

STATE OF MISSOURI



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 022016 - 006 Project Number: 2015-04-003  
Installation Number: 129-0019

Parent Company: Roeslein & Associates, Inc.

Parent Company Address: 9200 Watson Road, Suite 200, St. Louis, MO 63126

Installation Name: Roeslein Alternative Energy Missouri, LLC - Somerset

Installation Address: Avalon Street & Aztec Avenue, Somerset Township, MO 64119

Location Information: Mercer County (S1, T66N, R23W)

Application for Authority to Construct was made for:

The installation of impermeable covers on seventeen (17) existing lagoons and corresponding gas collection, cleaning, compression, and flare systems. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

Feb. 8, 2016

EFFECTIVE DATE

Handwritten signature of Kyna L Moore in black ink.

DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of startup of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources' regional office responsible for the area within which you are located within 15 days after the actual startup of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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## SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

Roeslein Alternative Energy Missouri, LLC  
Mercer County (S1, T66N, R23W)

1. Operational Limitations
  - A. Roeslein Alternative Energy Missouri, LLC shall divert all biogas to either the flares or the gas cleaning system at all times. The installation shall not emit the biogas directly into the atmosphere.
  - B. Before the biogas cleaning system becomes operational, Roeslein Alternative Energy Missouri, LLC shall divert all of the biogas to the flares. The time period for venting all biogas to flares shall begin from the date of permit issuance and not be more than twelve (12) consecutive months.
  - C. Once the biogas cleaning system becomes operational, Roeslein Alternative Energy Missouri, LLC shall divert the biogas to the flare only in case of cleaning system shut downs, which shall not exceed 2,000,000 scf per twelve (12) consecutive months for each flare.
  - D. Roeslein Alternative Energy Missouri, LLC shall keep a record of the operating hours of the flares to ensure that the limits in Special Condition 1.B. and 1.C. are not exceeded. Roeslein Alternative Energy Missouri, LLC shall also notify the Enforcement Unit of the Air Pollution Control Program of the start of operations for the biogas cleaning system within 30 days of startup of the system.
2. Control Device Requirement – Flares
  - A. The flares shall be operated and maintained in accordance with the manufacturer's specifications. A copy of the manufacturer's specifications shall be kept on site at all times.
  - B. Roeslein Alternative Energy Missouri, LLC shall maintain an operating and maintenance log for the flares which shall include the following:
    - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

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### SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

3. Sampling Requirements for Hydrogen Sulfide (H<sub>2</sub>S) and Ammonia (NH<sub>3</sub>)
  - A. Roeslein Alternative Energy Missouri, LLC shall sample the biogas to determine the H<sub>2</sub>S and NH<sub>3</sub> concentrations.
  - B. The H<sub>2</sub>S concentration shall not exceed 0.25 percent by volume and the NH<sub>3</sub> concentration shall not exceed 0.34 percent by volume.
  - C. Roeslein Alternative Energy Missouri, LLC shall collect samples monthly. During each collection event, three lagoons will be sampled and the results averaged to compare with the limits in Special Condition 3.B. The averaging period used for each sample shall be one hour.
  - D. The first sample collection shall be performed within 30 days after startup of operations. Sampling shall be performed using an approved EPA method or a method approved by the Missouri Air Pollution Control Program. Roeslein Alternative Energy Missouri, LLC shall submit a testing protocol to the Missouri Air Pollution Control Program at least fourteen (14) days before the first test for approval.
  - E. Each collection event shall be performed at a different lagoon. After a collection event has been performed at a lagoon, the same lagoon cannot be sampled until a collection event has been performed on all the other lagoons.
  - F. If any of the sampling results show an exceedance of the values in Special Condition 3.B., Roeslein Alternative Energy Missouri, LLC shall do the following:
    - 1) If the exceedance occurs before the gas cleaning system becomes operational, Roeslein Alternative Energy Missouri, LLC shall submit ambient impact modeling results to show that the potential emissions of SO<sub>x</sub> and NO<sub>x</sub> do not exceed their respective NAAQS.
    - 2) If the exceedance occurs after the gas cleaning system becomes operational, Roeslein Alternative Energy Missouri, LLC shall submit an emissions analysis to show that the NO<sub>x</sub> and SO<sub>x</sub> potential emissions do not exceed the *de minimis* level of 40 tons per year.
    - 3) If the installation cannot show compliance with Special Conditions 3.F.1) and 3.F.2), it shall contact the Air Pollution Control Program for further instructions.

