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FINAL

Preliminary Assessment/ Site Inspection Work Plan for the Callaway Drum Recycling Site, Auburndale, Polk County, Florida

EPA I.D. No. FLN000407303

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DATE

Prepared for:

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List of Acronyms and Abbreviations

a.k.a	also known as
ASTM	American Society for Testing and Materials
BGS	below ground surface
BNA	base, neutral and acid extractable organic compound
CDR	Callaway Drum Recycling
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (of 1980)
CompQAP	Comprehensive Quality Assurance Plan
CR	County Road
DOT	United States Department of Transportation
DQO	data quality objective
E & E	Ecology and Environment, Inc.
e.g.	for example
EISOPQAM	Environmental Investigation Standard Operating Procedures and Quality Assurance Manual
EPA	United States Environmental Protection Agency
FDEP	Florida Department of Environmental Protection, formerly FDER
FDER	Florida Department of Environmental Regulation, now FDEP
FGS	Florida Geological Survey
FIRM	Flood Insurance Rate Map
FS	Florida Statute
ft^2/day	square feet per day
gpm	gallons per minute
HRS	hazard ranking system

List of Acronyms, cont.

ID	inside diameter
IDW	investigation-derived waste
ml	milliliter
msl	mean sea level
NGVD	National Geodetic Vertical Datum
NPL	National Priorities List
NTU	nephelometric turbidity units
NWI	National Wetland Inventory
PA	Preliminary Assessment
PCB	polychlorinated biphenyl
PG	Professional Geologist
ppb	parts per billion
PUBHx	Palustrine, unconsolidated bottom, permanently flooded, excavated
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
SARA	Superfund Amendments and Reauthorization Act
SESD	(EPA) Science and Ecosystem Support Division
SI	site inspection
SWFWMD	Southwest Florida Water Management District
TAL	target analyte list
TCL	target compound list
TVA	total vapor analyzer
USC	United States Code
USGS	United States Geological Survey
VOA	volatile organic analysis
VOC	volatile organic compound

1 Introduction

This preliminary assessment/site inspection (PA/SI) work plan for the Callaway Drum Recycling site (United States Environmental Protection Agency (EPA) Identification Number FLN000407303) in Auburndale, Polk County, Florida, has been prepared by Ecology and Environment, Inc., (E & E) for the Florida Department of Environmental Protection (FDEP, formerly the Florida Department of Environmental Regulation [FDER]) under Contract Number HW-363. The available documents in the site file have reported the facility name variously as: Callaway & Son's Drum Reconditioning; Callaway & Sons Drum; Callaway & Son Drum Service; and Callaway Drum Recycling; however, for the purpose of this PA/SI, the site will be referred to as Callaway Drum Recycling (CDR). This work is being conducted pursuant to the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 United States Code (USC) 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act (SARA), Public Law 99-499, and Florida Statutes (FS), Chapter 403. The work plan has been developed based on the following information sources: FDEP's Windshield Survey conducted on April 12, 2001; review of associated file documents; and a site reconnaissance conducted on July 16, 2001.

The objectives of this PA/SI work plan are as follows:

- Discuss the available site history, including the findings of any previous investigations;
- Identify the migration pathways and hazard ranking system[1] (HRS) data gaps;
- Propose a scope of work that will collect data to fill the HRS data gaps; and
- Ensure that all data quality objectives (DQOs) will be performed in accordance with E & E's FDEP-approved Comprehensive Quality Assurance Plan (CompQAP; No. 860165G). The CompQAP incorporated the EPA Science and Ecosystem Support Division (SESD) Region 4 Environmental Investigation Standard Operating Procedures and Quality Assurance Manual (EISOPQAM).

[1] The hazard ranking system is EPA's primary tool for determining whether a site warrants listing on the National Priorities List (NPL). This includes evaluation of the groundwater, surface water, soil exposure (direct contact), and air migration pathways.

The DQOs of this work plan specifically apply to sampling locations, sampling procedures, sample types, use of data, data types, and field quality assurance/quality control (QA/QC) [34].

This PA/SI work plan consists of the following sections and appendices:

- Section 1: Introduction;
- Section 2: Site Description;
- Section 3: Site History;
- Section 4: Preliminary Pathway Evaluation (identifies potential migration pathways and hazard ranking system (HRS) data gaps);
- Section 5: Scope of Work/Methodology (identifies numbers of samples, locations, and methods required to fill HRS data gaps);
- Section 6: Preliminary Assessment/Site Inspection Report;
- Section 7: References;
- Appendix A: Health and Safety Plan; and
- Appendix B: American Society for Testing and Materials (ASTM) Environmental Assessment Report.

