

NOTES

RECEIPT

DATE 10/6/15

NO. 730019

RECEIVED FROM Ring-Neck Energy

ADDRESS Onida, SD

FOR Air Fees

\$ 1,000⁰⁰

ACCOUNT			HOW PAID		
AMT. OF ACCOUNT			CASH		
AMT. PAID			CHECK	<u>1,000</u>	<u>00</u>
BALANCE DUE			MONEY ORDER		

3221

BY KV

RECEIVED

SEP 30 2015

AIR QUALITY
PROGRAM



PO Box 68 Onida SD, 57564

September 29, 2015

Kyrik Rombough
Natural Resources Engineer
South Dakota DENR
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3182

Subject: Air Quality Construction Permit Application and Notification of Construction
Ring-neck Energy and Feed, LLC
Onida, South Dakota

Via Email: kyrik.rombough@state.sd.us

Dear Mr. Rombough:

Ring-neck Energy and Feed, LLC (RNE) submits this air quality construction permit application for the construction of a new fuel-grade ethanol production plant located in Onida, South Dakota. Emission sources at the plant include grain receiving and handling, fermentation, distillation, DDGS handling, DDGS drying, combustion, storage tanks, and fugitives. RNE has a proposed permitted capacity of 98.51 million gallons per year (MMGal/yr) of undenatured or 100 MMGal/yr of denatured ethanol. RNE will be a major source with respect to Title V permitting. The total facility emissions will remain below applicable Prevention of Significant Deterioration (PSD) thresholds for each criteria pollutant.

In accordance with Chapter 20 of Article 74:36 of the South Dakota Air Pollution Control Program (74:36:20:02.01), RNE is also providing notice of our intentions to initiate construction. This is allowable because:

1. RNE has submitted a construction permit application (attached);
2. RNE has submitted a notification to the department (this letter) at least five working days prior to initiating construction;
3. The new source is not subject to chapter 74:36:09 or 74:36:10;
4. The new source is not subject to 74:36:08:03.01;
5. RNE assumes liability for construction conducted on the source prior to permit issuance;
6. RNE will cease construction if the department deems the construction of the new source will interfere with the attainment of a national ambient air quality standard or increment; and
7. RNE will be required to make any changes to the new source that may be imposed in the issued construction permit.

We have also enclosed the \$125 application fee. We look forward to hearing from you on the status of this application. If you have any questions or comments regarding this submittal, please contact me at the number listed below or Bill VonSee, Merjent at (612) 746-1610.

Sincerely,



Walt Wendland
General Manager
(641) 420-5890

Enclosures: Air Quality Construction Permit Application
Application Fee (\$125)

cc: Bill VonSee, Merjent

CONSTRUCTION AIR PERMIT APPLICATION

**RING-NECK ENERGY & FEED, LLC
Onida, SD**

September 2015

Prepared For:
Ring-Neck Energy & Feed, LLC
P.O. Box 68
Onida, SD

Prepared by:
Merjent, Inc.
800 Washington Ave. N., Suite 315
Minneapolis, MN 55401
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1.0 EXECUTIVE SUMMARY

The Ring-Neck Energy & Feed, LLC plant (RNE) plans to build a new fuel-grade ethanol production plant located in Onida, South Dakota. Emission sources at the plant include grain receiving and handling, fermentation, distillation, DDGS handling, DDGS drying, combustion, storage tanks, and fugitives. RNE has a proposed permitted capacity of 98.51 million gallons per year (MMGal/yr) of undenatured or 100 MMGal/yr of denatured ethanol.

RNE will be a major source with respect to Title V permitting. The total facility emissions will remain below applicable Prevention of Significant Deterioration (PSD) thresholds for each criteria pollutant.