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#### SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

4. Control Device Requirement – Bio-Scrubber
  - A. Roeslein Alternative Energy Missouri, LLC shall control H<sub>2</sub>S emissions from the biogas cleaning system using a bio-scrubber as specified in the permit application.
  - B. The scrubber shall be operated and maintained in accordance with the manufacturer's specifications. The scrubber shall be equipped with a gauge or meter, which indicates the pressure drop across the scrubber. The gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.
  - C. Roeslein Alternative Energy Missouri, LLC shall monitor and record the operating pressure drop of the scrubber at least once every 24 hours while the biogas cleaning system is in operation. The pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
  - D. Roeslein Alternative Energy Missouri, LLC shall maintain a copy of the bio-scrubber manufacturer's performance warranty on site.
  - E. Roeslein Alternative Energy Missouri, LLC shall maintain an operating and maintenance log for the scrubber that shall include the following:
    - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
5. Record Keeping and Reporting Requirements
  - A. Roeslein Alternative Energy Missouri, LLC shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include MSDS for all materials used.
  - B. Roeslein Alternative Energy Missouri, LLC shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (6) REVIEW

Project Number: 2015-04-003  
Installation ID Number: 129-0019  
Permit Number:

Roeslein Alternative Energy Missouri, LLC      Complete Date  
Avalon Street & Aztec Avenue                      of Application:      April 15, 2015  
Somerset Township, MO 64119  
Mercer County (S1, T66N, R23W)

Parent Company:  
Roeslein & Associates, Inc.  
9200 Watson Road, Suite 200  
St. Louis, MO 63126

REVIEW SUMMARY

- Roeslein Alternative Energy Missouri, LLC has applied for authority to install impermeable covers on seventeen (17) existing lagoons and corresponding gas collection, cleaning, compression, and flare systems.
- HAP emissions are expected from the equipment. HAPs of concern are products of combustion.
- None of the NSPS apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Seventeen (17) flares are being used to control emissions from the lagoons. A bio-scrubber will be used to control H<sub>2</sub>S emissions from the biogas cleaning system once the system is operational.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Conditioned potential emissions of all pollutants are above de minimis levels, but below major source levels, before the biogas cleaning system is operational (maximum 12 months of operation). The potential emissions of all pollutants will be less than their respective de minimis levels after the biogas cleaning system becomes operational.
- This installation is located in Mercer County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year, and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was performed to determine the ambient impact of SO<sub>x</sub> and NO<sub>x</sub>.
- Emissions testing is not required for the equipment; however, sampling is required to determine the H<sub>2</sub>S and NH<sub>3</sub> concentrations in the biogas.
- No Operating Permit is required for this installation. After the biogas cleaning system becomes operational, emissions of all pollutants will be under their respective de minimis levels, and no federal regulations (i.e. NSPS, MACT, NESHAP) apply to the installation.
- Approval of this permit is recommended with special conditions.

### INSTALLATION / PROJECT DESCRIPTION

Roeslein Alternative Energy Missouri, LLC (RAEM) proposes to install impermeable covers on seventeen (17) existing lagoons at the Murphy Brown of Missouri Somerset Farm in Mercer County. The biogas generated at the lagoons will either be purified into methane or be diverted to a flare. RAEM will construct the project in two (2) phases. The first phase involves the installation of the lagoon covers and flare skids while the second phase includes the installation of the gas cleaning and compression equipment. During the first phase, RAEM will divert all of the biogas to the flare to collect gas flow rate and composition data. The results will be used to determine the sizing of the gas cleaning and compression systems. Once the gas cleaning and compression systems are operational, the flares will only be operated intermittently during gas cleaning system shutdowns. RAEM expects to divert a maximum of 2,000,000 scf of biogas to each flare after the gas cleaning system is operational.