All numbers associated with reference sources included in this text are displayed in brackets (e.g., [5]) and correspond to the reference list in Section 7.

2 Site Description

The CDR site is a vacant property located on County Road (CR) 655 in Auburndale, Polk County, Florida, within Section 33, Township 27 South, Range 25 East [1, 2, 3]. Based on the Auburndale topographic map, the approximate latitudinal and longitudinal coordinates for the site are 28E5'11" N and 81E49'11"W, respectively [1]. Figure 1 depicts the site location and a 1-mile radius around the site [1].

The CDR site is located in a rural residential area, approximately 450 feet north of the intersection of CR 655 and Lake Myrtle Drive [2, 4]. The site is rectangular in shape covering an area of 10.66 acres [2, 3]. According to records obtained from the Polk County Property Appraisers Office, Adams Packing Association, Inc. has owned the site since 1947 [3]. Available site information suggests that CDR operated on the site from some time prior to 1971 until approximately 1979 [5, 6, 9, 10]. However, the exact dates that CDR operated on the site are unknown.

The site is a vacant property having the approximate dimensions of 1,000 feet east-west by 500 feet north-south. No permanent structures currently exist on the site and the majority of the site is densely vegetated. On July 16, 2001, a site reconnaissance was conducted by personnel representing FDEP, E & E, and Adams Packing. In addition, a former CDR employee was present to point out former operational areas.

During the site reconnaissance several manmade features and areas of debris were observed that may be attributable to the former drum recycling operations (see Figure 2). A large excavated area composed of a series of ditches and berms running north-south is located in the northwest section of the site. Former employees of CDR stated that drums were unloaded in this area upon receipt and any contents were poured on the ground [6, 8]; however, the former employees were unable to describe the procedures in detail. The remnants of several drums were observed in this area during the site reconnaissance. A similar excavated area was observed in the southwest section of the site and remnants of drums and piles of crushed aluminum juice cans were observed in this area. Labeling on

the aluminum juice cans indicated that the cans had contained or were intended to contain Adams grapefruit juice.

Two large trenches that run east-west are located in the southeast section of the site. A less densely vegetated area is located centrally on the eastern half of the site. A former employee indicated that the main drum reconditioning operations were conducted in this area. Remnants of many drums and possible reconditioning equipment were observed in the vicinity of the former reconditioning area. In addition, a large pile of pallets and large open-top containers were observed in this same area. The containers, estimated to hold greater than 100 gallons, carried Adams Packing labels and appeared to be associated with juice processing. A former employee remembered that there was a well on the site; however, the employee could not remember the exact location. The well was not located during the site reconnaissance.

The site is located in an area of mixed land use, primarily rural residential and agricultural [4]. A review of the available historical aerial photographs indicates that the areas in all directions around the site were agricultural prior to 1979 [9, 10]. At present, a small subdivision is located north of the site. Agricultural pastureland is located beyond the subdivision, and CR 655 (a.k.a. Berkley Road) is directly east of the site, beyond which are residential subdivisions. Two properties comprising approximately 10 acres in total and zoned as a commercial enclave are located south of the site. A cellular tower and communications tower construction company currently operates on one of these properties. For approximately ten years from the mid-1970s, the former owner of this property, Mr. Pearson, operated a borrow pit for sand and clay. The site is bordered on the west by a railroad embankment, beyond which is pastureland.

2.1 Waste Characterization

Very little is known about the CDR operations on the site. Some information has been obtained from telephone interviews with two former employees, as well as a site walkover with a former employee. Historical aerial analysis and employee interviews suggest that drum recycling operations ceased at the site in the late 1970s. However, the start-date of the drum recycling operations is unknown. Analysis of the aerial photographs suggests that excavation operations apparently began at the site about 1958. Drum recycling operations are not apparent on aerial photographs until 1971.

Interviews with former employees indicated that drums initially were received and unloaded at the rear (west) of the property and any remaining contents were poured on the ground [6, 8]. The drums were reconditioned in the eastern half of the site. One former employee described the drum reconditioning process: After the drums were emptied, they were brought to the reconditioning areas

to be rinsed and cleaned. The drums were placed on racks to dry; then they were straightened and repainted to be sold.