2.0 PROJECT DESCRIPTION

RNE plans to build a new fuel-grade ethanol production plant located in Onida, South Dakota. RNE is proposing maximum production capacity of 98.51 MMGal/yr of undenatured ethanol. The basis for the production of ethanol is to convert starch to sugars and then convert the sugars to ethanol (i.e. grain alcohol). RNE is proposing to receive grain by truck and rail. The grain will be stored in bins prior to processing. The grain will be ground using a hammermill and conveyed to the process area. Water will then be added to the milled grain to create a slurry. The slurry will be cooked, liquefacted with enzymes, and the resultant mash cooled. The mash will be mixed with yeast and more enzymes in a fermenter. After approximately 48 hours of fermentation the resultant liquid (beer) will contain 12%-17% ethanol by weight. The beer will go through a distillation process; the resultant product is 95% ethanol and 5% water (190-proof) and whole stillage consisting of solids and water. Using molecular sieves, the remaining 5% water will be removed from the product resulting in 100% ethanol (200-proof). The product will then be combined with 2.5% natural gasoline and sold as 200-proof denatured ethanol. The whole stillage will be centrifuged to remove the water. The removed water will be evaporated until syrup remains. The syrup will be combined with the centrifuged wet spent grain and either stored as a saleable product or dried in a rotary kiln drier. The dried spent grain will then be pneumatically conveyed to a cooling cyclone to decrease the temperature and for collection of the spent grains. The spent grains will be stored in a storage building. The resulting saleable spent grain by-product is sold as Distillers Dried Grain and Solubles (DDGS). The DDGS and the ethanol will be loaded into trucks and railcars for distribution.

3.0 REGULATORY APPLICABILITY

A review of federal and state air quality regulations is described in the following sections.

3.1 NEW SOURCE REVIEW (NSR)/PREVENTION OF SIGNIFICANT DETERIORATION (PSD) (40 CFR 52)

The Administrative Rules of South Dakota (ARSD) 74:36:10:01 notes that new source review regulations apply to areas of the state which are designated as nonattainment pursuant to the Clean Air Act for any pollutant regulated under the Clean Air Act. RNE's operations are located in Onida, South Dakota, which is in attainment for all the pollutants regulated under the Clean Air Act. Therefore, RNE is not subject to new source review.

RNE does not qualify as a "Major Stationary Source" as defined in 40 CFR 52.21 (b)(1)(i)(a) because it does not match any of the listed source types. Nor does the source qualify as a "Major Stationary Source" as defined in 40 CFR 52.21 (b)(1)(i)(b) because it is not a source that "emits,

or has the potential to emit, 250 tons per year or more of a regulated NSR pollutant", excluding fugitive emissions.

3.2 NATIONAL AMBIENT AIR QUALITY STANDARDS (40 CFR 50)

RNE is located in a rural area of Sully County, South Dakota; the county is in attainment of all state and national ambient air quality standards.

The National Ambient Air Quality Standards (NAAQS) are identified in 40 CFR Part 50. Primary NAAQS define levels of air quality, which the United States Environmental Protection Agency (EPA) deems necessary to protect the public health. Secondary NAAQS define levels of air quality, which the EPA judges necessary to protect the welfare from any known, or anticipated adverse effects of a pollutant. Examples of protective public welfare include wildlife, buildings, national monuments, vegetation, visibility, and property value degradation caused by air pollution. The Prevention of Significant Deterioration (PSD) Increment is the maximum allowable increase in concentration that is allowed to occur above a baseline concentration for a pollutant.

Major sources of air pollution are required to demonstrate compliance with the NAAQS by completing refined air dispersion modeling. Because RNE will limit PTE below PSD thresholds, refined modeling is not specifically required by Federal rules for construction of new sources.

3.3 NEW SOURCE PERFORMANCE STANDARDS (NSPS)

A New Source performance Standard (NSPS), 40 CFR Part 60, is applicable to certain categories of affected facilities that are constructed, modified, or reconstructed and that meet other applicability criteria on or after a compliance date upon which a relevant subpart applies. A discussion on the applicability of various subparts follows:

3.3.1 ARSD 74:36:07:17 and 40 CFR 60 Subpart DD

The provisions of the standards of performance for grain elevators are applicable to the following grain elevators:

1. The provisions of this subpart are applicable to any grain terminal elevator, which has a permanent grain storage capacity of 2,500,000 bushels. A grain terminal storage elevator means any grain elevator except those located at animal food manufacturers, pet food manufactures, cereal manufacturers, breweries, and livestock feedlots; or
2. The provisions of this subpart are applicable to any grain storage elevator, which has a permanent grain storage capacity of 1,000,000 bushels. A grain storage elevator means any grain elevator located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant; and
3. Commences construction, modification, or reconstruction after August 3, 1978.

RNE is considered a grain terminal elevator. The permanent grain storage capacity for this plant is less than the 2,500,000 bushel applicability limit. Therefore, this new source performance standard does not pertain to RNE.

3.3.2 ARSD 74:36:07:14 and 40 CFR 60 Subpart Kb

The provisions of the standards of performance for volatile organic liquid storage vessels are applicable to each storage vessel with a capacity greater than or equal to 75 cubic meters that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. The capacities of Tanks T61, T62, T63, T64 and T65 are all greater than 75 cubic meters. Therefore, this subpart is applicable to all the tanks.

