# PERMIT MODIFICATION
# FOR
# TRAIL RIDGE LANDFILL

## FIRST RAI RESPONSE

~~810457~~
810527

**PREPARED FOR:**

**WASTE MANAGEMENT**

## TRAIL RIDGE LANDFILL, Inc.

5110 U.S. HIGHWAY 301
BALDWIN, FLORIDA 32234
PHONE NUMBER (904) 289-9100

**PREPARED BY:**


England · Thims & Miller, Inc.
ENGINEERS - PLANNERS - SURVEYORS - LANDSCAPE ARCHITECTS
14775 OLD ST AUGUSTINE ROAD JACKSONVILLE, FLORIDA 32258
CERTIFICATE OF AUTHORIZATION NUMBER 2584
PHONE NUMBER (904) 642-8990 FAX NUMBER (904) 646-9485


**PROJECT NUMBER: E 07-044**
**REVISED DATE: MAY 4, 2010**

England-Thims & Miller, Inc.

14775 Old St. Augustine Road • Jacksonville, Florida 32258
tel 904 642 8990 • fax 904 646 9485 • www etminc com





May 4, 2010

Mr Emerson C Raulerson, P E
Solid Waste Section Supervisor
Florida Department of Environmental Protection
7825 Baymeadows Way, Suite 200B
Jacksonville, FL 32256-7590

***RE: Trail Ridge Landfill WACS I.D. Number: NED/16/00033628***
***Minor Modification Application of the Class I Landfill Permit***
***FDEP File Number 0013493-018***
***ETM No. 07-044-02***

Dear Mr Raulerson

In response to the Request for Additional Information (RAI) dated March 19, 2010 regarding the above referenced project we offer the following response Please note each comment (bold face type) is repeated below followed by our response in italics The numbering matches your RAI

**SOLID WASTE SECTION**

1. **DEP agrees to revise Specific Condition No. 10.**

   *No response required*

2. **Since the applicant has proposed to decrease the minimally required number of personnel, please demonstrate that the Trail Ridge Landfill (Facility) can properly manage waste with fewer spotters.**

   a. **Item 3 of the submittal requests that the width of the working face be increased from 200 to 300 feet in order to allow the Facility to accommodate 25 trucks/truckloads with an approximate width of 12 feet during peak hours of operation. Please demonstrate the time it will take for the equipment operator/spotter to inspect each load of waste for unauthorized material, remove unauthorized waste or call someone else to remove it, as well as to spread and compact waste while taking into consideration the limited per vehicle space utilized for waste disposal and the limited amount of personnel (i.e., Specific Condition 17 presently requires a minimum total of nine people during the peak times, but the Application is proposing a minimum total of eight people).**

      *As stated in the updated rule (Chapter 62-701 320(15)(d), FAC ), equipment operators can serve as trained spotters The typical maximum loads per day are approximately 40 trucks per hour based on an inflow of approximately 3000 tons per day We propose that this volume of waste would require that 6 persons (on-the-ground spotter, laborer and equipment operators/spotters) operate as a team that is trained to visually inspect and remove*

*unauthorized material The on-ground spotter will direct in-bound trucks to the appropriate location Equipment operators that are trained spotters or interim spotters will spot all loads as they are being spread and after they are spread out, but before they are compacted Any unauthorized materials will either be pushed to the side by a heavy equipment operator for later removal by a laborer or, if safe to do so, will be removed directly by laborers with equipment operators providing assistance with large bulky materials We believe this approach will provide sufficient time to adequately inspect each load and remove unauthorized waste prior to compaction and is consistent with Chapter 62-701 3210(15)(d), FAC*

*It should also be noted that Chapter 62-701, FAC does not define or otherwise address the amount of time or the process required to visually inspect a load, but states only that each load must be visually inspected prior to compaction or load out If the Department has published or public guidance on what an adequate amount of time would be to visually inspect a load, we would appreciate that information*

**b. Please specify in the Operation Plan the location(s) of the spotters and laborers, the manner in which the waste will be inspected (e.g., while it is being discharged, as it is being spread, after it has been spread out, and prior to compaction) and the specific procedures to be followed if unauthorized waste is discovered. Also, address when and the manner in which waste will be spread out, and note that the Rule 62-701.320(15)(d)2.a F.A.C., requires each load of waste to be visually inspected <u>prior to being compacted,</u> which means it must be inspected prior to being spread by a compactor. Finally, please note that spotters shall be stationed where they can inspect <u>each</u> shipment of waste for unauthorized waste.**

*As stated in the previous response to 2a, the equipment operators are the key personnel for spotting and inspecting each load Each equipment operator will either be a trained or interim spotter As each load is unloaded on the working face, the equipment operator begins the initial inspection As each load is spread out by the equipment operator, each load is inspected more thoroughly to determine if there is any unauthorized waste If at any time unauthorized waste is discovered, it is removed by the laborers with the assistance of the equipment operator as needed As such, each load will be inspected by at least one trained or interim spotter prior to compaction It is the intent of the facility to have at least one spotter on the leading edge of the working face at all times to direct traffic and make additional observations Including equipment operators, there will always be at least one trained spotter at the working face*

**c. Since the Facility requests to use some equipment operators as spotters are to be located on heavy equipment spreading the waste at the working face, please specifically address in the Operation Plan the following:**

**(1) The heavy equipment operator shall be trained as an operator or spotter;**

*The Permittee (applicant) agrees that the equipment operators will be trained spotters*

**(2) When unauthorized waste is discovered, the heavy equipment operator must either move the unauthorized waste away from the active area for later removal and proper management, or must stop operation and notify another person on the ground or on other equipment who will immediately come to the active area and remove the unauthorized waste before operations are resumed; and**

*The Permittee agrees to this condition Once unauthorized waste is discovered, equipment operator must either move the unauthorized waste away from the active area for later removal and proper management, or must stop operation and notify another person (laborer) on the ground, who will immediately come to the active area and remove the unauthorized waste before operations are resumed*

**(3) That all interim spotters must be under the direct supervision of a trained operator or a trained spotter. Also, indicate the maximum allowed separation (i.e., the maximum distance, line of sight, etc.) between interim spotters and the trained operators or trained spotters under whose direct supervision they operate.**

*The Permittee agrees that all interim spotters will be under the direct supervision of a trained operator or trained spotter However, the maximum distance will vary depending on the exact location / shape of the working face The interim spotter will be within the line of site of a trained operator or trained spotter*

**Additionally, the submittal asks that Specific Condition No. 12 be changed to say that waste shall be "thoroughly" inspected prior to compaction instead of being "completely" inspected prior to compaction. Please note, since the newly revised version of F.A.C., Chapter 62-701 allows equipment operators to serve as spotters, we will replace the word "completely" with the word "visually" in order to be in accordance with the revised Chapter.**

*The Permittee concurs with this revision to Specific Condition 12*

3. **The request is to increase the width of the working face from 200 to 300 feet in order to simultaneously accommodate 25 trucks/truckloads, but has not proposed a similar decrease in the length of the working face. This would have the effect of increasing the size of the working face from 60,000 to 90,000 square feet. Please demonstrate that the Facility has a need to accommodate that number of trucks/ truckloads by indicating the typical number of loads deposited on the maximum day of the week and by breaking that number down to the hour. Also, use the maximum allowable waste acceptance rate, the typical in-place waste density and the Facility's permitted lift height to demonstrate that the Facility needs a 90,000 square foot working face.**

*The Permittee has specifically requested that the working face / daily cell be changed to 90,000 square feet (300 feet long by 300 feet wide) Based upon 3000 tons per day, the maximum load is approximately 40 per hour Loads are discharged, inspected and compacted within the hour,*

*but approximately 25 loads at 12' per load at this peak time should be provided at the working face This requires a working face that is 300' wide*

**Additionally, please indicate what is meant by and give examples of "adverse or extenuating circumstances" and note that any increase in the maximum size of the working face may only be done with DEP's concurrence at the time.**

*Adverse or extenuating circumstances would include major storm events such as hurricane clean-up, when preparing on exterior side slope for final cover, etc*

4. **Please see Comment No. 3.**

*Please refer to the response to Comment 3 for response to this question*

5. **DEP agrees to revise Specific Condition No. 15.**

*No response required*

6 **Please see Comment No. 2.**

*Please refer to the response to Comment 2 for response to this question*

7. **Please note, depending on both the constituent of concern and on other variables, DEP may be willing to approve the use of contaminated soils for initial cover even if it exceeds the commercial/industrial exposure levels because that potential exposure would be for a maximum of six months (i.e., until intermediate cover would be required). DEP therefore proposes the following language to replace the third sentence of Specific Condition No. 22:**

**If the analytical results indicate that the material is not hazardous waste, the material may be disposed of in the landfill. If the analytical results are above the commercial/industrial exposure levels of F.A.C., Chapter 62-777, then depending upon the contaminant of concern, the material may be utilized as initial cover on interior side slopes only, with DEP's written approval on a case-by-case basis. If the analytical results are below the commercial/industrial exposure levels of F.A.C., Chapter 62-777 then the material may be utilized as initial cover on interior side slopes only without case-specific approval from DEP.**

*The Permittee concurs with this revision to Specific Condition 22*

8. **DEP agrees to revise Specific Condition No. 30.**

*No response required*

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**9. DEP agrees to revise Specific Condition No. 33.**