Although the descriptions of the drum recycling operations given by the former employees were not detailed, it appears that the operation process may have been similar to those described at a CDR facility subsequently operated in Lake Alfred, Florida [11, 12]. This site was placed on EPA's National Priorities List (NPL) in May 2000 [35]. The Auburndale facility was initially brought to the attention of EPA and FDEP during the Lake Alfred facility NPL listing process. Although the former employees stated that some drums were labeled as caustic and corrosive, the source and the contents of the drums received at the site are unknown at this time [6, 8].

2.2 Site Topography and Drainage

The site is generally flat with a surface elevation of approximately 145 to 150 feet National Geodetic Vertical Datum (NVGD) [1]. Based on the Flood Insurance Rate Map (FIRM) for Polk County, the site is located within Zone C, described as an area of minimal flooding [13]. Based on the flat topography and dense vegetation, as well as the railroad embankment and the road to the west and east of the site, respectively, it is unlikely that stormwater runoff flows offsite. However, based on observations made during the site reconnaissance and a review of the National Wetland Inventory (NWI) map for the Auburndale quadrangle, an excavated wet area exists on the property adjacent to the southern end of the site. This area is described on the NWI map as PUBHx (Palustrine, unconsolidated bottom, permanently flooded, excavated) [14]. Stormwater runoff from the site possibly may flow toward this area. In addition, analysis of the 1971 aerial photograph suggests that a low moist area may exist in the west-central portion of the site [9]. Due to inaccessibility, the presence of this area was not confirmed during the site reconnaissance.

2. 3 Site Geology/Hydrogeology

The CDR site is located on the northern portion of the Winter Haven Ridge [21]. Elevations of the Winter Haven Ridge in Polk County range from about 150 to 230 feet above mean sea level (msl) [22].

The uppermost lithologic unit encountered in the site vicinity consists of variably clayey quartz sands of the Plio-Pleistocene Age Cypresshead Formation [23, 24]. In the site vicinity in northern Polk County, Cypresshead Formation sediments are approximately 50 to 60 feet thick [24, 25, 26].

The Cypresshead Formation is underlain by interbedded variably phosphatic sandy clays, clayey sands, limestones, and dolostones of the Miocene-Age Hawthorn Group [27]. In the Auburndale area, sediments of the Hawthorn Group are approximately 80 to 100 feet thick [25, 27].

Three principal hydrogeologic units are present in Polk County. In descending order, these are the surficial aquifer system, intermediate aquifer system, and Floridan aquifer system [28, 29, 30].

In Polk County, the surficial aquifer system consists of permeable quartz sands and clays of the Plio-Pleistocene Age Cypresshead Formation, undifferentiated Pleistocene and Holocene deposits, and where present, permeable sediments in the uppermost portion of the Peace River Formation of the Hawthorn Group [24, 29, 31]. The surficial aquifer system is approximately 50 feet thick in the vicinity of the site [31].

Groundwater occurs in the surficial aquifer system under generally unconfined conditions in Polk County [31], and the aquifer system is recharged primarily by rainfall. In Polk County, the surficial aquifer system is used as a source of water for domestic and small-scale agricultural use [22, 24]. Wells that tap the surficial aquifer system in Polk County typically do not yield more than 20 or 30 gallons per minute (gpm) [22]. The surficial aquifer system is considered a major source of recharge to the underlying intermediate aquifer system in the Polk County area [29,32].

The intermediate aquifer system is present over much of Polk County, south of Polk City, and consists of all water-bearing and confining units lying between the surficial aquifer system and the underlying Floridan aquifer system [28, 29]. Water-bearing units within the intermediate aquifer system consist of discontinuous sand, limestone and dolostone beds within the Peace River and Arcadia Formations of the Hawthorn Group [29]. Low permeability sandy clay and clay within the Peace River Formation comprise the upper confining unit of the intermediate system. Sandy clay and clayey sand in the lower portion of the Arcadia Formation form the lower confining unit of the intermediate system [29]. In northern Polk County in the vicinity of the site, the intermediate aquifer system is approximately 100 feet thick [29, 30].