The capacity of Tanks T61, T62, T63, T64 and T65 are greater than 151 cubic meters and have a maximum true vapor pressure greater than 5.2 kilo Pascal and less than 76.6 kilo Pascal. Therefore, these tanks must meet all requirements of this subpart and the notification requirements in 40 CFR § 60.7.

The requirements for Tanks T61, T62, T63, T64 and T65 include maintaining records of the size and dimension of the storage tanks, specific requirements for the tanks cover, type of volatile organic liquid stored, period of storage, and maximum true vapor pressure of the volatile organic liquid during the storage period. The permit shall include the following sections for this new source performance standard:

1. § 60.112b(a)(1);
2. § 60.113b(a);
3. § 60.115b(a);
4. § 60.116b(a), (b) and (c);
5. § 60.7(a)(1), (3), (4), and (5);
6. § 60.8(a), (b), (c), and (d); and
7. § 60.12.

RNE will install a fixed roof with internal floating roof on all of the tanks. Therefore, the permit conditions will be specific to the new source performance standard requirements for a fixed roof with an internal floating roof.

3.3.3 ARSD 74:36:07:22:01 and 40 CFR 60 Subpart VVa

40 CFR Part 60, Subpart VVa is applicable to affected facilities in the synthetic organic chemical manufacturing industry that commence construction, reconstruction, or modification after November 7, 2006 and the capacity of the plant is more than 1,000 megagrams per year of ethanol.

RNE is subject to 40 CFR Part 60, Subpart VVa. This subpart is applicable because construction commenced after November 7, 2006, and the capacity of the plant is more than 1,000 megagrams per year of ethanol.

3.3.4 ARSD 74:36:07:05 and 40 CFR 60 Subpart Db

The standards of performance for industrial, commercial, and institutional steam generating units are applicable to the following:

1. Each steam generating unit for which construction commenced after June 19, 1984; and

2. The steam generating unit has a heat input capacity greater than 100 million Btus per hour.

The boiler will be constructed after June 19, 1984, and has a heat input capacity of greater than 100 million Btus per hour; therefore, this rule is applicable to this boiler system.

RNE does not have to meet sulfur dioxide or particulate emission limits associated with Subpart Db because those standards are associated with the consumption of coal, oil, wood, etc. RNE will have to meet the nitrogen oxide limit and associated requirements in Subpart Db while operating the boiler. RNE will also have to meet the general requirements in Subpart A. The permit shall include the following sections for this new source performance standard:

1. § 60.44b(f),(h), (i), and (l)(2);
2. § 60.46b(c), and (e)(1) and (4);
3. § 60.48b(b)(1), (c), (d), (e)(2), (f), and (g);
4. § 60.49b(a)(1), (b), (c), (g), (h)(2) and (4), (o), and (w);
5. § 60.7(a)(1), (3), (4), and (5), (b), (c), (d), and (f);
6. § 60.8(a), (b), (c), and (d);
7. § 60.12; and
8. § 60.13(a), (b), (d)(1), (e)(2), and (f).

Subpart Db, will require RNE to operate the boiler in accordance with 40 CFR §§ 60.40b to 60.49b.

3.3.5 40 CFR 60 Subpart IIII

The provisions of 40 CFR Part 60, Subpart IIII are applicable to owners and operators of stationary compression ignition (CI) internal combustion engines (ICE) that meet one of the following:

1. Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is 2007 or later for engines that are not fire pump engines or model year 2008 or later for engines that are fire pump engines;
2. Owners or operators of stationary CI ICE that commence construction after July 11, 2005 where the CI ICE is manufactured after April 1, 2006 and is not a fire pump engine or manufactured as a certified National Fire Protection Association fire pump engine after July 1, 2006; or
3. Owners or operators of stationary CI ICE that modified or reconstructed their stationary CI ICE after July 11, 2005.

RNE is planning to install one stationary internal combustion engine, to be utilized as an emergency fire pump. This will be subject to Subpart IIII. Compliance with the standards can be attained by purchasing certified engines that meet the applicable requirements for a given model year.

3.4 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (PART 61)

40 CFR Part 61 defines requirements for industries that emit specific Hazardous Air Pollutants (HAPs). Part 61 was promulgated prior to the 1990 Clean Air Act Amendments (CAAA) and may be superseded in Part 63. Ethanol production facilities are not among the industries listed in Part

61. RNE does not emit any pollutants above the thresholds listed in Part 61 and is therefore not subject to 40 CFR Part 61 of the NESHAP requirements.