Because the potential emissions of the installation after the first 12 months of operation are expected to be less than de minimis, the installation is considered a minor source for construction permits. It is not required to apply for an operating permit, as no federal regulations (i.e. NSPS, MACT, NESHAP) apply. The facility has asked to keep the design of the cleaning system and some of the emission factors confidential per Missouri State Rules 10 CSR 10-6.210, *Confidential Information*; therefore, no information is given in this permit regarding the types of equipment involved in the cleaning process and no emission factors are specifically listed. This permit is a public version, and there is no confidential version of the permit.

### EMISSIONS/CONTROLS EVALUATION

Emissions from Phase I and Phase II of the project were calculated. Emissions from the flares were calculated from emission factors from EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, or from mass balances. PM, PM<sub>10</sub>, PM<sub>2.5</sub>, and CO emissions from the flare were calculated from emission factors in AP-42, Chapter 2.4, *Municipal Solid Waste Landfills* (November 1998). SO<sub>x</sub> emissions were calculated from mass balances assuming that all H<sub>2</sub>S contained in the biogas is oxidized to SO<sub>x</sub>. H<sub>2</sub>S emissions were calculated assuming that 95% of the H<sub>2</sub>S is oxidized, which should be a conservative value, since AP-42, Chapter 2.4 suggests a

value greater than 98%. The concentration used in the calculation for H<sub>2</sub>S is 0.25 percent by volume. NO<sub>x</sub> can be formed from the oxidation of ammonia (NH<sub>3</sub>) contained in the biogas, the fixation of atmospheric nitrogen with oxygen (thermal NO<sub>x</sub>), and the reaction with partially oxidized compounds within the flare (prompt NO<sub>x</sub>). NO<sub>x</sub> emissions from the oxidation of NH<sub>3</sub> were calculated using mass balances, assuming a concentration of 0.34 percent by volume. Thermal and Prompt NO<sub>x</sub> emissions were calculated using emission factor in AP-42, Chapter 2.4. The concentrations of H<sub>2</sub>S and NH<sub>3</sub> were provided by the company, and the company is required to sample the biogas periodically to ensure that the values are not exceeded. VOC emissions from the biogas passing through the flare were calculated assuming that a 0.01 fraction of the methane production potential are emitted as VOCs and that 99.2% will be destroyed by the flare. The 0.01 fraction was taken from the EPA document, *Emissions From Animal Feeding Operations, Draft* (August 2001), and the 99.2% device control efficiency is from AP-42, Chapter 2.4, Table 2.4-3. VOC emissions from combustion were determined using the emission factor in AP-42, Chapter 1.4, *Natural Gas Combustion* (July 1998).

CO<sub>2</sub> emissions from combustion of the flares were calculated using an emission factor from AP-42, Chapter 2.4. CO<sub>2</sub> emissions from the biogas were calculated from mass balances, assuming that 34% of the biogas is CO<sub>2</sub>, which is a typical number for biogas. CH<sub>4</sub> emissions from combustion were calculated from mass balances, assuming that 65% of the biogas is CH<sub>4</sub> and applying a 98% default control efficiency for the use of the flare.

