



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Rick Scott  
Governor

Jennifer Carroll  
Lt. Governor

Herschel T. Vinyard Jr.  
Secretary

September 28, 2011

*Sent by Electronic mail – Received Receipt Requested*

Ms. Kerri Stewart, Chief Administrative Officer  
City of Jacksonville  
Public Works Department  
117 West Duval Street, St. James Building, 4<sup>th</sup> Floor  
Jacksonville, FL 32202

Re: Trail Ridge Landfill, Trail Ridge Energy, LLC  
Landfill Gas-to-Energy Expansion  
Final Permit No. No. 0310358-012-AC/PSD-FL-374C, Air Construction Permit Revision  
Proposed Permit No. 0310358-013-AV, Title V Air Operation Permit Revision

Dear Ms. Stewart:

One copy of the final air construction permit revision and proposed permit determination for the revision of the Title V air operation permit for Trail Ridge Energy, LLC located at 5110 US Highway 301 South, Baldwin, Florida, Duval County, is enclosed. This letter is a courtesy to inform you that the draft Title V permit has become a proposed permit. **To simplify review and distribution, only the pages with the changes made to the Title V air operation permit as a result of the revisions are provided.**

An electronic version of the Title V determination has been posted on the Division of Air Resource Management's world wide web site for the United States Environmental Protection Agency (USEPA) Region 4 office's review. The web site address is:

["http://www.dep.state.fl.us/air/eproducts/apds/default.asp"](http://www.dep.state.fl.us/air/eproducts/apds/default.asp)

Pursuant to Section 403.0872(6), Florida Statutes, if no objection to the proposed Title V air operation permit is made by the USEPA within 45 days, the proposed permit will become a final permit no later than 55 days after the date on which the proposed permit was mailed (posted) to USEPA. If USEPA has an objection to the proposed permit, the final permit will not be issued until the permitting authority receives written notice that the objection is resolved or withdrawn.

Please submit any written comments you wish to have considered concerning the permitting authority's proposed action to the Title V permit to Mr. Syed Arif, P.E., Environmental Administrator, at the above letterhead address. If you have any questions, please contact the project engineer, Christy DeVore, by telephone at 850/717-9085 or by email at [christy.devore@dep.state.fl.us](mailto:christy.devore@dep.state.fl.us).

Sincerely,

Jeffery F. Koerner, P.E., Program Administrator  
Office of Permitting and Compliance  
Division of Air Resource Management

Enclosures

JFK/scd

## NOTICE OF AIR PERMIT

---

Copies sent by electronic mail (return receipt requested) to the following:

Ms. Kerri Stewart, City of Jacksonville(kerris@coj.net)  
Mr. Scott Salisbury, Trail Ridge Energy, LLC (scott.salisbury@landfillenergy.com)  
Mr. Robert Harvey, P.E., Derenzo and Associates, Inc. (rharvey@derenzo.com)  
Mr. Chris Kirts, Northeast District (christopher.kirts@dep.state.fl.us)  
Mr. Richard Robinson, Duval County Environmental Resources Management (robinson@coj.net)  
Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)  
Ms. Heather Abrams, EPA Region 4 (abrams.heather@epa.gov)  
Ms. Ana Oquendo, US EPA Region 4 (oquendo.ana@epa.gov)  
Ms. Barbara Friday, DEP OPC (barbara.friday@dep.state.fl.us) (for posting with U.S. EPA, Region 4)  
Ms. Lynn Scarce, DEP OPC Reading File (lynn.scarce@dep.state.fl.us)

## Scearce, Lynn

---

**From:** Scearce, Lynn  
**Sent:** Wednesday, September 28, 2011 10:06 AM  
**To:** 'kerris@coj.net'  
**Cc:** 'scott.salisbury@landfillenergy.com'; 'rharvey@derenzo.com'; Kirts, Christopher; 'robinson@coj.net'; 'forney.kathleen@epa.gov'; 'abrams.heather@epa.gov'; 'oquendo.ana@epa.gov'; DeVore, Christy; 'Arif, Syed'; Friday, Barbara; Scearce, Lynn  
**Subject:** 0310358-012-AC/ PSD-FL-374C, Trail Ridge Energy, Final Permit and 0310358-013-AV, Trail Ridge Energy, Proposed Permit  
**Attachments:** 0310358-012-AC-PSD-FL-374C, Trail Ridge Energy signature page.pdf; 0310358-013-AV, Trail Ridge Energy signature page.pdf

Tracking:	Recipient	Delivery	Read
	'kerris@coj.net'		
	'scott.salisbury@landfillenergy.com'		
	'rharvey@derenzo.com'		
	Kirts, Christopher	Delivered: 9/28/2011 10:06 AM	
	'robinson@coj.net'		
	'forney.kathleen@epa.gov'		
	'abrams.heather@epa.gov'		
	'oquendo.ana@epa.gov'		
	DeVore, Christy	Delivered: 9/28/2011 10:06 AM	
	'Arif, Syed'	Delivered: 9/28/2011 10:06 AM	
	Friday, Barbara	Delivered: 9/28/2011 10:06 AM	
	Scearce, Lynn	Delivered: 9/28/2011 10:06 AM	Read: 9/28/2011 10:06 AM
	Arif, Syed		Read: 9/28/2011 10:09 AM

Dear Ms. Stewart:

Attached is the official **Notice of Final Permit** and a **Notice of Proposed Permit** for the projects referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send".

*Note: We must receive verification that you are able to access the documents. Your immediate reply will preclude subsequent e-mail transmissions to verify accessibility of the document(s).*

Owner/Company Name: CITY OF JACKSONVILLE  
Facility Name: TRAIL RIDGE LANDFILL  
Project Number: 0310358-012-AC-PSD-FL-374C / 0310358-013-AV  
Permit Status: FINAL  
Permit Activity: CONSTRUCTION  
Facility County: DUVAL

Click on the following link to access the final permit project documents:

[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/0310358.012.AC.F\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0310358.012.AC.F_pdf.zip)

Click on the following link to access the proposed permit project documents:

[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/0310358.013.AV.P\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0310358.013.AV.P_pdf.zip)

The Office of Permitting and Compliance is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Access these documents by clicking on the link provided above, or search for other project documents using the "*Air Permit Documents Search*" website at <http://www.dep.state.fl.us/air/emission/apds/default.asp>.

Permit project documents addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are accessible. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record. If you have any problems opening the documents or would like further information, please contact the Florida Department of Environmental Protection, Office of Permitting and Compliance.

Note: The attached document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <http://www.adobe.com/products/acrobat/readstep.html> .

Regards,  
**Lynn Searce**  
Office of Permitting and Compliance (OPC)  
Division of Air Resources Management  
850-717-9025

## **Scearce, Lynn**

---

**From:** Scearce, Lynn  
**Sent:** Wednesday, September 28, 2011 10:06 AM  
**To:** Ana Oquendo; Friday, Barbara; Kathleen Forney; Scearce, Lynn  
**Cc:** DeVore, Christy; Arif, Syed  
**Subject:** 0310358-013-AV, Trail Ridge Energy, Notice of Proposed Permit

There is a proposed Title V Permit posted on Florida's website.

Click on the following link to access the permit project documents: Click on the following link to access the permit project documents:

[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/0310358.013.AV.P\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0310358.013.AV.P_pdf.zip)

If you have any questions about the posting, please feel free to contact me at the phone number below. If you have questions about the project please contact the Division of Air Resource Management, Office of Permitting and Compliance, 850-717-9000.

**Regards,**  
**Lynn Scearce**  
Office of Permitting and Compliance (OPC)  
Division of Air Resources Management  
850-717-9025

*Please take a few minutes to share your comments on the service you received from the department by clicking on this link [DEP Customer Survey](#).*

## Scearce, Lynn

---

**From:** Microsoft Exchange  
**To:** kerris@coj.net; robinson@coj.net  
**Sent:** Wednesday, September 28, 2011 10:06 AM  
**Subject:** Relayed: 0310358-012-AC/ PSD-FL-374C, Trail Ridge Energy, Final Permit and 0310358-013-AV, Trail Ridge Energy, Proposed Permit

**Delivery to these recipients or distribution lists is complete, but delivery notification was not sent by the destination:**

[kerris@coj.net](mailto:kerris@coj.net)

[robinson@coj.net](mailto:robinson@coj.net)

Subject: 0310358-012-AC/ PSD-FL-374C, Trail Ridge Energy, Final Permit and 0310358-013-AV, Trail Ridge Energy, Proposed Permit

---

Sent by Microsoft Exchange Server 2007

**Scearce, Lynn**

---

**From:** Microsoft Exchange  
**To:** scott.salisbury@landfillenergy.com  
**Sent:** Wednesday, September 28, 2011 10:06 AM  
**Subject:** Relayed: 0310358-012-AC/ PSD-FL-374C, Trail Ridge Energy, Final Permit and 0310358-013-AV, Trail Ridge Energy, Proposed Permit

**Delivery to these recipients or distribution lists is complete, but delivery notification was not sent by the destination:**