Groundwater within the intermediate aquifer system occurs under confined conditions. However, the intermediate aquifer system is considered a leaky aquifer system [29, 32] that can transmit water to the overlying surficial aquifer system or the underlying Floridan aquifer system depending on hydraulic head relationships between the three aquifer systems [29, 32]. Transmissivities of the water-bearing units within the intermediate aquifer system are generally less than 1,000 square feet per day (ft^2/day) in northern Polk County [29]. The intermediate aquifer system is an important source of water for domestic, industrial, and agricultural use in Polk County [29, 33]. In northern Polk County, the intermediate aquifer system is recharged by downward leakage from the surficial aquifer system [29, 34]

The upper Floridan aquifer system is the major source of water in the Polk County area and consists of a thick series of carbonate ranging from Eocene to Oligocene in age. In descending order, the upper Floridan aquifer system in the Polk County area includes the Oligocene age Suwannee Limestone, the Eocene-Age Ocala Limestone and permeable portions of the Eocene age Avon Park Formation [22, 24]. In northern Polk County, the upper Floridan aquifer is approximately 800 feet thick [33, 34]. Groundwater within the upper Floridan aquifer occurs under confined conditions in the site vicinity [22, 23]. Transmissivities reported for the upper Floridan aquifer in Polk County area range from approximately 4,000 to greater than 1,000,000 ft^2/day [34]. The upper Floridan aquifer is the principal source of water for consumptive use in Polk County [24, 33, 34]. In the site vicinity, the upper Floridan aquifer is recharged by leakage from the overlying intermediate aquifer system [29, 34].

Site-specific geology/hydrogeology were not available during the development of this work plan. Site-specific geology/hydrogeology will be provided in the combined PA/SI report.

The City of Auburndale operates six wells within a 4-mile radius of the site [15, 16]. The City of Auburndale well system collectively serves a population of approximately 31,822 people [16]. The two Winona Park wells operated by the City of Auburndale are located approximately 1.5 miles west-northwest of the site [15]. The three Atlantic Avenue wells, and one Tampa Street well, are located approximately 2.1 and 2.6-miles southwest of the site, respectively [15].

Forty-nine community and non-community well systems exist within 4 miles of the site, collectively serving 6,983 people. The largest system, Mariana Acres Water System, consists of two wells that serve 1,785 people [16]. These wells are located approximately 3.75 miles west of the site [15]. The nearest community system, Happy Day Trailer Park, serves 120 people and is located approximately 1.9 miles southwest of the site [15,16].

At this time, the number of private wells for potable use employed within 4 miles of the site is unknown. Observations made during the site reconnaissance suggest that the majority of properties in the vicinity of the site are served by public and municipal water systems. However, two private wells were observed within 0.25 miles of the site. One private supply well is located on the property immediately south of the site, and another is located east of the site beyond CR 655 (see Figure 2). A population database search indicates that 24,909 people reside within a 4-mile radius of the site [17].

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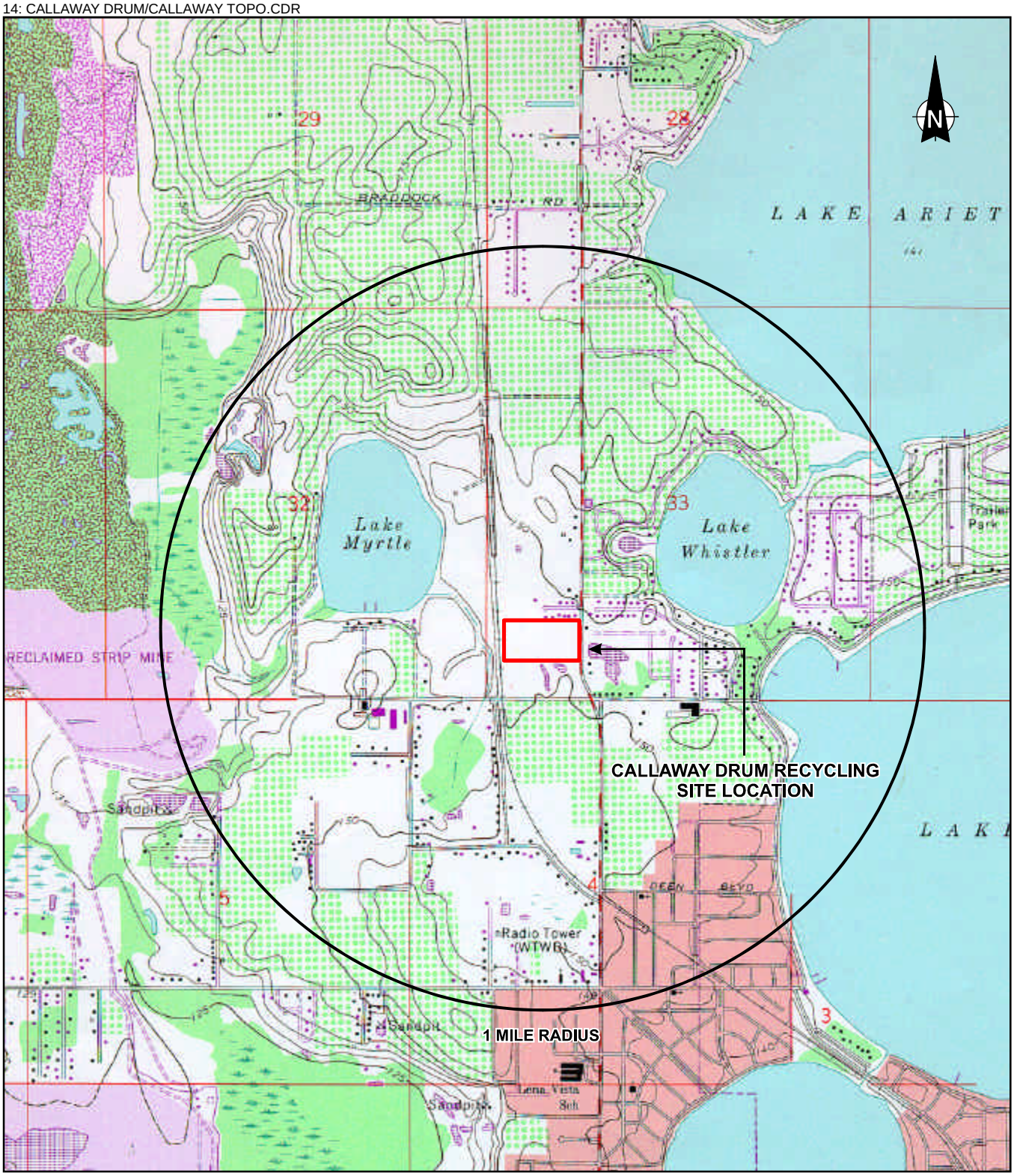
14: CALLAWAY DRUM/CALLAWAY TOPO.CDR



SOURCE: U.S.G.S. 7.5 Minute Series (Topographic) Quadrangle: Auburndale, Florida 1975, photorevised 1988.

SCALE

0 .5 1 MILE

0 1000 2000 3000 4000 5000 FEET

Figure 1 LOCATION MAP -- CALLAWAY DRUM RECYCLING, AUBURNDALE, POLK COUNTY, FLORIDA

3 Site History

From sometime prior to 1971 until the late 1970s, Callaway and Sons operated a drum recycling facility at the CDR site. A chronological listing of relevant site events is summarized below:

- **January 1, 1947.** Adams Packing Association Inc. purchased the property [3].
- **1970s.** CDR operated a drum recycling facility at the site [5, 6, 8, 9]
- **November 2000.** The EPA Environmental Services Division, Las Vegas, conducted an aerial photographic analysis of the Callaway and Sons Drum Service site. The report presented operational interpretation from aerial photographs taken between 1958 and 1993. [9].
- **March 26, 2001.** Ms. Joni Long, a former Callaway and Sons employee, sent a letter to Congressman Adam Putnam's office (Bartow) providing information about former activities at the site. The letter stated that Ms. Long handled chemicals, and was never told that they could be dangerous. Subsequently Ms. Long explained that she had health problems that her doctors are attributing to chemical and radioactive poisoning. The letter requested direction from Congressman Putnam's office, as Ms. Long is no longer able to work due to health problems [5].
- **March 27, 2001.** Barbara Dick, EPA Region IV, referred the site to FDEP to conduct a combined PA/SI [19].
- **April 12, 2001.** FDEP conducted a windshield survey of the CDR site [7].
- **July 16, 2001.** Personnel representing FDEP, E & E, and Adams Packing conducted a site reconnaissance of the CDR site. In addition, a former CDR employee was present for part of the site reconnaissance.

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4 Preliminary Pathway Evaluation

The purpose of the preliminary pathway evaluation is to identify the migration pathways and evaluate available data, including potential contamination sources, potential hazardous waste quantity, contamination concentrations, and potential targets. The proposed scope of work (see Section 5) has been developed to address data gaps identified in the preliminary pathway evaluation.