3.5 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (PART 63)

40 CFR Part 63 defines major source categories that emit HAPs above Title V major source thresholds; this Part is also known as Maximum Achievable Control Technology (MACT) standards. The major source threshold is 10 tons per year for any single HAP or 25 tons per year for all combined HAP emissions. Individual HAP emissions are limited to less than 10 tons per year and combined HAP emissions are less than 25 tons per year. RNE will be subject to 40 CFR Part 63, subpart ZZZZ because it is installing a reciprocating internal combustion engine (RICE). An "affected source" as defined by subpart ZZZZ "is an existing, new or reconstruction stationary RICE located at a major or areas source of HAP emissions." Therefore, RNE will be subject to the notifications, monitoring, installation, operation and maintenance requirements and record keeping requirements per subpart ZZZZ.

3.6 RISK MANAGEMENT PROGRAM

RNE is subject to the Chemical Accidental Release Prevention Program, which requires certain facilities to develop and implement Risk Management Programs (RMP). The RMP applies to facilities that produce, process, store, or use any regulated toxic substance in excess of the thresholds listed in 40 CFR § 68.130. RNE uses natural gasoline as a denaturant, which contains 30-40% pentane, an RMP chemical. Storage will exceed the applicability thresholds. RNE also uses anhydrous ammonia and has storage greater than 10,000 pounds.

3.7 TITLE V OPERATING PERMIT

40 CFR Part 70 created federal operating permit requirements. These requirements determine that a source is classified as major if the PTE of any single criteria pollutant is greater than 100 TPY. Major sources are required to obtain a federal Title V operating permit. RNE does have a PTE above 100 TPY and is also required to obtain a Title V air quality permit because it is required to comply with federal New Source Performance Standards. Any source operating in South Dakota that meets the requirements of the ARSD 74:36:05:03 is required to obtain a Title V air quality permit.

3.8 ACID RAIN

The acid rain requirements in the Clean Air Act (CAA) are not applicable to RNE. The requirements are applicable to utilities and other facilities that combust fossil fuel (mainly coal) and generate electricity for wholesale or retail sale. RNE will not combust fossil fuels for the purpose of generating electricity for wholesale or retail sale. Also, RNE is not listed as a regulated fossil fuel burning unit and RNE is not required to obtain an acid rain permit according to 40 CFR Part 72.

3.9 STRATOSPHERIC OZONE PROTECTION

Protection of the stratospheric ozone layer was promulgated as part of the CAA Amendment. Sections 601-618 limit activities that deplete stratospheric ozone. The stratospheric ozone protection requirements may apply to RNE. Use of some fire equipment could potentially release an ozone depleting substance known as halons. Release of halons during equipment

maintenance is unlawful. If the fire protection equipment is modified to trigger stratospheric ozone protection program requirements in 40 CFR Part 82, RNE will hire a third-party contractor to maintain the fire protection equipment in accordance with the stratospheric ozone protection requirements.

3.10 STATE RULES

Administrative Rules of South Dakota that apply to Air Quality include Chapter 74:36, Air Pollution Control Program. The sections that are relevant to this project include:

- 74:36:05, Operating Permits for Part 70 Sources;
- 74:36:06, Regulated air pollutant emissions;
- 74:36:07, New source performance standards;
- 74:36:08, National emission standards for hazardous air pollutants;
- 74:36:11, Performance Testing;
- 74:36:12, Control of Visible Emissions; and
- 74:37:01, Air Pollution Control Program Fees.

All of the sections listed above are discussed under the Federal air quality regulations. The state rules refer to the CFR, chapter 40 – Protection of the Environment.