All of the emissions were calculated using a biogas flow rate of 75 scfm on an annual basis, which reflects the maximum annual production rate from each lagoon, as shown through gas sampling. The CH<sub>4</sub> and CO<sub>2</sub> emissions can also be calculated using the emission factors from 40 CFR 98, Subpart C, Table C-1 and C-2; however, the emission factors from 40 CFR 98 were not used for this project because it yielded a lower estimate of emissions than the other methods. Once the cleaning system becomes operational, there will be CH<sub>4</sub> and CO<sub>2</sub> emissions from the exit streams. CO<sub>2</sub> emissions were calculated from mass balances assuming that all of the CO<sub>2</sub> generated by the biogas is emitted. CH<sub>4</sub> emissions were calculated using performance data provided by the manufacturer. N<sub>2</sub>O Emissions were calculated using the emission factor in 40 CFR 98. No N<sub>2</sub>O emission factors are available from AP-42. HAP emissions from combustion were calculated using emission factors in AP-42, Chapter 2.4.

The impermeable membrane is not expected to capture 100% of the biogas. To calculate fugitive emissions, it was assumed that 97.5% of the biogas would be captured. This is the capture efficiency given in 40 CFR 98, Subpart JJ, *Manure Management*, Table JJ-6, *Collection Efficiencies of Anaerobic Digesters*.

Particulate emissions from the haul road were estimated using the equations in AP-42, Chapter 13.2.2, *Unpaved Roads* (November 2006). The haul road is used to haul compressed methane and is only included in the emissions from Phase II of the project.

There will be H<sub>2</sub>S emissions from the flares and the gas cleaning system due to the H<sub>2</sub>S content in the biogas; however, the emissions are not considered part of this project because they existed in the gas before the addition of the equipment. H<sub>2</sub>S emissions

are not generated by the equipment. With the addition of the flares and the bio-scrubber at the outlet stream of the gas cleaning system, the H<sub>2</sub>S emissions from the lagoons will be less than the emissions before this project. The bio-scrubber is required by a special condition in this permit to ensure its proper operation in control of odor.

For CO<sub>2</sub> emissions from the gas cleaning system, it was assumed that 20% of the exit stream will be CO<sub>2</sub>. For CH<sub>4</sub> emissions, it was assumed that 0.4% of the exit stream consists of CH<sub>4</sub>. Both of these values are from the manufacturer's specifications.

The GHG (mass) emissions were calculated by summing the CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O emissions. The GHG (CO<sub>2</sub>e) emissions were calculated by multiplying the CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions by their respective global warming potential (1 for CO<sub>2</sub>, 25 for CH<sub>4</sub>, and 298 for N<sub>2</sub>O) and adding the results.

The following table provides an emissions summary for this project. Phase I emissions were calculated assuming that the flare is being used to combust the biogas during the entire year (8,760 hours). Phase II emissions were calculated assuming that only 2,000,000 scf of biogas is being diverted to the flare; otherwise, the biogas is being diverted to the gas cleaning system. If 2,000,000 scf of biogas is diverted to the flare, this leads to higher emissions than assuming that the cleaning system operates at 8,760 hours per year.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Phase I Potential Emissions	Phase I Conditioned Potential Emissions	Phase II Potential Emissions	Phase II Conditioned Potential Emissions
PM	25.0	3.70	N/A	0.90	N/A
PM <sub>10</sub>	15.0	3.70	N/A	0.41	N/A
PM <sub>2.5</sub>	10.0	3.70	N/A	0.21	N/A
SO <sub>x</sub>	40.0	141.91	N/A	7.20	N/A
NO <sub>x</sub>	40.0	20.95	N/A	1.06	N/A
VOC	40.0	1.98	N/A	0.10	N/A
CO	100.0	163.35	N/A	8.29	N/A
GHG (mass)	N/A	40,949	N/A	2,388	N/A
GHG (CO <sub>2</sub> e)	100,000	51,855	N/A	3,025	N/A
Total HAPs	25.0	0.41	N/A	0.02	N/A

N/A = Not Applicable

### PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are above de minimis but below major source levels before the biogas cleaning system is operational. Potential emissions of all pollutants will be below the de minimis level once the biogas cleaning system is operational.