4.1 Groundwater Pathway

Groundwater samples have not been collected at the site. Detailed regional/site geology and hydrogeology descriptions are provided in Section 2.3 of this work plan. The upper Floridan aquifer is the principal source of municipal, industrial, and domestic water supplies in Polk County. Six City of Auburndale supply wells are located within 4 miles of the site, and available information indicates that the depth of these wells is approximately 600-feet below ground surface (BGS) [15, 20]. The City of Auburndale water supply provides potable water to 31,822 people [16]. At this time it is not known if groundwater samples have been collected at the site. However, caustic and corrosive labeled drums were reportedly cleaned at this site. Based on the Lake Alfred facility, solvents also could be present. Based on the number of targets within a 4-mile radius, if groundwater contamination is documented and attributed to the site, the groundwater pathway may be of concern.

4.2 Surface Water Pathway

A detailed description of site topography and drainage at the site is provided in Section 2.2 of this work plan. It does not appear that a potential surface water migration pathway exists from the site. Therefore, the surface water pathway does not appear to be of concern.

4.3 Soil Exposure and Air Migration Pathways

A detailed site description is provided in Section 2 of this work plan. At this time it is not known if soil samples have been collected at the site. The population database search indicates that 24,909 people reside within a 4-mile radius of the site [17]. In addition, the future land-use map for Polk County indicates that the area around the site is zoned residential. Therefore, if soil contamination exists, the soil exposure and air migration pathway may be of concern at the site.

5 Scope of Work/Methodology

The following field activities are proposed for the CDR site. Initial field screening will include: installation of 30 to 40 20-foot borings using direct-push technology; the collection of surface and subsurface soil samples from each boring for screening of soil vapors using E & E's Color-Tech screening technique and a total vapor analyzer (TVA), and for soil pH; and the collection of groundwater grab samples from each boring for field screening. Upon completion of the field screening activities and review of the results, six 1-inch inside diameter (ID) "micro" monitoring wells will be installed. During installation of the monitoring wells one surface soil and one subsurface soil sample will be collected for laboratory analysis. In addition, upon completion and development of the monitoring wells a groundwater sample will be collected from each well for laboratory analysis. Water level measurements will be recorded for all newly installed monitoring wells.

The field investigation will focus on areas believed to be key during site operations. These include: the excavated areas in the northwest, southwest, and southeast sections of the site; and the former reconditioning operations area in the east-central half of the site. Figure 2 shows the proposed focus areas, and potential sample locations. Table 1 lists the soil and groundwater sample designations, potential locations, and rationale. Sampling locations, analytical procedures, or other portions of the scope of work may be altered based on field conditions and/or new site information. E & E will confer with FDEP prior to making any changes to the scope of work.

All sampling and fieldwork activities will be conducted in accordance with E & E's FDEP-approved CompQAP (No. 860165G) and E & E's site-specific health and safety plan (see Appendix A).

5.1 Field Screening

5.1.1 Surface/Subsurface Soil Screening

Continuous 4-foot soil cores will be collected from 30 to 40 locations using direct-push technology. Cores will be collected from the ground surface to the groundwater, estimated to be approximately 20 feet BGS. Direct-push locations will be selected in the field by the E & E project manager and the FDEP site manager based on field observations and site history. Each of the 4-foot core samples will be cut into two 2-foot sections and a soil sample collected from each for field screening using E & E's Color-Tech screening technique and a TVA. In addition, soil samples will be screened for pH. Visual and olfactory observation also will be utilized in the field screening techniques. E & E's Color-Tech screening technique uses colorimetric detector tubes capable of detecting chlorinated alkenes and hydrocarbons to a detection limit of 50 parts per billion (ppb). At each core depth, approximately 10 grams of soil sample will be collected and mixed with 10 milliliters (ml) of analyte-free water in a 40-ml volatile organic analysis (VOA) vial. Two needles will be pierced through the vial septa. One will be stationed near the top of the vial in the head space (sampling needle), and the other will be stationed near the base of the vial in the water soil mixture (inlet purging needle). A colorimetric detector tube and pump will be connected to the sampling needle and a sample will be drawn from the vial head space. Tentative analyte quantitation and identification will be based on tube concentration readings and color changes.

5.1.2 Groundwater Screening

Collection of groundwater grab samples will be attempted for each of the direct-push borings. Groundwater grab samples will be collected from approximately 5 to 10 feet below the water table by advancing a well screen and retractable steel casing assembly. When the desired depth is reached, the steel casing will be retracted exposing the screened section, thus allowing water to enter the screened section. A groundwater sample will then be collected using a peristaltic pump equipped with Teflon tubing. The groundwater grab samples will be field screened using the TVA and Color-Tech procedure. In addition, temperature, pH and conductivity measurements will be taken.