*No response required*

**10. DEP agrees to revise Specific Condition No. 37.**

*No response required*

**11. Please see Richard Rachal's attached memorandum.**

*Please see the following response to the waste clean-up section comments for the response to this question*

**12. a. DEP agrees to revise Subsection b.2 of Specific Condition No. 47.**

*No response required*

**b. DEP also agrees to revise Subsection c.2 of Specific Condition No. 47 with the following caveat: Instead of defining a major storm event as being "in excess of an inch of rainfall," DEP will agree to define it as being "one or more inches of rainfall."**

*No response required with regard to Specific Condition 47 c However, we would ask that Specific Condition 27 a also be revised to define a major storm event as being one or more inches of rainfall*

## WASTE CLEANUP SECTION

**1. I have reviewed the application including the itemized modifications requested in the letter submittal by England-Thims & Miller, Inc. received February 18, 2010. The modification requested to Specific Condition No. 46, Surface Water Monitoring - Subsection e. appears somewhat unclear. I recommend the revised language read "The Permittee shall ensure surface water samples shall not exceed applicable surface water standards." Alternatively surface water sample locations could be proposed for adjustment such that they only sampled discharges.**

*No response required*

In addition to responding to the Department's RAI, we hereby request the following modifications, which are consistent with the new rule

a Waste reports must be provided to the Department annually (rather than quarterly) and types of waste shall be, municipal solid waste, Class III waste, ash residue and other wastes

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pursuant to Chapter 62-701 500(4)(a), FAC Please see revised page 17 of the attached Operations Plan

b Weight tickets shall be kept for five years (rather than the life of the facility) pursuant to Chapter 62-701 500(13)(a), FAC

c The list of surface water monitoring parameters (Attachment 9 to the Permit) be revised to eliminate copper and zinc as well as provide clarification of Total Hardness as mg/L CaCO3 and Total phosphorus (rather than phosphates) pursuant to Chapter 62-701 510(8)(b), FAC

d The list of leachate monitoring parameters be revised to replace bicarbonate with total alkalinity and add biochemical oxygen demand (BOD5) and chemical oxygen demand (COD) pursuant to - Chapter 62-701 510(8)(c), FAC

e The required ground water technical report be changed from every two years to every two and one-half years during the active life of the facility pursuant to Chapter 62-701 510(9)(b), FAC (Specific Condition 45 s )

f In Specific Condition 27 c , the language for the erosion repair and notification should match the rule (Chapter 62-701 500(7) (j), FAC) Specifically, "If the erosion cannot be corrected within seven days of occurrence the landfill operator shall notify the Department and propose a correction schedule "

g The Permittee would like to adjust Saturday hours from 5 am to 2 pm to 6 am to 2 pm Please see revised page 14 of the attached Operations Plan

We trust these comments adequately address your concerns Please contact me at 904-265-3181 or via email at clemJ@etminc com should you require additional information or have any questions

Sincerely,

**ENGLAND-THIMS & MILLER, INC.**

Juanitta Bader Clem, P E
Vice President

5/4/2010

Attachments Operations Plan (Note only pages 14 and 17 changed )

cc Greg Mathes, Trail Ridge Landfill, Inc
Chris Pearson, City of Jacksonville
Jim Christiansen, Trail Ridge Landfill, Inc
Brian Dolihite, Trail Ridge Landfill, Inc
Eric Parker, Trail Ridge Landfill, Inc
Edward Schmalfeld, P E , Trail Ridge Landfill, Inc
Scott Lockwood, P E , ETM

SJL shb

# TRAIL RIDGE LANDFILL
# PERMIT DOCUMENTS
# FOR OPERATION
# THIRD RENEWAL

## I. INTRODUCTION

### A PURPOSE

The purpose of this Operation Report is to describe the method of continued operation of Trail Ridge Landfill located in Duval County, Florida Addressed in this report are the types of waste accepted at the landfill, operation plan, leachate management, stormwater management, environmental media monitoring, and closure plan for the landfill Trail Ridge Landfill is owned by the City of Jacksonville, Florida and is operated by Trail Ridge Landfill, Inc

### B SUPPLEMENTAL DOCUMENTS

This Operation Report is supplementary to the Permit Drawings, prepared by England, Thims & Miller, Inc in concert with Trail Ridge Landfill, Inc

This Operation Report and its associated Permit Drawings have been developed in accordance with the requirements of the Florida Department of Environmental Protection (the Department) and the St Johns River Water Management District (SJRWMD)

### C GENERAL OBJECTIVES

The intent of this Operation Report, along with its associated Permit Drawings, is to provide for the continued operation of Trail Ridge Landfill in accordance with applicable Federal, State, and local requirements The primary design objectives are the control of leachate and surface water, and the phased operation and closure of the landfill To achieve these requirements, a double geomembrane liner system, leachate collection and containment system, and surface water management system were installed Further, phasing plans for operation and closure has been developed and implemented

## II. GENERAL

### A SITE DESCRIPTION

Trail Ridge Landfill is located in Sections 18, 19, 20 and 21, Township 3 South, Range 23 East, Duval County, Florida Trail Ridge Landfill is owned by the City of Jacksonville, Florida and operated by Trail Ridge Landfill, Inc (a Waste Management Company) The total land area is approximately 978 acres of which approximately 148 acres is used for this Class I landfill A recent aerial photograph and topographic survey of the site are included in **Permit Drawing Nos. 2 and 5**

The landfill was constructed in five phases, Phase I through Phase V as shown on **Permit Drawing No. 7** Phases I and II were constructed in six sections The first section (Phase IA) was constructed in 1992 and certified on May 15, 1992 Whereas, Phase IB was certified on June 22, 1992, Phases IIA and IIB were certified on March 4, 1993, and Phases IC and IIC were certified on June 1, 1993 The construction of Phases I and II included construction of the stormwater treatment facility for the entire landfill as well as the conveyance system for Phases I and II

Phase IIIA was constructed in 1995 and certified on September 29, 1995 Phases IIIB, IVA and IVB were constructed in 1996 and certified on December 19, 1996 The construction of Phases IIIA, IIIB, IVA and IVB included the completion of the stormwater conveyance system for the entire landfill (with the exception of the downcomer system associated with closure)

The final phases, Phases IIIC, IVC and V were constructed in 2000/01 and certified on July 13, 2001 Solid waste has been placed in all the phases

### B RECYCLING EFFORTS

Duval County has a separate Materials Recovery Facility (MRF) Recyclable materials are picked up curbside and processed at the MRF for recycling The materials recycled include aluminum, glass, newspaper, HDPE, steel, cardboard, PET, magazines, corrugated cardboard and brown paper bags

Duval County recycles approximately 23 percent of their waste stream according to *Solid Waste Management in Florida 2006*, which was prepared by the Department of Environmental Protection, Division of Waste Management

C HISTORY

Trail Ridge Landfill, Inc has had only one enforcement action taken against it by the Department of Environmental Protection (the Department) for violations relating to any solid waste management facility A Consent Order (No 92-0725) was signed by Trail Ridge Landfill, Inc in conjunction with The Haskell Company, and Barco-Duval Engineering on July 24, 1992 to resolve that action which related to turbid discharge and erosion, siltation and scouring within adjacent wetland areas It should be noted that this violation occurred during the first increment of construction and in fact, during the construction of the stormwater management basin

D AIRPORT PROXIMITY

Trail Ridge Landfill is not located within 10,000 feet of a licensed and operating airport runway used by turbine powered aircraft, or within 5,000 feet of licensed and operating airport runway used only by piston engine aircraft There are no proposed changes to the horizontal or vertical limits of the landfill and a clearance letter from the Federal Aviation Administration was provided in the first permit renewal

E LOCATION CONSIDERATIONS

1 Foundation

A foundation analysis was conducted in 1990 as part of the original construction permit and due to a vertical expansion of the landfill, the foundation analysis was updated in 1996 as part of the first permit renewal There are no proposed changes to the horizontal or vertical limits of the landfill as part of this permit renewal and therefore, the foundation analysis was not updated

2 Floodplain

The Landfill is above the 100-year floodplain as shown on the Floodplain Map in **Appendix A**

3 Proximity to Property Boundary

At the closest point, the Landfill (measured from the toe of the proposed final cover slope) is more than 200 feet from the landfill property boundary as shown on **Permit Drawing No. 4**

4 Screening from Public View

The Landfill has at least a 200 foot buffer around Further, the surrounding property is currently zoned agriculture

F OPERATOR TRAINING

Currently, Trail Ridge Landfill, Inc has seven trained operators, five of whom are also trained spotters The operators/spotters were trained at the University of Florida TREEO Center which is a Department approved provider of training services In accordance with Rule 62-701 320(15), F A C , the continued training (16 hours for operators and four hours for spotters) will be conducted, at a minimum, every three years Please see the certification documents for existing trained personnel in **Appendix B** If additional personnel or new personnel require training, training will be provided by a Department approved provider within sixty days of hiring In the interim, new personnel will work under the supervision of a trained operator or trained spotter, whichever applies In addition, the facility also has an in-house training program and all employees are briefed on various environmental, health and safety topics