RING-NECK ENERGY & FEED, LLC
Information about Emission Units

Unit ID	Sources	Manufacturer	Capacity	Units	Capacity #2	Units	Date of Construction
	Truck and Rail Receiving		420	tph	20000	bu/hr	
Unit #1	Corn Conveyors		420	tph	20000	bu/hr	
	Scalpers		140	tph	5000	bu/hr	
	Corn Elevators		140	tph	5000	140	
Unit #2	Hammermill Feed		134	tph	4800	bu/hr	
	Hammermilling (4)		134	tph	4800	bu/hr	
	Conveyors		134	tph	4800	bu/hr	
Unit #3	Fermenter #1		730,000	gal			
	Fermenter #2		730,000	gal			
	Fermenter #3		730,000	gal			
	Fermenter #4		730,000	gal			
	Fermenter #5		730,000	gal			
	Fermenter #6		730,000	gal			
	Beerwell		985,000	gal			
	Mixer		100	MMGal/yr			
	Slurry Tank		100	MMGal/yr			
	Liquefaction Tank #2		100	MMGal/yr			
Unit #4	Yeast Tank		100	MMGal/yr			
	Beer Column		100	MMGal/yr			
	Side Stripper		100	MMGal/yr			
	Rectifier Column		100	MMGal/yr			
	200 Proof Condenser		100	MMGal/yr			
	Molecular Sieves		100	MMGal/yr			
	200 Proof Condenser		100	MMGal/yr			
	Centrifuges		50 each	tph			
	DDGS Dryer A		45	MMBtu/hr	41	tph	
	DDGS Dryer B		45	MMBtu/hr	41	tph	
Unit #5	RTO #1		18	MMBtu/hr			
	Truck Loadout Flare		12.4	MMBtu/hr	36000	gph	
Unit #6	Railcar Loadout				120000	gph	
	Boiler		150,000	lb steam/hr	210	MMBtu/hr	
Unit #7	DDGS Building		500	tph			
	DDGS Conveyor		500	tph			
	DDGS Loadout Spout		500	tph			
Unit #8	Biomethanator Flare		6.4	MMBtu/hr			
Unit #9	Cooling Towers		4	cells			
Unit #10	DDGS Cooler		82	tph			
Unit #11	Fire Pump		2.18	MMBtu/hr	300	hp	
Unit #17	Tank #1 (T64)		200,000	gal			
Unit #18	Tank #2 (T65)		200,000	gal			
Unit #19	Tank #3 (T63)		200,000	gal			
Unit #20	Tank #4 (T61)		1,500,000	gal			
Unit #21	Tank #5 (T62)		1,500,000	gal			

RING-NECK ENERGY & FEED, LLC
Stack Information

Emission Stack ID #	Description	Height of Opening From Ground (ft)	Inside Diameter in ft.		Exit Flow Rate (acfm)	Exit Gas Temperature (° F)	Discharge Direction	Rain Cap
			(left column only) or Length x Width in ft.	(both columns)				
1	Grain Receiving Baghouse	135	3.50	N/A	48,000	Ambient	vert	no
2	Hammermilling Baghouse	135	2.67	N/A	28,000	Ambient	vert	no
3	Fermentation CO2 Scrubber	75	2.00	N/A	12,885	90	vert	no
4	Regenerative Thermal Oxidizer Stack	125	5.00	N/A	19,911	240	vert	no
5	Ethanol Loadout Flare	25	4.00	N/A	6,400	850	vert	no
6	Boiler #1	40	5.00	N/A	N/A	N/A	vert	no
7	DDGS Handling Baghouse	40	1.17	N/A	3,750	Ambient	vert	no
8	Biomethanator	TBD	TBD	TBD	TBD	TBD	TBD	TBD
9	DDGS Cooler Stack	135	3.00	N/A	28,000	Ambient	vert	no
11	Emergency Fire Pump	8	0.25	N/A	650	1,250	vert	no