5.2 Monitoring Well Installation

Five monitoring wells will be installed on the CDR site using direct-push techniques. The exact location of each well will be determined in the field based on the results of the groundwater and soil field screening. The monitoring wells will be installed to a depth of approximately 25 feet BGS.

One background monitoring well will be installed on an adjacent property south of the CDR site (the Frasier property). Each well will be constructed of 1-inch schedule 40 flush-joint polyvinyl chloride (PVC) casing (the length of which will be determined in the field) attached to 10 feet of 0.010-inch factory slotted flush-joint threaded PVC screen, and a threaded PVC end cap. The screen/borehole annulus will be filled with clean silica sand (20/30 mesh) to a height of approximately 2 feet above the screen/casing joint. An approximately 2-foot thick layer of bentonite or very fine sand (35-70 mesh) will be placed above the sand pack to act as a seal. The remaining annular space will be filled with cement grout. The wells will be completed with a locking cap and above-ground security cover surrounded by a concrete pad. The wells will be developed by surging and overpumping using a pump until the water appears clear, and the pH, specific conductance, turbidity, and temperature have stabilized.

5.3 Surface/Subsurface Soil Samples

During the installation of the monitoring wells, one surface soil and one subsurface soil sample will be collected from each of the six monitoring well locations. The depth of the subsurface soil sample will be determined in the field based on the review of the field screening results. Samples collected for volatile organic compound (VOC) analysis will be collected with an EnCore™ sampler per EPA Method 5035. For QA/QC purposes, two duplicate soil samples, two soil sampling equipment rinsate blank samples, and at least one trip blank will also be collected.

5.4 Groundwater Samples

Groundwater samples will be collected from the six newly installed monitoring wells, shown on Figure 2 (see Table 1). Prior to sampling, a volume equivalent to three times the standing water column will be purged from each monitoring well. After each well volume has been removed, the pH, specific conductance, turbidity, and temperature will be recorded. If these parameters have not stabilized after the removal of three well volumes, purging will continue. However, no more than five well volumes will be removed. Groundwater samples will be collected when the turbidity readings are below 10 nephelometric turbidity units (NTUs). All monitoring well purging and groundwater sampling will be performed by low-flow methodology using a peristaltic pump with Teflon tubing. All groundwater samples will be collected from the tubing prior to passing through the peristaltic pump.

In addition, two groundwater samples will be collected from private supply wells located in the vicinity of the site. One sample will be collected from the supply well located on the adjacent

property to the south, and another will be collected from a private supply well located east of the site, beyond CR 655. For QA/QC purposes, one duplicate ground-water sample, one groundwater sampling equipment rinsate blank sample, and one trip blank will also be collected.

5.5 Laboratory Analysis

All soil samples and groundwater samples for laboratory analysis will be analyzed for the following: target compound list (TCL) VOCs; TCL base, neutral and acid (BNA) extractable organics; pesticides, herbicides, and polychlorinated biphenyls (PCBs); target analyte list (TAL) metals; and total cyanide. In addition, since caustic solutions may have been used at the site, soil samples will be analyzed for pH. With the exception of the trip blanks, each of the QA/QC samples will be analyzed for the same list of compounds. The trip blanks will be analyzed for TCL VOCs only. The FDEP Central Laboratory in Tallahassee will perform the laboratory analysis.

5.6 Hydrologic Assessment

Following the completion of the monitoring well sampling activities, a hydrologic assessment will be conducted, consisting of an elevation survey, and measurement of the water levels in the new and existing monitoring wells. The elevation survey of the newly installed wells, selected profiling locations and selected site features will be performed by a State of Florida licensed professional land surveyor.

5.7 Investigation-Derived Waste

All investigation-derived waste (IDW; i.e., soil cutting and cores, purge water, and decontamination fluids) will be containerized in United States Department of Transportation (DOT)-approved 1A-2, 55-gallon steel drums, clearly labeled and staged on site for subsequent disposal. Upon receipt of the analytical results, E & E will provide FDEP with a proposal and cost estimate for proper disposal of the containerized IDW.

