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Operations Manual

Halifax County Landfill Facility
Halifax County, North Carolina

APPROVED DOCUMENT
Division of Waste Management
Solid Waste Section
Date June 3, 2016 By

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Prepared for:

Halifax County Department of Public Utilities
Halifax, North Carolina

February 2016

NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER

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Halifax County Landfill Facility

Operations Manual

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1.0 GENERAL FACILITY OPERATIONS

This Operations Manual was prepared for operations of the Halifax County Landfill facility located on Liles Road near Littleton. Halifax County (County) owns and operates the facility under Solid Waste Permit No. 42-04. This document discusses the operation of the following landfill units and other solid waste management activities:

- Area 1 C&D Landfill Unit (vertical expansion over closed unlined municipal solid waste (MSW) unit);
- Area 2 C&D Landfill Unit (proposed);
- Ash Monofill (Cells 1 and 2 active; Cell 3 proposed);
- MSW Transfer Station;
- Animal Waste Disposal Area;
- Wood Waste Processing Area;
- White Goods Handling Area;
- Used Tire Storage Area; and
- Used Pesticide Container Storage Area.

Refer to **Figure 1** for the location of existing and proposed landfill units, the transfer station, and other solid waste management and site activities.

The information contained herein was prepared to provide facility personnel with a clear understanding of how the Design Engineer assumed that the completed facility would be operated and how regulatory operations criteria will be met. While deviations from the operations procedures outlined herein may be acceptable, they must be reviewed and approved by the NC Department of Environmental Quality (DEQ) Division of Waste Management (DWM) prior to implementation. Additionally, the Design Engineer should be consulted regarding any changes which may affect the design of the facility. Please refer to the appropriate permit application for a detailed discussion and calculations for the individual components of each landfill unit, including phasing plans.

1.1 Contact Information

All correspondence and questions concerning the operation of the Halifax County Landfill facility should be directed to the appropriate County and State personnel listed below. For fire or police emergencies dial 911.

1.1.1 Halifax County

Halifax County Department of Public Utilities
26 N. King Street (Public Works Building)
P.O. Box 70
Halifax, NC 27839
Phone: (252) 583-1451
Fax: (252) 593-5014

Contact: Greg Griffin, Director

Halifax County Landfill Facility
921 Liles Road
Littleton, NC 27850
P.O. Box 70
Halifax, NC 27839
Phone: (252) 586-7516
Fax: (252) 586-2685

Contact: Solid Waste Manager

1.1.2 North Carolina Department of Environmental Quality (DEQ)

North Carolina DEQ - Raleigh Central Office (RCO)
217 W. Jones Street
Raleigh, NC 27603
1646 Mail Service Center
Raleigh, NC 27699-1646
Phone/Fax: (919) 707-8200

North Carolina DEQ - Raleigh Regional Office (RRO)
3800 Barrett Drive
Raleigh, NC 27609
Phone: (919) 571-4700
Fax: (919) 571-4718

North Carolina DEQ - Fayetteville Regional Office (FRO)
225 Green Street, Suite 714
Fayetteville, NC 28301
Phone: (910) 486-1541
Fax: (910) 486-0707

North Carolina DENR - Winston-Salem Regional Office (WSRO)
450 West Hanes Mill Rd, Suite 300
Winston-Salem, NC 27105
Phone: (336) 776-9800

Division of Waste Management (DWM) - Solid Waste Section:

Field Operations Branch Head:	Jason Watkins (WSRO)
Eastern District Supervisor:	Dennis Shackelford (FRO)
Waste Management Specialist:	Mary Whaley (RCO)

Division of Land Resources - Land Quality Section:

Regional Engineer: John Holley, P.E. (RRO)

1.2 Facility Operating Hours

Normal hours of operation will be 8:00 A.M. to 4:00 P.M. Monday through Friday. The facility will be closed on weekends and on holidays as designated by the County.

The County may elect to modify these hours from time to time.

1.3 Site Access

The site will be accessed by the existing main entrance on Liles Road. A Scale and a scale house are provided at this entrance. All waste will have been weighed prior to being placed in the landfill or transfer station. A secondary entrance on Liles Road may also be utilized primarily for access to the ash monofill.

1.3.1 Physical Restraints

Limiting access to the landfill facility is important for the following reasons:

- Unauthorized and illegal dumping of waste materials is prevented.
- Trespassing, and injury resulting therefrom, is discouraged.
- The risk of vandalism is greatly reduced.

Access to active areas of the landfill will be controlled by a combination of fences and natural barriers, and strictly enforced operating hours. A landfill attendant will be on duty at all times when the facility is open for public use to enforce access restrictions (see also Section 1.2). Each entrance has a gate which will be securely locked during non-operating hours.

1.3.2 Security

Frequent inspections of gates and fences will be performed by landfill personnel. The County will arrange for a random security patrol of the landfill entrances to further discourage trespassing. Evidence of trespassing, vandalism, or illegal operation will be reported to the County Solid Waste Manager.

1.4 Signage

A prominent sign(s) containing the information required by the DWM will be placed at the main landfill entrance. This sign(s) will provide information on operating hours, operating procedures, and acceptable wastes. Additional signage will be provided as necessary within the landfill complex to distinctly distinguish the roadway to the active

landfill unit(s). Service and maintenance roads for use by facility staff will be clearly marked and barriers (e.g., traffic cones, barrels, etc.) will be provided as required.

1.4.1 Waste Limit Markers

During construction or closure of landfill units, waste limit markers will be used to identify the permitted limits of waste. The waste markers will be constructed of non-degradable material and will state "Waste Limits" or "Edge of Liner" in bold lettering. Offsets are acceptable such that all wording is clear to the DWM and operational staff. The waste markers will be maintained and replaced when damaged.

1.5 Communications

Cellular communications will be maintained between the active landfill unit(s), transfer station, and the landfill scale house and office. The scale house and office have telephones in case of emergency and for the conduct of day-to-day business. Emergency telephone numbers are displayed in these locations.

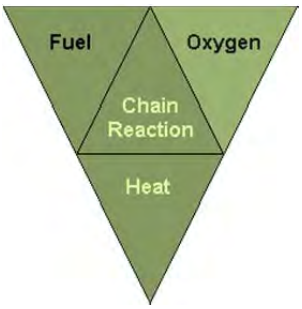
1.6 Fire Control

The possibility of fire within the landfill, transfer station, or a piece of equipment must be anticipated in the daily operation of the facility. Potential fire hazards include both surface conditions and subsurface conditions. Surface conditions include equipment operations and newly placed waste. Subsurface conditions include existing waste previously landfilled.

1.6.1 Open Burning

With the exception of the controlled burning of land clearing debris generated on-site or from emergency clean-up operations, no opening burning is allowed at the facility. Controlled burning will occur only if permitted or approved by the DWM, the Division of Air Quality (DAQ), and the local fire department.

1.6.2 Fire Tetrahedron[1]



To better understand the properties of fire, the fundamental methods to extinguish it must be understood. The fire "tetrahedron" illustrates the rule that in order to ignite and burn, each component of the tetrahedron (fuel, oxygen, heat, and chemical chain reaction) represents a property of flaming fire. A fire

[1] National Fire Protection Association (www.nfpa.org).

is prevented or extinguished by "removing" any one of them. A fire naturally occurs when the elements are combined in the right mixture (e.g., more heat needed for igniting some fuels, unless there is concentrated oxygen). The fire tetrahedron is a more modern adaptation of the traditional fire "triangle" recognizing the chemical reactions that may occur as a component - "the uninhibited chain reaction". This chain reaction is the feedback of heat to the fuel to produce the gaseous fuel used in the flame. In other words, the chain reaction provides the heat necessary to maintain the fire. These principles are integral in the prevention and management of potential fire situations. *Please note this information is considered as a basis of understanding which may be superseded by the direction and skill of the local Fire Marshal.*

1.6.3 Equipment

A combination of factory installed fire suppression systems and/or portable fire extinguishers will be operational on all pieces of heavy equipment at all times. Potential fire hazards are created from the build-up of fine, dry dust particles on and around operational motors and control panels. The presence of these build-ups can cause overheating and potential fire if periodic equipment cleaning and maintenance are not practiced. Portable fire extinguishers should be maintained in a state of readiness on each piece of moving equipment and equipment should be cleaned periodically.

1.6.4 General Fire Management Strategies

Each fire situation is site specific; however, general strategies for active fire management include the following (in no particular order):

- Accelerated high temperature combustion (displacing fuel);
- Covering of burning material with soil (reduce oxygen);
- Covering of burning material with foams (reduce oxygen);
- Flooding of burning material with water (reduce heat);
- Injecting an inert gas such as CO_2 (reduce oxygen);
- Excavating the burning material (displacing fuel) and then extinguishing it in small controlled areas; and
- Applying extinguishing agents that will interfere with and inhibit the combustion process at the molecular level (break the chemical reaction).

1.6.5 Fires Within Disposal Areas

Fires within the landfill disposal areas will be limited by the use of cover soil as a fire break and control of "hot" loads entering the landfill. Facility personnel at the scale house will alert appropriate staff and direct all vehicles containing waste that is suspected to be hot to the transfer station tipping floor where the hot load can be extinguished. If a hot load is placed on the working face, then the

load will be spread as thin as possible and daily cover soil will be immediately placed on the waste to extinguish the fire.

In general, fires that break out close to the surface of the disposal area should be excavated and smothered with cover material. Deep fires should be smothered out by placing moist soil on the surface and by constructing soil barriers around the fire. Where the smothering technique fails, the burning material must be excavated and smothered or quenched with water once the burning material is brought to the surface. Water is usually not effective unless it can be directly applied to the burning material.

For the lined ash monofill, in the event a fire occurs in the first lift of waste immediately above the protective cover layer, the possibility of damage to geosynthetics and collection piping exists. Once the fire is extinguished, the residue must be removed to allow limited inspection of the geosynthetics and piping. Damaged sections of geosynthetics, piping, etc. must be removed and replaced with new items of the same or equal material. The new materials must be placed in accordance with the technical specifications and construction quality assurance (CQA) documents prepared for this facility.

1.6.6 Fires within the Transfer Station or in Transfer Trailers

Fires within the transfer station or in transfer trailers will be limited by the control of "hot" loads entering the facility. Facility personnel at the scale house will alert appropriate staff and direct all vehicles containing waste that is suspected to be hot to the transfer station tipping floor where the hot load can be extinguished. If smoldering or burning waste is discovered on the tipping floor, then the waste will be segregated, spread as thin as possible, and the fire will be extinguished. No "hot" material will be loaded onto transfer trailers.