[scott.salisbury@landfillenergy.com](mailto:scott.salisbury@landfillenergy.com)

Subject: 0310358-012-AC/ PSD-FL-374C, Trail Ridge Energy, Final Permit and 0310358-013-AV, Trail Ridge Energy, Proposed Permit

---

Sent by Microsoft Exchange Server 2007

**Scearce, Lynn**

---

**From:** Microsoft Exchange  
**To:** rharvey@derenzo.com  
**Sent:** Wednesday, September 28, 2011 10:06 AM  
**Subject:** Relayed: 0310358-012-AC/ PSD-FL-374C, Trail Ridge Energy, Final Permit and 0310358-013-AV, Trail Ridge Energy, Proposed Permit

**Delivery to these recipients or distribution lists is complete, but delivery notification was not sent by the destination:**

[rharvey@derenzo.com](mailto:rharvey@derenzo.com)

Subject: 0310358-012-AC/ PSD-FL-374C, Trail Ridge Energy, Final Permit and 0310358-013-AV, Trail Ridge Energy, Proposed Permit

---

Sent by Microsoft Exchange Server 2007



## Scearce, Lynn

---

**From:** Robert Harvey [rharvey@derenzo.com]  
**Sent:** Wednesday, September 28, 2011 10:17 AM  
**To:** Scearce, Lynn  
**Subject:** Read: 0310358-012-AC/ PSD-FL-374C, Trail Ridge Energy, Final Permit and 0310358-013-AV, Trail Ridge Energy, Proposed Permit  
**Attachments:** ATT00001

## Scearce, Lynn

---

**From:** Robinson, Richard [ROBINSON@coj.net]  
**To:** Scearce, Lynn  
**Sent:** Wednesday, September 28, 2011 10:43 AM  
**Subject:** Read: 0310358-012-AC/ PSD-FL-374C, Trail Ridge Energy, Final Permit and 0310358-013-AV, Trail Ridge Energy, Proposed Permit

Your message was read on Wednesday, September 28, 2011 10:43:26 AM (GMT-05:00) Eastern Time (US & Canada).

## Scearce, Lynn

---

**From:** DeVore, Christy  
**Sent:** Thursday, September 29, 2011 3:54 PM  
**To:** Scearce, Lynn; kerris@coj.net  
**Cc:** oquendo.ana@epa.gov  
**Subject:** RE: 0310358-012-AC/ PSD-FL-374C, Trail Ridge Energy, Final Permit and 0310358-013-AV, Trail Ridge Energy, Proposed Permit

This is a reminder that they published the public notice at the draft permit Title V issuance, so the EPA 45-day time clock review began the day this proposed permit was issued. Thanks.

*Christy DeVore, P.E.  
Bureau of Air Regulation  
Telephone (850) 717-9085*

---

**From:** Scearce, Lynn  
**Sent:** Wednesday, September 28, 2011 10:06 AM  
**To:** kerris@coj.net  
**Cc:** scott.salisbury@landfillenergy.com; rharvey@derenzo.com; Kirts, Christopher; robinson@coj.net; forney.kathleen@epa.gov; abrams.heather@epa.gov; oquendo.ana@epa.gov; DeVore, Christy; Arif, Syed; Friday, Barbara; Scearce, Lynn  
**Subject:** 0310358-012-AC/ PSD-FL-374C, Trail Ridge Energy, Final Permit and 0310358-013-AV, Trail Ridge Energy, Proposed Permit

Dear Ms. Stewart:

Attached is the official **Notice of Final Permit** and a **Notice of Proposed Permit** for the projects referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send".

*Note: We must receive verification that you are able to access the documents. Your immediate reply will preclude subsequent e-mail transmissions to verify accessibility of the document(s).*

Owner/Company Name: CITY OF JACKSONVILLE  
Facility Name: TRAIL RIDGE LANDFILL  
Project Number: 0310358-012-AC-PSD-FL-374C / 0310358-013-AV  
Permit Status: FINAL  
Permit Activity: CONSTRUCTION  
Facility County: DUVAL

Click on the following link to access the final permit project documents:  
[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/0310358.012.AC.F\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0310358.012.AC.F_pdf.zip)

Click on the following link to access the proposed permit project documents:

[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/0310358.013.AV.P\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0310358.013.AV.P_pdf.zip)

The Office of Permitting and Compliance is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Access these documents by clicking on the link provided above, or search for other project documents using the "*Air Permit Documents Search*" website at <http://www.dep.state.fl.us/air/emission/apds/default.asp>.

Permit project documents addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are accessible. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record. If you have any problems opening the documents or would like further information, please contact the Florida Department of Environmental Protection, Office of Permitting and Compliance.

Note: The attached document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <http://www.adobe.com/products/acrobat/readstep.html> .

Regards,

**Lynn Searce**

Office of Permitting and Compliance (OPC)

Division of Air Resources Management

850-717-9025

*Please take a few minutes to share your comments on the service you received from the department by clicking on this link [DEP Customer Survey](#).*

## PROPOSED TITLE V DETERMINATION

---

### PERMITTEE

City of Jacksonville  
Public Works Department  
117 West Duval Street, St. James Building, 4<sup>th</sup> Floor  
Jacksonville, FL 32202

### PERMITTING AUTHORITY

Florida Department of Environmental Protection (Department)  
Division of Air Resource Management  
Office of Permitting and Compliance  
2600 Blair Stone Road, MS #5505  
Tallahassee, Florida 32399-2400

### PROJECT

Air Permit No. 0310358-013-AV  
Title V Revision Permit  
Trail Ridge Energy, LLC

The permittee proposes the installation and operation of four new Caterpillar Model No. G3520C engine generator sets and modifies the CO emissions standard as Best Available Control Technology (BACT) for the proposed and existing engine generator sets. The applicant requested a concurrent revision of the Title V air operation permit with the construction permit modification.

### NOTICE AND PUBLICATION

The Department distributed a draft Title V permit revision package on August 19, 2011. The applicant published the Public Notice in the Financial News and Daily Record on August 26, 2011. The Department received the proof of publication on September 6, 2011.

### COMMENTS

#### Applicant

On August 30, 2011, the Department received comments from the applicant. The Department made corrections to clerical errors. The following summarizes the comments and the Department's response.

1. *Comment:* The mailing address specified on page 47 for Trail Ridge Energy, LLC should be updated to 46280 Dylan Dr, Suite 200, Novi MI 48377.

*Response:* The address has been changed as follows:

Trail Ridge Energy, LLC  
46280 Dylan Dr, Suite 200 ~~29261 Wall Street~~  
Novi ~~Wixom~~, Michigan 48377 ~~48393~~

2. *Comment:* Condition E.1 specify a 20 cylinder engine as opposed to a 4 cylinder engine.

*Response:* The condition has been changed as follows:

**Landfill Gas Engine/Generator Sets:** The permittee is authorized to install and operate a total of ten (Caterpillar Model G3520C or equivalent) spark-ignited reciprocating internal combustion engines. Each engine is a 4- 20-cylinder engine with a total displacement of approximately 86.3 liters. Each engine has a maximum rating of 2,233 bhp and is coupled to a 1,600 kW generator (nominal rating) for the generation of up to a total of 16 MW of electricity. The maximum rating when coupled to the electrical

## PROPOSED TITLE V DETERMINATION

generator is 2,233 bhp. Each engine will fire LFG. The LFG will pass through a gas treatment system prior to combustion in the engines.

3. *Comment:* Trail Ridge Energy requests that the reference in condition E.1.b. to the landfill flares be removed from the permit for the landfill gas (LFG) fueled engines. LFG collection and control requirements are adequately addressed in Title V air operation permit issued to the landfill owner/operator.

*Response:* This condition has been changed as follows:

Each engine shall be equipped with an automatic fail-safe block valve which must be designed to stop the flow of landfill gas in the event of an engine failure. ~~Excess landfill gas not fired in the engines shall be flared in accordance with the requirements of Subpart WWW in 40 CFR 60.~~

4. *Comment:* Trail Ridge Energy requests that *LFG shall be directed to the new engines, the existing flares or some other appropriate treatment or control system* be removed from condition E.2.

*Response:* This condition has been changed as follows:

LFG Treatment System: The permittee shall design, install, operate and maintain a LFG Treatment System including equipment for: gas compression (blowers/compressors), de-watering (knock-out and chilling system) and particulate removal (filtration). Specifically, the permittee shall design, install, maintain and operate 1 micron primary and polishing filters to remove particulate matter from the LFG prior to combustion in the engines. The LFG treatment system shall not be equipped with atmospheric vents. ~~LFG shall be directed to the new engines, the existing flares or some other appropriate treatment or control system.~~ [Application Nos. 0310358-004-AC and 0310358-012-AC; and Rule 62-212.400, F.A.C.]

5. *Comment:* Remove Condition E.3, LFG Flaring, from the Trail Ridge Energy section of the permit.

*Response:* The condition has been removed as it was already specified in Condition E.1.b.