Table 1

SAMPLE LOCATIONS AND RATIONALE
Callaway Drum Recycling Site, Auburndale, Polk County, Florida

Sample Type	Sample Designation	Sample Location	Rationale	Analytical Method
Soil	CDRSS-1	Surface soil: To be collected near southwest corner property south of site (Frasier property).	Background location	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
	CDRSS-2	Surface soil: Potentially to be collected from the excavated area in southwest section of the site.	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
	CDRSS-3	Surface soil: Potentially to be collected from the excavated area in the northwest section of the site	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
	CDRSS-4	Surface soil: Potentially to be collected from the excavated area in southeast section of the site.	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
	CDRSS-5	Surface soil: Potentially to be collected from the main facility operations area in the eastern section of the site	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
	CDRSS-6	Surface soil: To be determined in the field	Potential source/impact area	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
	CDRSS-7	Surface soil: To be determined in the field	Potential source/impact area	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
	CDRSS-8	Surface soil: To be determined in the field.	Potential source/impact area	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
	CDRSB-1	Subsurface soil: To be collected near southwest corner property south of site (Frasier property).	Background location	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
	CDRSB-2	Subsurface soil: Potentially to be collected from the excavated area in southwest section of the site.	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
	CDRSB-3	Subsurface soil: Potentially to be collected from the excavated area in the northwest section of the site.	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH.

See key at end of table.

Table 1

SAMPLE LOCATIONS AND RATIONALE
Callaway Drum Recycling Site, Auburndale, Polk County, Florida

Sample Type	Sample Designation	Sample Location	Rationale	Analytical Method
Soil (cont.)	CDRSB-4	Subsurface soil: Potentially to be collected from the excavated area in southeast section of the site.	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
	CDRSB-5	Subsurface soil: Potentially to be collected from the main facility operations area in the eastern section of the site.	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
	CDRSB-6	Subsurface soil: To be determined in the field	Potential source/impact area	VOCs, BNAs, Pest/Herb/PCBs, Metals, Cyanide, and pH
Groundwater	CDRGW-1	Groundwater: To be collected near southwest corner property south of site (Frasier property).	Background location	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRGW-2	Groundwater: Potentially to be collected from the excavated area in southwest section of the site.	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRGW-3	Groundwater: Potentially to be collected from the excavated area in the northwest section of the site.	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRGW-4	Groundwater: Potentially to be collected from the excavated area in southeast section of the site.	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRGW-5	Groundwater: Potentially to be collected from the main facility operations area in the eastern section of the site	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRGW-6	Groundwater: To be determined in the field	Potential source area	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRGW-7	Groundwater: To be collected from private supply well south of site,	Potential impact area	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRGW-8	Groundwater: To be collected from private supply well east of the site.	Potential impact area	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide

See key at end of table.

Table 1

SAMPLE LOCATIONS AND RATIONALE
Callaway Drum Recycling Site, Auburndale, Polk County, Florida

Sample Type	Sample Designation	Sample Location	Rationale	Analytical Method
Quality Assurance/ Quality Control	CDRSS-RB	NA	Soil sampling equipment rinsate blank	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRSS-DUP	NA	Duplicate soil sample	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRSS-TB	NA	Trip blank for soil samples	VOCs
	CDRSB-RB	NA	Soil sampling equipment rinsate blank	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRSB-DUP	NA	Duplicate soil sample	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRSB-TB		Trip blank for soil samples	VOCs
	CDRGW-RB	NA	Groundwater sampling equipment rinsate blank	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRGW-DUP	NA	Duplicate groundwater sample	VOCs, BNAs, Pest/Herb/PCBs, Metals and Cyanide
	CDRGW-TB	NA	Trip blank for groundwater samples	VOCs

Key:
BNA = Base, neutral, and acid extractable organic compounds.
DUP = Duplicate sample.
Herb = Herbicides.
NA = Not applicable.
PCB = Polychlorinated biphenyl.
Pest = Pesticide.
RB = Rinsate blank sample.
TB = Trip blank sample
VOC = Volatile organic compound.

6 Combined Preliminary Assessment/ Site Inspection Report

Upon receipt of the analytical results, E & E will prepare a combined PA/SI report. The report will include those elements required in a typical PA and the more detailed information necessary in a SI report, including the site history, site description, and environmental setting; a description of the methodology used during the field investigation; a discussion of the analytical results; and an evaluation of the four pathway/exposure routes.

In conjunction with preparation of the PA/SI report, E & E will prepare a HRS evaluation and HRS score summary report for the CDR site. The score summary report will consist of a two- to three-page discussion of how the site score was achieved and any issues or data gaps that could significantly affect the site score [36].

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APPENDIX A

Health and Safety Plan

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APPENDIX B

ASTM Environmental Assessment Report

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