## III. TYPES AND QUANTITY OF WASTE ACCEPTED

The types of waste accepted at Trail Ridge Landfill typically consist of residential/household, office, commercial, agricultural, and industrial wastes The materials accepted for disposal include garbage, refuse, treated biomedical waste, construction and demolition debris, shredded waste tires, asbestos, water treatment sludge, industrial sludge, domestic sludge and non-hazardous special waste The waste stream is monitored as each vehicle enters the site and passes by the ticket office/scale house operator and again at the working face The waste stream is monitored for prohibited wastes such as hazardous waste, untreated biomedical waste, non-containerized liquid wastes, and special wastes prohibited by Rule 62-701 300(8), F A C Incoming waste quantities are determined by the use of scales

The site serves the City of Jacksonville, Duval County, and Northeast Florida According to the Florida Office of Economic and Demographic Research, the 2007 population estimate for Duval County is 897,597 The annual tonnage for 2007 was approximately 844,000 tons, based on facility waste records The total remaining airspace available for waste is approximately 9,063,000 cubic yards (as of February of 2008) This volume will accommodate approximately 7,250,000 tons of waste (based upon a density of 1,600

lb/cubic yard) It is anticipated that the landfill has a remaining life of approximately 8 years

Currently, the cover material for the landfill comes from offsite borrow sources This material is transported to the site and stockpiled on the site adjacent to the working face

## IV. FACILITY DESIGN

Trail Ridge Landfill has been designed to meet or exceed all applicable regulatory standards Details of the design are included in the Permit Drawings These plans include all maps, plan sheets, drawings, cross-sections and aerial photographs All Permit Drawings have been signed and sealed by a Florida Registered Professional Engineer

### A AERIAL PHOTOGRAPH

An aerial photograph by Aerials Express, dated February 2008, can be found on **Permit Drawing No. 2.** The aerial photograph includes the existing land uses and zoning within one mile of the facility

### B PLOT PLAN

#### 1 Dimensions

A dimensioned site plan is contained on **Permit Drawing No. 4.**

#### 2 Location of Monitoring Wells and Soil Borings

The location of all the existing monitoring wells is provided on **Permit Drawing No. 3**, which is a Specific Purpose Survey

The location and depth of soil borings were provided in the original Hydrogeological Investigation and Groundwater Monitoring Plan prepared by Golder & Associates and submitted as part of the original permit documents No new borings have been drilled as part of this permit renewal

#### 3 Plan of Disposal Area

The plan for disposal areas is contained on the Base Grading Plan and Bottom Liner Phasing Plan (**Permit Drawing Nos. 6 and 7**)

4 Cross-Sections

Cross-sections of the original and proposed final elevations are contained on **Permit Drawing No. 10.**

5 Operational (Fill) Areas

The location of the current operational area is shown on **Permit Drawing No. 7** Further, Fill Phasing Plans are presented on **Permit Drawing Nos. 11 - 13.**

6 Fencing

The landfill site is fenced in its entirety **Permit Drawing No. 4** shows the fence and gate locations

C TOPOGRAPHIC MAPS

1 Contour Intervals

A topographic map with 2-foot contour intervals on NGVD datum is contained on the Existing Topographic Plan (**Permit Drawing No. 5**)

2 Proposed Fill Areas

The proposed fill areas are delineated on the Base Grading Plan and the Bottom Liner Phasing Plan (**Permit Drawing Nos. 6 and 7).**

3 Borrow Areas

There are no borrow areas on the existing landfill site

4 Access Road

The primary access road to the site consists of a two-laned paved industrial roadway runs from U S Highway 301 west to the ticket office/scale house This paved roadway continues on site to the perimeter road which encircles the landfill The perimeter road is an all-weather stabilized roadway that provides continuous access to all landfill locations

5 Grades

The Master Drainage Plan is included as **Permit Drawing No. 8** The site is designed to provide positive drainage of stormwater runoff from the landfill to the perimeter ditch and then directly into the stormwater management basin for treatment prior to discharge Special design features have been incorporated to segregate clean stormwater from any contaminated stormwater which is handled as leachate

6 Cross-Section of Waste Lift

A typical section is contained on **Permit Drawing No. 13**

7 Special Drainage Devices

As a part of closure (including close-as you-go), downcomer pipes are installed in the side slopes to carry the stormwater runoff from the drainage terraces on the side slopes to drainage structures at the toe of the slope These drainage structures discharge to the perimeter ditch and ultimately, the stormwater management basin These drainage structures which connect to downcomer piping have been designed with baffles to prevent stormwater from exiting the structures The Master Drainage Plan is contained on **Permit Drawing No. 8** and details of the structures are contained in a detail on **Permit Drawing Nos. 20 and 21**

8 Fencing

The site is fenced as shown on the Site Plan (**Permit Drawing No. 4**)

9 Equipment Facilities

Facilities for equipment maintenance and storage have been provided as shown on the Site Plan (**Permit Drawing No. 4**)

10 Additional Uses

a Tire Shredder

A portable tire shredder is operated on the site on a periodic basis Whole waste tires are temporarily stored and when sufficient tires have

accumulated, a portable shredder is brought to the site to shred the tires The shredded tires are being landfilled or used as initial cover

D ENVIRONMENTAL MEDIA MONITORING

The groundwater, surface water and leachate are monitored on a semi-annual basis The laboratory analysis of the environmental media monitoring (groundwater, surface water and leachate) is conducted by Columbia Analytical Services Their Department of Health, Bureau of Laboratories Certification Number is E84282 and a copy of the certification is provided in **Appendix C**

E FINANCIAL RESPONSIBILITY

The City of Jacksonville (the landfill owner) provides financial responsibility for the closure and long-term care of the landfill by means of a Landfill Management Escrow Account

## V. LANDFILL PERFORMANCE AND DESIGN STANDARDS

The design of the landfill is based on three fundamental principals, containment, collection and monitoring Containment is accomplished by a state-of-the-art liner system which includes both primary and secondary liner systems Collection of leachate is accomplished through the primary leachate collection piping system as well as the secondary leak detection/leachate collection system Monitoring of these systems occurs with the sampling and analyses of the leachate and groundwater

A DOUBLE LINER SYSTEM

The entire liner system for the landfill has been constructed The double liner system, as constructed and certified, is composed of the following from top to bottom

Primary

- 24" Protective Soil Cover ($k \leq 1 \times 10^{-3}$ cm/sec)
- Geotextile Fabric
- Drainage Layer (Geonet)
- 60-mil High Density Polyethylene (HDPE) Primary Liner
- Geosynthetic Clay Liner

Secondary (Leak Detection System)

- Geotextile Fabric
- Drainage Layer (Geonet)
- 60-mil HDPE Secondary Liner
- 6" Compacted Subgrade ($k \leq 1 \times 10^{-5}$ cm/sec)

This double composite liner system insures the integrity of the landfill base from leachate contamination The three impermeable layers and two drainage layers provide reliability for the Class I Landfill

The liner system covers the entire base of refuse disposal area as well as the leachate containment facilities (storage tanks with concrete containment) Cross sections of the landfill which includes natural ground versus existing base grades are contained on **Permit Drawing No. 10**

B LEACHATE COLLECTION AND REMOVAL SYSTEM

The primary leachate collection system is composed of a drainage geonet laid on a minimum 2% cross slope to an 8" HDPE perforated collection pipe laid in a trench (leachate collection trench) sloped at a minimum of 0 85% (**Permit Drawing No. 10**) The secondary leak detection and collection system consists of a geonet which also drains to the leachate collection trench A 24" layer of protective sand layer is provided above the primary drainage layer This sand layer provides drainage to the geonet as well as a protective layer for the double synthetic liner system

The leachate collection piping is accessible at both ends for cleaning via a clean-out High pressure flushing as well as mechanical cleaning can be used to remove any solids In accordance with Rule 62-701 500(8)(h), F A C , the leachate collection system has been water pressure cleaned and inspected by video recording and the subsequent report is presented in **Appendix D**

The primary leachate collection pipes passes through the leachate collection sump and terminates at the leachate vault on the east side of the landfill The leachate collection sump consists of an 18" or 24" diameter HDPE perforated pipe (riser pipe) surrounded by an aggregate sump The riser pipe extends from the sump up to the leachate vault The 8" HDPE leachate collection pipe discharges directly into the riser pipe as well as the sump A small submersible pump is located inside each riser pipe Level sensors in the riser pipe are used to control the pump which removes leachate as it accumulates The pumps are mounted on wheels and can easily be removed for maintenance

The leak detection system is constructed and operates similarly to the primary collection system with the exception that multiple layers of geonet are provided in lieu of the 8" HDPE perforated collection pipe Each leachate vault box has a flow meter for the primary and secondary leachate collection system The flow from each meter is read daily (Monday thru Friday) as well as the rainfall, which is recorded daily The leachate flows and rainfall are compared to check for proper operations of the collection system **Appendix E** contains the current records

C LEACHATE STORAGE TANKS

1 Design

Leachate is pumped from each sump into a force main and to the leachate storage area where six 20,000-gallon fiberglass storage tanks provide temporary storage The leachate storage tanks are surrounded by a concrete secondary containment basin which can hold 140 percent of the total tanks volume plus one foot of free board These leachate handling facilities including the concrete containment basin are underlain by the liner system

The leachate storage tanks are emptied by tanker, on an as needed basis, and the leachate is hauled to JEA's Buckman Street Wastewater Treatment Facility for treatment and disposal A letter from JEA accepting the leachate for treatment is included in **Appendix F**