6. *Comment:* Condition E.7. and E.8. specify that the *permittee shall set the air-to-fuel ratio for each engine based on the most recent emissions tests*. The air-to-fuel ratio is adjusted electronically based on constantly monitoring the inlet gas methane content (i.e., heat value) and other engine parameters that indicate efficient fuel combustion. Therefore, the air-to-fuel ratio is not “set” by the engine operator; rather it is controlled by the electronic engine control module. A more accurate requirement is to operate each engine within 0.5% of the exhaust gas oxygen content measured during the performance test.

*Response:* The conditions regarding operating each engine within 0.5% of the exhaust gas oxygen has been added as follows:

Operating Requirements (Emission Unit ID Nos. 004-009): The permittee shall set the air-to-fuel ratio for each engine based on the most recent emissions tests or each engine shall be operated within 0.5 percent of the oxygen content in the exhaust gas at the air-to-fuel ratio operated at during the most recent performance test demonstrating compliance with the standards specified in this permit and other operating conditions. [Rule 62-212.400(BACT), F.A.C. and Appendix F of Construction Permit Application; Construction Permit No. 0310358-004-AC/PSD-FL-374]

Operating Requirements (Emission Unit ID Nos. 012-015): The permittee shall set the air-to-fuel ratio for each engine based on the most recent emissions tests or each engine shall be operated within 0.5 percent of the oxygen content in the exhaust gas at the air-to-fuel ratio operated at during the most recent performance test demonstrating compliance with the standards specified in this permit and other operating conditions identified in NSPS 40 CFR 60, Subpart JJJJ. [Rule 62-212.400(BACT), F.A.C., NSPS Subpart JJJJ in 40 CFR 60 and Appendix F of Construction Permit Application; Construction Permit No. 0310358-004-AC/PSD-FL-374]

7. *Comment:* The references to diesel and biodiesel fuels should be deleted from Condition E.13.

## PROPOSED TITLE V DETERMINATION

---

*Response:* The references to diesel/biodiesel have been removed.

8. *Comment:* In condition E.14. only specify the most stringent VOC emission limit, 0.28 g/bhp-hr.

*Response:* The condition has been revised as follows:

Volatile Organic Compounds (VOC): The emission rate of total VOC from each engine/generator set exhaust shall not exceed ~~1.0 g/bhp-hour~~ 0.28 g/bhp-hr and a maximum of 1.4 lb/hr. *{Permitting Note: 1.0 g/bhp-hour limit is the NSPS Subpart JJJJ standard for Emission Unit ID Nos. 012-015, however the "g/bhp-hour" and "lb/hour" limits allow the project to avoid PSD preconstruction review for VOC emissions.}* [NESHAP Subparts A and JJJJ in 40 CFR 63 and Rules 62-204.800 and 62-212.400(12), F.A.C.]

9. *Comment:* Please modify Condition E.15. for consistency with the annual chlorine sampling requirement.

*Response:* The sampling of the chlorine content is to be done semiannually while the reporting of HCl emissions is to be done annually. The HCl emissions limit are close to the hazardous air pollutant (HAP) threshold, therefore the conditions were clarified to be consistent with the requirement for a 12-month rolling total.

10. *Comment:* Remove Condition E.18.b requiring the use of fuel with at least 90% LFG.

*Response:* Condition E.18.b has been changed as the fuel will be 100% LFG:

~~Upon completing startup, each engine shall operate with a LFG fraction at 90% or greater; and~~

11. *Comment:* Trial Ridge Energy requests that VOC testing be removed from Condition 14 or that Condition 14 include the option to use USEPA alternate method 78 (ALT-078) for the direct measurement of VOC emissions from internal combustion engine exhausts.

*Response:* The alternative method, USEPA-ALT-078, is acceptable and has been added to the condition.

12. *Comment:* Condition E.24. specifies ASTM Method D3588 or equivalent for measuring LFG Lower Heating Value (LHV). Please remove this condition referencing LHV and ASTM Method D3588.

*Response:* The requirement to determine lower heating value has been removed.

13. For condition E.26., add the option to record operating information and emission calculations electronically.

*Response:* This condition has been changed as follows:

Monthly Records: Within ten calendar days following each month, the permittee shall observe and record the following information in a written log or electronic format accessible to a compliance inspector:

### The Department

The Department made corrections to clerical errors and the following changes.

1. *Comment:* Recording the HCl and SO<sub>2</sub> emissions has been made consistent for 12 months, rolling total, as these pollutants are PSD pollutants. Also, condition 25 in Section 3.E. has been clarified as follows:

Monthly Records: Within ten calendar days following each month, the permittee shall observe and record the following information in a written log or electronic format accessible to a compliance inspector: number of hours of operation of each engine; total monthly landfill gas flow rate to all engines combined; and HCl and SO<sub>2</sub> emissions for the month and previous 12 months, rolling total. Emissions of HCl and SO<sub>2</sub> shall be calculated from the monthly fuel consumption as well as the analytical results for the chlorine and sulfur contents of the landfill gas representative of the given month of operation based on the semiannual sampling for that period. [Rule 62-210.200 (232), F.A.C.]

### CONCLUSION

The final action of the Department is to issue the permit with the minor changes, corrections and clarifications as described above.

City of Jacksonville  
Trail Ridge Municipal Solid Waste (MSW) Landfill  
Facility ID No.: 0310358  
Duval County

Title V Air Operation Permit Revision

**PROPOSED Permit No.: 0310358-013-AV**



**Permitting Authority:**

State of Florida  
Department of Environmental Protection  
Division of Air Resource Management  
Office of Permitting and Compliance

2600 Blair Stone Road, MS#5505  
Tallahassee, Florida 32399-2400

Telephone: (850) 717-9000

Fax: (850) 717-9001



# Title V Air Operation Permit Revision

Permit No.: 0310358-013-AV

## Table of Contents

<u>Section</u>	<u>Page Number</u>
Placard Page .....	1
I. Facility Information.	
A. Facility Description. ....	2
B. Summary of Emissions Units. ....	2
C. Applicable Regulations. ....	2
II. Facility-wide Conditions. ....	4
III. Emissions Units and Conditions.	
Trail Ridge Landfill, Inc.	
Subsection A: Emissions Unit 001 - Municipal Solid Waste Landfill .....	9-32
Subsection B: Emissions Unit 010- 5,000 scfm open, non-assisted Flare .....	33-38
Subsection C: Emissions Unit 011- -3,200 scfm open, non-assisted Flare (re-installed and physically de-rated to 1,600 scfm ) .....	49-57
Subsection D: Emissions Unit 002- Fugitive Dust Emissions .....	46
Trail Ridge Energy, LLC	
Subsection E: Emissions Units 004 through 009 and 012 through 015- (10) Reciprocating internal combustion engines .....	48-58
IV. Appendices. ....	At End
Appendix A, Abbreviations, Acronyms, Citations and Identification Numbers	
APPENDIX BD- BACT Determination for Trail Ridge Energy LLC	
Appendix CP-1, Compliance Plan for Construction Permit No. 0310358-007-AC	
Appendix CP-2, Compliance Plan for Construction Permit No. 0310358-012-AC	
Appendix D-1, Definitions for 40 CFR 60 Subpart WWW and 40 CFR 63 Subpart AAAA Combined Municipal Solid Waste Landfills	
Appendix EPA, EPA Determination dated October 19, 2006	
EPA Determination dated August 26, 2008	
Appendix F, 40 CFR 61 Subpart M Figure 4	
Appendix I, List of Insignificant Emissions Units and/or Activities.	
Appendix ICE – Requirements for Internal Combustion Engines.	
Appendix 40 CFR 60, Subpart A - General Provisions.	
Appendix 40 CFR 63, Subpart A – General Provisions.	
Appendix 40 CFR 61, Subpart A – General Provisions.	
Appendix LR-1, Local Rule Index	
Appendix RR, Facility-wide State Reporting Requirements.	
Appendix T, Facility-wide State Testing Requirements.	
Appendix TV, Title V General Conditions.	
Appendix U, List of Unregulated Emissions Units and/or Activities.	
Gas Collection and Control System Plan received June 10, 1997	
Order on Request for Alternate Procedures and Requirements No. 09-B-AP	
Appendix ALT-078, Direct Measurement of VOC Emissions	
Referenced Attachments. ....	At End
Table 1, Summary of Air Pollutant Standards and Terms.	
Table 2, Compliance Requirements.	
Table H, Permit History.	
Statement of Basis	



# Florida Department of Environmental Protection

Rick Scott  
Governor

Jennifer Carroll  
Lt. Governor

Herschel T. Vinyard Jr.  
Secretary

**PERMITTEE:**

City of Jacksonville  
Solid Waste Division  
1031 Superior Street  
Jacksonville, Florida 32254

Permit No.: 0310358-013-AV  
Trail Ridge Energy, LLC  
Facility Id No.: 0310358  
Title V Air Operation Permit Revision

The purpose of this permit is to: 1) revise the Title V Air Operation Permit No. 0310358-010-AV; 2) incorporate the terms and conditions of Construction Permit 0310358-012-AC and 3) incorporate the terms and conditions of Construction Permit 0310358-007-AC. The existing facility is located at 5110 U.S. Highway 301, Baldwin, Duval County, Florida, UTM Coordinates: Zone 17, 399.765 km East and 3344.919 km North; Latitude: 30° 14' 00" North and Longitude: 82° 02' 30" West.