## APPLICABLE REQUIREMENTS

Roeslein Alternative Energy Missouri, LLC shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

### GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

## AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient air quality modeling was performed to determine the ambient impact of SO<sub>x</sub>, NO<sub>x</sub>, and CO. Results show that the ambient impacts of all pollutants are below their respective significance levels or NAAQS levels. More information regarding the AAQIA can be found in the memorandum "Ambient Air Quality Impact Analysis (AAQIA) for Roeslein Alternative Energy Missouri, LLC – Somerset Farm – Mercer County Site – 2015-04-003."

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

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Ryan Schott  
New Source Review Unit

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Date

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 30, 2015, received April 1, 2015, designating Roeslein & Associates, Inc. as the owner and operator of the installation
- Memo titled "AAQIA for Roeslein Alternative Energy Missouri, LLC – Somerset Farm – Mercer County Site – 2015-04-003"

## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....	percent	<b>m/s</b> .....	meters per second
<b>°F</b> .....	degrees Fahrenheit	<b>Mgal</b> .....	1,000 gallons
<b>acfm</b> .....	actual cubic feet per minute	<b>MW</b> .....	megawatt
<b>BACT</b> .....	Best Available Control Technology	<b>MHDR</b> .....	maximum hourly design rate
<b>BMPs</b> .....	Best Management Practices	<b>MMBtu</b> ....	Million British thermal units
<b>Btu</b> .....	British thermal unit	<b>MMCF</b> .....	million cubic feet
<b>CAM</b> .....	Compliance Assurance Monitoring	<b>MSDS</b> .....	Material Safety Data Sheet
<b>CAS</b> .....	Chemical Abstracts Service	<b>NAAQS</b> ...	National Ambient Air Quality Standards
<b>CEMS</b> .....	Continuous Emission Monitor System	<b>NESHAPs</b>	National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> .....	Code of Federal Regulations	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO</b> .....	carbon monoxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSR</b> .....	New Source Review
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>PM</b> .....	particulate matter
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>ppm</b> .....	parts per million
<b>EQ</b> .....	Emission Inventory Questionnaire	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EP</b> .....	Emission Point	<b>PTE</b> .....	potential to emit
<b>EPA</b> .....	Environmental Protection Agency	<b>RACT</b> .....	Reasonable Available Control Technology
<b>EU</b> .....	Emission Unit	<b>RAL</b> .....	Risk Assessment Level
<b>fps</b> .....	feet per second	<b>SCC</b> .....	Source Classification Code
<b>ft</b> .....	feet	<b>scfm</b> .....	standard cubic feet per minute
<b>GACT</b> .....	Generally Available Control Technology	<b>SDS</b> .....	Safety Data Sheet
<b>GHG</b> .....	Greenhouse Gas	<b>SIC</b> .....	Standard Industrial Classification
<b>gpm</b> .....	gallons per minute	<b>SIP</b> .....	State Implementation Plan
<b>gr</b> .....	grains	<b>SMAL</b> .....	Screening Model Action Levels
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>HAP</b> .....	Hazardous Air Pollutant	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>hr</b> .....	hour	<b>tph</b> .....	tons per hour
<b>hp</b> .....	horsepower	<b>tpy</b> .....	tons per year
<b>lb</b> .....	pound	<b>VMT</b> .....	vehicle miles traveled
<b>lbs/hr</b> .....	pounds per hour	<b>VOC</b> .....	Volatile Organic Compound
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

Mr. Chris Roach  
Director  
Roeslein Alternative Energy Missouri, LLC  
9200 Watson Road, Suite 200  
St. Louis, MO 63126

RE: New Source Review Permit - Project Number: 2015-04-003

Dear Mr. Roach:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions and your new source review permit application is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, Truman State Office Building, Jefferson City, Missouri 65102, website: [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc). If you have questions regarding this permit, contact Ryan Schott at the Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp  
New Source Review Unit Chief

SH:rs1

Enclosures

c: Northeast Regional Office  
PAMS File: 2015-04-003  
Permit Number: