  
[lindsayn@rcgov.us](mailto:lindsayn@rcgov.us)

Reference: **Phase I Environmental Site Assessment**  
Pineview Industrial Site – 496 Acres  
Columbia, Richland County, South Carolina  
S&ME Project No. 1614-12-246.rev1

Mr. Lindsay:

S&ME, Inc. has completed the Phase I Environmental Site Assessment (ESA) for the referenced property. The attached report presents the findings of S&ME's Phase I ESA which was performed in general accordance with ASTM E 1527-05, S&ME Proposal No. 1614-8815-12, dated June 18, 2012, and our Agreement for Services AS-071.

S&ME appreciates the opportunity to provide this Phase I ESA for the project. Please contact us at your convenience if there are questions regarding the information contained in this report.

Sincerely,

**S&ME, Inc.**

Chris Daves, P.W.S.  
Biologist

Thomas Behnke, P.G.  
Environmental Department Manager

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## TABLE OF CONTENTS

<b>SUMMARY</b> .....	<b>1</b>
<b>1.0 INTRODUCTION</b> .....	<b>3</b>
1.1 Purpose.....	3
1.2 Detailed Scope of Services .....	3
1.3 Significant Assumptions .....	4
1.4 Limitations and Exceptions.....	5
1.5 Special Terms, Conditions and Reliance .....	5
<b>2.0 SITE DESCRIPTION</b> .....	<b>7</b>
2.1 Location and Legal Description.....	7
2.2 Site and Vicinity Description.....	7
2.3 Current Use of the Property .....	7
2.4 Descriptions of Roads, Structures, and Other Improvements on the Site.....	7
2.5 Current Uses of the Adjoining Properties .....	7
<b>3.0 USER PROVIDED INFORMATION</b> .....	<b>8</b>
3.1 Title Records.....	8
3.2 Environmental Liens or Activity and Use Limitations .....	8
3.3 Specialized Knowledge.....	8
3.4 Commonly Known or Reasonably Ascertainable Information.....	8
3.5 Valuation Reduction for Environmental Issues .....	8
3.6 Owner, Property Manager and Occupant Information.....	8
3.7 Reason for Performing Phase I ESA.....	8
3.8 Other .....	9
<b>4.0 RECORDS REVIEW</b> .....	<b>9</b>
4.1 Standard Environmental Record Sources .....	9
4.2 Additional Environmental Record Sources .....	12
4.3 Physical Setting Sources .....	12
4.4 Historical Use Information on the Property.....	13
4.5 Historical Use Information of Adjoining Properties.....	17
<b>5.0 SITE RECONNAISSANCE</b> .....	<b>18</b>
5.1 Methodology and Limiting Conditions.....	18
5.2 General Site Setting .....	18
5.2.1 Current Use(s) of the Property.....	18
5.2.2 Past Use(s) of the Property .....	18
5.2.3 Current Uses of Adjoining Properties .....	18
5.2.4 Past Uses of Adjoining Properties .....	19
5.2.5 Geologic, Hydrogeologic, Hydrologic, and Topographic Conditions.....	19
5.2.6 General Description of Roads, Structures & Other Improvements .....	19
5.2.7 Potable Water Supply and Sewage Disposal System .....	20
5.3 Exterior Observations .....	20
5.4 Interior Observations .....	21
<b>6.0 INTERVIEWS</b> .....	<b>21</b>
6.1 Interview With Owner .....	21
6.2 Interview with Key Site Manager.....	22
6.3 Interview with Occupants .....	22
6.4 Interview with Local Government Officials .....	22
6.5 Interviews with Others.....	22

<b>7.0</b>	<b>FINDINGS</b> .....	<b>22</b>
7.1	On-Site Findings .....	22
7.2	Off-Site Findings .....	23
<b>8.0</b>	<b>OPINIONS</b> .....	<b>23</b>
8.1	On-Site Opinions .....	23
8.2	Off-Site Opinions.....	24
8.3	Data Gaps.....	25
<b>9.0</b>	<b>CONCLUSIONS</b> .....	<b>25</b>
<b>10.0</b>	<b>DEVIATIONS</b> .....	<b>25</b>
<b>11.0</b>	<b>ADDITIONAL SERVICES</b> .....	<b>25</b>
<b>12.0</b>	<b>REFERENCES</b> .....	<b>25</b>
<b>13.0</b>	<b>SIGNATURE(S) OF ENVIRONMENTAL PROFESSIONAL(S)</b> .....	<b>26</b>
<b>14.0</b>	<b>QUALIFICATION(S) OF ENVIRONMENTAL PROFESSIONAL(S)</b> .....	<b>26</b>

**APPENDICES**

<b>A</b>	<b>FIGURES</b>
	<b>FIGURE 1 – VICINITY MAP</b>
	<b>FIGURE 2 – TOPOGRAPHIC MAP</b>
	<b>FIGURE 3 – AERIAL MAP</b>
	<b>SITE PHOTOGRAPHS</b>
<b>B</b>	<b>HISTORICAL RESEARCH DOCUMENTATION</b>
<b>C</b>	<b>EDR DATABASE REPORT</b>
<b>D</b>	<b>REGULATORY RECORDS DOCUMENTATION</b>
<b>E</b>	<b>INTERVIEW DOCUMENTATION</b>
<b>F</b>	<b>CONTRACT BETWEEN USER AND S&amp;ME, INC.</b>

## **SUMMARY**

S&ME, Inc. (S&ME) has performed a Phase I Environmental Site Assessment (ESA) of an approximate 496-acre site located north of the intersection of Bluff Road and Longwood Road in Columbia, Richland County, South Carolina. This Phase I ESA was authorized by Mr. Nelson Lindsay of Richland County. The following summary is intended as an overview of the Phase I ESA, and does not include the complete findings and opinions of the full report.

A site visit was conducted by Chris Daves, an S&ME environmental professional, and Amanda White on July 11 and 18, 2012, to evaluate the subject site for drainage patterns, vegetation patterns, stains, discoloration, surrounding land use, and other visual aspects suggestive of the presence of Recognized Environmental Conditions (RECs).

At the time of the site reconnaissance, the site consisted primarily of previously cleared and graded land for future use as an industrial park (northern portion), a hayfield (central portion), and Long Branch Farms, a commercial nursery (southern portion). Historically, the site has consisted of farmland and/or forestland from at least 1938 until the present. The current surrounding properties consist of mixture of light industrial, recreational, municipal, commercial, agricultural, silvicultural, and residential land uses.