This Title V Air Operation Permit Revision is issued under the provisions of Chapter 403, Florida Statutes (F.S.) and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210 and 62-213. The above named permittee is hereby authorized to operate the facility shown on the application and approved drawing(s), plans and other documents, attached hereto or on file with the permitting authority, in accordance with the terms and conditions of this permit.

Effective Date:  
Renewal Application Due Date:  
Expiration Date:

Executed in Tallahassee, Florida  
For the Division of Air Resource Management

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Printed Name of Above Designee)

JH/scd

## SECTION I. FACILITY INFORMATION.

### **Subsection A. Facility Description.**

This facility an active, Class I municipal solid waste (MSW) landfill consisting of 176 acres that is operated by Trail Ridge Landfill, Inc. and owned by the City of Jacksonville. The landfill has an overall design capacity of 24,332,000 cubic yards (18,249,113 tons) according to the Gas Collection and Control System Design Plan received June 10, 1997.

The Class I landfill was constructed in sixteen (16) phases: Phases IA, IB, IC, IIA, IIB, IIC, IIIA, IIIB, IVA, IVB, IIIC, IVC, VA, VB, VC, and VD. Each of the phases is constructed and authorized to accept waste in accordance with the Solid Waste Permit. MSW received by the facility is placed in active cells where it is compacted and covered. The MSW undergoes anaerobic decomposition releasing landfill gas that consists of carbon dioxide, methane (approximately 40-60%), water vapor, and greater than 50 MG/year of non-methane organic compounds (NMOC).

The landfill gas is produced from both active and capped cells. This gas is collected by an active, landfill gas collection system (a series of vertical and/or horizontal collection piping, blower system) and routed to a treatment system that treats the landfill gas for subsequent use as fuel to power the reciprocating internal combustion engines (RICE)-generator sets at the Trail Ridge Energy, LLC electricity generation plant. Trail Ridge Energy, LLC is located on a parcel of land segregated from the Trail Ridge Landfill, Inc. operations. Any excess landfill gas that exceeds the volume Trail Ridge Energy LLC is able to accept is diverted to the 5,000 scfm or the de-rated 1,600 scfm open flares for control.

### **Subsection B. Summary of Emissions Units.**

EU No.	Brief Description
<i>Regulated Emissions Units</i>	
001	Municipal Solid Waste Landfill (Active, Landfill Gas Collection System which consists of a series of vertical and/or horizontal collection piping, blower system that includes two 2,500 scfm centrifugal exhauster type LFG blowers designed at a minimum of -60"wc inlet suction and 10" wc discharge pressure and currently 89 NSPS gas extraction wells. The number of gas extraction wells to be installed will change dependent on compliance with the 40 CFR 60 WWW Standards.)
010	5,000 scfm Open, Non-Assisted Flare manufactured by Parnel Biogas, Inc. Two centrifugal exhaust landfill gas blowers with a maximum design of 2,500 cfm each, with a minimum of -60 "w.c. inlet suction and 10" w.c. discharge pressure.
011	A de-rated 1,600 scfm Open, Non-Assisted Flare manufactured by Landfill Gas Specialties. A centrifugal exhaust landfill gas blower with a maximum design of 1,600 cfm, a minimum of -60 "w.c. inlet suction and 10" w.c. discharge pressure.
002	Fugitive Dust Emissions from unpaved roads and landfill work areas.
004 – 009 and 012 – 015	Ten Caterpillar Model G3520C landfill gas fueled internal combustion engines and electricity generators. Each engine has a power generation rating of 2,233 brake horsepower at 100 percent load. The generator has a power output rating of 1,600 kilowatt. The engines will be fueled exclusively with landfill gas generated by and received from the Trail Ridge landfill facility.

### **Subsection C. Applicable Regulations.**

The Trail Ridge Landfill is a Major/Title V source of air pollution pursuant to Chapter 62-210, FAC and Rule 2.301, Jacksonville Environmental Protection Board (JEPB), because the potential emissions of at

## SECTION I. FACILITY INFORMATION.

---

least one regulated air pollutant, such as particulate matter (PM/PM10), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), or volatile organic compounds (VOC) exceed 100 tons per year. The landfill is also an EPA designated Title V source in accordance with the standards of 40 CFR 60 Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills (40 CFR 60.752(c)), because the design capacity of the landfill is greater than 2.5 million cubic meters and megagrams.

The landfill is located in an area unclassifiable for the air pollutant particulate matter (PM) less than or equal to ten (10) micrometers, in the area of influence of an air quality maintenance area for PM and in an air quality maintenance area for ozone pursuant to Chapter 62-204, Florida Administrative Code (FAC) and Jacksonville Environmental Protection Board (JEPB), Rule 2.201.

The landfill commenced construction after May 30, 1991 and therefore is subject to the provisions of 40 CFR 60, Subpart A, General Provisions, Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills in accordance with 40 CFR 60.750(a). The landfill is subject to the provisions of 40 CFR 63, Subpart A, General Provisions and 40 CFR 63 Subpart AAAA, National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills in accordance with 40 CFR 63.1935. The landfill is also subject to the provisions of 40 CFR 61, Subpart A, General Provisions and 40CFR Part 61 Subpart M (Asbestos).

The Department has presumed that the Trail Ridge Landfill facility has a control relationship over the Trail Ridge Energy LLC electricity generation operations since the Trail Ridge Energy LLC electricity generation operations are under contract with the landfill and the operations will be fueled exclusively with methane-rich landfill gas provided by the landfill. The Trail Ridge Energy LLC engine plant project is permitted under Permit No. 0310358-004-AC/PSD-FL-374. The facility is therefore a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C

Prior to the landfill gas being sent to the Trail Ridge Energy LLC engine plant for re-use, the landfill gas is sent to a treatment system. The treatment system is subject to the provisions of 40 CFR 60, Subpart A- General Provisions, Subpart WWW-Standards of Performance for Municipal Solid Waste Landfills, 40 CFR 63, Subpart A- General Provisions and Subpart AAAA- National Emission Standards for Hazardous Air Pollutants- Municipal Solid Waste Landfills. In addition, the proposed four engine/generator sets, Emission Unit ID Nos. 012-015, are also subject to 40 CFR60 Subpart JJJJ and 40 CFR 63 Subpart ZZZZ.

Also, included in this permit are miscellaneous insignificant emission units and/or activities. Compliance Assurance Monitoring (CAM) requirements are not applicable to this facility. Based upon the Title V air operation permit revision application received March 7, 2011:

- The facility is a Title V source
- An Area source of hazardous air pollutants (HAPs)
- Major source of air pollutants, other than HAPs
- One or more emissions units subject to NSPS (40 CFR 60)
- One or more emissions units subject to NESHAP (40 CFR Part 61 and Part 63)

These documents are on file with the permitting authority:

Application for Title V Air Operation Permit Revision received March 7, 2011

Request for Additional Information dated April 8, 2011

Comments from Trail Ridge Energy LLC received June 20, 2011

---

**SECTION II. FACILITY-WIDE CONDITIONS.**

---

**Section II. Facility-Wide Conditions.**

**The following conditions apply facility-wide:**

- FW1.** APPENDIX TV, TITLE V CONDITIONS, is a part of this permit.  
{Permitting note: APPENDIX TV, TITLE V CONDITIONS, is distributed to the permittee only. Other persons requesting copies of these conditions shall be provided a copy when requested or otherwise appropriate.}
- FW2.** General Pollutant Emission Limiting Standards. Objectionable Odor Prohibited. No person shall cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor. [Rule 62-296.320(2), F.A.C.; and Rule 2.1001, JEPB; Construction Permit No. 0310358-004-AC/PSD-FL-374]
- FW3.** **Not federally enforceable.** The facility shall be subject to City of Jacksonville Ordinance Code, Title X, Chapter 360 [Environmental Regulation], Chapter 362 [Air and Water Pollution], Chapter 376 [Odor Control] and JEPB, Rule 1. [Final Rules with Respect to Organization, Procedure and Practice].
- FW4.** **Not federally enforceable.** The facility shall be subject to JEPB Rule 2, Part Nos. I through VII and Part Nos. IX through XIII.

**Emissions and Controls**

- FW5.** General Particulate Emission Limiting Standards. General Visible Emissions Standard. Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, no person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20 percent opacity). EPA Method 9 is the method of compliance pursuant to Chapter 62-297, F.A.C. [Rules 62-296.320(4)(b)1. & 4., F.A.C.; Rule 2.1001, JEPB and Rule 2.1101, JEPB]
- FW6.** Open Burning Prohibition. Open burning is prohibited, except when determined by the Department to be the only feasible method of operation and authorized by this permit or an emergency exists which requires immediate action to protect human health and safety. [Rule 62-296.320(3)(a)&(b), F.A.C.]
- FW7.** Prevention of Accidental Releases (Section 112(r) of CAA). If, and when, the facility becomes subject to 112(r), the permittee shall:
- a. Submit its Risk Management Plan (RMP) to the Chemical Emergency Preparedness and Prevention Office (CEPPO) RMP Reporting Center. Any Risk Management Plans, original submittals, revisions or updates to submittals, should be sent to: RMP Reporting Center, Post Office Box 10162, Fairfax, VA 22038, Telephone: (703) 227-7650.
  - b. Submit to the permitting authority Title V certification forms or a compliance schedule in accordance with Rule 62-213.440(2), F.A.C.  
[40 CFR 68]
- FW8.** Insignificant Emissions Units and/or Activities. Appendix I-1, List of Insignificant Emissions Units and/or Activities, is a part of this permit. [Rules 62-213.440(1), 62-213.430(6) and 62-4.040(1)(b), FAC and Rules 2.501 and 2.1301, JEPB]

SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

Subsection E. Emissions Units 004-009 and 012-015

**The specific conditions in this section apply to the following emissions unit(s):**

Emission Unit	Brief Description
004-009 and 012-015	<ul style="list-style-type: none"><li>• Ten Caterpillar Model G3520C landfill gas fueled internal combustion engines and electricity generators for the generation of up to a total of 16 megawatts (nominal rating) of electricity. The engines will be fueled exclusively with landfill gas generated by and received from the Trail Ridge landfill facility.</li><li>• The landfill gas will go through a gas treatment system prior to combustion in the engines.<ul style="list-style-type: none"><li>• The system shall consist of:<ol style="list-style-type: none"><li>1. Initial two-stage inlet gas dewatering/filter vessels (the bottom chambers are used for moisture knock-out, top chambers are equipped with coalescing filter media to remove gas particles having diameters of 1-micron and larger.</li><li>2. A gas compressor/blower.</li><li>3. Air-to-gas coolers (chillers), which will be used to reduce the elevated temperatures of LFG received from compressor to approximately 10°F above ambient temperatures.</li><li>4. Final two-stage gas dewatering/filter vessels (the bottom chambers are used for moisture knock-out, top chambers are equipped with coalescing filter media to remove gas particles having diameters of 1-micron or larger.</li></ol></li></ul></li></ul>

**Permitting Note:** The landfill gas treatment system is subject to 40 CFR Part 60, Subpart WWW - Standards of Performance for Municipal Solid Waste Landfills adopted by reference in Rule 62-204.800(8)(b)72., F.A.C.; 40 CFR Part 63, Subpart AAAA- National Emission Standards for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills adopted by reference in Rule 62-204.800(11)(b)58., F.A.C; The emissions unit is subject to Prevention of Significant Deterioration (PSD) pursuant to Rule 62-210.200(164)(a)2, F.A.C. and BACT Determination for CO, NOx and PM<sub>10</sub> emissions. Emission Unit ID Nos. 012-015 are also subject to 40 CFR60 Subpart JJJJ and 40 CFR 63 Subpart ZZZZ.

**EQUIPMENT**

- E.1. Landfill Gas Engine/Generator Sets: The permittee is authorized to install and operate a total of ten (Caterpillar Model G3520C or equivalent) spark-ignited reciprocating internal combustion engines. Each engine is a 20-cylinder engine with a total displacement of approximately 86.3 liters. Each engine has a maximum rating of 2,233 bhp and is coupled to a 1,600 kW generator (nominal rating) for the generation of up to a total of 16 MW of electricity. The maximum rating when coupled to the electrical generator is 2,233 bhp. Each engine will fire LFG. The LFG will pass through a gas treatment system prior to combustion in the engines.
- a. Each engine shall be equipped with an air-to-fuel ratio controller and ignition timing to maintain efficient fuel combustion.

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection E. Emissions Units 004-009 and 012-015

- b. Each engine shall be equipped with an automatic fail-safe block valve which must be designed to stop the flow of landfill gas in the event of an engine failure.
- c. Each engine shall be equipped with a non-resettable elapsed time meter to indicate the elapsed engine operating time in cumulative hours.
- d. A gas flow meter shall be installed to monitor the total flow rate to all of the landfill gas engines.

*{Permitting Note: The heat input rate is based on 100% load (2,233 bhp), a nominal landfill gas heating value of 500 British thermal units (Btu) per scf and an approximate landfill gas firing rate of 580 scfm per engine.}* [Application Nos. 0310358-004-AC and 0310358-012-AC; and Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400(PSD), F.A.C.]

- E.2. LFG Treatment System: The permittee shall design, install, operate and maintain a LFG Treatment System including equipment for: gas compression (blowers/compressors), de-watering (knock-out and chilling system) and particulate removal (filtration). Specifically, the permittee shall design, install, maintain and operate 1 micron primary and polishing filters to remove particulate matter from the LFG prior to combustion in the engines. The LFG treatment system shall not be equipped with atmospheric vents. [Application Nos. 0310358-004-AC and 0310358-012-AC; and Rule 62-212.400, F.A.C.]

#### PERFORMANCE RESTRICTIONS

- E.3. Permitted Capacity: Each landfill gas engine has a maximum power rating of 2,233 bhp at 100% load (approximately 17.6 MMBtu/hour). The electrical generator set has a nominal power rating of 1,600 kilowatts. [Rule 62-210.200(PTE), F.A.C.]
- E.4. Authorized Fuel: Each engine shall only fire landfill gas. [Application Nos. 0310358-004-AC and 0310358-012-AC and Rule 62-210.200(PTE), F.A.C.]
- E.5. Restricted Operation: The hours of operation are not limited (8760 hours per year). [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]
- E.6. Operating Requirements (Emission Unit ID Nos. 004-009): The permittee shall set the air-to-fuel ratio for each engine based on the most recent emissions tests or each engine shall be operated within 0.5 percent of the oxygen content in the exhaust gas at the air-to-fuel ratio operated at during the most recent performance test demonstrating compliance with the standards specified in this permit and other operating conditions. [Rule 62-212.400(BACT), F.A.C. and Appendix F of Construction Permit Application; Construction Permit No. 0310358-004-AC/PSD-FL-374]
- E.7. Operating Requirements (Emission Unit ID Nos. 012-015): The permittee shall set the air-to-fuel ratio for each engine based on the most recent emissions tests or each engine shall be operated within 0.5 percent of the oxygen content in the exhaust gas at the air-to-fuel ratio operated at during the most recent performance test demonstrating compliance with the standards specified in this permit and other operating conditions identified in NSPS 40 CFR 60, Subpart JJJJ. [Rule 62-212.400(BACT), F.A.C., NSPS Subpart JJJJ in 40 CFR 60 and Appendix F of Construction Permit Application; Construction Permit No. 0310358-004-AC/PSD-FL-374]
- E.8. Applicable NSPS Provisions (Emission Unit ID Nos. 012-015): The landfill gas engines are subject to, and shall show compliance with, the applicable provisions in NSPS Subpart A (General Provisions) and NSPS Subpart JJJJ (Stationary Spark Ignition Internal Combustion Engines) of 40 CFR 60, which are identified in Appendix ICE of this permit. [NSPS Subparts A and JJJJ in 40 CFR 60 and Rule 62-204.800, F.A.C.]

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection E. Emissions Units 004-009 and 012-015

E.9. Applicable NESHAP Provisions (Emission Unit ID Nos. 012-015): The landfill gas engines are subject to, and shall show compliance with, the applicable provisions in NESHAP Subpart A (General Provisions) and NESHAP Subpart ZZZZ (Reciprocating Internal Combustion Engines) of 40 CFR 63, which are identified in Appendix ICE of this permit. Pursuant to 40 CFR 63.6590, the landfill gas engines complies with NESHAP Subpart ZZZZ by complying with NSPS Subpart JJJJ. [NESHAP Subparts A and ZZZZ in 40 CFR 63 and Rule 62-204.800, F.A.C.]

#### EMISSIONS STANDARDS

- E.10. Nitrogen Oxides (NO<sub>x</sub>): The emission rate of NO<sub>x</sub> from each engine/generator set exhaust shall not exceed 0.6 gram per brake horsepower hour (g/bhp-hr) and a maximum of 3.0 pounds per hour (lb/hr). [Rule 62-212.400(12), F.A.C.]
- E.11. Carbon Monoxide (CO): The emission rate of CO from each engine/generator set exhaust shall not exceed 3.5 g/bhp-hr and a maximum of 17.2 lb/hr. [Rule 62-212.400(12), F.A.C.]
- E.12. Particulate Matter/Particulate Matter less than 10 microns (PM/PM<sub>10</sub>): Emissions of PM/PM<sub>10</sub> shall be minimized by the following work practice standards: installing, maintaining and operating the LFG Treatment System that meets the filtration specification; and, as determined by EPA Method 9, visible emissions from each engine exhaust shall not exceed 10% opacity. *{Permitting Note: Based on these work practice standards, the expected maximum PM/PM<sub>10</sub> emissions from each engine is 0.24 g/bhp-hr and a maximum of 1.2 lb/hr.}* [Rule 62-212.400(BACT), F.A.C.]
- E.13. Volatile Organic Compounds (VOC): The emission rate of total VOC from each engine/generator set exhaust shall not exceed 0.28 g/bhp-hr and a maximum of 1.4 lb/hr. *{Permitting Note: 1.0 g/bhp-hour limit is the NSPS Subpart JJJJ standard for Emission Unit ID Nos. 012-015, however the "g/bhp-hour" and "lb/hour" limits allow the project to avoid PSD preconstruction review for VOC emissions.}* [NESHAP Subparts A and JJJJ in 40 CFR 63 and Rules 62-204.800 and 62-212.400(12), F.A.C.]
- E.14. Sulfur Dioxide (SO<sub>2</sub>): Sulfur dioxide emissions from the ten engines shall not exceed 41.6 tons during any rolling 12 months. Emissions shall be calculated based on the representative sulfur content of each fuel and the actual monthly fuel consumption rate of each fuel based on the following:
- LFG: The representative sulfur content for a given month shall be the sulfur content determined from sampling and analysis within the same semiannual period.
  - Fuel Consumption: The monthly fuel consumption shall be determined from the fuel flow monitors.
- Compliance with the SO<sub>2</sub> emissions cap shall be determined by summing the calculated monthly SO<sub>2</sub> emissions from each fuel based on stoichiometry for a rolling 12-month period. *{Permitting Note: The project avoids PSD review based on this emissions cap.}* [Rule 62-212.400(12)(Source Obligation), F.A.C.]
- E.15. Hydrogen Chloride (HCl): Hydrogen chloride emissions from the facility shall not exceed 9.0 tons during any rolling 12 months. Emissions shall be calculated based on the representative chlorine content of LFG and the actual monthly fuel consumption rate of the engines and the amount flared based on the following:
- LFG: The representative chlorine content for a given month shall be the chlorine content determined from sampling and analysis within the same semiannual period.



### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection E. Emissions Units 004-009 and 012-015

- b. **Fuel Consumption:** The monthly fuel consumption shall be determined from the fuel flow monitors on the engines as well as the flares.

Compliance with the HCl emissions cap shall be determined by summing the calculated monthly HCl emissions from LFG based on stoichiometry for a rolling 12-month period. *{Permitting Note: This emissions cap ensures that the facility remains an area source of HAP emissions with regard to NESHAP Subpart ZZZZ in 40 CFR 63 (less than 10 tons per year of any single HAP and less than 25 tons per year for the combination of all HAP)}.* [Applicant Request and Rule 62-4.070(3), F.A.C.]

- E.16. **Visible Emissions:** Visible emissions from each engine/generator set exhaust shall not exceed 10% opacity. [Rule 62-212.400, F.A.C.]

#### EXCESS EMISSIONS

- E.17. **Excess Emissions Allowed:** Excess CO and NO<sub>x</sub> emissions (as specified in this subsection) resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing best operational practices to minimize emissions are adhered to and:
- To the extent practicable, the operator shall strive to complete engines startups within 30 minute; and
  - The duration of excess emissions due to malfunctions shall be minimized but in no case exceed two hours in any 24-hour period.

[Rule 62-210.700(1), F.A.C.]

#### TESTING REQUIREMENTS

- E.18. **Initial Compliance Test (Emission Unit ID Nos. 012-015):** Each landfill gas engine shall be tested to demonstrate initial compliance with the emissions standards for CO, NO<sub>x</sub> and VOC under 40 CFR 60, Subpart JJJJ as well as the BACT standards of this permit. In addition, each unit shall be tested for opacity in accordance with EPA Method 9. The initial performance test must be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial startup of each unit. *{Permitting Note: Since the BACT emission standards are more stringent than 40 CFR 60, Subpart JJJJ emission standards, compliance with the BACT emission standards will satisfy compliance with the 40 CFR 60, Subpart JJJJ emission standards.}* [Rules 62-212.400(BACT), 62-297.310(7)(a)1, F.A.C. and NSPS Subpart JJJJ in 40 CFR 60]
- E.19. **Periodic Compliance Tests (Emission Unit ID Nos. 012-015):** Every 8,760 engine hours or at least once every three years, whichever comes first, each landfill gas engine shall be tested to demonstrate compliance with the emissions standards for CO, NO<sub>x</sub> and VOC under 40 CFR 60, Subpart JJJJ as well as the BACT standards of this permit. During these periodic tests, at least one landfill gas engine shall also be tested for opacity in accordance with EPA Method 9. *{Permitting Note: Since the BACT emission standards are more stringent than 40 CFR 60, Subpart JJJJ emission standards, compliance with the BACT emission standards will satisfy compliance with the 40 CFR 60, Subpart JJJJ emission standards.}* [Rules 62-212.400(BACT), 62-297.310(7)(a)1 and 4, F.A.C., and NSPS Subpart JJJJ in 40 CFR 60]
- E.20. **Performance Tests (Emission Unit ID Nos. 004-009):** Initial, annual and renewal compliance tests shall be conducted on only one of the six engines. A different engine shall be tested each year such that all engines are tested during the six year cycle.
- E.21. **Test Requirements:** During each required compliance stack test, the permittee shall operate a tested landfill gas engine at permitted capacity (90% to 100% of 2,233 bhp). The permittee shall

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

#### Subsection E. Emissions Units 004-009 and 012-015

notify the Compliance Authority in writing at least 15 days prior to any scheduled stack tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit. *{Permitting Note: Although the NSPS provides for a 30-day test notification, a 15-day notice is sufficient in Florida.}* [Rule 62-297.310(7)(a)9, F.A.C.]

E.22. Test Methods: Tests required by this permit shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
1 - 4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
7 or 7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Note: The method shall be based on a continuous sampling train.}
19	Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)
18	Measurement of Gaseous organic Compound Emissions by Gas Chromatography <i>{Note: the emission standards are based on VOC measured as methane.}</i>
25A	Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer <i>{Note: the emission standards are based on VOC measured as methane.}</i>
ALT-078	Clarification of Approval of an Alternative to Method 18 for 40 CFR Part 60, Subpart JJJJ

The above methods are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. ALT-078 method is included in the Appendices. [Rules 62-204.800, 62-212.400(BACT) and Appendix A of 40 CFR 60]

E.23. LFG Composition Analysis: The following methods shall be used to satisfy the sampling/analysis of LFG:

- a. Sulfur Content: ASTM Method D5504-01 or equivalent.
- b. Chlorine Content: Modified EPA Method TO-15 or equivalent.
- c. The LFG shall be collected and transported in an appropriate canister (e.g. SUMMA®, Bottle-Vac Sampler or equivalent).

[Rule 62-4.070(3), F.A.C.]

#### MONITORING REQUIREMENTS

E.24. Landfill Gas Sampling/Analysis: At least semiannually, the permittee shall obtain the following representative samples of landfill gas: a sample taken during each required compliance stack test; and a sample taken during the next semiannual period. A representative sample shall be taken in each calendar semiannual period (January – June and July – December) approximately six months apart. Each gas sample shall be collected under normal operating conditions (i.e., with valves open for all operating cells) by appropriate canister (e.g. SUMMA®, Bottle-Vac Sampler or equivalent).

### SECTION III. EMISSIONS UNITS AND SPECIFIC CONDITIONS.

---

#### Subsection E. Emissions Units 004-009 and 012-015

Each sample shall have an ultimate analysis conducted for at least sulfur and chlorine. Results shall also be reported as SO<sub>2</sub> and HCl emission factors in terms of lb/million standard cubic feet (lb/MMscf) of landfill gas. Based on the sampling results and Rule 62-297.310(7)(b)(Special Compliance Tests), F.A.C., the Compliance Authority may request additional gas sampling and analyses. [Rules 62-210.200 and 62-212.400, F.A.C.]

- E.25. Monthly Records: Within ten calendar days following each month, the permittee shall observe and record the following information in a written log or electronic format accessible to a compliance inspector: number of hours of operation of each engine; total monthly landfill gas flow rate to all engines combined; and HCl and SO<sub>2</sub> emissions for the month and previous 12 months, rolling total. Emissions of HCl and SO<sub>2</sub> shall be calculated from the monthly fuel consumption as well as the analytical results for the chlorine and sulfur contents of the landfill gas representative of the given month of operation based on the semiannual sampling for that period. [Rule 62-210.200 (232), F.A.C.]

#### RECORDS AND REPORTS

- E.26. Test Reports: The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA test, shall provide the applicable information identified in Rule 62-297.310(8)(c). [Rule 62-297.310(8), F.A.C.]

#### COMMON CONDITIONS

- E.27. General Provisions: This emissions unit is also subject to the applicable General Provisions of 40 CFR 63 Subpart A.

**SECTION 4. APPENDIX BD (PROPOSED)**  
**BACT Determination for Trail Ridge Energy LLC**

**Trail Ridge Energy, LLC**  
**Trail Ridge Landfill, City of Jacksonville**  
**BACT from PSD-FL-374C/0310358-012-AC**  
**Baldwin, Duval County**

**PROJECT DESCRIPTION**

EU No.	Emission Unit Description
004-009 and 012-015	Ten Caterpillar Model G3520C lean-burn reciprocating internal combustion engine/generator sets

The City of Jacksonville operates the existing Trail Ridge Landfill, which is a municipal solid waste landfill located in Duval County at 5110 US Highway 301 South, Baldwin, Florida. Trail Ridge Energy proposes to install and operate four new Caterpillar Model No. G3520C engine generator sets and to modify the CO emissions standard as Best Available Control Technology (BACT) for the four proposed and six existing engine generator sets. Landfill gas will be used to fuel the ten lean-burn Caterpillar Model No. CAT G3520C engine/generator sets capable of producing a combined nominal 16 megawatts (MW) of power to the electrical grid. The two existing flares will be retained as additional combustion devices for the landfill gas. The landfill gas will be routed through a landfill gas treatment system and then to the landfill gas engines. If necessary, residual landfill gas will be routed to the flares. The landfill gas treatment system includes initial gas de-watering (moisture knock-out vessel), gas compressors and blowers, air-to-gas coolers and particulate filtration.

Exhaust gas from each engine will exit an individual stack (23 feet tall) equipped with a noise muffler. The six existing engines are housed in an enclosed building and the four proposed engines will be housed adjacent in an enclosed building. In accordance with Rule 62-212.400, F.A.C., the proposed project is subject to PSD major stationary source preconstruction review for emissions of CO, NO<sub>x</sub> and PM/PM<sub>10</sub>.

**FINAL BACT DETERMINATIONS**

In accordance with Rule 62-212.400, F.A.C., the Department specifies the following BACT determinations for each engine.

Pollutant	BACT Standard	Control Technology	Compliance Method
CO	3.5 g/bhp-hour and 17.2 lb/hour	Combustion design combined with good combustion and maintenance practices.	EPA Method 10
NO <sub>x</sub>	0.6 g/bhp-hour and 3.0 lb/hour		EPA Method 7 or 7E
PM/PM <sub>10</sub>	<i>Work Practice Standard:</i> The landfill gas pretreatment system shall include a filtration system to remove particulate down to 1 micron.		Design and maintenance records
	<i>Work Practice Standard:</i> Visible emissions from each engine exhaust stack shall not exceed 10% opacity, based on a six-minute average.		EPA Method 9

**APPENDIX CP-2**  
**COMPLIANCE PLAN**

---

**CP2.1. Compliance Schedule.** The facility has been issued Construction Permit No. 0310358-012-AC/PSD-FL-347C which authorizes the installation of four Caterpillar (CAT) Model G3520C or equivalent gas IC engines and electricity generators.

Because the applicant included these engine/generator sets in the Title V Operation Permit Revision application, a Compliance Plan has been incorporated into this Title V Operation Permit Revision to address the requirements of the air construction permit. The permittee shall meet the following milestones:

<b>E.U. ID. No.</b>	<b>Milestone</b>	<b>Milestone Date</b>
012-015	Installation of four Caterpillar (CAT) Model G3520C gas IC engines and electricity generators	Pursuant to the timeframes established in the air construction permit.
012-015	Compliance Testing conducted and test reports submitted pursuant to requirements of air construction permit	Pursuant to the timeframes established in the air construction permit.
012-015	Responsible Official to submit "Certification of Compliance", addressing these emissions units, indicating what is not in compliance, when non-compliance started, the degree or amount of non-compliance, the duration of non-compliant operations, steps taken to identify and correct non-compliant conditions, and actions (with time table), to correct any current non-compliant conditions and achieve compliance.	No later 180 after the emissions units commences operation

APPENDIX U

LIST OF UNREGULATED EMISSIONS UNITS AND/OR ACTIVITIES.

Unregulated Emissions Units and/or Activities. An emissions unit which emits no “emissions-limited pollutant” and which is subject to no unit-specific work practice standard, though it may be subject to regulations applied on a facility-wide basis (e.g., unconfined emissions, odor, general opacity) or to regulations that require only that it be able to prove exemption from unit-specific emissions or work practice standards.

The below listed emissions units and/or activities are neither ‘regulated emissions units’ nor ‘insignificant emissions units’.

<u>E.U. ID No.</u>	<u>Brief Description of Emissions Units and/or Activity</u>
N/A	A stand-alone fan-cooled radiator for each IC engine.
N/A	Drums for the engine radiator coolant.
N/A	One used lube oil tank (approximately 1,000 gallons) and moisture conditioning equipment.
N/A	One new lube oil tank (approximately 2,000 gallons) and moisture conditioning equipment.

## Direct Measurement of VOC Emissions



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
RESEARCH TRIANGLE PARK, NC 27711

JUL 21 2010

OFFICE OF  
AIR QUALITY PLANNING  
AND STANDARDS

Howard Schiff  
TRC Companies Inc.  
650 Suffolk Street  
Wannalancit Mills  
Lowell, MA 01854

Dear Mr. Schiff:

In an alternative methods approval letter dated February 25, 2010, we granted Derenzo & Associates permission to use the TECO Model 55C analyzer in place of Method 18 to measure methane from internal combustion engines subject to 40 CFR Part 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. You brought to our attention that the proposed analyzer more appropriately measures non-methane organics and should be allowed as an alternative to the "cuter" analyzers already allowed by the regulation.

We see your point and appreciate your bringing it to our attention. This letter grants approval to use the TECO Model 55C analyzer to measure non-methane organic compounds from Subpart JJJJ engines. The analyzer may also be used by others at other Subpart JJJJ engines. We will announce this as broadly applicable to all stationary spark ignition combustion engines on EPA's web-site (at <http://www.epa.gov/ttn/cmc/methods.html#CatB>).

If you need further assistance, please contact Foston Curtis at (919) 541-1063 or Gary McAlister at (919) 541-1062.

Sincerely,

A handwritten signature in cursive script that reads "Conniesue B. Oldham".

Conniesue B. Oldham, Ph.D., Group Leader  
Measurement Technology Group

cc: Michael Brack, Derenzo & Associates  
Foston Curtis, E143-02  
Gary McAlister E143-02

Internet Address (URL) • <http://www.epa.gov>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 25% Postconsumer)

**Table 1-1, Summary of Air Pollutant Standards and Terms**

City of Jacksonville  
Trail Ridge Energy Plant

**PROPOSED Permit No.:** 0310358-013-AV  
**Facility ID No.:** 0310358

This table summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

E.U. ID No.	Brief Description
EU004-009	(6) CAT G3520C Engines
EU012-015	(4) CAT G3520C Engines

Pollutant Name**	Fuel(s)	Hours/Year	Allowable Emissions			Equivalent Emissions*		Regulatory Citation(s)	See permit condition(s)
			Standard(s)	lbs./hour	TPY	lbs./hour	TPY		
Visible Emissions		8760	<10% Opacity						III.E.16.
NOx			0.6 g/bhp-hr	3.0	12.9				III.E.10.
CO			3.5 g/bhp-hr	17.2	75.3				III.E.11.
PM10 ***			0.24 g/bhp-hr	1.2	5.1				III.E.12
VOC			0.28 g/bhp-hr	1.4	6				III.E.13.
HCl			5.9 lb/MMscf		0.9				III.E.15.
SO <sub>2</sub> (all engines)					41.6				III.E.14.

Notes:

\* The "Equivalent Emissions" listed are for informational purposes only.

\*\*Applicable to each engine except for SO<sub>2</sub>

\*\*\*Expected maximum emissions. Emissions of PM/PM10 shall be minimized by the following work practice standards: installing, maintaining and operating the LFG Treatment System that meets the filtration specification; the firing of diesel/biodiesel that meets the maximum sulfur specification; and, as determined by EPA Method 9, visible emissions from each engine exhaust shall not exceed 10% opacity.



**Table 2-1, Summary of Compliance Requirements**

City of Jacksonville  
Trail Ridge Municipal Solid Waste (MSW) Landfill

**PROPOSED Permit No.:** 0310358-013-AV  
**Facility ID No.:** 0310358

This table summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.

**E.U. ID No.    Brief Description**  
EU001                      Municipal Solid Waste Landfill

Pollutant Name or Parameter	Fuel(s)	Compliance Method	Testing Time Frequency	Frequency Base Date *	Min. Compliance Test Duration	CMS**	See permit condition(s)
Well Pressure		Monitoring	Monthly				III.A.11.
Well O2 or N2 Surface		Monitoring	Monthly				III.A.11.
Methane		Scanning	Quarterly/Annually				III.A.12.

\* The frequency base date is established for planning purposes only; see Rule 62-297.310, F.A.C.