RING-NECK ENERGY & FEED, LLC
Process Equipment Information

Unit #	Emission Point ID #	Stack ID #	Control Equipment	Description	Maximum Design Capacity	Units	Manufacturer	Model No.
Unit #1	EU1	1	Baghouse	Truck Dump Pit #1	20,000	Bu/hr	TBD	TBD
Unit #1	EU2	1	Baghouse	Truck Dump Pit #2	20,000	Bu/hr	TBD	TBD
Unit #1	EU3	1	Baghouse	Rail Dump Pit	20,000	Bu/hr	TBD	TBD
Unit #1	EU4	1	Baghouse	Corn Conveyor #1	20,000	Bu/hr	TBD	TBD
Unit #1	EU5	1	Baghouse	Corn Elevator#1	20,000	Bu/hr	TBD	TBD
Unit #1	EU6	1	Baghouse	Corn Conveyor #2	20,000	Bu/hr	TBD	TBD
Unit #1	EU7	1	Baghouse	Corn Elevator #2	20,000	Bu/hr	TBD	TBD
Unit #1	EU8	1	Baghouse	Scalper #1	20,000	Bu/hr	TBD	TBD
Unit #1	EU9	1	Baghouse	Corn Bin #1	500,000	Bu	TBD	TBD
Unit #1	EU10	1	Baghouse	Corn Bin #2	500,000	Bu	TBD	TBD
Unit #2	EU11	2	Baghouse	Surge Bin	11,000	Bu	TBD	TBD
Unit #2	EU12	2	Baghouse	Conveyor #3	1,500	Bu/hr	TBD	TBD
Unit #2	EU13	2	Baghouse	Hammermill #1	1,500	Bu/hr	TBD	TBD
Unit #2	EU14	2	Baghouse	Hammermill #2	1,500	Bu/hr	TBD	TBD
Unit #2	EU15	2	Baghouse	Hammermill #3	1,500	Bu/hr	TBD	TBD
Unit #2	EU16	2	Baghouse	Hammermill #4	1,500	Bu/hr	TBD	TBD
Unit #3	EU17	3	Scrubber	Slurry Tank	60,000	gallons	TBD	TBD
Unit #3	EU18	3	Scrubber	Liquefaction tank #1	60,000	gallons	TBD	TBD
Unit #3	EU19	3	Scrubber	Liquefaction tank #2	60,000	gallons	TBD	TBD
Unit #3	EU20	3	Scrubber	Flash Tank	1,339	gallons	TBD	TBD
Unit #3	EU21	3	Scrubber	Cook Tank	50,000	gallons	TBD	TBD
Unit #3	EU22	3	Scrubber	Fermenter #1	1,050,000	gallons	TBD	TBD
Unit #3	EU23	3	Scrubber	Fermenter #2	1,050,000	gallons	TBD	TBD
Unit #3	EU24	3	Scrubber	Fermenter #3	1,050,000	gallons	TBD	TBD
Unit #3	EU25	3	Scrubber	Fermenter #4	1,050,000	gallons	TBD	TBD
Unit #3	EU26	3	Scrubber	Fermenter #5	1,050,000	gallons	TBD	TBD
Unit #3	EU27	3	Scrubber	Fermenter #6	1,050,000	gallons	TBD	TBD
Unit #3	EU28	3	Scrubber	Beerwell	1,370,000	gallons	TBD	TBD
Unit #4	EU29	4	RTO	Yeast Tank	400	gallons	TBD	TBD
Unit #4	EU30	4	RTO	Beer Stripper	850	gpm	TBD	TBD
Unit #4	EU31	4	RTO	Side Stripper	150	gpm	TBD	TBD
Unit #4	EU32	4	RTO	Rectifier Column	150	gpm	TBD	TBD
Unit #4	EU33	4	RTO	Molecular Sieve	150	gpm	TBD	TBD
Unit #4	EU34	4	RTO	Evaporator	405	gpm	TBD	TBD
Unit #4	EU35	4	RTO	Whole Stillage Tank	100,000	gallons	TBD	TBD
Unit #4	EU36	4	RTO	Centrate Stillage Tank	1,000	gallons	TBD	TBD
Unit #4	EU37	4	RTO	Centrifuge #1	185	gpm	TBD	TBD
Unit #4	EU38	4	RTO	Centrifuge #2	185	gpm	TBD	TBD
Unit #4	EU39	4	RTO	Centrifuge #3	185	gpm	TBD	TBD
Unit #4	EU40	4	RTO	Centrifuge #4	185	gpm	TBD	TBD
Unit #4	EU41	4	RTO	Syrup Tank	100,000	gallons	TBD	TBD
Unit #4	EU42	4	RTO	200 Proof Condenser	100	gpm	TBD	TBD
Unit #4	EU43	4	RTO	DDGS Dryer #1	45	MMBtu/hr	TBD	TBD
Unit #4	EU44	4	RTO	DDGS Dryer #2	45	MMBtu/hr	TBD	TBD
Unit #4	EU45	4	RTO	RTO	18	MMBtu/hr	TBD	TBD
Unit #5	EU46	5	Flare/Dedicated Fleet	Ethanol Loadout	1,600	gpm	TBD	TBD
Unit #6	EU47	6	Boiler	Boiler #1	150,000	lb steam/hr	TBD	TBD
Unit #7	EU48	7	Baghouse	DDGS Storage Building	5,000	tons	TBD	TBD
Unit #7	EU49	7	Baghouse	DDGS Elevator	318	tph	TBD	TBD
Unit #7	EU50	7	Baghouse	DDGS Loadout Spout	318	tph	TBD	TBD
Unit #8	EU51	8	Flare	Biomethanator Flare	6	MMBtu/hr	N/A	N/A
Unit #9	EU52	9	NA	Cooling Towers	4	cells	N/A	N/A
Unit #9	EU53	9	Baghouse	DDGS Cooler	N/A	N/A	N/A	N/A
Unit #11	EU54	11	NA	Emergency Fire Pump	300	hp	TBD	TBD

RING-NECK ENERGY & FEED, LLC
Tank Information

Storage Tank Information

Tank ID #	Product(s) Stored	Interior	Interior	Capacity (1000 gals.)	Construction Type	Floating Roof Only		
		Height (ft)	Diameter (ft)			Support Type	Deck Type	Seal Type
T64	200 Proof (200,000 gals)	30	33	200	IFRT	Self	Bolted	Vapor
T65	200 Proof (200,000 gals)	30	33	200	IFRT	Self	Bolted	Vapor
T63	Denaturant Tank (200,000 gals)	30	33	200	IFRT	Self	Bolted	Vapor
T61	Denatured Ethanol #1 (1,500,000 gals)	70	65	1500	IFRT	Self	Bolted	Vapor
T62	Denatured Ethanol #2 (1,500,000 gals)	70	65	1500	IFRT	Self	Bolted	Vapor

Fugitive Source Information

Fugitive Source ID #	Description of Fugitive Emission Source	Pollutant Emitted PM or VOC
F001	Grain Receiving Fugitives	PM
F002	DDGS Loadout Fugitives	PM
F003	Paved Roads	PM
F004	Equipment Leaks	VOC
F005	Wetcake Storage	VOC

**APPENDIX A – SD DENR FORMS
AND ASSOCIATED FIGURES**



**Application Form
Air Quality Construction Permit
General Information Form
And
Certification of Applicant Form**

SEND ALL MATERIALS TO:

SD Department of Environment and Natural Resources
Air Quality Program
523 East Capitol
Pierre, South Dakota 57501-3181

**RECEIVED
SEP 30 2015
AIR QUALITY
PROGRAM**

(Please complete shaded areas - if you have questions call (605) 773-3151)

A. Application Type

Check the appropriate box:

<input checked="" type="checkbox"/>	New ¹		<input type="checkbox"/>	Modification ¹		<input type="checkbox"/>	Administrative Revision
-------------------------------------	------------------	--	--------------------------	---------------------------	--	--------------------------	-------------------------

For administrative revisions, provide existing permit number: 28.0505-59-01C

¹ – Applications for a “New” air quality construction permit that is also a major source of air emissions under the Title V air quality operating permit program is required to submit an application fee of \$125. In addition, a “Modification” to an existing source with a Title V air quality operating permit is also required to submit an application fee of \$125. The application fee is not applicable to ethanol plants.

B. General Information

1. Facility name:	Ring-Neck Energy & Feed, LLC
2. Mailing address:	PO Box 68
City, state, zip code	Onida, SD 57564
3. Facility location (if plant is portable, enter location at time of submittal):	No address available at this time. All mail goes to above address.
Street and city	No address available at this time. All mail goes to above address.
Legal description (if street address is unknown)	E ½ SE ¼ NE ¼ Section 14 Township 114 N Range 77 W (Quarter, Section, Township, Range)
4. Construction contact:	Walter Wendland
Name/title	641-420-5890 (cell)
Telephone number	Walt@ringneckenergy.com
Email address	

D. Air Emissions Summary (skip this section for Administrative Revisions)

Potential air emissions are calculated assuming the permitted unit operates 24 hours per day, 7 days per week, 52 weeks per year at its maximum design capacity. If air emissions are available, please complete the following table. Attach all available documentation used to calculate the potential air emissions such as a spreadsheet, software programs (i.e., Tanks 4.09), emission factors, calculations, MSDS sheets for all products containing volatile organic compounds and/or hazardous air pollutants, and other supporting documentation.

Pollutant	Actual	Potential Controlled	Potential Uncontrolled
	(tons per year)	(tons per year)	(tons per year)
PM10 ²			
PM2.5 ³	SEE ATTACHED CALCULATIONS		
Sulfur Dioxide			
Nitrogen Oxide			
Carbon Monoxide			
Volatile Organic Compounds			
Greenhouse Gases			
Hazardous Air Pollutants (if applicable)			

² – PM10 means particulate matter 10 microns in diameter or less; and

³ – PM2.5 means particulate matter 2.5 microns in diameter or less.

Please contact the Department at (605) 773-3151 if assistance is needed for calculating emissions for the permitted units such as emission factors, clarifying what potential emissions are, efficiency for control equipment, or for any other questions.