The secondary containment basin includes a sump and discharge pipe for draining stormwater from the basin The basin is drained of stormwater within 24 hours or when 10 percent of the storage capacity is reached, whichever occurs first The stormwater is discharged either to a leachate tanker or the stormwater management system, depending upon whether it has been contaminated with leachate

2 Overfill Prevention System

The existing storage tanks are equipped with an overfill prevention system which includes level sensors and gauges, high level alarms and automatic shutoff controls This overfill control equipment are inspected weekly by the facility operator to ensure the system is in working order

3 Inspection and Corrective Action

The exterior of these fiberglass tanks is inspected weekly by the facility operator for leaks and maintenance deficiencies An interior inspection of the tanks is performed when the tanks are drained or at a minimum of every three years The most recent inspection report is contained in Appendix P

If the inspection reveals a tank or equipment deficiency, leak, or any other deficiency which could result in failure of the tank to contain leachate, remedial measures will be taken immediately to eliminate the leak or correct the deficiency Inspection reports will be maintained and made available to the Department upon request for the lifetime of the leachate storage system

D SURFACE WATER MANAGEMENT SYSTEM

The stormwater management system is an existing wet detention system which was permitted by the Department This system was designed and constructed to detail a 25-year, 24-hour storm event and treat stormwater to meet the wet detention criteria of Rule 40C-42 026(5), F A C Further, the facility was designed and constructed with perimeter swales and ditches to direct stormwater to the wet detention basin and away from the landfill, thereby preventing stormwater from coming into contact with waste

To prevent stormwater contamination, refuse placement operations follow an orderly sequence of steps In summary, these activities consist of the following

1 Limit daily operations within an active sector for as long as practical
2 Maintain only a minimum active working face to allow for daily refuse placement
3 Apply initial cover to any exposed refuse as soon after disposal as practical
4 Final cover and seeding of any area completed to designed grade as soon as practical

E GAS MANAGEMENT SYSTEM

The Gas Management System for Trail Ridge Landfill consists of the landfill gas collection system and the combustible gas monitoring program which are described below

1 Landfill Gas Collection System

The landfill gas collection system consists of gas extraction wells, gas collection pipes, a gas extraction blower, flare station and gas condensate pump station This system was designed, constructed and operated in accordance with the approved Title V Air Operation Permit (Permit No 0310358-003-AV) This permit was issued by the City of Jacksonville, Regulatory & Environmental Services Department (RESD) and expires on August 31, 2008 This system is monitored on a regular basis in accordance with the Title V Air Operation permit and data is provided to RESD annually

A minor modification permit application has been submitted to the Department This application is to construct a landfill gas-to-energy facility to convert the landfill gas collected at the landfill into energy

2 Combustible Gas Monitoring Program

A combustible gas monitoring program has been implemented and includes quarterly monitoring with results submitted to the Department The location of the monitoring points for the gas collection system is shown on the Gas Collection Plan, which is provided in **Appendix G**

If combustible gas levels exceed twenty-five percent of the lower explosive limit in a structure (excluding gas control or recovery components) or the lower explosive limits at or beyond the property boundary, Trail Ridge Landfill will

a Immediately take all necessary steps to ensure protection of human health and notify the Department

b Within seven days of detection, submit to the Department for approval a remediation plan for the gas releases The plan will describe the nature and extent of the problem and the proposed remedy The remedy will be completed within 60 days of detection unless otherwise approved by the Department

## VI. PHASING PLANS

The landfill has been constructed with five phases (Phases I through V) and one surface water management facility as shown on **Permit Drawing No. 7** The completed landfill, including final contours, is presented on **Permit Drawing No. 9.**

### A FILL PHASING PLAN

The sequence of fill operations initially corresponded to the liner phasing The overall sequence of the fill operations is shown on **Permit Drawing Nos. 11 - 13** As shown on the plans, Liner Phases I, II, IIIA, IIIB, IVA and IVB were initially filled to EL 210± (NGVD) and then Phases I and IIIA were filled to EL 250± (NGVD) Next Phase IIIC and IVC were filled to EL 210± Phases VA and VC, followed by Phase VB and VD, were filled to above the anchor berm (so stormwater will drain from the waste filled areas) Currently, Phases VA, VC, VB and VD are being filled to EL 210± (NGVD) Then on the eastern half, the landfill will be filled to EL 270± (NGVD) which leaves access to the top from the southwest corner and northern slopes The next fill phase is the filling of the eastern portion to EL 330± (NGVD) The final fill phase will include filling the western slope (the operations access location) and the top area

### B CLOSURE PHASING PLAN

The closure phasing will correspond to the above fill phasing The Closure Phasing Plans are contained on **Permit Drawing Nos. 14 and 15** When solid waste disposal units have been filled to their final design grade, they will be closed in a close-as-you-go fashion

## VII. O PERATION PLAN

### A OPERATION PERSONNEL AND HOURS OF OPERATION

The Director of Landfill Operations is responsible for the overall operation of the Trail Ridge Landfill The Director of Landfill Operations responsibility is to assure that operations at the site are performed in accordance with the procedures outlined in this Operation Plan

The Director of Landfill Operations, the Operations Manager and several operators are trained operators under Rule 62-701 320 (15), F A C At least one trained operator will be on-site during all times when the landfill receives waste Further, at least one trained spotter (who may also be an equipment operator) will be at the working face at all times waste is being accepted and/or spread out prior to disposal at that respective working face

1 Hours of Operation

| | | |
|---|---|---|
| a | Normal Monday - Friday | 6 00 A M to 7 00 P M |
| b | Normal Saturday | ~~5~~6 00 A M to 2 00 P M |
| c | Maximum Hours | 5 00 A M to 10 00 P M |

During emergency situations, i e , after a hurricane, the landfill may operate beyond the above hours However, the Florida Department of Environmental Protection must be notified at the first available opportunity The landfill will have lights with at least 3 candle-feet of illumination for operation during non-daylight hours

2 Personnel

Personnel expected to be at the landfill includes

| Personnel | Total |
|---|---|
| Director of Landfill Operations | 1 |
| Operations Manager | 1 |
| Equipment Operators | 8 |
| Mechanic | 1 |
| Labors/Spotters | 6 |
| Compliance Officer | 1 |
| Clerical | 3 |

On a normal basis, the personnel present during operating hours on the landfill will include a trained operator, a trained spotter, a material handler (laborer) and

an equipment operator The trained spotter may also function as an equipment operator During peak operating hours, the facility will have additional personnel, in accordance with the Required Personnel Matrix in **Appendix H**

A work schedule is developed on a weekly basis to ensure that adequate staff is present on the landfill to handle the expected volume of waste

B CONTINGENCY OPERATIONS

The on-site entrance road is an all-weather road The entrance road and administration area are paved The pavement extends beyond the ticket office/scale house to the perimeter road around the landfill The perimeter road is a stabilized limerock road Haul roads beyond this point are maintained for adverse weather condition usage

Emergency conditions at the facility may be created by a natural disaster (i e , hurricane or tornado), flooding and fire Waste is not normally delivered to the site during emergency conditions The following procedures will be implemented with the imminent threat of a major storm

1 Initial cover will be applied and compacted over all exposed waste
2 All landfill equipment will be fueled and parked near natural wind screens, earthen mounds or tree areas
3 All lightweight signs and equipment will be secured
4 Work will begin in dry areas only when operations are resumed and waste materials will not be disposed in standing water

The surface water management system will allow disposal operations to continue during periods of inclement weather This will include the utilization of temporary berms and ditches to drain stormwater away from the active face

In the event of a natural disaster in the area, operational hours will be extended as appropriate to meet the needs of the community and the Department will be notified

In the event a hot load is received or a fire occurs at the landfill, the operator will extinguish the fire, as soon as possible Hot loads will be discharged in an area on the landfill isolated from the current active face, spread out and covered with soil to extinguish the fire The load will only be discharge onto an area that has a minimum of 12 inches of cover for separation from existing waste After the load is extinguished, the waste will be moved to the active face for disposal or left in place with intermediate cover placed over it

If a fire occurs within the working face, the operator will cease operations in the working face until the fire is extinguished The operator will direct all waste disposal

to another operational area that is a safe distance from the fire The temporary disposal area shall not interfere with fire-fighting equipment

For a subsurface fire that occurs outside the working face, the operator will cordon off the area and determine if the working face should be moved until the fire is extinguished At no time shall the landfill place waste in a burning area

C WASTE CONTROL

The waste stream will be monitored by the scale house operator, as each vehicle passes by the ticket office/scale house and then again at the working face by the spotter(s) In addition, the scale house is equipped with cameras/video monitoring systems, which record a time-coded picture of the vehicles entering the site

There will be at least one trained spotter at each working face to observe the wastes disposed at all times the landfill receives waste to detect unauthorized waste The spotter will be assisted by additional personnel, including trained operators, equipment operators, laborers, and trained spotters, when necessary If any unauthorized wastes are discovered at the landfill, the landfill owner/operator will promptly notify the person responsible for shipping the wastes to the landfill and the generator of the wastes, if known, for subsequent removal off site If the waste is deemed hazardous, the area where the wastes are deposited will be immediately cordoned off from public access If the generator or hauler cannot be identified, the landfill owner/operator will assure the cleanup, transportation, and disposal of the waste at an appropriate waste management facility