Transfer trailer fires are uncommon, but may occur when open trailers are loosely loaded with combustible waste materials. If smoke or fire are observed in a loaded waste transfer trailer, the fire must be immediately reported to the Solid Waste Manager. If possible, the load should be immediately doused with water from the tipping floor. If possible, the transfer trailer should be slowly moved from the loading bay, moved at least 100 feet away from the building, and disconnected from the truck cab. The Solid Waste Manager will evaluate the situation and response, and, if necessary, call 911.

1.6.7 Notification

The County will verbally notify the DWM (see **Section 1.1.2**) within 24 hours of discovery of a fire within any landfill disposal area or in the transfer station. In addition, written documentation describing the fire, the actions carried out to extinguish the fire, and a strategy for preventing future occurrences will be

provided to the DWM within 15 days following any such occurrence using the DWM's Fire Occurrence Notification Form (see **Appendix A**).

1.6.8 Coordination With Local Fire Department

A copy of this Operations Manual will be filed with the local fire department including all contact information for the facility.

1.7 Severe Weather Conditions

Unusual weather conditions can directly affect the operation of the landfill facility. Some of these weather conditions and recommended operational responses are as follows.

1.7.1 Ice Storms

An ice storm can make access to the facility dangerous, prevent movement or placement of cover soil, and, thus, may require closure of the facility until the ice is removed or has melted.

1.7.2 Heavy Rains

Exposed soil surfaces can create a muddy situation in some portions of the facility during rainy periods. The control of drainage and use of crushed stone on unpaved roads should provide all-weather access for the site and promote drainage away from critical areas. In areas where the aggregate surface is washed away or otherwise damaged, new aggregate should be used for repair.

Intense rains can affect newly constructed drainage structures such as swales, diversions, cover soils, and vegetation. After such a rain event, inspection by facility personnel will be initiated and corrective measures taken to repair any damage found before the next rainfall.

1.7.3 Electrical Storms

The open area of the facility is susceptible to the hazards of an electrical storm. If necessary, activities will be temporarily suspended during such an event. Refuge will be taken as necessary in the on-site buildings or in rubber-tired vehicles.

1.7.4 Windy Conditions

Facility operations during a particularly windy period may require that the working face be temporarily shifted to a more sheltered area. When this is done, the previously exposed face will be immediately covered with cover soil.

1.7.5 Violent Storms

In the event of hurricane, tornado, or severe winter storm warning issued by the National Weather Service, facility operations may be temporarily suspended until the warning is lifted. Cover soil will be placed on exposed waste and buildings and equipment will be properly secured to the extent deemed safe.

1.8 Equipment Requirements

The County will maintain on-site equipment required to perform the necessary site activities. Periodic maintenance of all equipment and minor and major repair work will be performed at designated maintenance zones.

The anticipated major equipment requirements for operation and maintenance of the site are listed in **Table 1** below. These may vary based upon incoming tonnages and equipment replacement schedules.

Table 1 Equipment Requirements

Description	Primary Function (Allocation)
1) Compactor (C&D)	Waste placement and compaction
2) Dozers (2) (C&D and Ash Monofill)	Stripping and grading of borrow areas, fine grading, slope work, and site cleanup
3) Excavator	Loading and placement of cover soils; general site operations
4) Dump Truck and/or Pan	Loading and hauling of cover soils
5) Rubber-Tired Front End Loader	Moving waste on tipping floor of transfer station
6) Yard Tractor	Moving transfer trailers
7) Transfer Trailers (Multiple)	Waste transportation (Contractor-Owned)

1.9 Personnel Requirements

1.9.1 C&D Landfill and Ash Monofill

At least one member of the facility supervisory staff will be certified as a Manager of Landfill Operations (MOLO) by the Solid Waste Association of North America (SWANA) (or other DWM-approved program) and operations staff will go through appropriate training. At least one certified (SWANA Landfill Operations Specialist or other DWM-approved program) operator will be present on-site during times when the landfill is receiving or disposing of waste. As part of this training, personnel learn to recognize loads which may contain prohibited wastes.

1.9.2 Transfer Station

At least one member of the facility supervisory staff will be trained in the management of transfer station operations and operations staff will go through appropriate training. As part of this training, personnel learn to recognize loads which may contain prohibited wastes.

1.10 Health and Safety

All aspects of the facility operations were developed with the health and safety of the operating staff, customers, and neighbors in mind. Prior to commencement of operations of the facility, a member of the operating staff will be designated site safety officer. This individual, together with the facility's management will modify the site safety and emergency response program to remain consistent with SWANA and Occupational Safety and Health Administration (OSHA) guidance.

Safety equipment provided includes equipment rollover protective cabs, seat belts, audible reverse warning devices, hard hats, safety shoes, and first aid kits. Facility personnel will be encouraged to complete the American Red Cross Basic First Aid Course. Other safety requirements as designated by the County will also be implemented.

Facility employees will be routinely trained in health and safety by supervisory staff. All training will be documented. The following are some general recommendations for the health and safety of workers:

1.10.1 Personal Hygiene

The following items are recommended as a minimum of practice:

- Wash hands before eating, drinking, or smoking.
- Wear personal protective equipment as described in Section 1.10.2.
- Wash, disinfect, and bandage ANY cut, no matter how small it is. Any break in the skin can become a source of infection.
- Keep fingernails closely trimmed and clean (dirty nails can harbor pathogens).

1.10.2 Personal Protective Equipment

Personal Protective Equipment (PPE) must be evaluated as to the level of protection necessary for particular operating conditions and then made available to facility employees. The list below includes the PPE typically used and/or required in a solid waste management facility workplace.

- Safety shoes with steel toes.
- Noise reduction protection should be used in areas where extended exposure to continuous high decibel levels are expected.
- Disposable rubber latex or chemical resistant gloves for handling and/or sampling of waste materials.
- Dust filter masks (voluntary).
- Hard hats (in designated areas and/or activities).

Following use, PPE's should be disposed of or adequately cleaned, dried, or readied for reuse.

1.10.3 Mechanical Equipment Hazard Prevention

All equipment should be operated with care and caution. All safety equipment such as horns, backup alarms, and lights should be functional. A Lockout-Tagout program will be used to identify equipment in need or under repair and insure that operation is "off-limits" prior to maintenance or repair. All operators will be trained in the proper operation of equipment.

1.10.4 Employee Health and Safety

Some general safety rules are:

- Consider safety first when planning and conducting activities.
- Review the equipment O&M manual(s) prior to attempting repairs/changes.
- Remember the buddy system for repair of mechanical equipment.
- Post emergency contact phone numbers.
- Provide easy and visible access to the Right to Know materials.
- Provide easy and visible access to first aid kits and fire extinguishers.

1.10.5 Physical Exposure

Facility personnel may come in contact with the fluids, solids, and airborne constituents found at the facility. Routine training should be conducted regarding the individual and collective materials used at the facility and their associated hazards. Training concerning safe work practices around these potential exposures should cover the use of equipment and proper disposal procedures.

1.10.6 Safety Data Sheets

Safety Data Sheets (SDS) will be made available for all chemicals stored on site for use at the facility. SDS will be stored in a location with all other Right to Know information for the site.

1.11 Utilities

Electrical power, water, telephone, and restrooms will be provided at the scale house, office, and/or transfer station.

1.12 Record Keeping Program

The County will maintain the following records in an operating record at the facility:

A. Current permit(s) (Permit to Construct, Permit to Operate, etc.);
B. Current operations manual/plan(s) and engineering plan for each landfill unit and transfer station;
C. Inspection reports;
D. Audit and compliance records;
E. Annual reports (including survey and other documentation related to airspace usage in landfill units);
F. Waste inspection records (see Section 2.3.1);
G. Daily tonnage records - including source of generation;
H. Waste determination records (if applicable);
I. Quantity, location of disposal, generator, and special handling procedures for all special wastes disposed of at the site;
J. List of generators and haulers that have attempted to dispose of restricted wastes;
K. Employee training procedures and records of training completed;
L. All ground water monitoring and surface water quality information (See the current Water Quality Monitoring Plan) including:
    1. Monitoring well construction records;
    2. Sampling dates and results;
    3. Statistical analyses (if applicable); and
    4. Results of inspections, repairs, etc.
M. LFG monitoring results and remedial measures as required (see the current LFG Monitoring Plan);
N. All closure and post-closure information, where applicable, including:
    1. Notification of intent to close;
    2. Testing;
    3. Certification; and
    4. Recording.
O. Cost estimates or financial assurance documentation;
P. A notation of the date of cover placement;
Q. Documentation of approval for controlled burning (Date of Approval/Name of Approving DWM personnel) (see Section 1.6.1).
R. NPDES records (see Section 3.1.4); and
S. Leachate records (see Section 3.2.1.1).

The operating record will be kept up to date by the Solid Waste Manager or his designee. It will be presented upon request to the DWM for inspection. A copy of this Operations Manual will be kept at the landfill and will be available for use at all times.

2.0 WASTE HANDLING OPERATIONS

This section describes the required waste handling operations for the Halifax County Landfill facility. In addition to the MSW, C&D, and ash waste disposed of at or transferred from this facility, the County also handles scrap tires, white goods and scrap metal, electronics, and used pesticide containers. These materials are stored at the landfill facility until there are sufficient quantities for pick up by various recycling contractors. The County also operates an animal waste disposal area and a wood waste processing area.

2.1 Acceptable Wastes

2.1.1 Approved Service Area

The Halifax County Landfill facility is currently approved to serve Halifax County.

2.1.2 Transfer Station

Non-hazardous solid waste as defined by NCGS 130A-290(a)(35) generated within the approved service area may be accepted at the transfer station. In addition, animal carcasses from the NC Department of Transportation and from local animal control departments within the approved service area are accepted and handled as described in Section 2.4.4.2. Carcasses are bagged prior to arrival.

Acceptable wastes must meet the requirements of the receiving disposal facility.

2.1.3 C&D Landfill Units

Only the following wastes generated within the approved service area may be disposed of in the C&D landfill units:

- Construction and Demolition (C&D) Solid Waste: as defined in 15A NCAC 13B.0532(8) means solid waste resulting solely from construction, remodeling, repair, or demolition operations on pavement and buildings or structures. C&D waste does not include municipal and industrial wastes that may be generated by the on-going operations at buildings or structures.
- Inert Debris: as defined in 15A NCAC 13B.0101(22) means concrete, brick, concrete block, uncontaminated soil, gravel and rock, and untreated and unpainted wood.
- Land Clearing Waste: as defined in 15A NCAC 13B.0101(23) means solid waste which is generated solely from land-clearing activities, limited to stumps, trees, limbs, brush, grass, and other naturally occurring vegetative material.
- Asphalt: in accordance with NCGS 130A-294(m).
- Industrial solid waste that is generated by mobile or modular home

manufacturers and asphalt shingle manufacturers. The waste must be separated at the manufacturing site to exclude municipal solid waste, hazardous waste, and other waste prohibited from disposal in a Construction and Demolition Landfill.
- Other Wastes as Approved by the Solid Waste Section of the Division of Waste Management.

In addition, the special wastes (asbestos only) described in **Section 2.4.4.1** and may also be disposed of in the C&D landfill units.

2.1.4 Ash Monofill

Only coal combustion by-products (residuals including fly ash, bottom ash, boiler slag, and flue gas desulfurization (FGD) residue produced by coal fired electrical or steam generation units) generated within the approved service area may be disposed of in the ash monofill. Note that minor amounts of coal fines may also be included with wastes brought to the monofill for disposal.

2.1.5 Wood Waste Processing Area

Clean untreated unpainted wood, including pallets, lumber scraps, land clearing debris (stumps and limbs), and yard waste (limbs, leaves, pine straw, grass and shrubbery cuttings, etc.) is accepted for processing within the facility's wood waste processing area (see **Section 2.6**).

2.2 Prohibited Wastes

2.2.1 Transfer Station

The following wastes are prohibited from acceptance at the transfer station:

- Used Oil and Motor Vehicle Oil Filters;
- Yard Waste;
- White Goods;
- Antifreeze (ethylene glycol);
- Aluminum Cans;
- Whole Scrap Tires;
- Lead Acid Batteries;
- Certain Recyclable Rigid Plastic Containers (per NCGS 130A-309.10(f)(11));
- Wooden Pallets;
- Oyster Shells;
- Discarded Computer Equipment and Televisions;
- Construction and Demolition Debris (C&D) (Except when allowed by the County).

In addition, operating criteria prohibit other materials from acceptance at the transfer station. These materials include:

- Hazardous waste as defined by NCGS 130A-290(a)(8), including hazardous waste from conditionally exempt small quantity generators.
- Polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761 with the exception of trace amounts found in materials such as consumer electronics.
- Bulk or non-containerized liquid wastes unless the waste is household waste other than septic waste and waste oil; or the waste is leachate or gas condensate derived from the MSW landfill unit. A liquid determination will be performed by the paint filter test (see **Appendix B** for apparatus and procedure).
- Containers holding liquid wastes unless the waste is household waste.
- Medical waste as defined in G.S. 130A-290(a)(18).
- Sludge as defined in G.S. 130A-290(a)(34).
- Septage as defined in G.S. 130A-290(a)(32).

2.2.2 C&D Landfill Units

Only wastes as defined in **Section 2.1.3** above may be accepted for disposal in the C&D landfill units. Prohibited wastes include waste exclusions listed in 15A NCAC 13B .0542 as follows:

- Wastewater treatment sludge. Wastewater treatment sludge may be accepted, with the approval of the DWM, for utilization as a soil conditioner and incorporated into or applied onto the vegetative soil layer component of the final cover system. In this case, the sludge will be applied at no greater than agronomic rates and to a maximum depth of six inches.
- Containers such as tubes, drums, barrels, tanks, cans, and bottles unless they are empty and perforated to ensure that no liquid, hazardous, or municipal solid waste is contained therein;
- Garbage as defined in G.S. 130A-290(a)(7);
- Hazardous waste as defined in G.S. 130A-290(a)(8), to also include hazardous waste from conditionally exempt small quantity generators;
- Industrial solid waste unless a demonstration has been made and approved by the DWM that the landfill meets the requirements of Rule .0503(2)(d)(ii)(A);
- Liquid wastes;
- Medical waste as defined in G.S. 130A-290(a)(18);
- Municipal solid waste as defined in G.S. 130A-290(a)(18a);
- Polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761;
- Radioactive waste as defined in G.S. 104E-5(14);
- Septage as defined in G.S. 130A-290(a)(32);

- Sludge as defined in G.S. 130A-290(a)(34);
- Special wastes as defined in G.S. 130A-290(a)(40);
- White goods as defined in G.S. 130A-290(a)(44); and
- Yard trash as defined in G.S. 130A-290(a)(45).

The following wastes cannot be received if separate from C&D waste:

- Lamps or bulbs including but not limited to halogen, incandescent, neon or fluorescent;
- Lighting ballast or fixtures;
- Thermostats and light switches;
- Batteries including but not limited to those from exit and emergency lights and smoke detectors;
- Lead pipes;
- Lead roof flashing;
- Transformers;
- Capacitors;
- Copper chrome arsenate (CCA) and creosote treated woods; and
- Pallets.

Waste accepted for disposal in the C&D landfill units must be readily identifiable as C&D waste and must not have been shredded, pulverized, or processed to such an extent that the composition of the original waste cannot be readily ascertained except as specified as follows:

- C&D waste that has been shredded, pulverized, or otherwise processed may be accepted for disposal from a facility that has received a permit from an authorized regulatory authority which specifies such activities are inspected by the authority, and whose primary purpose is recycling and reuse of the C&D material. For this case, a waste screening plan and waste acceptance plan will be prepared and made available to the DWM upon request.

The County will not dispose of C&D waste that is known to be generated within the boundaries of a unit of local government that by ordinance:

(A) Prohibits generators or collectors of C&D waste from disposing that type or form of C&D waste.
(B) Requires generators or collectors of C&D waste to recycle that type or form of C&D waste.

2.2.3 Ash Monofill

Only wastes as defined in **Section 2.1.4** above may be accepted. Unacceptable wastes found in this area, if not otherwise prohibited, will be disposed of in the

active C&D landfill unit or taken to the transfer station for transport to an approved MSW landfill.

2.2.4 Wood Waste Processing Area

Only clean wood waste as defined in Section 2.1.5 above may be accepted in the wood waste processing area. Unacceptable wastes found in this area, if not otherwise prohibited, will be disposed of in the active C&D landfill unit or taken to the transfer station for transport to an approved MSW landfill.

2.3 Waste Screening Programs

In order to assure that prohibited wastes are not entering the facility, screening programs have been implemented. Waste received at both the scale house and waste taken to the transfer station or active landfill units is inspected by trained personnel. These individuals have been trained to spot indications of suspicious wastes, including: hazardous placarding or markings, liquids, powders or dusts, sludges, bright or unusual colors, drums or commercial size containers, and "chemical" odors. Screening programs for visual and olfactory characteristics of prohibited wastes are an ongoing part of the facility operation.

Records of information gathered as part of the waste screening programs will be maintained at the facility during its active life and as long as required by the County and the DWM.

2.3.1 Waste Receiving and Inspection

All vehicles must stop at the scale house located near the entrance of the facility and visitors are required to sign-in. All waste transportation vehicles are weighed and the content of the load assessed. The scale attendant(s) requests from the driver of the vehicle a description of the waste it is carrying to ensure that unacceptable waste is not allowed into the facility. The attendant(s) then visually checks the vehicle as it crosses the scale. Signs informing users of the acceptable and unacceptable types of waste are posted at the scale house. Once passing the scales, the vehicles are routed to the transfer station, landfill unit, or other area (white goods handling area, etc.) as appropriate.

Vehicles are randomly selected for screening on a regular basis, depending on personnel available. At least one vehicle per week, but not less than 1% by weight of the waste stream entering the landfill (based on the previous week's total), will be randomly selected by inspection personnel. A random truck number and time will be selected (e.g., the tenth load after 10:00 a.m.) on the day of inspections. However, if something suspicious is spotted in any waste load, that load is inspected further.

Vehicles selected for inspection are directed to an area of intermediate cover adjacent to the working face or to an area of the tipping floor of the transfer station where the vehicle will be unloaded. Waste is carefully spread using suitable equipment. An attendant trained to identify wastes that are unacceptable inspects the waste discharged at the screening site. If unacceptable waste is found, including wastes generated from outside of the service area, the load will be isolated and secured by berming off the area. For unacceptable wastes that are non-hazardous, the Solid Waste Manager will then notify officials of the DWM (see **Section 1.1.2**) within 24 hours of attempted disposal of any waste the landfill is not permitted to receive in order to determine the proper course of action. For unacceptable wastes that are thought to be hazardous, the Hazardous Waste Contingency Plan outlined in **Section 2.3.2** will be followed. The hauler is responsible for removing unacceptable waste from the facility property.

If no unacceptable waste is found, the load will be pushed to the working face and incorporated into the daily waste cell or loaded into a transfer trailer. All random waste inspections will be documented by facility staff using the waste screening form provided in **Appendix C**.

In addition to random waste screening described above, waste unloaded on the active face of the landfill or on the tipping floor of the transfer station will be inspected by the equipment operators, trained to spot unacceptable wastes, before and during spreading and compaction or loading onto transfer trailers. Any suspicious looking waste is reported immediately to the designated primary inspector for further evaluation.

2.3.2 Hazardous Waste Contingency Plan

In the event that identifiable hazardous waste or waste of questionable character is detected at the facility, appropriate equipment, protective gear, personnel, and materials as necessary will be employed to isolate the wastes. The DWM will be notified immediately (see **Section 1.1.2**) that an attempt was made to dispose of hazardous waste at the facility. If the vehicle attempting disposal of such waste is known, all attempts will be made to prevent that vehicle from leaving the site or, if the vehicle has left the site, immediate notice will be served on the owner of the vehicle that hazardous waste, for which they have responsibility, has been disposed of at the facility.

The County will assist the DWM as necessary and appropriate in the removal and disposition of the hazardous waste and in the prosecution of responsible parties. If needed, the hazardous waste will be covered with either on-site soils or other tarping material until such time when an appropriate method can be implemented to properly handle the waste. The cost of the removal and disposing of the hazardous waste will be charged to the owner of the vehicle

involved. Any vehicle owner or operator who knowingly dumps hazardous waste in the facility may be barred from using the facility.

Should an incident where hazardous waste is found at the facility occur, the event will be documented by facility staff using the waste screening form provided in Appendix C.

2.4 Waste Disposal

2.4.1 Access

Traffic will be clearly directed to the appropriate active access road. For the active lined ash monofill, all vehicles entering the unit will use the active ramp(s) to minimize the potential for damage the liner system. Traffic speed on the ramp should be less than 10 MPH.

The location of access roads during waste placement will be determined by facility staff in order to reflect waste placement strategy. Additionally, access will be maintained for site monitoring locations.

2.4.2 General Procedures

For each active landfill unit, waste transportation vehicles will arrive at the working face at random intervals. There may be a number of vehicles unloading waste at the same time, while other vehicles are waiting. In order to maintain control over the unloading of waste, a certain number of vehicles will be allowed on the working face at a time. The actual number will be determined by the spotter (the spotter is typically the compactor or dozer operator). This procedure will be used in order to minimize the potential of unloading un-acceptable waste and to control disposal activity. Operations at the working face will be conducted in a manner which will encourage the efficient movement of transportation vehicles to and from the working face, and to expedite the unloading of waste.

The approach to the working face will be maintained such that two or more vehicles may safely unload side by side (A minimum separation distance of 10 feet is encouraged.). A vehicle turn-around area large enough to enable vehicles to arrive and turn around safely with reasonable speed will be provided adjacent to the unloading area. The vehicles will back to a vacant area near the working face to unload. Upon completion of the unloading operation, the transportation vehicles will immediately leave the working face area. Personnel will direct traffic as necessary to expedite safe movement of vehicles.

Waste unloading at the landfill will be controlled to prevent disposal in locations other than those specified by site management. Such control will also be used to confine the working face to a minimum width, yet allow safe and efficient

operations. The width and length of the working face will be maintained as small as practical in order to maintain the appearance of the site, control windblown waste, and minimize the amount of cover required each day. Normally, only one working face will be active on any given day, with all deposited waste in other areas covered by either daily/periodic, intermediate, or final cover, as appropriate.

The procedures for placement and compaction of solid waste include: unloading of vehicles, spreading of waste into 2 foot lifts (thicker lifts may be necessary at the operators discretion depending on waste type and location of waste placement), and compaction on relatively flat slopes (i.e. 5H:1V max.) using a landfill compactor and a minimum number of three full passes. For the ash monofill, the ash is spread and tracked in with a bulldozer.

Caution will be used in wet conditions such that no waste will be placed into ponded water. Likewise, surface water will not be allowed to be impounded over waste.

Wind screens and/or diking adjacent to active areas may be used as practical to control windblown waste (refer also to **Section 3.7, Litter Control**).

The use of portable signs with directional arrows and portable traffic barricades will facilitate the unloading of wastes to the designated disposal locations. These signs and barricades will be placed along the access route to the working face of the landfill or other designated areas which may be established.

Except as described in **Section 2.10**, the removal of solid waste from any landfill unit is prohibited except upon notification of the DWM (see **Section 1.1.2**). Regardless, the general public is prohibited from any waste removal activities from any landfill unit.

2.4.3 Ash Monofill

The following items are unique to the ash monofill in that this unit includes a geomembrane liner and related geosynthetics.

2.4.3.1 Placement of Initial Lift

During ash placement operations, the landfill liner system is most vulnerable during the placement of the first lift of waste. The first lift should be a minimum of two (2) to four (4) feet thick and be carefully spread using a bulldozer. A spotter should be used during placement of the first lift of ash to ensure that no movement of the underlying protective cover is occurring which might indicate stretching or wrinkling of the liner system geosynthetics is occurring.

In the event that the landfill staff identifies any damage to any part of the landfill's liner system, they should immediately initiate its repair. Additionally, they should document the damage and the repair as a part of the operating record.

2.4.3.2 Equipment Operations Within the Landfill

Both the facility's operational vehicles and waste transportation vehicles must be restricted as follows within the ash monofill:

- Equipment operation directly on the protective cover will be limited to rubber-tired vehicles having a maximum ground contact, i.e., tire pressure, of less than 32 psi.
- A minimum vertical separation of 3 feet will be maintained between the geomembrane liner and all waste transportation vehicles.
- A minimum vertical separation of 5 feet will be maintained between the geomembrane liner and waste compactors.

The operation of vehicles within those portions of the landfill not actively receiving waste should be restricted to activities associated with erosion and sedimentation control.

2.4.4 Special Waste Management

2.4.4.1 Asbestos Management (C&D Landfill Units)

The County may dispose of asbestos within the C&D landfill units. Asbestos will only be accepted if it has been processed and packaged in accordance with State and Federal (40 CFR 61) regulations. Asbestos will arrive at the site in vehicles that contain only the asbestos waste and only after advance notification by the generator.

Once the hauler brings the asbestos to the landfill, the hauler will be directed to the designated asbestos disposal area by facility staff. The designated disposal area will be prepared by facility staff by leveling a small area using a dozer or loader. Prior to disposal, the landfill operators will stockpile cover soil near the designated asbestos disposal area. The volume of soil stockpiled will be sufficient to cover the waste and to provide any berms, etc. to maintain temporary separation from other landfill traffic.

Once placed in the prepared area, the asbestos waste will be covered with a minimum of 18 inches of cover soil placed in a single lift. The surface of the cover soil will be compacted and graded using a tracked dozer or

loader. The landfill compactor will be prohibited from operating over asbestos disposal areas until at least 18 inches of cover is in-place.

The facility staff will record the approximate location and elevation of the asbestos waste once cover is in-place (typically using a GPS device). The Solid Waste Manager will then review pertinent disposal and location information to assure compliance with regulatory requirements and enter the information into the Operating Record.

Once disposal and recording for asbestos waste is completed, the disposal area may be covered with waste. No excavation into designated asbestos disposal areas will be permitted.

2.4.4.2 Animal Carcasses (Animal Waste Disposal Area or Tr. Station)

The disposal of animal carcasses within the animal waste disposal area will be handled as follows:

- The generator of the carcass(es) must call in advance to the facility, and a determination will be made as to whether or not the carcass(es) will be accepted.
- If approved, the generator will present the carcass(es) at a predetermined time.
- An area for disposal will already have been prepared and the waste will be covered immediately with three (3) feet of soil.

Animal carcasses will be handled at the transfer station as follows:

- Carcasses will have been bagged prior to arrival.
- Upon arrival the bagged carcasses will be immediately loaded into a transfer trailer.

2.4.5 Daily or Periodic Cover

2.4.5.1 C&D Landfill Units

At the completion of waste placement each week, or sooner if the area of exposed waste exceeds one-half acre in size, a 6-inch layer of earthen material or other material as approved by the DWM will be placed over the exposed waste. Cover will be placed at more frequent intervals if necessary to control disease vectors, fires, odors, blowing litter, and scavenging.

2.4.5.2 Ash Monofill

Due to the nature of the waste placed in this landfill unit, no periodic soil cover is required.

2.4.6 Alternate Daily Cover

Alternate daily cover (ADC) materials/methods may be used upon approval by the DWM. Materials and corresponding methods that have been approved for use at other facilities may be used upon notification of the DWM (see **Section 1.1.2**). Materials/methods which have not been approved for use at other facilities will require a demonstration period prior to approval.

2.4.7 Intermediate Cover

2.4.7.1 C&D Landfill Units

A 12-inch layer of soil cover should be placed on all waste surfaces that have not received waste in 30 days but are below final elevation. This intermediate cover should be seeded immediately and graded such that all precipitation run-off is channeled to the surface water systems.

2.4.7.2 Ash Monofill

Upon reaching final grades on outer slopes, a 12-inch layer of soil cover will be placed over the ash. This intermediate cover should be seeded immediately and graded such that all precipitation run-off is channeled to the surface water systems.

2.4.8 Height Monitoring

Periodically, the facility staff will monitor landfill top and side slope elevations with a level. When such elevations approach design grades, the final top-of-waste grades will be staked to limit over-placement of waste.

2.5 Transfer Station Operations

The transfer station is located at the north end of the facility (see **Figure 1**). The operation of the transfer station is as described below. See **Figures 2A and 2B** for the floor plan and details (transfer station loading bay/floor drain and leachate storage tank), respectively.

2.5.1 Waste Receipt

All wastes received for processing at the transfer station will have been weighed-in and visually inspected by scale house personnel (see **Section 2.3**). Vehicles to be unloaded on the tipping floor will be directed by the waste spotter to back into the transfer station building and unload onto the tipping floor.

The transfer station typically receives an average of approximately 30 to 60 tons per day based on annual waste acceptance records. Actual daily amounts may vary outside of this range but future average values are anticipated to be similar.

2.5.2 Tipping Floor Operations

Unloaded wastes will be visually inspected on the tipping floor (see **Section 2.3**). Acceptable waste will be loaded into an awaiting open-top transfer trailer in the loading bay (lower floor of the building). The building has push walls on either side of the tipping floor to aid operations staff in pushing waste through the loading chute located above the loading bay.

2.5.3 Container Loading and Transport

The waste loaded into each transfer trailer should be placed to eliminate excessive voids, irregularities, and protruding wastes to the extent possible. Each loaded trailer will be immediately covered with a tarp prior to leaving the loading bay. Any partially loaded trailer will be left in the loading bay. The movement of trailers on the site is the responsibility of the County. The movement of trailers to and from the site is the responsibility of either the County or a contracted transfer trucking firm.

Once loaded, trailers will be moved from the loading bay to await transport to a disposal facility (currently the East Carolina Regional Landfill in Bertie County, NC - NC Solid Waste Permit No. 08-03). The disposal facility will be appropriately permitted to receive waste from the transfer station's service area. Waste can be stored in covered containers at the facility after hours, but no longer than 48 hours.

2.5.4 Equipment Operations Within the Transfer Station

Equipment operations will be carried out in a safe manner to avoid damage to the structure and transport vehicles.

2.5.5 Daily Cleaning

Daily cleaning will be used to control the potential for disease vectors, fire, odors, blowing litter, and scavenging. Any waste remaining on the tipping floor at the end of each day will be placed into a transfer trailer and the partially filled trailer will be covered overnight with a tarp. Additionally, the tipping floor will be swept clean and rinsed with water at the end of each working day. Wash-down water, which becomes leachate upon contact with waste or waste residue, will be directed toward the drain located in the loading bay. From the drain, the wash-down water flows to a concrete storage tank located to the southeast of the building (see **Section 3.2.1** for management of leachate at the transfer station).

2.5.6 Weekly Cleaning

A thorough cleaning of the transfer station (tipping floor, push walls, and loading bay) and waste handling equipment using water will be performed on a weekly basis. Cleaning agents may be used but must not be harmful to the concrete flooring or other surfaces which will be contacted.

2.6 Wood Waste Processing Area Operations

A wood waste processing are is located to the east of the existing Area 1 C&D landfill unit (see **Figure 1**). The operation of the wood waste processing area is as follows:

- Acceptable wood and yard wastes are stockpiled in windrows with a maximum height of 15 feet and width of 50 feet. Sufficient space is provided between windrows to allow equipment access in case of fire and the windrows are kept a minimum of 50 feet from the property line.
- Once sufficient material is accumulated at the site, a contractor is brought in to grind the waste. This typically occurs 2 times per year.
- Once the waste is ground and becomes mulch, it is either hauled off-site (for use as boiler fuel), used around the site (primarily for surface stabilization), or placed in windrows (with similar maximum dimensions to pre-processed materials) to be used in the future at the site. Typically, approximately 4,000 tons of material is ground each year.

Unacceptable wastes found in this area, if not otherwise prohibited, will be routed to either the active C&D landfill unit or transfer station as appropriate.

Should the County decide to provide ground wood/yard waste to the public, the County will follow the requirements for a Small Type 1 Compost facility (under 15A NCAC 13B.1402 (g)(3)) including notification of the DWM (see **Section 1.1.2**) and operation in accordance with requirements of 15A NCAC 13B.1406.

2.7 White Goods Handling Area

A white goods handling area is located to the east of the existing Area 1 C&D landfill unit (see Figure 1). The operation of the white goods handling area is as follows:

- County personnel segregate materials suspected of containing chloroflourocarbon (CFC) refrigerants (i.e. refrigerators, freezers, and air conditioners containing Freon), and set aside to minimize the potential for damage prior to CFC removal.
- Other white goods and scrap metal are stockpiled up to about 10 feet high over an approximate 100 foot by 100 foot area.
- Once the stockpile reaches capacity (typically every 2 to 3 months), a recycler removes any CFC refrigerants (from applicable previously segregated materials) and hauls the white goods and scrap metal off-site to be recycled.

2.8 Used Tire Storage Area

Used tires are collected at an area near the landfill scale house (see Figure 1) and placed in up to three tire trailers. Once one or more trailers are full, the trailer(s) are picked up by a recycling contractor.

2.9 Used Pesticide Container Storage Area

A sheltered storage area is located near the landfill office/maintenance building (see Figure 1) for used pesticide containers from local agricultural sources. Once approximately 5,000 containers have been collected, a recycling contractor grinds the containers, bags the ground plastic, and transports the plastic for recycling.

2.10 Material Recovery

The County may elect to perform some material recovery at the facility for purposes of recycling and reuse. It is anticipated that most of the materials to be recovered will arrive at the facility as C&D waste. Thus, MSW will not be processed.

General procedures for material recovery will be as follows:

1. Staff will separate materials to be recovered near the active face of the landfill.

2. Only the following materials may be recovered:

    - Non-treated, non-painted clean wood (lumber);
    - Pallets (damaged and un-damaged);
    - Cardboard;
    - Metal (ferrous and non-ferrous);
    - Brick and block (undamaged and un-painted); and

- Concrete (non-asphaltic).

3. Materials to be recovered may be stockpiled within the current limits of the C&D landfill, placed with similar materials stockpiled elsewhere (i.e. scrap metal), or placed in containers. Brick and block and concrete may be stockpiled until a load is generated; it is used as on-site as beneficial fill; or it is removed from the site for sale as fill, aggregate, etc.

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3.0 ENVIRONMENTAL MANAGEMENT

This section reviews the overall environmental management tasks required for the successful operation of the facility.

3.1 Surface Water Control

As used herein, the definition of "surface water" is water which results from precipitation or site run-on that has not contacted the waste.

Proper control of surface water at the facility will accomplish the following goals:

- Minimize the potential for the discharge of pollutants to waters of the United States, including wetlands (point or non-point sources);
- Prevent the run-on of surface water into the landfill unit(s) or the transfer station;
- Prevent the run-off of surface water that has come into contact with the waste (i.e. leachate);
- Limit the erosion caused by surface waters;
- Limit sediments carried off-site by surface waters; and
- Maximize the SEPARATION of SURFACE water from LEACHATE.

Separate erosion and sedimentation control plans have been provided for the various landfill units and other site activities. These plans describe both short and long term engineered features and practices for preventing erosion and controlling sedimentation at this site. The following is a brief discussion of some of these features and practices, focusing more on the landfill units.

3.1.1 Surface Water Run-On Control

The perimeter berms and/or perimeter channels around the landfill unit(s) are designed to prevent the run-on of surface water from adjacent land into the landfill. Additional structures such as diversion berms, channels, down pipes, etc. carry surface water away from the landfill units.

Likewise for the transfer station, the potential for run-on of surface water is minimized by use of a roof over the tipping and loading bay floors and exterior grades which slope away from the transfer station building.

3.1.2 Erosion Control

The serviceability of the landfill relies heavily on soil berms, barrier layers, and agricultural layers that are readily eroded by flowing water. Erosion control provisions incorporated in the landfill include the following:

- The slope of the working face should typically be no steeper than 5H:1V where practical to limit erosion of the daily/periodic cover.
- Intermediate cover that has been exposed for more than 30 days must be seeded immediately and repaired when erosion features are identified.
- Drainage breaks (diversion berms, rain gutters, etc.) are provided on the final cover to limit the flow length of run-off.
- Water collected by each drainage break is routed to stormwater drainage channels or down pipes so that the run-off volume does not accumulate going down the slope.
- The vegetative soil layer placed over the final cover must be seeded immediately.

Additional erosion control measures have been taken within the drainage channels and at points of stormwater discharge. All final cover should be inspected regularly for erosion damage and promptly repaired. Revegetation should be performed in accordance with the requirements of the applicable erosion and sedimentation control plan and/or the NC Erosion and Sedimentation Control Planning and Design Manual[2].

3.1.3 Sedimentation Control

Stormwater run-off from the landfill unit(s) is conveyed to one of the on-site sediment basins and/or traps. These basins and/or traps should be inspected regularly for sediment build-up or erosion damage. The basins and/or traps should be cleaned out when sediment fills the lower half of the basin. Sediments removed may be stockpiled within an active borrow area to dry (if needed) prior to use at the site.

3.1.4 NPDES Requirements

The County will follow the requirements of applicable National Pollutant Discharge Elimination System (NPDES) permit requirements for the site. Requirements include periodic inspections, qualitative monitoring, and sampling of stormwater discharge points. The County will keep records of all inspections, monitoring, and sampling activities (including any test results) in the operating record.

[2] NC Division of Land Resources (Current Update), North Carolina Erosion and Sediment Control Planning and Design Manual, NCDENR - Division of Land Resources - Land Quality Section, Raleigh, NC.

3.2 Leachate Management

3.2.1 Transfer Station

All wash-down water which comes into contact with the waste, tipping floor, loading bay floor, or waste handling equipment will be treated as leachate. Wash-down water, which is collected in floor drain in the loading bay and flows to a concrete storage tank located to the southeast of the building. The floor drain will be visually inspected during routine cleaning activities. If there is evidence that the drains are not working properly the County will initiate the necessary maintenance activities.

The leachate storage tank level will be checked at least once per week. The tank will be pumped out whenever the tank approaches full capacity (typically quarterly or more frequently if larger storms are forecast). The leachate will then be hauled to an approved wastewater treatment plant for treatment and disposal. The tank will be routinely inspected. If there is evidence that the tank is not functioning properly, the County will initiate the necessary maintenance actions.

It is anticipated that any leachate volume outside the building or leachate storage tank will be minor (i.e. no more than a few gallons - such as the case of a leaky fitting during loading of leachate that is quickly repaired). In the event of a larger spill, the DWM will be verbally notified (see Section 1.1.2). All spills will be contained as much as practical by facility staff (using excavation, soil berms, cleanup agents/material, or other means) and the leachate and spent containment material will be properly disposed of.

3.2.1.1 Record Keeping

Records of leachate hauled from the transfer station will be placed in the facility operating record as described in Section 1.12.

3.2.2 Leachate Seeps

Leachate seeps can occur due to a variety of circumstances. The goal in dealing with leachate seeps is to prevent seepage from leaving the limits of waste disposal areas and to minimize the potential for reoccurrence. If evidence of leachate seeps is observed, the County will take the following actions. Depending on the circumstances, various combinations of actions may be appropriate.

1. If leachate is observed outside of the limits of waste disposal areas, notify the DWM (see Section 1.1.2).
2. Contain the flow of leachate using soil berms and/or excavation.

3. Excavate the area of seepage to attempt to allow flow into the underlying waste (i.e. break-up soil layers that may be causing the seep.).
4. For contained leachate that will not flow into underlying waste, a pump may be required to route the leachate to an existing leachate collection system cleanout pipe and/or gravel column (ash monofill) or to a tanker truck.
5. For the lined ash monofill, French drains may be utilized for routing the seepage to the leachate collection system (via cleanout pipes and/or gravel columns).
6. The use of soil (particularly clay) to plug the seepage may also be successful in the case where flows are minor.
7. Remove and dispose of impacted cover soils accordingly.
8. Repair/regrade landfill cover as necessary.

3.2.3 Leachate Contingency Plan

In the event that leachate levels within the existing leachate sumps or tanks approach their capacity, the County will initiate pump and haul operations or other actions to minimize the potential for a leachate release.

In the event that of a leachate release the County will take immediate measures to control, contain, and recover the discharged leachate. The DWM will also be verbally notified (see Section 1.1.2) as soon as practical. Written documentation describing the events of the leachate release, the actions carried out to remove the discharged leachate, and a strategy for preventing future occurrences will be provided to the DWM within 30 days following any such occurrence.

3.3 Water Quality Monitoring

The monitoring program and procedures outlined in the current water quality monitoring plan(s) will be followed for the monitoring of site groundwater monitoring wells and surface water monitoring locations.

3.3.1 Record Keeping

Documentation of the water quality monitoring program will be placed in the facility operating record as described in Section 1.12.

3.4 Landfill Gas (LFG) Management

Landfill gas (LFG) generated from the landfill units will be vented using passive vents placed at the time of closure. Refer to the appropriate permit application for details of these vents.

3.5 Landfill Gas (LFG) Monitoring

The County will implement a routine landfill gas (LFG) monitoring program to ensure that methane concentrations do not exceed 25 percent of the lower explosive limit (LEL) (1.25% methane (CH_4)) in facility structures, or 100 percent of the LEL (5% CH_4) at property boundaries. LFG monitoring activities and remedial actions for concentrations exceeding these requirements will be in accordance with the current landfill gas monitoring plan(s).

3.5.1 Record Keeping

Results of LFG monitoring and description of any remedial measures will be placed in the facility operating record as described in Section 1.12.

3.6 Vector Control

3.6.1 Transfer Station

Control of insects, rodents, and birds will be accomplished by regular cleaning of the transfer station and the control of litter. If vector control becomes a problem, additional measures will be taken to ensure the protection of human health.

3.6.2 C&D Landfill Units and Ash Monofill

Due to the nature of the waste disposed in these landfill units, vector control is not anticipated to be of concern. Note that the use of periodic cover in the C&D landfill units will discourage animals from nesting in the waste.

3.7 Litter Control

The vegetative trees/bushes act as a barrier to keep litter contained within the site and a litter control crew will pick up litter around the site and on access roads daily as necessary. Wind screens adjacent to active areas may be used as practical to control windblown waste. Additionally, facility staff will make operational changes as practical based on wind conditions that may spread litter.

3.8 Odor Control

3.8.1 Transfer Station

Odorous or potentially odorous materials will be pushed into a transfer trailer and covered as soon as possible to avoid odor problems. Additionally, regular cleaning of the transfer station will help minimize the potential for odor

problems. If odor control becomes a problem, additional measures will be taken to ensure odor control.

3.8.2 C&D Landfill Units and Ash Monofill

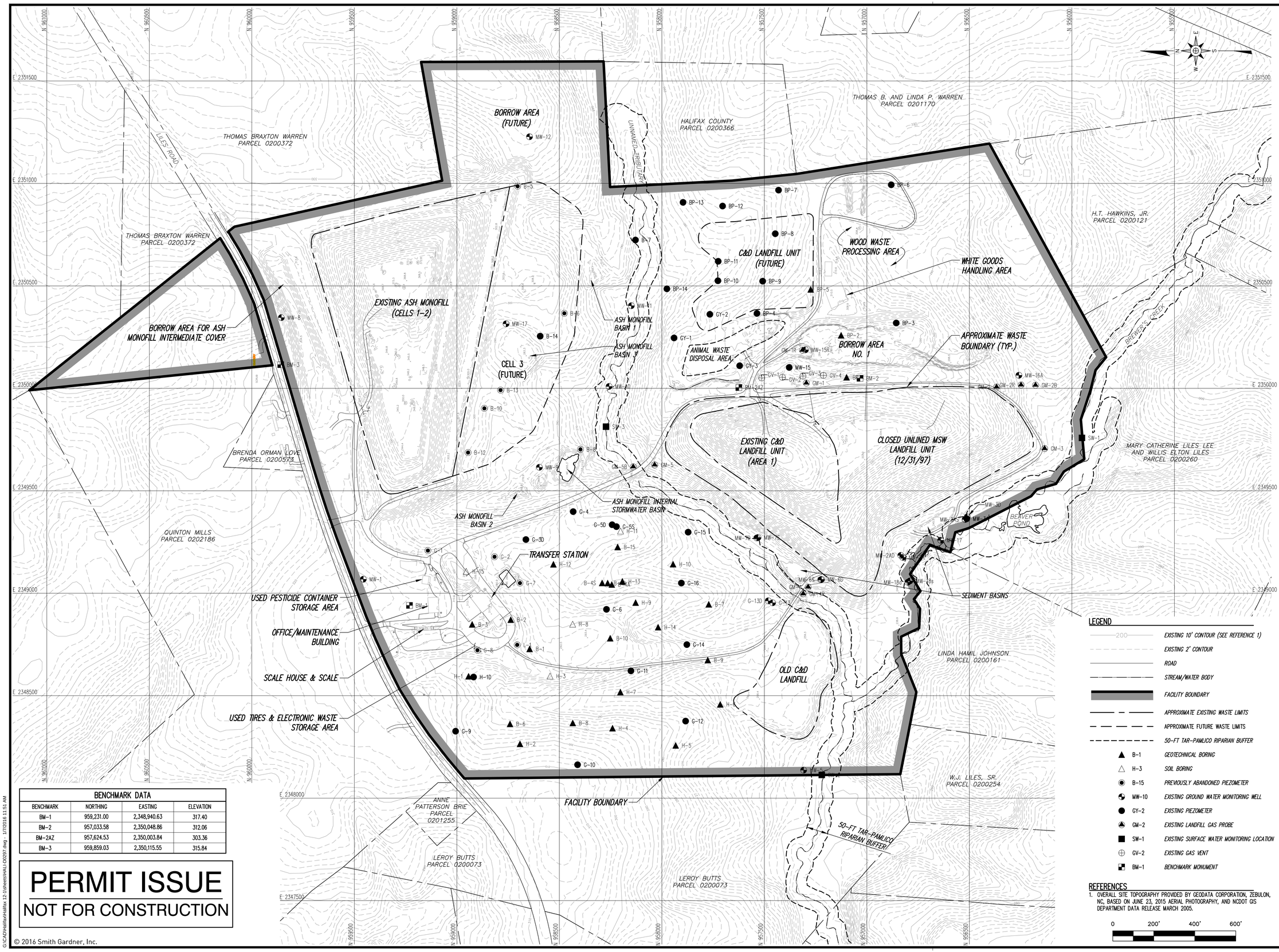
Due to the nature of the waste disposed in these landfill units, odor control is not anticipated to be of concern. However, if odor control becomes a problem, additional measures (such as additional cover over wastes such as drywall) will be taken to ensure odor control.

3.9 Dust Control

Dust related to waste hauler traffic on the access roads will be minimized by using a water truck to limit dust on the gravel portions of site roads. Dust generated by excavation of cover soil will be limited by watering the cut soil areas if accessible to the water truck. The source of water is from the County's water line and/or from one of the site sediment basins.

3.10 Air Quality

The County will follow all air quality requirements which are applicable to the landfill facility. This includes applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the U.S. EPA Administrator pursuant to Section 110 of the Clean Air Act.



BENCHMARK DATA			
BENCHMARK	NORTHING	EASTING	ELEVATION
BM-1	959,231.00	2,348,940.63	317.40
BM-2	957,033.58	2,350,048.86	312.06
BM-2AZ	957,624.53	2,350,003.84	303.36
BM-3	959,859.03	2,350,115.55	315.84

PERMIT ISSUE
NOT FOR CONSTRUCTION

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LEGEND

- EXISTING 10' CONTOUR (SEE REFERENCE 1)
- EXISTING 2' CONTOUR
- ROAD
- STREAM/WATER BODY
- FACILITY BOUNDARY
- APPROXIMATE EXISTING WASTE LIMITS
- APPROXIMATE FUTURE WASTE LIMITS
- 50-FT TAR-PAMLICO RIPARIAN BUFFER
- B-1 GEOTECHNICAL BORING
- H-3 SOIL BORING
- B-15 PREVIOUSLY ABANDONED PIEZOMETER
- MW-10 EXISTING GROUND WATER MONITORING WELL
- GY-2 EXISTING PIEZOMETER
- GM-2 EXISTING LANDFILL GAS PROBE
- SW-1 EXISTING SURFACE WATER MONITORING LOCATION
- GV-2 EXISTING GAS VENT
- BM-1 BENCHMARK MONUMENT

REFERENCES

1. OVERALL SITE TOPOGRAPHY PROVIDED BY GEODATA CORPORATION, ZEBULON, NC, BASED ON JUNE 23, 2015 AERIAL PHOTOGRAPHY, AND NCDOT GIS DEPARTMENT DATA RELEASE MARCH 2005.

0 200' 400' 600'

PREPARED FOR:

HALIFAX COUNTY NORTH CAROLINA DEPARTMENT OF PUBLIC UTILITIES

PREPARED BY:

NC LIC. NO. C-0828 (ENGINEERING)

SMITH+ GARDNER
ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

SEAL

SEAL

REV.	DATE	DESCRIPTION

PROJECT TITLE:

HALIFAX COUNTY LANDFILL FACILITY CONTINUED OPERATIONS

DRAWING TITLE:

EXISTING AND PROPOSED LANDFILL UNITS AND SOLID WASTE MANAGMENT ACTIVITIES

DESIGNED: P.K.S.	PROJECT NO: HALIFAX 12-1
DRAWN: J.A.L.	SCALE: AS SHOWN
APPROVED:	DATE: JAN. 2016
FILENAME: HALI-D0297	
SHEET NUMBER:	DRAWING NUMBER: FIG.1

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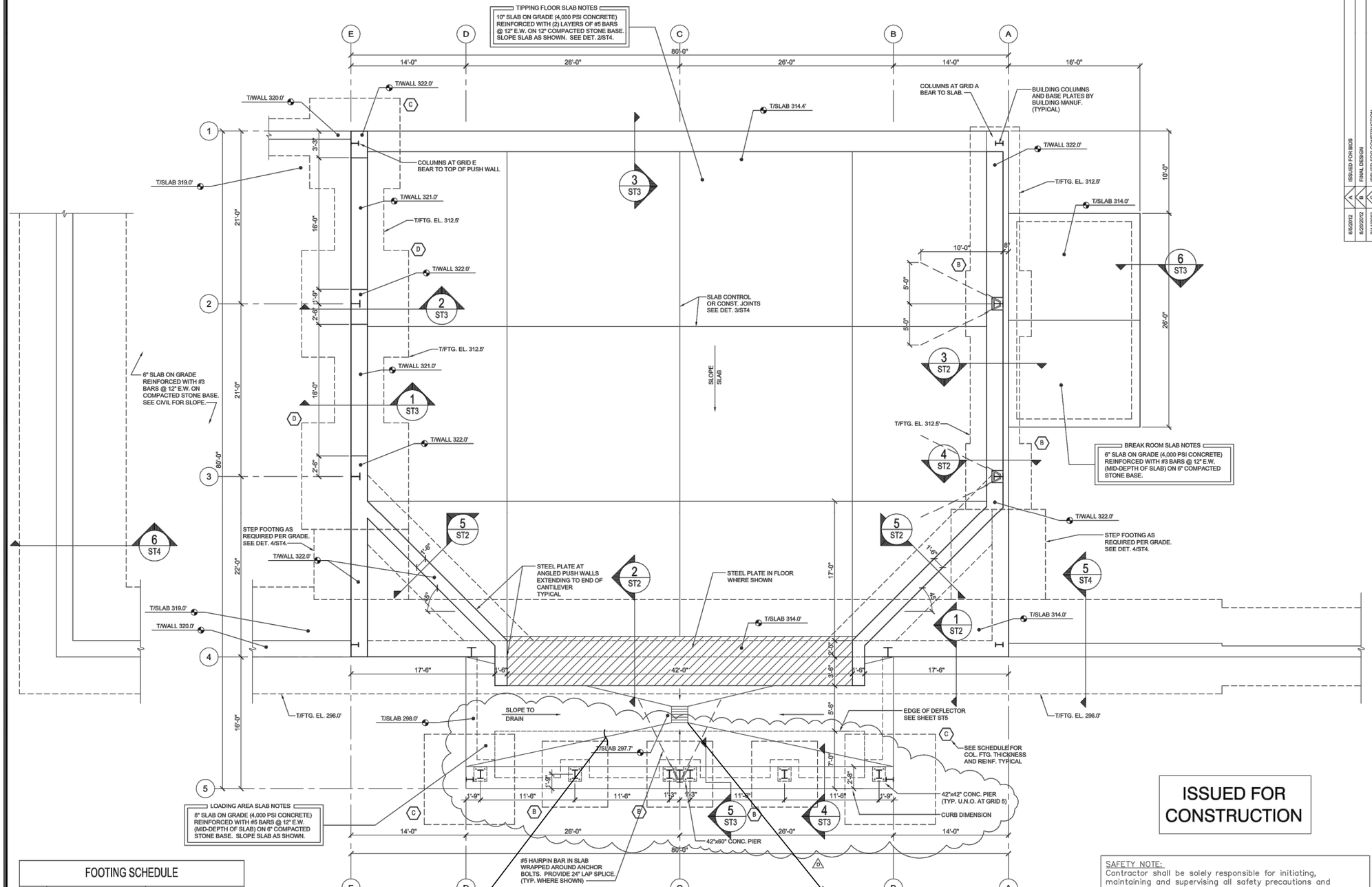

1 SLAB AND FOUNDATION PLAN
S1 3/16" = 1'-0"

FOOTING SCHEDULE					
MARK	SIZE			TOP & BOTT. REINF.	
	N-S	E-W	THK.	N-S	E-W
A	6'-0"	6'-0"	1'-6"	6 #6	6 #6
B	8'-0"	8'-0"	2'-0"	8 #6	8 #6
C	11'-0"	11'-0"	2'-2"	14 #6	14 #6
D	13'-0"	13'-0"	2'-6"	18 #6	18 #6

ISSUED FOR CONSTRUCTION

SAFETY NOTE:
Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

NO.	DATE	REVISION
A	6/5/2012	ISSUED FOR BIDS
B	8/20/2012	FINAL DESIGN
C	2/14/2013	ISSUED FOR CONSTRUCTION
D	3/13/2013	GRID 5 ISSUED FOR CONSTRUCTION

ROSS LINDEN ENGINEERS PC
710 W. NORTH STREET RALEIGH, NC 27603
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SEAL

PROJECT TITLE: HALIFAX COUNTY TRANSFER STATION CONSTRUCTION DRAWINGS

DRAWING TITLE: STRUCTURAL SLAB AND FOUNDATION PLAN

DESIGNED BY:	DRAWN BY:
BMR	BMR
CHECKED BY:	PROJECT NO.: C120401
SCALE: AS SHOWN	DATE: 13 MAR 2013
FILE NAME: C120401-HALIFAXCD	
SHEET NO.: 11	DRAWING NO.: ST1

PREPARED BY:
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PREPARED FOR:

TRANSFER STATION FLOOR PLAN

DRAWN:	APPROVED:	SCALE:	FIGURE NO.
J.A.L.	P.K.S.	N.T.S.	2A

DATE:	PROJECT NO:	FILENAME:
Jan 2016	HALIFAX 12-1	HALI-B0298

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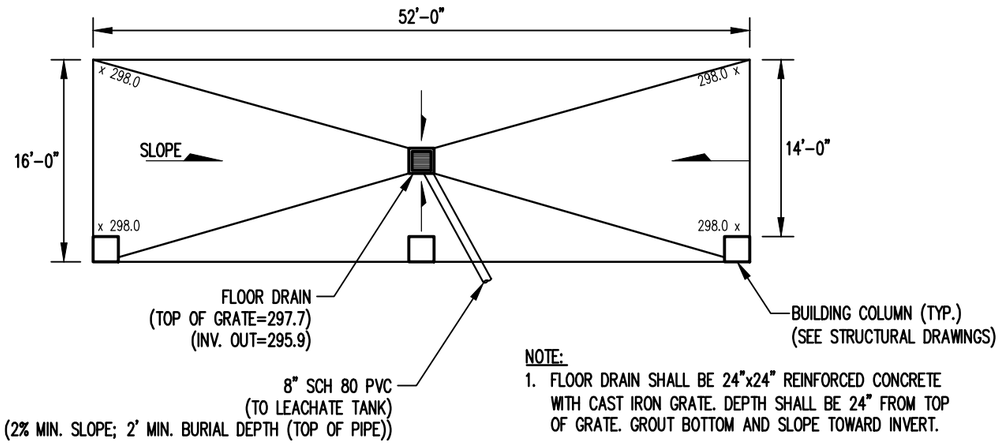
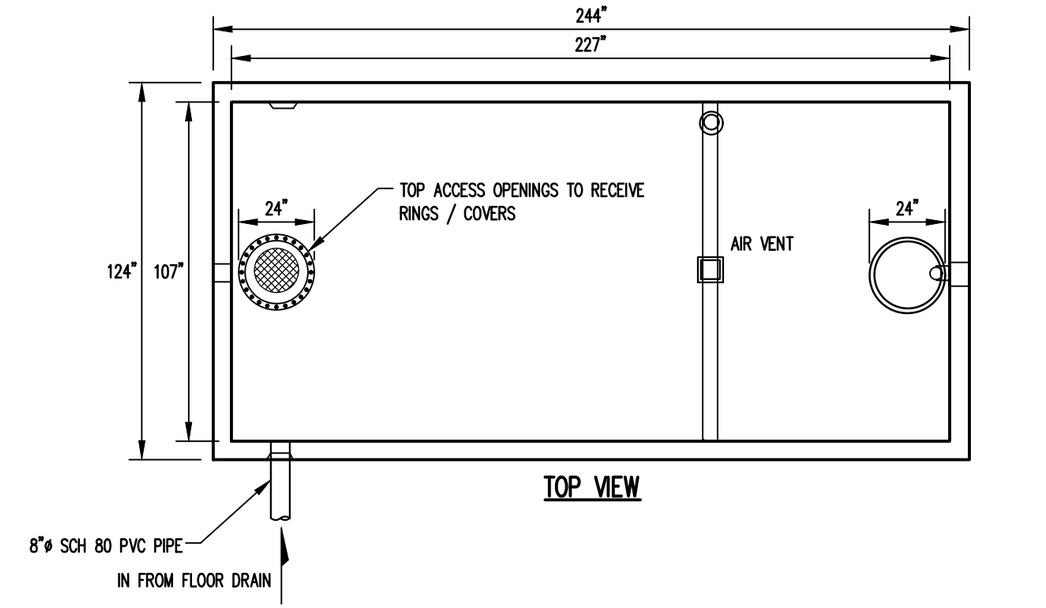


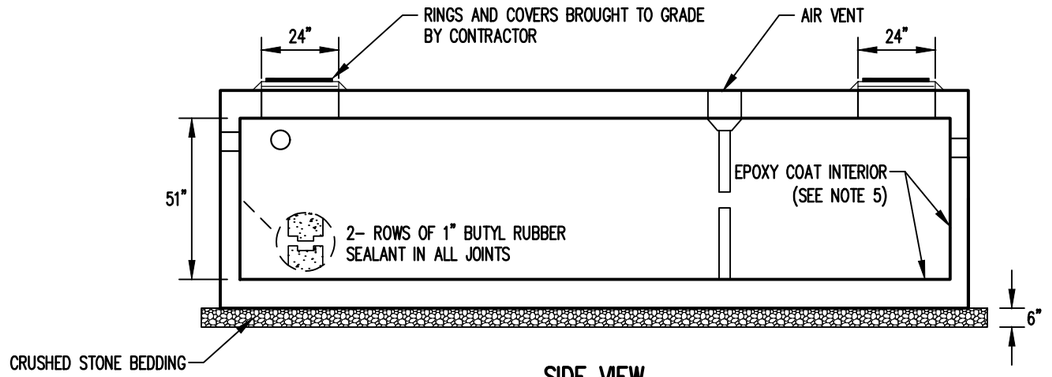
NOTE:
1. FLOOR DRAIN SHALL BE 24"x24" REINFORCED CONCRETE WITH CAST IRON GRATE. DEPTH SHALL BE 24" FROM TOP OF GRATE. GROUT BOTTOM AND SLOPE TOWARD INVERT.

LOADING BAY FLOOR

DETAIL 1 / FIG. 2B — NOT TO SCALE



TOP VIEW



SIDE VIEW

NOTES:
1. TANK SHALL BE CONSTRUCTED USING PRECAST REINFORCED CONCRETE.
2. CONCRETE COMPRESSIVE STRENGTH = 4,500 PSI AT 28 DAYS.
3. TANK SHALL BE TRAFFIC RATED.
4. INLET PIPE(S) SHALL BE SEALED WITH NONSHRINK WATERTIGHT GROUT.
5. THE INTERIOR OF THE TANK SHALL BE FACTORY EPOXY COATED WITH A MINIMUM 50 MIL SURFACE DRY. EPOXY SEALER PRIME COATING AND FINISHING COATING SHALL BE NSP 100 AND NSP 120, RESPECTIVELY, OR APPROVED EQUAL.

LEACHATE STORAGE TANK

DETAIL 2 / FIG. 2B — NOT TO SCALE

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FIGURE NO.: 2B
FILENAME: HALI-B0299
SCALE: N.T.S.
PROJECT NO: HALIFAX 12-1
APPROVED: P.K.S.
DRAWN: J.A.L.
DATE: Jan 2016
PREPARED FOR:

TRANSFER STATION DETAILS

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Appendix A

Fire Occurrence Notification Form

Operations Manual
Halifax County Landfill Facility
Halifax County, North Carolina

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SOLID WASTE MANAGEMENT FACILITY
FIRE OCCURRENCE NOTIFICATION
NC DENR Division of Waste Management
Solid Waste Section

Notify the Section verbally within 24 hours and submit written notification within 15 days of the occurrence.
(If additional space is needed, use back of this form.)

NAME OF FACILITY: _____ PERMIT # _____

DATE AND TIME OF FIRE: _____ @ _____

HOW WAS THE FIRE REPORTED AND BY WHOM:

LIST ACTIONS TAKEN:

WHAT WAS THE CAUSE OF THE FIRE:

DESCRIBE AREA, TYPE, AND AMOUNT OF WASTE INVOLVED:

WHAT COULD HAVE BEEN DONE TO PREVENT THIS FIRE:

DESCRIBE PLAN OF ACTIONS TO PREVENT FUTURE INCIDENTS:

NAME: _____ TITLE: _____ DATE: _____

****

THIS SECTION TO BE COMPLETED BY SOLID WASTE SECTION REGIONAL STAFF

DATE RECEIVED _____

List any factors not listed that might have contributed to the fire or that might prevent occurrence of future fires:

_____

FOLLOW-UP REQUIRED:

☐ NO ☐ PHONE CALL ☐ SUBMITTAL ☐ MEETING ☐ RETURN VISIT BY:_____ (DATE)

ACTIONS TAKEN OR REQUIRED:

Revised 6/8/09

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Appendix B

Paint Filter Liquids Test

Operations Manual
Halifax County Landfill Facility
Halifax County, North Carolina

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METHOD 9095
PAINT FILTER LIQUIDS TEST
From EPA SW-846

1.0 Scope and Application

1.1 This method is used to determine the presence of free liquids in a representative sample of waste.

1.2 The method is used to determine compliance with 40 CFR 264.314 and 265.314.

2.0 Summary of Method

2.1 A predetermined amount of material is placed in a paint filter. If any portion of the material passes through and drops from the filter within the 5 minute test period, the material is deemed to contain free liquids.

3.0 Interferences

3.1 Filter media were observed to separate from the filter cone on exposure to alkaline materials. This development causes no problem if the sample is not disturbed.

4.0 Apparatus and Materials

4.1 Conical paint filter: Mesh number 60 (fine meshed size). Available at local paint stores such as Sherwin-Williams and Glidden for an approximate cost of $0.07 each.

4.2 Glass funnel: If the paint filter, with the waste, cannot sustain its weight on the ring stand, then a fluted glass funnel or glass funnel with a mouth large enough to allow at least 1 inch of the filter mesh to protrude should be used to support the filter. The funnel is to be fluted or have a large open mouth in order to support the paint filter yet not interfere with the movement, to the graduated cylinder, of the liquid that passes through the filter mesh.

4.3 Ring stand and ring or tripod.

4.4 Graduated cylinder or beaker: 100-mL.

5.0 Reagents

5.1 None.

6.0 Sample Collection, Preservation, and Handling

6.1 All samples must be collected according to the directions in Chapter Nine of EPA SW-846.

6.2 A 100 mL or 100 g representative sample is required for the test. If it is not possible to obtain a sample of 100 mL or 100 g that is sufficiently representative of the waste, the analyst may use larger size samples in multiples of 100 mL or 100 g, i.e., 200, 300, 400 mL or g. However, when larger samples are used, analysts shall divide the sample into 100-mL or 100-g portions and test each portion separately. If any portion contains free liquids, the entire sample is considered to have free liquids.

7.0 Procedure

7.1 Assemble test apparatus as shown in Figure 1.

7.2 Place sample in the filter. A funnel may be used to provide support for the paint filter.

7.3 Allow sample to drain for 5 minutes into the graduated cylinder.

7.4 If any portion of the test material collects in the graduated cylinder in the 5-min. period, then the material is deemed to contain free liquids for purposes of 40 CFR 264.314 and 265.314.

8.0 Quality Control

8.1 Duplicate samples should be analyzed on a routine basis.

9.0 Method Performance

9.1 No data provided.

10.0 References

10.1 None required.

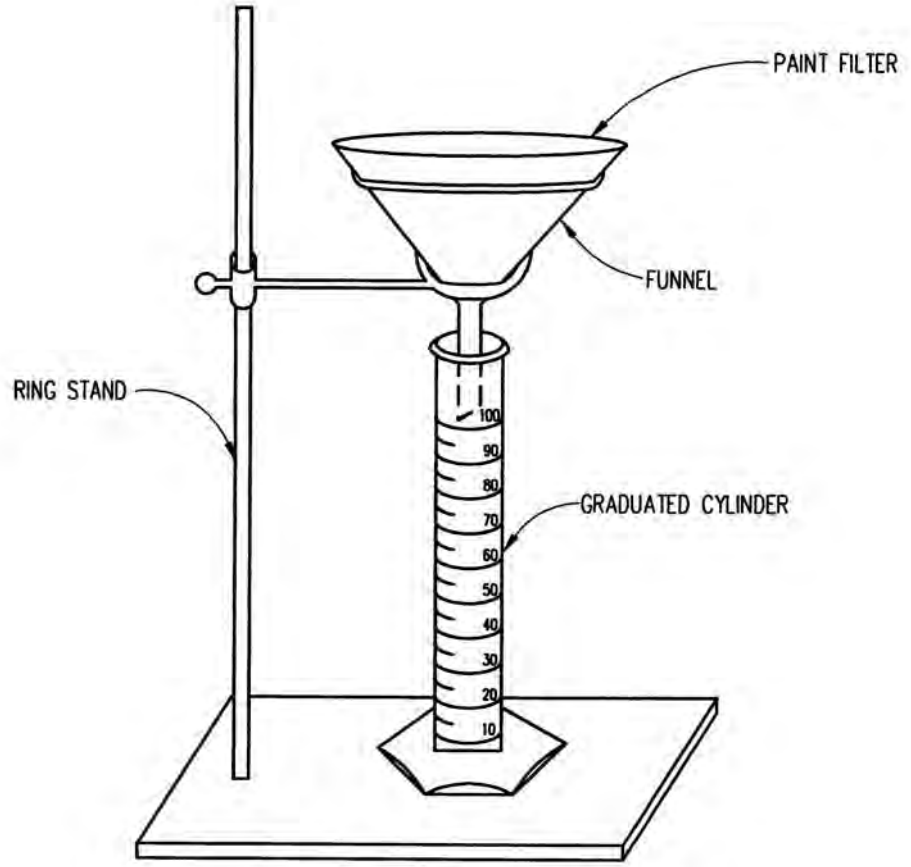
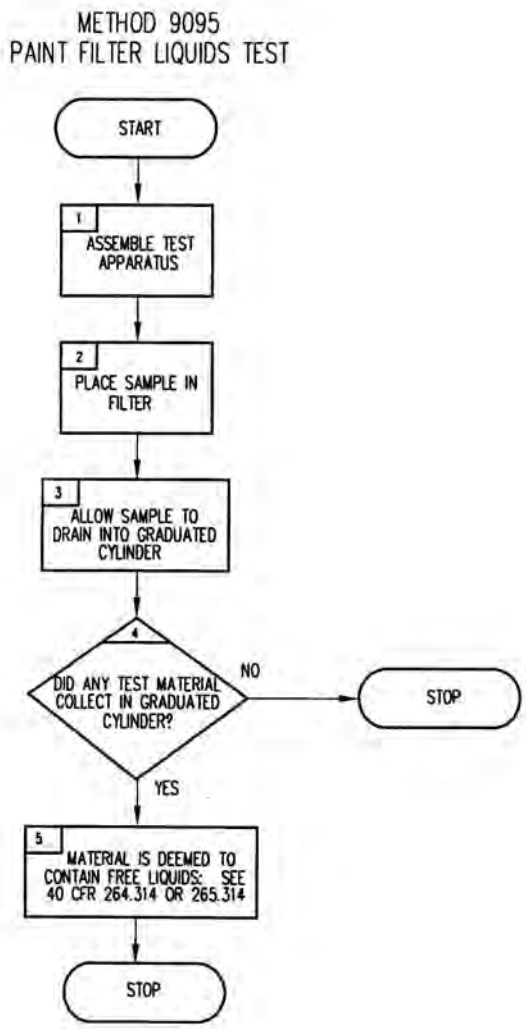


FIGURE 1. PAINT FILTER TEST APPARATUS.


METHOD 9095
PAINT FILTER LIQUIDS TEST
START
1
ASSEMBLE TEST APPARATUS
2
PLACE SAMPLE IN FILTER
3
ALLOW SAMPLE TO DRAIN INTO GRADUATED CYLINDER
4
DID ANY TEST MATERIAL COLLECT IN GRADUATED CYLINDER?
NO
STOP
YES
5
MATERIAL IS DEEMED TO CONTAIN FREE LIQUIDS: SEE 40 CFR 264.314 OR 265.314
STOP

Appendix C

Waste Screening Form

Operations Manual
Halifax County Landfill Facility
Halifax County, North Carolina

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Halifax County Landfill Facility
Permit No. 42-04
(252) 586-7516

WASTE SCREENING FORM

Day / Date: _____ Time Weighed in: _____
Truck Owner: _____ Driver Name: _____
Truck Type: _____ Vehicle ID / Tag No: _____
Weight: _____ Tare: _____
Waste Generator / Source: _____

Reason Load Inspected:
Random Inspection _____ Staff Initials _____
Detained at Scales _____ Staff Initials _____
Detained by Operating Staff _____ Staff Initials _____

Inspection Location: _____

Approved Waste Determination Form Present? Yes _____ No _____ N/A _____

Description of Load: _____

Load Accepted (signature) _____ Date _____
Load Not Accepted (signature) _____ Date _____

Reason Load Not Accepted (complete only if load not accepted)

Description of Suspicious Contents:
Color: _____ Hazardous Waste Markings: _____
Texture: _____
Drums Present: _____ Smell: _____
Est. Cubic Yards in Load: _____
Est. Tons in Load: _____

Halifax County Emergency Management Contacted? Yes _____ No _____

Company or Authority Contacted? _____
Hazardous Materials Present: _____

Hauler Notified (if waste not accepted) Phone: Time Contacted:
Other Observations: _____

Final Disposition
Signed: _____ Date _____
Waste Screening Inspector or Solid Waste Manager

Attach related correspondence to this form.
File completed form in Operating Record.