### **On-Site Findings**

Five (5) on-site findings of potential environmental concern were identified:

1. A self-contained gasoline aboveground storage tank (AST) was observed adjacent to a farming warehouse structure on the eastern portion of the site. Two additional gasoline ASTs on a concrete pad were observed near the cluster of structures associated with the Long Branch Farms operation. The three gasoline ASTs were observed to be in good condition with no apparent signs of leakage, stressed vegetation, or soil/concrete staining. Based on these observations, the ASTs are not considered a REC in connection with the subject site at this time.
2. Five 55-gallon hydraulic oil drums were observed on a pallet in one of the Long Branch Farms structures. Five empty 55-gallon drums were observed on a concrete pad near a mobile home on the southern portion of the site. The 55-gallon drums associated with the Long Branch Farms structure were neatly stored with no apparent signs of leakage or soil/concrete staining. The 55-gallon drums near the mobile home were empty with no apparent signs of leakage, stressed vegetation, or soil/concrete staining. Based on these observations, the 55-gallon drums are not considered a REC in connection with the subject site at this time.
3. A groundwater monitoring well was observed on the eastern portion of the site on the parcel owned by the East Richland County Public Service Authority. Based on an interview with Larry Brazell with East Richland County Public Service Authority, the monitoring well was placed on the site per SCDHEC regulations to monitor domestic sludge applications from 1980-1983. The well was monitored for approximately 10

years until 1993. No soil or groundwater contamination issues were noted during the required period of monitoring. Based on this knowledge, the monitoring well and past domestic sludge application are not considered a REC in connection with the subject site at this time.

4. Two mobile herbicide/pesticide containers were observed on the central portion of the site and on the Long Branch Farms portion of the site. Bulk storage of these chemicals, stressed vegetation, or soil staining were not observed around the pesticide/herbicide mobile containers. Based on these observations, the pesticide/herbicide mobile containers are not considered a REC in connection with the subject site at this time.
5. The historic use of the site as farmland since at least 1938 is considered a finding of potential environmental concern because of likely pesticide and herbicide use are typically associated with crop production. Environmental issues associated with pesticide and herbicide usage generally arise from chemical storage, mixing, and disposal areas. Other than the mobile containers, S&ME did not observe specific areas on the subject site indicating that pesticides and herbicides were stored, mixed, or disposed on the site under conditions indicative of a material threat of release. On-site disposal of solid waste are also a common practice on agricultural properties. However, no evidence of landfilling or dump sites was observed on the site. Based on these observations, the historic agricultural use of the site is not considered a REC at this time.

#### **Off-Site Findings**

S&ME contracted Environmental Data Resources (EDR) to prepare a Radius Map Report compiling federal and state environmental database information. The review of the EDR Radius Map Report and other public records identified seven (7) off-site facilities with listings related to hazardous materials or petroleum products in the vicinity of the subject site. In our opinion, these off-site regulated facilities do not appear to constitute a REC or a Vapor Encroachment Condition (VEC) in connection with the subject site at this time based on topographic position relative to the site, distance, and/or regulatory status.

In summary, this assessment has revealed no evidence of RECs or VECs in connection with the subject site.

## 1.0 INTRODUCTION

### 1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to identify, to the extent feasible pursuant to the processes described herein, *recognized environmental conditions* in connection with the subject site. This Phase I ESA was prepared in accordance with the standard developed by the American Society for Testing and Materials (ASTM) entitled “E 1527-05 Standard Practice for Environmental Site Assessment: Phase I Environmental Site Assessment Process” (ASTM E 1527-05).

ASTM defines the term *recognized environmental condition* as the presence or likely presence of hazardous substances or petroleum products on the property under conditions that indicate an existing release, a past release, or a material threat of a release of hazardous substances or petroleum products into the structures on the property or into the ground, groundwater, or surface water of the site. The term does not 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 enforcement action if brought to the attention of appropriate governmental agencies. ASTM defines *historical recognized environmental condition* as an environmental condition which in the past would have been considered a *recognized environmental condition*, but which may or may not be considered a *recognized environmental condition* currently.

### 1.2 Detailed Scope of Services

S&ME's approach to performing this Environmental Site Assessment consisted of four major tasks in accordance with the ASTM Standard Practice E 1527-05.

Task 1 - A review of reasonably ascertainable and practically reviewable public records for the site and the immediate vicinity was conducted to characterize environmental features of the site and to identify past and present land use activities, on or in the vicinity of the site, which may indicate a potential for *recognized environmental conditions*. The review of the public record included:

1. Review of reasonably ascertainable federal, state and tribal standard environmental record sources as well as selected local sources in accordance with the specified minimum search distances in ASTM E 1527-05. The search of these records was performed by a firm specializing in this service subcontracted to S&ME with results presented in a written report that will be appended to S&ME's Phase I ESA report.
2. Examination of one or more of the following resources: aerial photographs, fire insurance maps, property tax records, street directories, USGS topographic maps, building department records, planning department data, fire department or health department records, town historian and zoning/land use records of the property and vicinity for evidence suggesting past uses that might have involved hazardous substances or petroleum products.

Task 2 - A site reconnaissance was performed to identify visible signs of environmental conditions on or adjacent to the site, and to evaluate evidence found in the review of public record that might be indicative of activities resulting in hazardous substances or petroleum products being used or deposited on the site. The site reconnaissance included the following activities:

1. A visual reconnaissance of the site and adjacent properties to observe signs of spills, stressed vegetation, buried waste, underground or aboveground storage tanks, subsidence, transformers, or unusual soil discoloration which may indicate the possible presence of contaminants on the property.
2. The periphery of the property was viewed and a walk-through of accessible areas of the site interior was conducted.
3. Areas of the site were photographed to document the current use(s) of the property as well as significant conditions such as unusually discolored soil, stressed vegetation, or other significant features associated with the property.

Task 3 - Inquiries with appropriate local officials were conducted to consider any local knowledge of hazardous substances or petroleum products on the subject property or on adjacent properties. In addition, the current owner of the property was interviewed regarding his knowledge of any hazardous substances or petroleum products on the subject property or on adjacent properties.

Task 4 - The collected data were evaluated and this report was prepared.

Unless specifically authorized as an addition to the Phase I ESA work scope, the assessment did not include any assessment of environmental conditions not specifically included in the ASTM E 1527-05 standard such as the assessment of business risk issues such as; lead in drinking water; mold, fungi or bacteria in on-site buildings; regulatory compliance; cultural/historic risks; industrial hygiene; health/safety; ecological resources; endangered species; indoor air quality including possible vapor intrusion; radon or high voltage power lines.

### **1.3 Significant Assumptions**

- The slope of the water table under static conditions (no pumping interference) often approximates the land surface topography in the area. Thus, the movement of groundwater is assumed to be in approximately the same direction as the drop of the topographic slope.
- Information acquired from the public record and interviews is accurate and reliable.
- Existing creeks and perennial surface waterways are either losing to or gaining from the groundwater regime. Thus, existing creeks and perennial surface waterways delineate the locations of hydrogeologic barriers for flow within the subsurface groundwater regime.



#### **1.4 Limitations and Exceptions**

The findings of this report are applicable and representative of conditions encountered at the subject property at the time of this evaluation, and may not represent conditions at a later date. The review of public records was limited to that information which was available to S&ME at the time this report was prepared. Interviews with local and state government authorities were limited to those people whom S&ME were able to contact during the preparation of this report. All information was derived from practically reviewable, readily available sources in compliance with the standards set forth in ASTM E 1527-05.

Although this report satisfies ASTM E 1527-05, these results are not a guarantee or warranty that no environmental conditions exist or that the property is free from all contamination. The Standard was developed to outline appropriate inquiry into the assessment of real property and therein “reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions.”

The opinions presented in this report are based on findings derived from a site reconnaissance, a review of specified regulatory records and historical sources, and comments made by interviewees. Generally, information obtained from public records and from interviews is reliable. However, S&ME cannot warrant or guarantee that information provided is complete or accurate. In the event responses requested by S&ME from public agencies are provided to S&ME following the submittal of our report, they will be forwarded to the client in the form received for evaluation by the client.

Additional limitations to this Phase I ESA are as follows:

- Standard historical sources were not reasonably ascertainable to trace the operational history of the property back to its undeveloped state or to document the land use in approximately five-year intervals.
- Due to large scale and in some cases poor resolution of historical aerial photographs, only limited detailed review of historic site conditions was feasible.
- The property boundaries of the site were approximated based on user-provided information, GIS tax parcel maps, and field observations.
- S&ME did not enter several structures on the site due to locked doors.

#### **1.5 Special Terms, Conditions and Reliance**

All materials and information used for this project were obtained by S&ME. The resulting report is provided for the sole use of Richland County (the user) on the project for which it was prepared. Use of this report by any additional parties will be at such parties' risk, and S&ME disclaims liability for any use or reliance by any additional parties.

The users may request in writing additional reports, name another party or parties as addressee(s) or otherwise entitle the party or parties to rely on the report. Such request for additional addressees shall include the name and addresses of the additional addressees and any suggested wording the additional addressee wishes S&ME to consider for inclusion in the report.

S&ME shall have sole discretion in (1) approving client's request for issuance of reports to additional addressees, and (2) incorporating in our report any additional wording or deletions requested by the additional addressees. The additional addressees' use and reliance on the report will be subject to the same rights, obligations, and limitations imposed by the current contract with Richland County. However, the total liability of S&ME to all addressees' of the Phase I ESA shall be limited to the remedies and amounts as provided in the current standing contract. The additional addressees' use and reliance on the report shall signify the additional addressees' agreement to be bound by the contract that makes up the agreement between S&ME and Richland County.

S&ME hereby acknowledges that this report may be relied upon by the users subject to the limitations of the current contract that makes up the agreement between S&ME and Richland County. A copy of this agreement is included in Appendix F.

According to standards set forth by ASTM 1527-05, an environmental site assessment meeting or exceeding this practice and for which the information was collected or updated within one year prior to the date of acquisition of the property or the date of the intended transaction may be used provided the following components were conducted or updated within 180 days of the date of purchase or the date of the intended transaction:

- Interviews with owners, operators, and occupants;
- Searches for recorded environmental cleanup liens;
- Reviews of federal, tribal, state, and local government records;
- Visual inspections of the property and of adjoining properties; and
- The declaration by the environmental professional responsible for the assessment or update.

## 2.0 SITE DESCRIPTION

### 2.1 Location and Legal Description

The subject site is located north of the intersection of Bluff Road and Longwood Road in Columbia, Richland County, South Carolina. The site is approximately 496 acres overall and consists of the following tax parcels and owners:

Tax Parcel	Owner	Acreage
16200-03-20	Richland County	50
16209-01-01	Richland County	37.01
16200-02-20	SC Research Authority	109
16100-02-20	East Richland Co. Public Service Authority	83.87
16100-02-02	Long Branch Farms, LLC	191.50
16100-02-04	Long Branch Farms, LLC	19.75

The approximate location of the site is depicted on Figures 1-4 in Appendix A.

### 2.2 Site and Vicinity Description

The site is located primarily in an agricultural and silvicultural use area approximately six miles southeast of downtown Columbia in Richland County, South Carolina. Flat topography is present in the site vicinity. The overall slope of the site is to the south. The major drainage feature in the area is Reeder Point Branch flowing north to south across the western portion of the site.

### 2.3 Current Use of the Property

The northern portion of the site has been cleared and graded for future use as an industrial park. The central portion of the site consists of a hayfield. The remainder of the site is occupied by Long Branch Farms, a commercial nursery.

### 2.4 Descriptions of Roads, Structures, and Other Improvements on the Site

Ingress and egress to the site are various roads from the northwest (Pineview Road), southwest (Carswell Road), south (Longwood Road), and east (Longwood Road). Numerous dirt roads were observed within the site boundaries. Structures included four mobile homes, multiple pole sheds, storage/equipment sheds, an office building, pump houses, and a warehouse. Eight ponds were observed on the site.

### 2.5 Current Uses of the Adjoining Properties

The surrounding properties consist of light industrial, recreational, municipal, commercial, agricultural, silvicultural, and residential land uses. Please refer to Section 5.2.3 (Current Uses of Adjoining Properties) for a more detailed account of adjoining property use.

### **3.0 USER PROVIDED INFORMATION**

This section is provided to summarize information provided by the user that may help in identification of RECs. As is discussed in ASTM Practice E-1527-05, the environmental professional does not typically generate this information.

#### **3.1 Title Records**

The user did not provide title records.

#### **3.2 Environmental Liens or Activity and Use Limitations**

Reasonably ascertainable recorded land title records may contain *environmental liens* or *activity and use limitations* recorded against the property. ASTM Practice E 1527-05 does not impose on the environmental professional the responsibility to check for recorded environmental liens or activity and use limitations. The user of the Phase I ESA is responsible for determining, through their choice of a title company, title professional, or attorney, whether any environmental liens have been recorded against the property. The user did not provide documents indicating a search for these items. However, the user (via the various owners) indicated they were unaware of environmental liens, Activity Use Limitations (AULs), or Environmental Controls (ECs) for the site. Please see the User/Owner Questionnaires in Appendix D.

#### **3.3 Specialized Knowledge**

The user provided a pdf copy of a previous Phase I ESA for the Walker Farm property by Milliken Forestry Company (February 6, 2005). This property consisted of 196 acres on the northern portion of the current site. No RECs were identified in the report. A copy of this Phase I ESA is included in Appendix B. The user did not indicate other specialized knowledge related to the site.

#### **3.4 Commonly Known or Reasonably Ascertainable Information**

The user did not provide commonly known information or provide information regarding any reasonably ascertainable sources of data.

#### **3.5 Valuation Reduction for Environmental Issues**

The user did not indicate value reduction for environmental issues.

#### **3.6 Owner, Property Manager and Occupant Information**

The owners of the site include Richland County, SC Research Authority, East Richland County Public Service Authority, and Long Branch Farms. Mr. Nelson Lindsay of Richland County acted as the liaison between the owners and S&ME. Identified occupants included Long Branch Farms.

#### **3.7 Reason for Performing Phase I ESA**

The user did not indicate the reason for performing this Phase I ESA. We have assumed the Phase I ESA was performed to identify, to the extent feasible pursuant to ASTM E 1527-05, *Recognized Environmental Conditions* in connection with the site. This

practice is intended to permit a user to satisfy one of the requirements to qualify for the "innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations to CERCLA liability."

**3.8 Other**

No other user-provided information was provided.

**4.0 RECORDS REVIEW**

**4.1 Standard Environmental Record Sources**

S&ME contracted Environmental Data Resources (EDR) to prepare a Radius Map Report compiling federal and state environmental database information from the regulatory records of the United States Environmental Protection Agency (USEPA), the United States Geological Survey (USGS), and the South Carolina Department of Health and Environmental Control (SCDHEC). The purpose of the EDR report was to identify environmental sites and activities within a designated radius of potential concern from the subject site, as outlined by ASTM E 1527-05.

General descriptions of the databases are included within the EDR Radius Map Report, which is attached in Appendix C. The major databases reviewed along with the date the information was issued, and the search radii employed are provided in the following table.

**Table 1: List of Databases Searched**

Database	Approximate Search Distance
<b>Federal Environmental Record Sources</b>	
NPL	1 mile
Proposed NPL	1 mile
DELISTED NPL	1 mile
NPL LIENS	TP
CERCLIS	0.5 mile
CERCLIS-NFRAP	0.5 mile
CORRACTS	1 mile
RCRIS-TSD	0.5 mile
RCRIS-LQG	0.25 mile
RCRIS-CESQG	0.25 mile
RCRIS-SQG	0.25 mile
ERNS	TP
HMIRS	TP
CONSENT	1 mile
ROD	1 mile

<b>Database</b>	<b>Approximate Search Distance</b>
TRIS	TP
TSCA	TP
FTTS	TP
PADS	TP
MLTS	TP
MINES	0.25 mile
FINDS	TP
RAATS	TP
<b>State Environmental Record Sources</b>	
Hazardous Waste (SWHS)	1 mile
Brownfields	0.5 mile
ALLSITES	1 mile
Landfills (SWF/LF)	0.5 mile
LUST	0.5 mile
UST	0.25 mile
Spills	TP
GWCI	0.5 mile
DRYCLEANERS	1 mile
VCP	0.5 mile
AST	TP
<b>Tribal Records</b>	
Indian Reservations	1 mile
Indian LUST	0.5 mile
Indian UST	0.25 mile

TP = Target Property

S&ME evaluated the EDR report for regulated sites located within the ASTM-designated search radii. The EDR Radius Map Report also contains the “EDR Zip Code Scan Report” and an “Orphan Summary” which lists facilities that are believed to be in the area of the site, but cannot be located due to incomplete address information. The vehicular reconnaissance identified no additional obvious facilities within one-half mile of the subject site.

The public record review, including the EDR Radius Map Report, identified seven (7) facilities with records pertaining to hazardous substances or petroleum products within the ASTM-specified search distances. The following facilities are located adjacent or in the immediate vicinity of the subject site and are discussed below.

**Table 2: Database Search Results**

Facility	Location Direction/ Distance Topographic Relationship	Record	Comment
Vectra Technology, Inc. Maintenance Facility (now Energy Solutions)	1700 Longwood Rd. 100 ft. S Upgradient	RCRA-NonGen	Nuclear energy consultants located just south of the site. No violations documented. Based on USGS topo map, groundwater flow for a majority of the site is to the southwest and toward the subject site.
Mill Creek Sewer Pump Station	5200 Bluff Road 300 ft. S Downgradient	UST, LUST	Former UST and LUST site. Petroleum release documented in 1993 and granted NFA status by SCHDEC in 1999. One 1,000-gal. UST has been abandoned. Based on USGS topo map, groundwater flow is south and away from subject site.
Pinnacle Composites	1401 Pineview Rd. 900 ft. W Upgradient	RCRA-NonGen	Broadwoven fabric, manmade fiber, and silk operation. No violations documented.
Roadway Express	1308 Pineview Rd. 1,000 ft. W Upgradient	UST, RCRA-CESQG	Shipping/trucking operation. Former UST site. One 10,000-gal. UST has been abandoned. No documented releases. Based on USGS topo map, groundwater flow is east and toward subject site.
Kyzer Short-term C&D/LCD Landfill	1516 Pineview Rd. 200 ft. NW Upgradient	FINDS	According to SCDHEC, the landfill was never permitted or constructed. No violations documented.
Crowson Stone Printing	2840 Shop Rd. 750 ft. NW Upgradient	RCRA-NonGen	Printing operation. No violations documented.
Container Corp of SC	625 Pineview Rd. 1,100 ft. N Upgradient	UST, LUST	Former UST and LUST site. Petroleum releases documented in 1998 and granted NFA status by SCHDEC in 1998. Five USTs have been abandoned. Based on USGS topo map, groundwater flow is south and toward subject site.

## 4.2 Additional Environmental Record Sources

- A search of the Environmental Protection Agency (EPA) Envirofacts database (<http://www.epa.gov/emefdata/em4ef.home>) was conducted. The subject site did not appear on the database. No additional facilities were identified within the search radii.
- S&ME also searched the SCDHEC Land and Waste Management on-line database website (<http://www.scdhec.net/environment/lwm/databases.htm>) for public records (land use controls, etc.), mining and solid waste facilities, and the Underground Storage Tank Registry. No additional facilities were identified.
- A search of SCDHEC's Groundwater Contamination Inventory (GWCI) (<http://www.scdhec.gov/environment/water/gwci.htm>) was conducted. No additional facilities were identified within the search radii.
- The user provided a pdf copy of a previous Phase I ESA for the Walker Farm property by Milliken Forestry Company (February 6, 2005). This property consisted of 196 acres on the northern portion of the current site. No RECs were identified in the report. A copy of this Phase I ESA is in Appendix B.

## 4.3 Physical Setting Sources

The site is identified on a USGS 7.5-minute series Topographic Quadrangle Map, titled Fort Jackson South, South Carolina dated 1982. The original map has a scale of one inch equals 2,000 feet. A Topographic Map, prepared using a portion of the map, is included as Figure 2 in Appendix A.

The map depicts approximately half the site as open land while the other half of the site is depicted as vegetated land. A utility easement is depicted running east-west across the north-central portion of the site. Three structures are depicted just north of a pond on the north-central portion of site. Three additional structures are depicted on the southern portion of the site. Unimproved roads are depicted on the northern and southern portion of site. Two smaller ponds are located on the southwestern portion of the site. Reader Point Branch is shown flowing north to south along the western portion of the site. The site is bordered by a railroad to the north, a pond and several structures to the south, undeveloped land to the east, and multiple structures along Pineview Road to the west. Topography in the area is relatively flat. The slope on the site is to the south. Surface elevation across the site is approximately 110-150 feet above mean sea level.

The subject site is located in the Atlantic Coastal Plain Physiographic Province. The Coastal Plain consists of unconsolidated sands, silts, and clays of the Pleistocene epoch. During this time, the ocean retreated over the land and left formations and terraces indicating former shorelines. The parent material of most of the soils is marine or fluvial deposits. The sedimentary beds of the Coastal Plain overlap each other in the sequence they were laid down and slope gently to the coast.

S&ME reviewed the United States Department of Agriculture's *Soil Survey of Richland, County, South Carolina* which depicts the soil types underlying the subject site and its surrounding area. Sheet 44 of the soil survey depicted the subject site as being underlain



by the following soils:

**Table 3: Soil Series**

Soil Series	Drainage	Permeability	Location
Cantey loam (Ca)	Poor	Slow	Flats, slight depressions on terraces
Dothan loamy sand (DoA)	Well	Moderate-Mod. Slow	Broad ridges
Fuquay sand (FuB)	Well	Rapid-Slow	Broad ridgetops & narrow side slopes adjacent to drainages
Goldsboro sandy loam (GoA)	Well	Moderate	Interstream divides
Johnston loam (Jo)	Poor	Mod. Rapid- Rapid	Floodplains
Norfolk loamy sand (NoA)	Well	Moderate	Broad interstream divides
Persanti very fine sandy loam (Ps)	Mod. Well	Slow	Terraces
Rains sandy loam (Ra)	Poor	Moderate	Broad flats, slight depressions along drainageways
Udorthents (Ud)	Variable	Variable	Man-altered areas

#### **4.4 Historical Use Information on the Property**

The historical use of the subject site was determined by reviewing various historical sources listed below. In summary, the site historically consisted of farmland and/or forestland since at least 1938. Various ponds were excavated on the site beginning in the late 1950s. A farming structures cluster was evident on aerial photographs and topographic maps from 1938 until 1982 on the southern portion of the site. Structures were located north of the northernmost pond from the late 1950s until the early 2000s. The central portion of the site contained structures associated with Long Branch Farms from at least 1994 until the present. The eastern portion of the site has contained farming structures since at least 1994. Several mobile homes have also been located on the southern and southwestern portions of the site. The northern portion of the site was cleared and graded for future industrial park use in the late 2000s. The southern portion of the site has been used as a tree farm/nursery since the 1990s.

#### **Aerial Photographs**

Aerial photographs (1938-2012) were reviewed to observe previous conditions and development of the subject site, as well as immediately adjacent properties. A copy of the 2011 aerial photograph is included as Figure 3 in Appendix A. Copies of the aerials are in Appendix B. The following table presents the findings of the aerial photograph review.

**Table 4: Aerial Photographs**

SOURCE	DATE	APPROX. SCALE	COMMENTS
Google Earth Aerials	2012 2011 2010 2006	1" = 400'	Northern portion of site is cleared with a detention pond. Forested riparian areas surround Reeder Point Branch along western boundary of site. Ponds are located on central, western, eastern, & southwestern portions of site. Central and southern portions of site consist primarily of open land (fields and nursery plants). Structures are evident on the east-central, central, and southwestern portions of the site. Surrounding properties consist of forestland (north, east, south), light industrial/commercial/residential parcels along Pineview Rd. (west). Energy Solutions and Tucker Oil Co. structures evident to the south along Longwood Rd. Bluff Road Park is evident to the west.
Richland County GIS	2011 2009 2007	1" = 400'	Similar to Google Earth aerial photos.
Google Earth Aerials	2005 2004 2003	1" = 400'	Similar to 2006 aerial except northern portion of site consists of farmland and several small structures are evident just north of the pond on the central portion of the site. Northern adjoining properties are open land.
Richland County GIS	2004 2000 1996	1" = 400'	Similar to prior Google Earth aerial photos. Fewer commercial businesses along Pineview Rd.
SCDNR Website NAPP Aerial	1999	1" = 400'	Similar to Google Earth and Richland County aerial photos.
Google Earth Aerial	1994	1" = 400'	Similar to 1999.
USC Map Library NRCS-USDA Aerial	1981	1" = 400'	Site is primarily farmland and forestland. Three ponds are evident on the site. A farm buildings cluster is evident on the southern portion of the site. Structures associated with the nursery are not evident on central portion of site. Energy Solutions and Tucker Oil Co. are not evident to the south along Longwood Rd.
USC Map Library NRCS-USDA Aerial	1970	1" = 1,320'	Site remains farmland and forestland. Only one pond evident on the site. Structures evident north of pond. Surrounding properties consist of farmland and forestland with a few scattered structures to the west and southwest. Pineview Rd. does not extend fully north near the western portion of the site; therefore very few structures were evident along this corridor.

SOURCE	DATE	APPROX. SCALE	COMMENTS
USC Map Library NRCS-USDA Aerial	1966	1"= 1,320'	Similar to 1970.
USC Map Library NRCS-USDA Aerial	1959	1"= 1,320'	Similar to 1966.
USC Map Library NRCS-USDA Aerial	1951	1"= 1,320'	Similar to 1959. Pond not evident on central portion of site. Several structures remain north of this area.
USC Map Library NRCS-USDA Aerial	1943	1"= 1,320'	Similar to 1951.
USC Map Library NRCS-USDA Aerial	1938	1"= 1,320'	Similar to 1943.

No direct evidence was observed on the reviewed aerial photographs indicating that open dumping, or hazardous material use or storage has occurred on or near the subject site. However, the scales and clarity of several of the reviewed aerial photographs inhibited the identification of specific site use or activities.

**Sanborn Maps**

S&ME contracted with EDR to conduct a database search of historic Sanborn Fire Insurance maps that depict the subject site and surrounding area. EDR maintains the largest library of Sanborn Fire Insurance maps available. No map coverage was available for the site.

**City Directories**

A search of the city directories (Polk and Hill's – 1986-2011) was conducted at the Richland County Public Library in Columbia.

**Subject Site**

Address	Listing/Years
1550 Longwood Rd.	Long Branch Farms (2001-2011)
1600 Longwood Rd.	Residence
1630 Longwood Rd.	Residence

**Southern Adjoining Properties**

Address	Listing/Years
1700 Longwood Rd.	Energy Solutions (2011); ATG/RWE Nukem (2006); Applied Technology Group (2001)
5056 Bluff Rd.	Bluff Rd. UMC (2006-2011)
5116, 5039 Bluff Rd.	Residences (2006-2011)
5110 Bluff Rd.	Bail Bonds (2001-2011)

***Western Adjoining Properties***

<b>Address</b>	<b>Listing/Years</b>
1520 Pineview Rd.	Merritt Vet Supplies (2001-2011)
1516 Pineview Rd.	Kyzer Truck & Trailer/Atl. Coast Trailer Sales (1994-2011)
1446 Pineview Rd.	Ryan Brewer Enterprises (2011); Digital C. (2006); Southern Way Catering/Munn Libby (1994-2001)
1444 Pineview Rd.	Jeffery Archery (2011); Ducksback Shop (2006)
1428 Pineview Rd.	Exceed Landscape Solutions (2011)
1420 Pineview Rd.	Residence (1990-2011)
148 Carswell Rd.	Bluff Road Parks (1994-2011)
1013, 1020 Medlin Rd.	Residences (2001-2011)

***Historic USGS Topographic Maps***

S&ME also reviewed historic topographic maps on-line via the online system at the Thomas Cooper Library (<http://www.sc.edu/library/digital/collections/topomaps.html>). Historical topographic maps were reviewed for the years 1948 and 1965 (*Hopkins, SC*). These maps depict the site with five structures with both open and wooded land. A railroad line borders the site to the north.

***Tribal Records***

The review of the public record including the EDR Radius Map Report did not reveal any listings of tribal environmental records (Indian Reservations, Indian UST, or Indian LUST). According to a fact sheet obtained from the National Indian Child Welfare Association, there are no recognized Tribal lands within the vicinity of the subject site. The site does not appear to be located on or near any tribal lands. According to the U.S. Census, the Catawba Indian Nation in York County is the only federally recognized tribe in South Carolina. South Carolina began to offer state recognition to tribes in early 2005. S&ME reviewed the South Carolina Indian Affairs Commission website (<http://southcarolinaindianaffairs.com/members.html>) as well as the websites of two state recognized tribes, the Pee Dee Indian Tribe (<http://www.peedeeindiantribeofsc.com/>) and the Waccamaw Indian Tribe ([http://www.waccamaw.us/FRAME\\_HOME.htm](http://www.waccamaw.us/FRAME_HOME.htm)), and one unrecognized tribe, the Marlboro, Chesterfield, Darlington County Pee Dee Indian Tribe (<http://mcdcpeedeeindiantrib.tripod.com/>), for any information regarding environmental concerns. These sources did not contain information regarding environmental issues.

***Building Records***

S&ME attempted to review building records on-line using the Richland County GIS system <http://www.richlandmaps.com/index.html>. Building records indicated two single-story residences (both 1,530 sf) built in 1964 were located on tax parcel R 16200-03-01. Building records indicated a farm building (3,168 sf) built in 1993 was located on tax parcel R16100-02-02.

***Zoning/Land Use Records***

S&ME reviewed zoning records on-line using the Richland County GIS system. Zoning/land use records indicated the site is zoned as M-1 and L-1, or Light Industrial, and is used currently for commercial, residential, timberland, and agricultural purposes.

**Land Title Records**

Land title records were not provided by the user. Please refer to Appendix B for the tax cards regarding ownership of these tax parcels.

<b>Tax Parcel</b>	<b>Owner</b>	<b>Comments</b>
16200-03-20	Richland County	Purchased from Walker Farms Partnership in 2005
16209-01-01	Richland County	Purchased from the State of SC in 2009
16200-02-20	SC Research Authority	Purchased from Walker Farms Partnership in 2005; Richland Co. (2005), and State of SC (2005)
16100-02-20	East Richland Co. Public Service District	Purchased from Wyman Boozer Realty in 1989
16100-02-02	Long Branch Farms, LLC	Purchased from Branch Interest ASC Partnership in 2005

**Property Tax Files**

Property tax file records were reviewed on the Richland County GIS system. No indication of environmental issues was noted during the review. Three of the six (6) tax parcels comprising the site are tax-exempt due to governmental ownership. Other readily available property tax files were not reviewed because they were unlikely to offer information pertinent to the identification of RECs at this site.

**4.5 Historical Use Information of Adjoining Properties**

The historical use of the adjoining properties was determined by reviewing historical topographic maps, historical aerial photographs, county tax assessor records, and city directories.

Historically, the adjoining properties have historically been occupied by open land and forestland from at least 1938 until the present. A railroad track has been present north of the site since at least 1938. The southern adjoining properties along Longwood Road have been occupied by a nuclear energy consulting group (Energy Solutions, RWE Nukem Corp., ATG Nuclear Services, MMT of TN, Vectra Technologies, and Nupac Services) since 1986. Tucker Oil Company facility has operated at 1750 Longwood Road since 1989. Residences, a church, and a bail bonding business have been present south of the subject site. Beginning in the 1980s, the Pineview Road corridor to the west of the subject site began to get more commercialized. Western adjoining properties have included a vet supply firm, a trucking/shipping firm, a fencing company, a catering company, a landscape firm, several other commercial businesses, residences, and the Bluff Road Park located along Carswell Drive to the southwest.

## **5.0 SITE RECONNAISSANCE**

A site reconnaissance was performed by Chris Daves, an S&ME environmental professional, and Amanda White on July 11 and 18, 2012 to observe the current uses of the site, adjoining properties, and properties in the surrounding area, as well as the geologic, hydrogeologic, and topographic conditions of the site and the surrounding area. Photographs were taken of various portions of the subject site to document existing conditions. Copies of pertinent photographs are included in Appendix A of this report.

### **5.1 Methodology and Limiting Conditions**

The subject site was observed by walking the perimeter and interior of the site. A vehicular tour of the area was made to confirm the locations of facilities listed by regulatory agencies and to verify nearby land use. The tour involved viewing nearby properties from publicly accessible areas, but not entering private property. Observation of nearby properties was limited to areas visible in the line of sight from public roadways. S&ME did not enter adjacent properties to view areas not visible from the subject site or public property. S&ME did not enter the mobile home residences, the office building, or the equipment/ storage structures on the eastern portion of the site due to occupancy or locked doors. No other limiting conditions were encountered.

### **5.2 General Site Setting**

#### **5.2.1 Current Use(s) of the Property**

The northern portion of the site has been cleared and graded (Photographs 1 and 2) for future use as an industrial park. The central portion of the site is occupied by a hayfield (Photograph 3). The remainder of the site is occupied by Long Branch Farms, a commercial nursery (Photographs 4 and 5). The remainder of the site is undeveloped forestland.

#### **5.2.2 Past Use(s) of the Property**

Site observations did not reveal previous uses of the property that are different from the current use.

#### **5.2.3 Current Uses of Adjoining Properties**

**North:** Undeveloped open land, forestland, and the American Italian Pasta Company are located north and northeast of the site across a railroad track.

**South:** Forestland, Energy Solutions (Photograph 6), and the Tucker Oil Company warehouse are located south of the site. Several residences, the Bluff Road United Methodist Church, and a bail bonding business are located southwest of the site along Bluff Road.

Energy Solutions (<http://www.energysolutions.com/>) is a recycling, processing and disposal of nuclear material operation. Energy Solutions offers a full range of services for the decommissioning and remediation of nuclear sites and

facilities, management of spent nuclear fuel, the transportation of nuclear material and the environmental cleanup of nuclear legacy sites. The Tucker Oil facility contained multiple, out-of-commission ASTs (Photograph 7) in the yard behind the on-site structure. This facility is located downgradient from the subject site.

**East:** Forestland is located east of the site.

**West:** Bluff Road Park (Photograph 8), several residences, and multiple commercial/light industrial facilities are located west of the site along Pineview Road, Carswell Drive, and Medlin Drive. The commercial/light industrial facilities included Merritt Vet Supply, Kyzer Truck and Trailer (transportation), Ryan Brewer Enterprises (fencing), Jeffery Archery, and Exceed Landscape Solutions.

#### **5.2.4 Past Uses of Adjoining Properties**

Site observations did not reveal other previous uses of the adjoining properties that are different from the current uses.

#### **5.2.5 Geologic, Hydrogeologic, Hydrologic, and Topographic Conditions**

Topography in the area is relatively flat. The overall slope of the site is to the south. Surface soils consisted of sands, loamy sands, and loams. Reeder Point Branch (Photograph 9) was observed flowing along the western site boundary. Several additional streams and ditches were also observed throughout the site. Wetland areas (Photograph 10) adjacent to Reeder Point Branch and several of the ponds were also observed. Eight ponds (Photograph 11), including a large detention pond on the northern portion of the site, were observed. No other surface water features were observed on the site. Regional groundwater flow can be assumed to roughly mimic the surface topographic slope. No confirmation of surface run-off or groundwater conditions was made during the site reconnaissance.

#### **5.2.6 General Description of Roads, Structures & Other Improvements**

Ingress and egress to the site are various roads from the northwest (Pineview Road), southwest (Carswell Road), south (Longwood Road), and east (Longwood Road). Numerous dirt roads were observed within the site boundaries. Structures included four mobile homes (Photographs 12-13), multiple pole sheds (Photograph 14), storage/equipment sheds (Photograph 15), an office building, pump houses, and a farming warehouse (Photograph 16). Eight ponds were observed on the site. One of these ponds is a detention pond located on the northern portion of site. The residences and office building contain electric heating and cooling systems. Non-mobile home structures contained slab floors. Open-air sheds contained dirt floor with the exception of the pole shed (concrete slab floor) on the parcel owned by the East Richland County Public Service Authority (eastern portion of site). Exact dates of construction of the structures is unknown

### 5.2.7 Potable Water Supply and Sewage Disposal System

Municipal water and sewer connections are not observed on the site. The residences and office building on the site use drinking water wells and domestic septic systems.

### 5.3 Exterior Observations

- Hazardous Substances and Petroleum Products in Connection with Identified Uses – None observed.
- Aboveground Storage Tanks – A self-contained gasoline AST (Photograph 17) was observed adjacent to the farming warehouse structure on the eastern portion of the site. Two additional gasoline ASTs (Photograph 18) on a concrete pad were observed near the cluster of structures associated with the Long Branch Farms operation. Each AST was approximately 500 gallons. Each AST was in good condition with no apparent signs of leakage, stressed vegetation, or soil/concrete staining.
- Underground Storage Tanks – None observed.
- Odors – None observed.
- Pools of Liquid – None observed.
- Drums – Five 55-gallon hydraulic oil drums (Photograph 19) were observed on a pallet in one of the Long Branch Farms structures. Five empty 55-gallon drums (former contents unknown) (Photograph 20) were observed on a concrete pad near the mobile home on the southern portion of the site.
- Hazardous Substances and Petroleum Products Containers (Not Necessarily in Connection with Identified Uses) – See Drums description.
- Unidentified Substance Containers – None observed.
- PCBs – Several pole-mounted transformers were observed near the various structures on the site. The transformers were observed to be in good condition and several were marked with non-PCB stickers.
- Mounds – None observed.
- Pits, Ponds, or Lagoons – Eight ponds were observed on the site. The ponds appear to serve as sources of irrigation, recreation, or detention purposes.
- Stained Soil or Pavement – None observed.
- Stressed Vegetation – None observed.
- Drains or Sumps – None observed.
- Solid Waste – None observed.
- Waste Water – None observed.
- Wells – Several drinking water well houses (Photograph 21) were observed near the mobile homes on the site. A groundwater monitoring well (Photograph 22) was observed on the eastern portion of the site on the parcel owned by the East Richland County Public Service Authority. Based on an interview with Larry Brazell with East Richland County Public Service Authority, the monitoring well was placed on the site per SCDHEC regulations to monitor domestic sludge applications from 1980-1983.



The well was monitored for approximately 10 years until 1993. No groundwater contamination issues were noted during the required period of monitoring.

- Septic Systems – The residences and office building on the site use domestic septic systems.
- Dumping – None observed.
- Herbicide/Pesticide Storage or Mixing Areas – Two mobile herbicide/pesticide containers were observed on the central portion (Photograph 23) of the site and on the Long Branch Farms portion (Photograph 24) of the site. Bulk storage of these chemicals, stressed vegetation, or soil staining were not observed around these mobile container.

#### **5.4 Interior Observations**

S&ME did not enter the locked structures on the site. S&ME was able to observe the interior of the pole sheds, open sheds, and inside one of the pump houses. Besides the 55-gallon drums on the wooden pallet and the two pesticide/herbicide containers, no additional hazardous material items were noted.

## **6.0 INTERVIEWS**

Interviews were conducted by Chris Daves, an S&ME Environmental Professional, to obtain information from individuals who have knowledge of current and past activities at the site, and to clarify observations made during the site reconnaissance or data review of the site. Copies of interview correspondence are located in Appendix E.

### **6.1 Interview With Owners**

S&ME received a completed Environmental Questionnaire from three of the property owner representatives: Mr. Nelson Lindsay of Richland County, Mr. Marvin Davis of the SC Research Authority, and Mr. R.C. McEntire, Jr. of Long Branch Farms. Mr. Nelson Lindsay served as the liaison for the individual property owners. On the Environmental Questionnaires, these owners indicated they had no knowledge of environmental concerns, USTs, environmental liens, AULs, or ECs in association with the subject site. Mr. Lindsay indicated the Richland County-owned portion of the site was previously cleared and graded for an industrial park site. Mr. McEntire indicated the Long Branch Farms portion of the site was a landscape/tree farm operation.

S&ME interviewed Larry Brazell with the East Richland County Public Service Authority on July 24, 2012 regarding the Authority's parcel as well as the groundwater monitoring well. Mr. Brazell indicated the monitoring well was placed on the site per SCDHEC regulations to monitor domestic sludge applications in the field from 1980-1983. The well was monitored for approximately 10 years until 1993. No soil or groundwater contamination issues were noted during the required period of monitoring. He indicated they had no knowledge of environmental concerns, USTs, environmental liens, AULs, or ECs in association with the subject site.

## **6.2 Interview with Key Site Manager**

See Section 6.1.

## **6.3 Interview with Occupants**

See Section 6.1.

## **6.4 Interview with Local Government Officials**

On July 2, 2012, S&ME submitted a Freedom of Information request to the Columbia Fire Department via fax (803-343-8719) regarding fire, spills, petroleum, or hazardous materials on the site or immediate surrounding area. The fire department provided an incident report for a brush fire in 2002, but this incident did not involve hazardous materials.

S&ME interviewed Mr. Marty Lindler with the SCDHEC Bureau of Land and Waste Management via telephone (803-896-4205) on July 25, 2012 regarding the Kyzer Short-Term Landfill northwest of the site. Mr. Lindler mentioned Kyzer submitted an application in 1996 for a C&D landfill, but the company did not follow through completing the necessary information to obtain a permit. SCDHEC never issued a permit for the landfill and the landfill was never developed.

## **6.5 Interviews with Others**

No other interviews were conducted for this assessment.

# **7.0 FINDINGS**

## **7.1 On-Site Findings**

Five (5) on-site findings of environmental concern were noted.

- A self-contained gasoline AST was observed adjacent to the warehouse structure on the eastern portion of the site. Two additional gasoline ASTs on a concrete pad were observed near the cluster of structures associated with the Long Branch Farms operation. Each AST was approximately 500 gallons.
- Five 55-gallon hydraulic oil drums were observed on a pallet in one of the Long Branch Farms structures. Five empty 55-gallon drums were observed on a concrete pad near the mobile home on the southern portion of the site.
- A groundwater monitoring well was observed on the eastern portion of the site on the parcel owned by the East Richland County Public Service Authority.
- Two mobile herbicide/pesticide containers/dispensers were observed on the central portion of the site and on the Long Branch Farms portion of the site.
- The historic use of the site as farmland since at least 1938 is considered a finding of potential environmental concern because of likely pesticide and herbicide use are typically associated with crop production.

## 7.2 Off-Site Findings

The following off-site regulated facilities were identified within the ASTM search radii on the EDR Radius Map Report:

Facility	Location Direction/ Distance Topographic Relationship	Record
Vectra Technology , Inc. Maintenance Facility (now Energy Solutions)	1700 Longwood Rd. 100 ft. S Upgradient	RCRA-NonGen
Mill Creek Sewer Pump Station	5200 Bluff Road 300 ft. S Downgradient	UST, LUST
Pinnacle Composites	1401 Pineview Rd. 900 ft. W Upgradient	RCRA-NonGen
Roadway Express	1308 Pineview Rd. 1,000 ft. W Upgradient	UST, RCRA-CESQG
Kyzer Short-term C&D/LCD Landfill	1516 Pineview Rd. 250 ft. NW Upgradient	FINDS
Crowson Stone Printing	2840 Shop Rd. 750 ft. NW Upgradient	RCRA-NonGen
Container Corp of SC	625 Pineview Rd. 1,100 ft. N Upgradient	UST, LUST

## 8.0 OPINIONS

### 8.1 On-Site Opinions

S&ME offers the following opinions regarding the on-site findings of potential environmental concern identified during this Phase I ESA:

- The three gasoline ASTs were observed to be in good condition with no apparent signs of leakage, stressed vegetation, or soil/concrete staining. Based on these observations, the ASTs are not considered a REC in connection with the subject site at this time.
- The 55-gallon drums associated with the Long Branch Farms structure were neatly stored with no apparent signs of leakage or soil/concrete staining. The 55-gallon drums near the mobile home were empty with no apparent signs of leakage, stressed vegetation, or soil/concrete staining. Based on these observations, the 55-gallon drums are not considered a REC in connection with the subject site at this time.

- Based on an interview with Larry Brazell with East Richland County Public Service Authority, the monitoring well was placed on the site per SCDHEC regulations to monitor domestic sludge applications from 1980-1983. The well was monitored for approximately 10 years until 1993. No soil or groundwater contamination issues were noted during the required period of monitoring. Based on this knowledge, the monitoring well and past domestic sludge applications are not considered a REC in connection with the subject site at this time.
- Bulk storage of these chemicals, stressed vegetation, or soil staining were not observed around the pesticide/herbicide mobile containers. Based on these observations, the pesticide/herbicide mobile containers are not considered a REC in connection with the subject site at this time.
- Environmental issues associated with pesticide and herbicide usage generally arise from chemical storage, mixing, and disposal areas. Other than the mobile containers, S&ME did not observe specific areas on the subject site indicating that pesticides and herbicides were stored, mixed, or disposed on the site under conditions indicative of a material threat of release. On-site disposal of solid waste are also a common practice on agricultural properties. However, no evidence of landfilling or dump sites was observed on the site. Based on these observations, the historic agricultural use of the site is not considered a REC at this time.

## 8.2 Off-Site Opinions

S&ME offers the following opinions regarding the off-site findings of potential environmental concern identified during this Phase I ESA:

1. *Vectra Technology Maintenance Facility (now Energy Solutions), Pinnacle Composites, and Crowson Stone Printing* **are not** considered a REC based on their current regulatory status.
2. *Mill Creek Sewer Pump Station* **is not** considered a REC because the UST on this site has been removed, the previous petroleum release was granted NFA status by SCDHEC, and the direction of groundwater flow to the southeast away from the subject site.
3. *Roadway Express* **is not** considered a REC because the UST on this site has been removed without a documented petroleum release.
4. *Kyzer Short-term C&D/LCD Landfill* **is not** considered a REC because the landfill was never constructed, according to SCDHEC.
5. *Container Corp. of SC* **is not** considered a REC because the UST on this site has been removed and the previous petroleum release was granted NFA status by SCDHEC.

### **8.3 Data Gaps**

Data failure encountered during the performance of the Phase I ESA is that the operational history of the site was not able to be traced in approximately 5-year intervals, because standard historical sources, such as additional aerials photographs or Sanborn Maps, were not readily ascertainable to obtain the information. A search of the land title records for environmental liens or AULs was not performed as title information was not provided by the User at the time of this report. It is our opinion that these data gaps are not significant and did not affect the environmental professional's ability to identify possible RECs on the subject site based on the long term usage of the site as farmland and forestland, and the Owner/User statements that there are no environmental liens or AULs associated with the site.

## **9.0 CONCLUSIONS**

S&ME has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-05 of an approximate 496-acre site located north of the intersection of Bluff Road and Longwood Road in Columbia, Richland County, South Carolina. Any exceptions to, or deletions from this practice are described in Sections 1.4 and 10.0 of this report. This assessment has revealed no evidence of RECs in connection with the subject site.

We found no evidence of on-site or off-site sources of vapor encroachment in connection with the subject site. Consequently, a Tier I Vapor Encroachment Screening was not performed as part of this assessment.

## **10.0 DEVIATIONS**

S&ME has endeavored to perform this Phase I ESA in conformance with the scope and limitations of ASTM E 1527-05. The environmental professionals who performed the Phase I ESA did not feel the need to deviate from the standard.

## **11.0 ADDITIONAL SERVICES**

No other additional services were performed for this assessment.

## **12.0 REFERENCES**

1. *ASTM Standards on Environmental Site Assessments for Commercial Real Estate. E 1527-05, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.* American Society for Testing and Materials (ASTM), Philadelphia, PA, 2005.
2. *ASTM Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions. E 2600-10.* American Society for Testing and Materials (ASTM), Philadelphia, PA, 2010.
3. Google Earth. Aerial Photographs 1994-2012.

4. Milliken Forestry Company, Phase I ESA for Walker Farm Property, February 6, 2005.
5. Richland County GIS - <http://gis.Richlandcounty.org/maps/start.asp>
6. *Soil Survey of Richland County, South Carolina*, United States Department of Agriculture, Soil Conservation Service, 1978.
7. United States Geological Survey (USGS), 7.5-minute Series, Topographic Map, *Fort Jackson South, S.C.* Quadrangle, 1982.
8. United States Geological Survey (USGS), 7.5-minute Series, Topographic Map, *Hopkins, S.C.* Quadrangle, 1948 and 1965.

### **13.0 SIGNATURE(S) OF ENVIRONMENTAL PROFESSIONAL(S)**

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professionals as defined in Section 312.10 of 40 CFR 312. We have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject site. We have developed and performed the All Appropriate Inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Chris Daves, P.W.S.  
Biologist



Tom Behnke, P.G.  
Environmental Department Manager

### **14.0 QUALIFICATION(S) OF ENVIRONMENTAL PROFESSIONAL(S)**

The environmental professionals for this project are Mr. Chris Daves and Mr. Tom Behnke, P.G. Mr. Daves and Mr. Behnke meet the qualifications per 312.10 of 40 CFR Part 312. Mr. Daves has a B.S. in Biology and a M.S. in Earth and Environmental Resources Management and over 11 years relevant work experience in environmental consulting. He has performed hundreds of environmental assessments for real estate transactions in South Carolina, North Carolina, and Georgia. He has also attended ASTM training for Phase I ESAs.

Mr. Behnke is the Environmental Department Manager in Richland, South Carolina and is a Senior Hydrogeologist with over 21 years of experience. Projects he has managed include groundwater contaminant and flow evaluations; and Phase I & Phase II environmental assessments for real estate transactions. Mr. Behnke is a senior reviewer for S&ME and has also attended ASTM training for Phase I ESAs.