In the event unauthorized waste is identified after the hauler has left the facility, the unauthorized waste shall be removed from the working face and placed in close proximity to the working face At the end of the day, at a minimum, unauthorized waste such as batteries, oil filters, used oil, etc will be removed from the landfill and stored at the existing concrete storage area adjacent to the waste tire storage and processing area Within the storage area, the materials shall be placed in a single layer on pallets (The water level in the storage area will be checked on a weekly basis and accumulated water will be pumped out and treated as leachate) Tires will be placed within the tire storage areas White goods will be stored in a roll-off box White goods and batteries will be taken off site by various recyclers on a quarterly basis, at a minimum

Only two types of biological waste are accepted for disposal, bodies of domestic animals and treated biomedical waste Before the bodies of domestic animals are brought to the facility, the landfill will request information about the waste to determine if the animals were diseased If the animals were not diseased, the bodies will be disposed within the working face and then covered immediately with either additional waste or initial cover If the bodies of the domestic animal are from

diseased animals, the bodies will be handled in accordance with Section 823 041(1), F S Treated biomedical waste will be disposed within the working face and then covered with either additional waste or initial cover

D WEIGHING WASTE

All incoming waste will be weighed and recorded on a daily basis at the on-site scales prior to disposal The on-site scales include at least one scale for incoming vehicles and one scale for outgoing vehicles

E OPERATION RECORD

The operating record consists of all records, reports, analytical results, demonstrations, and notifications required by Chapter 62-701, F A C , any construction, operation, and closure plans and permits, including all modifications to those permits issued by the Department, Permit Document Plans, as well as training records required by Chapter 62-701 320(15), F A C The record is considered part of the operation plan and will be kept with the plan at the landfill facility The operating record will be available for inspection at reasonable times by Department personnel

F WASTE RECORDS

The operators will record, in tons per day, the amount of solid waste received and will estimate the amount of each waste listed below Waste reports will be compiled monthly, and copies provided to the Department annually ~~quarterly~~

Types of waste received

a Municipal solid waste ~~Residential/household waste~~
b Class III waste ~~Commercial waste~~
c Ash residue ~~Treated biomedical waste~~
d Other wastes ~~Water treatment sludge~~
~~e Construction and demolition debris~~
~~f Agricultural waste~~
~~g Industrial waste~~
~~h Waste tires~~
~~i Asbestos~~
~~j Industrial sludge~~
~~k Domestic sludge~~
~~l Non-Hazardous special wastes~~

G ACCESS CONTROL

Access to the landfill is provided by a paved entrance road from U S 301

The entire site is fenced Access is restricted by a gate near the entrance off U S 301 as well as a second gate closer to the site All gates will be locked at night and whenever the landfill is closed Public access and receipt of wastes will occur only when an attendant is on duty

Traffic control on site is accomplished by signage and site personnel Spotters will assist with traffic control at the working face by directing in-coming trucks to their final unloading area

Access to areas restricted from traffic will be controlled by temporary earthen berms and barricades

H VEHICLE TRAFFIC CONTROL

Signs are provided to direct traffic to the disposal area Further, spotters will direct incoming vehicles to their final disposal area

I WASTE MONITORING

1 The operations will include a load checking program to detect and discourage attempts to dispose of unauthorized wastes at the landfill The load checking program consists of the following minimum requirements

a The landfill operator will examine at least three random loads of solid waste delivered to the landfill each week The waste collection vehicle drivers selected by the inspector will be directed to discharge their loads at a designated location within the landfill (near the working face) A detailed inspection of the discharged material will be made for any unauthorized wastes

b If unauthorized wastes are found, the facility will contact the generator, hauler, or other party responsible for shipping the waste to the landfill to determine the identity of the waste sources

2 Handing hazardous wastes

a If any regulated hazardous wastes are identified by random load checking, or are otherwise discovered to be improperly deposited at the landfill, the landfill owner/operator will promptly notify the Department by telephone, the person responsible for shipping the wastes to the landfill, and the generator of the wastes, if known The area where the wastes are deposited will be immediately cordoned off from public access If the generator or hauler cannot be identified, the landfill owner/operator will

assure the cleanup, transportation, and disposal of the waste at a permitted hazardous waste management facility

The operator will provide a report of the discovery of hazardous waste to the Department within seven days The report will include the date of the incident, how the materials were discovered, transferred and transported, the disposal location, and if known, the source of the material. The material will be transferred and disposed off site in accordance with applicable local, state and federal regulations The clean up will include determining the extent of contamination as well as the handling of materials that are contaminated by the hazardous waste

b Subsequent shipments from sources found or suspected to be previously responsible for shipping regulated hazardous waste will be subject to precautionary measure prior to the solid waste management facility accepting wastes

3 Recording inspection results Information and observations resulting from each random inspection will be recorded in writing and retained at the landfill for at least three years The recorded information will include the date and time of the inspection, the names of the hauling firm and the driver of the vehicle, the vehicle license plate number, the source of the waste, as stated by the driver, and observations made by the inspector during the detailed inspection The written record will be signed by the inspector

J WASTE HANDLING

The landfill may have two (2) working faces and will be consistent with orderly traffic control, waste spreading, and compaction activities

All solid waste will be spread in layers of approximately two feet in thickness and compacted to approximately one foot in thickness or as thin a layer as practical before the next layer is applied Bulky materials, which are not easily compacted, will be worked into other materials as much as practical

The first layer of waste placed above the liner and leachate collection system will be a minimum of four feet in compacted layer thickness and will consist of selected waste loads containing no large rigid objects that may damage the liner or leachate collection system The placement of this initial waste was supervised by a quality assurance monitor under the supervision of a Florida Registered professional Engineer

Solid waste will be formed into cells to construct horizontal lifts The working face of the cell and side grades will be at a slope no greater than three feet horizontal to

one foot vertical rise Lift depth will normally not exceed ten feet but may be deeper, depending on specific operations, daily volume of waste, width of working face, and good safety practices

Each working face will be only wide enough to accommodate vehicles discharging the waste, and to minimize the exposed area and unnecessary use of cover material The typical working face is 200 feet long by 300 feet wide The size of the working face will vary based upon the location of the working face and waste volume

A second working face may be necessary due to utilization of a tipper The second working face will be located near the first working face and shall have a portable tipper used to unload solid waste trailers The location of the portable tipper within the second working face will be determined by the landfill operator and will vary depending on the amount of solid waste received and weather conditions The second working face shall have a trained spotter whenever solid waste is being accepted and/or spread out prior to disposal

The facility will provide a working area within the lined landfill area for the placement of waste during wet weather This area will be utilized when access to the regular working face is limited due to wet weather The location of the wet weather area is based on accessibility during wet weather The typical wet weather working face is 200 feet long by 300 feet wide but the size will vary based upon the location and waste volume

## K WASTE COMPACTION AND APPLICATION OF COVER

Waste will be spread in layers of approximately two (2) feet in thickness and compacted to approximately one (1) foot in thickness or as thin a layer as practical before the next layer is applied In general three to five passes with the compactor will be made on each layer of refuse Compaction of the waste will be accomplished both from top down and from the bottom up

Initial cover will be applied and maintained at the landfill in order to minimize any adverse environmental, safety, or health effects such as those resulting birds, unauthorized wastes, blowing litter, odors, disease vectors, or fires The minimum frequency for applying initial cover is at the end of each work day A 6" thick initial ~~soil~~ cover (consisting of soil, shredded tires, contaminated soils, or ash contaminated soil) or an FDEP approved alternate daily cover may also be applied at the end of each operating day

For those areas where additional solid waste will be deposited within 18 hours, a temporary cover, such as a tarpaulin, may be placed on the working face at the end of the work day and removed prior to deposition of additional waste Additionally, waste tires that have been cut into sufficiently small parts may be utilized as initial

cover on the landfill, in accordance with Rule 62-711 400(3)(a), F A C Shredded tires will not be used on exterior side slope or roadways A six-inch thick layer of shredded tires will be placed for initial cover, which will remain in place and be covered with additional waste or intermediate cover Shredded tires for initial cover will be stored on top of the landfill in the vicinity of the working face

An intermediate cover, in addition ~~n~~ to the six (6) inch initial cover, will be applied and maintained within seven (7) days of cell completion if final cover or an additional lift is not to be applied within 180 days of cell completion All or part of this intermediate cover may be removed before placing additional waste or installing final cover The intermediate cover will consist of either a 12" compacted layer of soil or a 16" compacted layer of 50/50 mixture of soil/mulch The mulch/soil mixture will be a fairly homogeneous mixture and the mulch will be ground into sufficiently small pieces (approx 1" or less) Any mulch/soil mixture used on exterior side slopes will be removed and replaced with intermediate cover Therefore, it will not affect the stability of the final cover system

Final cover will be applied to a solid waste disposal unit once it has been filled to its design dimensions The final cover including permanent vegetation will be placed over the entire surface of each completed solid waste disposal unit within 180 days after final waste placement Solid waste disposal units, which are designated by phase, are shown on **Permit Drawings Nos. 14 and 15**

Uncontrolled and unauthorized scavenging is not permitted at the landfill site Salvaging is also not permitted

A litter policing operation will be employed to keep litter from leaving the working area of the landfill Litter outside the working area will be picked up within 24 hours Some litter may be exposed through the initial cover, if it is in traffic areas and away from public view

Erosion control measures will be employed to correct any erosion which exposes waste or causes malfunction of the stormwater management system Erosion control measures will be implemented within three days of occurrences If the erosion cannot be corrected within seven days of occurrence, the landfill operator will notify the Department and propose a corrective schedule

## L OPERATION OF LEACHATE AND STORMWATER CONTROLS

### 1 Leachate Management

The primary leachate collection system consists of an 8" perforated HDPE collection pipe surrounded by an aggregate encasement, which is covered by a geotextile fabric This collection system is located in a trench on top of the

primary liner Leachate is collected within each leachate sector (300' wide, typical) and directed to the collection system by a geonet drainage blanket located on top of the primary liner

The primary leachate collection pipes passes through the leachate collection sump and terminates at the leachate vault on the east side of the landfill The leachate collection sump consists of an 18" or 24" diameter HDPE pipe (riser pipe) surrounded by an aggregate sump The riser pipe extends from the sump up to the leachate vault The 8" HDPE leachate collection pipe discharges directly into the riser pipe as well as the sump A small submersible pump is located inside each riser pipe Level sensors in the riser pipe are used to control the pump, which removes leachate as it accumulates The pumps are mounted on wheels and can easily be removed for maintenance

The leachate pumps discharge into a leachate force main which transfer the leachate to the fiberglass storage tanks (20,000 gallons each) The leachate storage tanks are visually inspected daily, Monday through Friday, by on-site personnel A daily log (Monday through Friday) is kept outlining leachate generation and storage volumes The facility will use the maximum allowable leakage rate of 4,492 gallons per cell per day as an action rate to determine when the leakage through the primary liner is too great and needs to be investigated The Department will be notified within 24 hours if the maximum leakage rate is exceeded on any one day and a report submitted to the Department within seven days of the discovery of the exceedance Leachate will be transported off-site by tanker at regular intervals based on leachate production The leachate is transported to the Buckman Street Wastewater Treatment Facility for treatment and disposal

The secondary (detection) leachate collection system is constructed and operates similarly to the primary system The exceptions for this system include

a Multiple layers of geonet were installed in lieu of the 8" HDPE perforated pipe

b The secondary leachate collection system is piped to a separate storage tank (20,000 gallons)

2 Stormwater Management

The Stormwater Management System was designed in accordance with Rules 62-25, 40C-4 and 40C-42, F A C for both treatment and peak flow attenuation The stormwater treatment is provided by wet detention

All stormwater is collected and directed into the stormwater basin The landfill prevents erosion by directing stormwater in a controlled manner by way of temporary and permanent stormwater controls Stormwater from the top of the landfill is typically collected in swales and directed to downcomers (both temporary and permanent), which brings the water down to the existing drainage inlets and perimeter ditch The collection system includes terraces on the final landfill slopes in conjunction with downcomer piping This system will control runoff and minimize erosion on the landfill side slopes When erosion occurs, it is repaired within three days and the reason for the erosion is evaluated to eliminate the source Details of this system are shown on the Permit Drawings The existing wetland discharge of treated stormwater occurs through a perforated spreader pipe around the perimeter of the stormwater management basin This wetland irrigation system, adjacent to the stormwater management basin must be inspected on an annual basis (during the annual stormwater management basin inspection) to ensure that no pipes are clogged, broken or otherwise rendered non-functional Any non-functioning pipes shall be repaired within 14 days of discovery

## M MAINTENANCE OF LEACHATE COLLECTION SYSTEM

Each leachate vault box (located at the east end of each leachate collection pipe) has a flow meter for the primary and secondary leachate collection system These flow meters will be read daily, Monday thru Friday If the reading in a flow meter is noticeably diminishing or otherwise reduced compared to the other flow meters and daily rainfall records, the flow meter and pump will be checked for proper operation In the event it is deemed necessary, the leachate collection system will be either videoed to determine if there is a clog or other reason for diminished flow or the leachate collection pipe will be flushed cleaned The leachate collection system will be jet cleaned every five years prior to permit renewal

## N LEACHATE MANAGEMENT

The landfill operator will monitor the leachate level in and record the flow from both the leachate collection (primary) and detention (secondary) sumps on a daily basis, Monday through Friday The operator will maintain at least one backup pump on site or have access to a backup pump that can be installed within hours of discovery that a pump is not operating The operator/owner will sample and analyze the leachate in accordance with the Environmental Media Monitoring Plan and will submit the results to the Department

The operator will operate and maintain the leachate collection system to collect and remove leachate from the landfill The leachate will be stored on site in the six 20,000-gallon leachate storage tanks and will be transported to JEA's Buckman Street Wastewater Treatment Facility for treatment and disposal

The quantity of leachate collected by the leachate collection and removal system will be recorded (in gallons) on a daily basis, Monday through Friday The amount of leachate transported off site will be recorded on a daily basis, Monday through Friday

If the flow from any secondary leachate detection sump exceeds 4,492 gallons per day for one day, the Department will be notified within 24 hours and a follow-up report prepared within 7 days The follow-up report will include a description and assessment of the situation, proposed remedial actions, the proposed remedial action and a schedule for commencing and completing the remediation

A recording rain gauge is operated and maintained to record precipitation at the landfill These precipitation records will be maintained and used to compare with leachate generation rates

O LEACHATE SPILLAGE CONTROL PLAN

The leachate storage and pumping facilities are inside a concrete containment area, which will hold 140% of the volume of the storage tanks plus one foot of freeboard This facility is constructed on top of the liner system Therefore, the Leachate Spillage Control Plan is directed at those spills that would occur outside the containment area

The Leachate Spillage Control Plan consists of four major elements, Training, Containment, Remediation and Notification as described below

1 Training

The tanker driver and/or site personnel (the Attendant for the purposes of this subsection) will be trained to prevent spills The Attendant will perform the following prior to loading the tanker truck

a Inspect the tanker for signs of leakage
b Verify all tanker discharge valves are closed
c Verify the tanker is completely within the leachate loading area containment curbing
d Verify the liquid level in the containment sump is at or below the discharge pipe
e Verify the containment sump discharge gate valve is closed
f Verify leachate fill hose is securely fastened to inlet port of the tanker
g Verify the available tanker volume

Upon completion of this inspection, the Attendant will begin the following fill sequence

1 Operate the leachate loading pump for approximately five minutes or until 500 gallons of leachate has been pumped and then discontinue pumping
2 Inspect the tanker, fill hose and pumping system for leakage
3 Upon verification that no spilling or leaking has occurred, restart pumping
4 Continuously monitor the tanker fill operations
5 Monitor the leachate flow meter until approximately 95% of the available tanker volume has been filled
6 Discontinue filling operations and remove fill hose
7 Perform a final inspection of tanker and tanker fill area

2 Containment

If a spill occurs, the Attendant will notify the District Manager of the spill and request assistance The Attendant will institute the following containment sequence

a Cease pumping
b Place sandbags around drainage structures down slope from the loading area to prevent any spillage from entering the drainage system (NOTE The first 500 gallons of spillage inside the containment curb will drain naturally into the 500-gallon containment sump )
c Create an earthen berm around the spill with on-site sands taken from the daily cover stockpile

3 Remediation

After the spill has been securely contained, the following cleanup will begin

a Pump the leachate in the containment sump into on-site storage tanks
b Spread absorbent sands across all areas in contact with the spill
c Remove the contaminated sand to the landfill disposal area

4 Notification

In the event of a leachate spill, the Department will be notified

The outlined Spillage Control Plan focuses primarily on a spill at the tanker truck loading area However, if a leachate spill is discovered at any location on site, the pertinent containment, remediation and notification procedures described above will be implemented

## P COMBUSTIBLE GAS MONITORING PROGRAM

The combustible gas monitoring plan is provided in **Appendix G.** The Monitoring locations will be monitored quarterly with the results submitted to the Department

If combustible gas levels exceed twenty-five percent of the lower explosive limit in structures (excluding gas control or recovery components) or the lower explosive limits at or beyond the property boundary, Trail Ridge Landfill will

1 Immediately take all necessary steps to ensure protection of human health and notify the Department

2 Within seven days of detection, submit to the Department for approval a remediation plan for the gas releases The plan will describe the nature and extent of the problem and the proposed remedy The remedy will be completed within 60 days of detection unless otherwise approved by the Department

## Q STORMWATER MANAGEMENT

1 Stormwater Handling

The stormwater management system was installed as part of the initial construction and is operated and maintained in accordance with the requirements of the DEP Solid Waste permit The stormwater management system includes the wet detention basin as well as the swales, drainage ditches and culverts, discharge structures, downcomer pipes and other appurtenances as required Pertinent features of the stormwater handling system include

a Potentially contaminated stormwater will be segregated from clean stormwater and contaminated stormwater will not be discharged from the site,
b A 24-hour, 25-year rainfall event is detained on site,
c Stormwater is treated to meet the requirements of Rule 62-25, F A C ,
d The maximum discharge rate following a 25-year, 24-hour storm event does not exceed the pre-development discharge from this design storm

Stormwater is routed through the internal ditch and culvert network to the wet detention basin for treatment The discharge structure releases the stormwater at the control rate to a dispersion pond, which ultimately discharges to the adjacent wetlands

The discharge structure was designed to effectively prevent floating materials from being released from the site

2 Stormwater Treatment

a Clean Stormwater

Stormwater runoff is treated in the existing wet detention basin This basin is designed to treat 2 5 inches of runoff from the impervious surfaces and detain a 25-year, 24-hour storm event

In addition, there is an existing wetland discharge of treated stormwater through a perforated spreader pipe around the perimeter of the stormwater management basin This wetland irrigation system must be inspected on an annual basis and any non-functioning pipes or erosion due to the irrigation system shall be repaired within 14 days of discovery

b Other Stormwater

Stormwater which comes into contact with refuse will be segregated from the clean stormwater and will not be discharged from the site This potentially contaminated water includes stormwater which falls on uncovered refuse or has otherwise made contact with refuse

Temporary berms will be constructed in advance of the active fill face to collect stormwater which falls in the active area This potentially contaminated stormwater will be pumped onto the working face or back into previously filled portions of the landfill

3 Stormwater Maintenance

The stormwater management system shall be maintained on a regular basis or as needed and shall include

a Removal of trash and debris,
b. Inspection of inlets and outlets,
c Removal of sediments when the storage volume or conveyance capacity of the system is below design levels,
d Stabilization and restoration of eroded areas, and
e Mowing of grassed areas and removal of grass clipping from stormwater conveyance and treatment areas

On an annual basis, the wet detention system, including the pumping system that is used to facilitate stormwater treatment and irrigation of the adjacent wetlands, shall be inspected by a registered Florida Professional Engineer This inspection shall demonstrate that the pumping system is capable of maintaining a flow rate between 2 5 cubic feet per second (cfs)

(1122 0 gallons per minute (gpm)) and 2 11 cfs (947 0 gpm) to meet the permitted drawdown rate or a plan to provide the required drawdown rate In addition, the wetland irrigation system will be inspected to ensure that no pipes are clogged, broken or otherwise rendered non-functional and there is no erosion due to the irrigation system Any non-functioning pipes or erosion shall be repaired within 14 days of discovery

43 Erosion Control

Stormwater terraces will be constructed on the side slopes of the completed landfill These berms will route surface water flow to downcomer pipes buried in the final cover, and ultimately to the perimeter drainage ditch This system of terraces and pipes will minimize erosion of the final cover Vegetative cover will be established and maintained, as soon as practical, after finish contours are completed

When erosion occurs, repair will begin within three days and the reason for the erosion will be evaluated to eliminate the source Should the repair require more than 7 days, the Department will be notified as required by Rule 62-701 500(7)(j), F A C

R EQUIPMENT

Sufficient equipment (including three compactors, two dozers, an excavator, a loader, a grader, a water wagon, three trucks, a service truck and a tractor) is provided to ensure proper operation of the landfill and for spreading, compacting and covering waste In addition, for tractor trailers disposing at the landfill, a tipper may be utilized Substitutions and additions to the equipment listed above may occur However, equipment capable of performing comparably to the listed equipment will be maintained on site In addition, equipment is available within 24 hours from other company operations and distributors should any situation dictate the requirement for additional equipment

The minimum equipment at the working face will include two compactors and one dozer When the waste receipt exceeds 2600 tons per day, an additional compactor will be provided for spreading and/or compaction

S OPERATION FEATURES

The scale house and the administrative building both have telephones for routine emergency communications Further, both facilities provide shelter, sanitary facilities and first aid equipment

Dust originating from haul road surfaces will be controlled by periodic sweeping and/or watering of road surfaces, as required Additionally, final cover will be vegetated as soon as practical after application of final cover, in order to minimize the blowing of dust on site

In the event a hot load is received or a fire occurs at the landfill, the operator will extinguish the fire, as soon as possible Hot loads will be discharged in an area on the landfill isolated from the current active face, spread out and covered with soil to extinguish the fire The load will only be discharged onto an area that has a minimum of 12 inches of cover for separation from existing waste After the load is extinguished, the waste will be moved to the active face for disposal or left in place and intermediate cover placed over it

If a fire occurs within the working face, the operator will cease operations in the working face until the fire is extinguished The operator will direct all waste disposal to another operational area that is a safe distance from the fire The temporary disposal area shall not interfere with fire fighting equipment

When a fire occurs at the landfill, the application of additional compacted cover will be utilized to cut off the flow of oxygen into the burning area If this does not contain the fire, the affected area will be thoroughly wetted, excavated, and wetted again prior to reconstructing the cells The chance of fire occurring at a properly run sanitary landfill is minimal

For a subsurface fire that occurs outside the working face, the operator will cordon off the area and determine if the working face should be moved until the fire is extinguished At no time shall the landfill place waste in a burning area

Instruction in fire fighting procedures is routinely provided to site personnel, and portable fire extinguishers are located on each machine and vehicle Local Fire Departments will be employed to assist the site personnel and equipment, if necessary

Fire hydrants are located on site and are connected to the pump system, which draws water from the stormwater basin

Trail Ridge Landfill, Inc has developed an extensive program regarding safety and accident prevention As part of this program, employees are trained in proper operation and emergency procedures Telephone communication and First Aid equipment are provided at the facility Operating vehicles are in compliance with current OSHA safety requirements, including caging and shields to protect operators All appropriate equipment has back-up alarms and those alarms are maintained in good repair

The problem of blowing litter will be minimized by limiting the active working face and using initial cover or tarpaulins over the active fill areas Other methods, such as the utilization of casual labor pickers and portable fencing will be employed as required to contain loose paper and other wind-blown refuse during fill operations Any loose paper or similar refuse blown outside the working area will be picked up on a regular basis

Signage indicating the name of facility, operating authority, hours of operation and charges for disposal is located adjacent to the gate, prior to the ticket/scale house Additional signs are placed on site to direct traffic Warning signs are located in operating areas dealing with leachate and gas collection

T ROADS

The entrance road and ticket office/scale house area are paved Beyond the paved area, all-weather perimeter roads are maintained to the active fill area, monitoring devices, and stormwater controls Service and haul road construction and maintenance are coordinated with the landfill phasing and development Service and haul roads will be constructed of slag, broken concrete, rocks and bricks, which provide a stable base The roadways will be graded to direct runoff to roadside swales to minimize erosion Slag from Ameristeel will be utilized on access road within the liner limits only

U RECORDS KEEPING

The landfill operator will

1 Keep records of all information used to develop or support the permit applications and any supplemental information pertaining to construction of the landfill throughout the design period Records pertaining to the operation of the landfill will be kept for the design period of the landfill

2 Retain records of all monitoring information, including calibration and maintenance records, all original chart recordings for continuous monitoring instrumentation, and copies of all reports required by permit, for at least ten years Background water quality records will be kept for the design period of the landfill

3 Maintain an annual estimate of the remaining life and capacity in cubic yards of the existing, constructed landfill and remaining capacity and site life of other permitted areas not yet constructed The annual estimate will be based on a summary of the heights, lengths, and widths of the solid waste disposal units The estimate will be made and reported annually to the Department

Records which are more than five years old and which are required to be retained may be archived, provided that the landfill operator can retrieve them for inspection within seven days

V WASTE TIRE PROCESSING

The landfill includes a waste tire processing facility The permit application and operations plan for the waste tire processing are contained in **Appendix I**

W INSPECTIONS

The operator will inspect all the active area on a weekly basis, the closed areas, at a minimum, on a monthly basis, and both areas after major storm events Further, the operator will inspect the leachate collection system and gas collection system on a weekly basis A Sample inspection checklist is contained in **Appendix J.** Eroded areas will be repaired within 3 days of discovery and other insufficiencies will be repaired within 7 days

## VIII. WATER QUALITY MONITORING

A WATER QUALITY MONITORING

There is an existing Environmental Media Monitoring Plan (Groundwater, Surface Water, and Leachate) for this facility which is part of the current Solid Waste Permit and will continue a part of this renewal permit This plan includes semi-annual monitoring of each media The cover letter for the Biennial Water Quality Technical Report is contained in **Appendix O.**

B SURFACE WATER MONITORING

A surface water monitoring plan was approved as part of the original permit as well as the permit renewal

C GROUNDWATER MONITORING

A groundwater monitoring plan was approved as part of the original permit as well as the permit renewal The over letter for the semiannual groundwater monitoring report is contained in **Appendix O.**

## IX. SPECIAL WASTE HANDLING

It is Trail Ridge Landfill, Inc 's policy to control the disposal of acceptable non-hazardous Special Wastes in the landfill A written description of each Special Waste must be submitted by the customer Before certain Special Wastes are accepted, a laboratory analysis of a representative sample may be required Approval to dispose of a Special Waste is given only after review by Trail Ridge Landfill, Inc A log of Special Wastes disposal is maintained at the landfill

### A ASBESTOS

Asbestos will be landfilled in accordance with all requirements of Federal (40 CFR, Part 61 154, Subpart M), local and state regulations Bags must have the OSHA required label Each shipment will be accompanied by shipping papers

Trail Ridge Landfill, Inc requires that the waste generator make arrangements before disposal of regulated asbestos-containing waste materials and inform the operator of the quantity of the waste and the scheduled date the shipment will arrive at the landfill

Asbestos containing waste will be disposed in an area separate from the active working face, and covered immediately with a minimum of six inches of soil or appropriate refuse A coordinate grid system will be used to record the locations of disposed asbestos and a record of the asbestos location will be maintained