\*\*CMS [=] continuous monitoring system

## Appendix H-1, Permit History/ID Number Changes

City of Jacksonville  
Trail Ridge Municipal Solid Waste Landfill

PROPOSED Title V Operation Permit No.: 0310358-013-AV  
Facility ID No.: 0310358

011	1,600 scfm (de-rated) open flare	0310358-009-AV	May 10, 2010	May 10, 2015	Title V Permit Revision to incorporate Construction Permit No. 0310358-007-AC. Will be incorporated in Title V Renewal, i.e. issued under No. 0310358-010-AV
001 002 004-009  010 011	Municipal Solid Waste Landfill Fugitive Emissions (6) Reciprocating Internal Combustion Engines (Engine Plant) 5,000 scfm open Flare 1,600 scfm (de-rated) open flare	0310358-010-AV	May 10, 2010	May 10, 2015	Title V Renewal
004-009	(6) Reciprocating Internal Combustion Engines (Engine Plant)	0310358-011-AC	January 22, 2009	October 1, 2009	Permit Revision to Construction permit No. 0310358-004-AC
004-009 and 012-015	Add (4) Reciprocating Internal Combustion Engines (Engine Plant) & Revise CO BACT	0310358-012-AC	September 28, 2011	October 1, 2016	Permit Revision to Construction permit No. 0310358-004-AC

## Appendix H-1, Permit History/ID Number Changes

City of Jacksonville  
Trail Ridge Municipal Solid Waste Landfill

PROPOSED Title V Operation Permit No.: 0310358-013-AV  
Facility ID No.: 0310358

E.U. ID No.	Description	Permit No.	Effective Date	Expiration Date	Project Type
001	Municipal Solid Waste Landfill Open 2,800 scfm open Flare	0310358-001-AC	February 7, 1997	July 31, 1998	Construction
001 002 003	Municipal Solid Waste Landfill Open 2,800 scfm Flare Fugitive Emissions Diesel and Leachate Storage Tanks	0310358-002-AV	August 9, 1999	August 31, 2003	Initial Title V
001 002 003	Municipal Solid Waste Landfill Open 2,800 (now 3,100 scfm) Flare Fugitive Emissions Diesel and Leachate Storage Tanks	0310358-003-AV	May 3, 2004	August 31, 2008	Renewal Title V
004-009	(6) Reciprocating Internal Combustion Engines (Engine Plant)	0310358-004-AC	December 11, 2006	October 1, 2008	Construction
010	5,000 scfm open Flare	0310358-005-AC	November 1, 2006	March 30, 2008	Construction
001 002 003	Municipal Solid Waste Landfill Open 2,800 (now 3,100 scfm) Flare Fugitive Emissions Diesel and Leachate Storage Tanks	0310358-006-AV	December 4, 2006	August 31, 2008	Administrative Correction
011	1,600 scfm (de-rated) open flare	0310358-007-AC	March 2, 2010	March 2, 2011	Construction
004-009	(6) Reciprocating Internal Combustion Engines (Engine Plant)	0310358-008-AC	May 2, 2008	October 1, 2009	Time Extension of Permit No. 0310358-004- AC

## STATEMENT OF BASIS

---

### Title V Air Operation Permit Revision

Permit No. 0310358-013-AV

#### APPLICANT

The applicant for this project is the City of Jacksonville. The applicant's responsible official and mailing address are: Ms. Kerri Stewart, Chief Administrative Officer, City of Jacksonville Public Works Department, 117 West Duval Street, St. James Building, 4<sup>th</sup> Floor, Jacksonville, FL 32202.

#### FACILITY DESCRIPTION

The existing Trail Ridge Landfill facility is located at 5110 U.S. Highway 301 South in Baldwin, Duval County, Florida. The Trail Ridge Energy, LLC facility is located at the existing Trail Ridge Landfill facility. The Trail Ridge Energy, LLC facility includes six lean-burn spark-ignition reciprocating internal combustion engine (RICE)-generator sets firing landfill gas, is categorized under Standard Industrial Classification (SIC) Code No. 4953, Refuse Systems. The UTM coordinates are Zone 17, 399.873 km East, and 3344.309 km North.

Trail Ridge Landfill is a Class I Municipal Solid Waste (MSW) Landfill consisting of 176 acres. This landfill commenced construction in 1992. Trail Ridge Landfill receives approximately 2,500 - 3,000 tons of waste daily. The site totals 977 acres of land and currently has a 148-acre "footprint" which serves residential and commercial customers.

The nonmethane organic compounds (NMOC) emissions are greater than 50 megagrams per year. Landfill gas (LFG) is directed to an enclosed flare where methane, NMOC and HAPs contained in the gas are destroyed at high temperatures. The facility currently operates two flares – one 5,000 standard cubic feet per minute (scfm) open flare and one 1,600 scfm open flare.

In order to reduce the amount of LFG wasted by flaring, all available LFG from the landfill is supplied to Trail Ridge Energy for use as fuel to power the proposed internal combustion (IC) engine electricity generation plant.

#### PROJECT DESCRIPTION

The purpose of this permitting project is to revise the existing Title V permit for the above referenced facility to add the installation and operation of four new Caterpillar Model No. G3520C engine generator sets and to modify the CO emissions standard as Best Available Control Technology (BACT) for the proposed and existing engine/generator sets.

#### PROCESSING SCHEDULE AND RELATED DOCUMENTS

March 17, 2011 Department received the application for an air pollution construction permit and Title V revision permit.

April 8, 2011 Department requested additional information.

June 20, 2011 Department received additional information; application complete.

August 18, 2011 Department issued the Draft Title V revision permit.

#### PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is not identified as a major source of hazardous air pollutants (HAP).

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

## STATEMENT OF BASIS

---

NSPS: The facility does operate units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

NESHAP: The facility does operate units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

CAIR: The facility is not subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

### PROJECT REVIEW

To incorporate the provisions of permit No. 0310358-012-AC, which authorized the construction of four lean-burn reciprocating internal combustion engine/generator sets as part of the existing landfill gas-to-energy plant at the Trail Ridge Landfill. In addition, the permittee requested a modification to the CO emissions standard as Best Available Control Technology (BACT) for the existing engine/generator sets. The landfill gas will be used to fuel the proposed four and existing six lean-burn reciprocating internal combustion engine/generator sets. The plant will have the potential to generate an additional 6.4 megawatts (MW) of electricity for a combined nominal 16 MW of power to the electrical grid. In addition, the applicant requested a concurrent revision of the Title V air operation permit. The two existing flares will be retained as additional combustion devices for the landfill gas. The landfill gas will be routed through a landfill gas treatment system and then to the engines. As necessary, residual landfill gas will be routed to the flares. The project will result in the following potential emissions increases at the existing landfill: 284.7 tons/year of carbon monoxide (CO); 51.7 tons/year of nitrogen oxides (NO<sub>x</sub>); 20.7 tons/year of particulate matter (PM), particulate matter with a mean particle diameter of 10 microns or less (PM<sub>10</sub>) and particulate matter with a mean particle diameter of 2.5 microns or less (PM<sub>2.5</sub>); 16.6 tons/year of sulfur dioxide (SO<sub>2</sub>); and 24.2 tons/year of volatile organic compounds (VOC).

AC/PSD Permit Revisions. The applicant requested the concurrent processing of an air construction permit revision to change air construction/PSD permit conditions. See Permit No. 0310358-012-AC/PSD-FL-374C for the changes made. The Technical Evaluation and Preliminary Determination summarizes the requested changes, the Department's responses and identifies the changes made to the underlying air construction permit conditions. These changes have been reflected within the Title V air operation permit.

Changes have been made in the proposed Title V air operation permit as detailed in the Proposed Title V Determination.

### CONCLUSION

This project revises Title V air operation permit No. 0310358-010-AV, which was issued on May 5, 2011. This Title V air operation permit revision is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C.

Florida Department of  
Environmental Protection

Memorandum

---

To: Jeff Koerner, Program Administrator, Office of Permitting and Compliance  
Through Syed Arif, Office of Permitting and Compliance SA 9/27  
From: Christy DeVore, Office of Permitting and Compliance CD  
Date: September 27, 2011  
Subject: Final Air Construction Permit Project No. 0310358-012-AC/PSD-FL-374C  
Proposed Air Title V Permit Revision No. 0310358-013-AV  
City of Jacksonville Trail Ridge Landfill, Trail Ridge Energy  
Landfill Gas-to-Energy Expansion

The Trail Ridge Landfill is an existing municipal solid waste landfill. The applicant proposes to install and operate an additional four lean-burn reciprocating internal combustion engine/generator sets as part of the existing landfill gas-to-energy plant at the Trail Ridge Landfill. In addition, the applicant has requested a modification to the CO emissions standard as Best Available Control Technology (BACT) for the existing engine/generator sets. The plant will have the potential to generate an additional 6.4 megawatts (MW) of electricity for a combined nominal 16 MW of power to the electrical grid. Two engine/generator sets will be installed first with the remaining two engine/generator sets installed once landfill gas rates increase. The applicant requested a concurrent revision of the Title V air operation permit. To simplify review and distribution, only the pages with the changes made to the Title V air operation permit as a result of the revisions are provided. The project is not considered a new source review reform project.

The attached Final Determination summarizes the publication and comment process. There are no pending petitions for administrative hearings or extensions of time in which to file a petition for an administrative hearing. I recommend your approval of the attached final and proposed permits for this project.

Attachments

JFK/scd