### B CONTAMINATED SOIL

In accordance with Rule 62-701-520(4), F A C., non-hazardous contaminated soil may be accepted at the landfill for disposal, upon approval by Trail Ridge Landfill, Inc Prior to receipt of contaminated soils at the landfill, the facility will review pertinent analytical test results (including TCLP for metals, volatiles, semi-volatiles, pesticides, herbicides and total PCBs) from the source and these results must be from a Florida certified laboratory The facility will also require that the generator/transporter certify that the material is non-hazardous

A special waste approvals person will evaluate each waste stream based on 1) the type of material to be disposed (off specification product(s), contaminated media, contaminated soil, etc ), 2) the type of contamination expected to be present (inorganic, organic or both), and 3) the process generating the waste For waste streams of known contamination, the approvals person can tailor the analytical

requirements in order to focus on known contaminants For example, if a waste stream is generated from the spill of used motor oil from a vehicle accident, then the analylites of concern could be isolated to the RCRA metals and benzene However, the analytical requirements for waste streams where contamination was from an unknown source or from a broad spectrum of contaminants, will have to based on a case-by-case basis using generator knowledge, process generating the waste and similar items In these cases, the approvals person may choose to ensure that all of the characteristic analyses per 40 CFR 261 21, 261 22, 261 23, 261 24, and Total PCBs are met

If the results indicate that the material is not hazardous waste, the material may be approved for disposal at the site Depending upon the contaminant of concern and the Department's approval on a case-by-case basis, the contaminated soil may be used for initial cover on interior side slopes but not on exterior side slopes If the constituents of concern do not exceed Rule 62-777, FAC, Soil Cleanup Target Levels for Direct Exposure Based Industrial/Commercial Levels, the soil may be used for initial cover If the soil has any visible organics or other material that may attract birds or vermin, has an odor or is saturated, it can not be utilized as initial cover A five point composite sample is required for every 500 tons of soil prior to delivery to the site During disposal, random load visual inspections are conducted

Contaminated soils that are stored on the site for future use as initial cover will be stockpiled on top of the landfill (within the lined landfill footprint) The stockpile will be located at a minimum of 20 feet from any side slopes The storage area will be surrounded by a silt fence and a sign will be placed at each entrance The sign will state that the material is initial cover storage area and that the material shall only be used on interior slopes Further, the facility will keep records on the amount of material received, the amount used for cover, and the location of the placement

C. ASH CONTAMINATED SOIL

The City of Jacksonville has ash contaminated soil from the Brown's Dump Site and the Jacksonville Ash Site that typically does not exceed Rule 62-777, FAC, Soil Cleanup Target Levels for Direct Exposure Based Industrial/Commercial Levels Due to the extensive data on this ash contaminated soil, a five point composite sample result is required for every 1,000 cubic yards of soil (in lieu of every 500 tons) prior to delivery to the site The composite sample shall be tested for TCLP for the eight RCRA Metals If the TCLP testing indicates the soil is nonhazardous, this ash contaminated soil may be accepted at the site and used for initial cover on interior side slopes but not on exterior side slopes However, if the soil has any visible organics or other material that may attract birds or vermin, has an odor or is saturated, it can not be utilized as initial cover

Ash contaminated soil that is stored at the site for future use as initial cover will be stockpiled on top of the landfill (within the lined landfill footprint) The stockpile will be located at a minimum of 20 feet from any side slopes The storage area will be surrounded by a silt fence and a sign will be placed at each entrance The sign will state that the area is the initial cover storage area and that the material shall only be used on interior slopes Further, the facility will keep records on the amount of material received, the amount used for cover, and the location of the placement

D OTHER WASTES

Other waste material such as shredded waste and biological waste may be accepted for disposal, upon review by Trail Ridge Landfill, Inc and in accordance with the requirements of Rule 62-701.520 (2) and (5), F A C , respectively

Regarding shredded waste, before any shredded waste is brought to the landfill, the operator will request information from the shredding facility to demonstrate that the particle sizes are in accordance with Rule 62-701 520(2)(a), FAC If the material is deemed acceptable for disposal, the material will be unloaded near the working face and then spread and compacted onto the working face The shredded waste will be placed in the working face with the other waste materials and will receive initial daily cover or be tarped in conjunction with the other waste materials

Regarding biological waste, there are only two types of waste accepted that the landfill will accept, bodies of domestic animals and treated biomedical waste Before the bodies of domestic animals are brought to the facility, the operator will request information about the waste to determine if the animals were diseased If the animals were not diseased, the bodies will be disposed within the working face and then covered immediately with either additional waste or initial cover If the bodies of the domestic animal are from diseased animals, the bodies will be handled in accordance with Section 823 041(1), F S Treated biomedical waste will be disposed within the working face and then covered with either additional waste or initial cover

Ash residue from the burning of solid waste will be handled in accordance with Chapter 62-702, F A C Prior to receipt of ash residue from a facility, the landfill will request test results from the generator If the material is deemed acceptable for disposal, the ash residue will be placed on the working face and covered with additional waste or initial cover The material will not be stockpiled on site

## X. CLOSURE

The Trail Ridge Landfill will be closed in accordance with closure requirements of Rule 62-701 600 and 62-701 610, F A C

A SCHEDULE

1 At least one year prior to the projected date when wastes will no longer be accepted or all solid waste disposal units are expected to reach design dimensions, a written notice will be provided to the Department and the local pollution control agency with a schedule for cessation of waste acceptance and closure of the landfill If unforeseen circumstances do not allow the one year notification, notice will be provided as soon as the need to close the facility becomes apparent

2 At least 120 days prior to the date when wastes will no longer be accepted at the landfill, users will be advised of the intent to close the facility by posting signs at the entrance of the facility giving the date of closing, the location of alternative disposal facilities and the name of the person responsible for closing the landfill. These signs will be maintained throughout the closing period

3 At least 90 days prior to the date when wastes will no longer be accepted, a closure permit application will be submitted to the Department

B DESIGN

Final cover will be applied to a solid waste disposal unit once it has been filled to its design dimensions The final cover including permanent vegetation will be placed over the entire surface of each completed solid waste disposal unit within 180 days after final waste placement Solid waste disposal units which are designated by phase are shown on **Permit Drawings Nos. 14 and 15**

The closure design and details are provided in **Permit Drawing Nos. 9, 20 and 21** The design includes the final cover as described below and the stormwater terraces and downcomer pipes

1 Intermediate Cover

In areas where active filling will not occur for a period of 180 days or more, a minimum of one foot of intermediate cover will be applied Intermediate cover will consist of either a 12" compacted layer of soil or a 16" compacted layer of

50/50 mixture of soil/mulch The mulch/soil mixture will be a fairly homogeneous mixture and the mulch must be ground into sufficiently small pieces (approx 1" or less)

2 Final Cover

a Side Slopes

The landfill side slopes will be completed with ~~2 5~~ 3 0 feet of final cover A twelve-inch intermediate soil layer will first be placed over the refuse and/or initial cover This will provide a level surface for applying twelve inches of compacted clay (with a maximum permeability of 6 67 x $10^{-8}$ cm/sec) A 24-inch layer of loosely compacted soil capable of sustaining vegetation will be placed over the compacted clay to complete the final cover construction Final cover will be applied in accordance with the Phasing Plan as shown on **Permit Drawing Nos. 14 and 15**

An alternate closure design demonstration for the side slope closure was provided in the previous Permit Renewal The Quality Assurance/Quality Control Plan for the final cover on the side slopes, which will be installed during operation (close-as-you-go), is provided in **Appendix K**

b Top Area

The top area of the landfill will be closed with a geomembrane liner and a 24-inch vegetative cover layer A 12-inch intermediate soil layer will first be placed over the refuse and/or initial cover This will provide a level surface for applying the 40-mil (average thickness) textured HDPE liner (with a maximum water vapor transmission rate of 2 4 g/($m^2$ x day) A 12-inch sand layer will be placed over the geomembrane liner to provide drainage to the top swale underdrain system A 12-inch layer of loosely compacted soil capable of sustaining vegetation will be placed over the sand layer The Quality Assurance/Quality Control Plan including the Project-Specific Addenda for the final cover on top area is provided in **Appendix L**

3 Vegetation

The final surface of the landfill will be vegetated (with bahia grass and/or bermuda grass) as soon as possible after the final cover has been placed This will be done progressively with final cover completion It may be necessary to

provide mulch to prevent erosion prior to the seed taking hold Vegetation, fertilizer, and seed rates will be consistent with the recommendations of the Regional Soil Conservation Service and/or past experience on this site

C FINAL USE

The City of Jacksonville does not have a proposed final use at this time Nevertheless, the City will consult the Department prior to conducting activities at the landfill after closure

D CLOSURE OPERATIONS

Upon issuance of the closure permit, the landfill will be closed in accordance with the approved plans and any special permit provisions The closure operations will include the procedures required by Chapter 62-701 610, F A C including Department closure inspections, a final survey report, certification of closure construction completion, and declaration to the public

E LONG TERM CARE

Trail Ridge Landfill will be monitored and maintained for thirty (30) years from the date of closing, in accordance with Chapter 62-701 620, F A C The Quality Assurance / Quality Control Plan for Long Term Care is provided in **Appendix M.**

F FINANCIAL RESPONSIBILITY

Proof of financial responsibility is provided by the City of Jacksonville by means of a Landfill Management Escrow Account, in accordance with Chapter 62-701 630, F A C The current financial assurance cost estimate form for both closure and post-closure is provided in **Appendix N** These cost estimates will be updated annually in accordance with Rule 62-701 630(4), F A C