E. Forms for Specific Equipment and Control Equipment

9. The following forms must be completed for each piece of specific equipment being installed at the facility and submitted with this form:

Boiler, Turbine, or Furnace	Generators and Fire Pumps	Incinerator
Kiln or Dryer	Spray Booth	Storage Tank
Miscellaneous	Insignificant Activities⁴	

⁴ – The “Insignificant Activities” form should be completed for each operation identified as an insignificant activity and exempt from permitting.

10. The following forms must be completed for each piece of specific air control equipment being installed at the facility and submitted with this form:

Baghouse	Wet Scrubber	Electrostatic Precipitator
Thermal Oxidizer	Miscellaneous	

F. Certification of Compliance

I certify the following:

This application is submitted in accordance with the provisions of the South Dakota Codified Laws 34A-1 and Administrative Rules of South Dakota 74:36. To the best of my knowledge, after reasonable inquiry, the statements and information contained in the application and supporting documents are true, accurate, and complete. In accordance with South Dakota Codified Laws 1-40-27, I have also enclosed a completed Certification of Applicant form.

Signature:	<i>Walter Wendland</i>	<i>9/30/2015</i>
Print Name:	Walter Wendland	Date

Responsible Official

STATE OF SOUTH DAKOTA

BEFORE THE SECRETARY OF

THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

IN THE MATTER OF THE)
APPLICATION OF)

Title V Air Permit)

STATE OF South Dakota)

COUNTY OF Sully)

CERTIFICATION OF

APPLICANT

I, Walter Wendland, the applicant in the above matter after being duly sworn upon oath hereby certify the following information in regard to this application:

I have read and understand South Dakota Codified Law Section 1-40-27 which provides:

"The secretary may reject an application for any permit filed pursuant to Titles 34A or 45, including any application by any concentrated swine feeding operation for authorization to operate under a general permit, upon making a specific finding that:

(1) The applicant is unsuited or unqualified to perform the obligations of a permit holder based upon a finding that the applicant, any officer, director, partner, or resident general manager of the facility for which application has been made:

(a) Has intentionally misrepresented a material fact in applying for a permit;

(b) Has been convicted of a felony or other crime involving moral turpitude;

(c) Has habitually and intentionally violated environmental laws of any state or the United States which have caused significant and material environmental damage;

(d) Has had any permit revoked under the environmental laws of any state or the United States; or

(e) Has otherwise demonstrated through clear and convincing evidence of previous actions that the applicant lacks the necessary good character and competency to reliably carry out the obligations imposed by law upon the permit holder; or

(2) The application substantially duplicates an application by the same applicant denied within the past five years which denial has not been reversed by a court of competent jurisdiction.

Nothing in this subdivision may be construed to prohibit an applicant from submitting a new application for a permit previously denied, if the new application represents a good faith attempt by the applicant to correct the deficiencies that served as the basis for the denial in the original application.

All applications filed pursuant to Titles 34A and 45 shall include a certification, sworn to under oath and signed by the applicant, that he is not disqualified by reason of this section from obtaining a permit. In the absence of evidence to the contrary, that certification shall constitute a prima facie showing of the suitability and qualification of the applicant. If at any point in the application review, recommendation or hearing process, the secretary finds the applicant has intentionally made any material misrepresentation of fact in regard to this certification, consideration of the application

may be suspended and the application may be rejected as provided for under this section.

Applications rejected pursuant to this section constitute final agency action upon that application and may be appealed to circuit court as provided for under chapter 1-26."

I certify pursuant to 1-40-27, that as an applicant, officer, director, partner, or resident general manager of the activity or facility for which the application has been made that I; a) have not intentionally misrepresented a material fact in applying for a permit; b) have not been convicted of a felony or other crime of moral turpitude; c) have not habitually and intentionally violated environmental laws of any state or the United States which have caused significant and material environmental damage; (d) have not had any permit revoked under the environmental laws of any state or the United States; or e) have not otherwise demonstrated through clear and convincing evidence of previous actions that I lack the necessary good character and competency to reliably carry out the obligations imposed by law upon me. I also certify that this application does not substantially duplicate an application by the same applicant denied within the past five years which denial has not been reversed by a court of competent jurisdiction. Further;

"I declare and affirm under the penalties of perjury that this claim (petition, application, information) has been examined by me, and to the best of my knowledge and belief, is in all things true and correct."

Dated this 30 day of September, 2015.

Ring-neck Energy + Feed LLC
Applicant (print)

Walter Wendland
Applicant (signature)

Subscribed and sworn before me this 30 day of September, 2015.

Linda Bruning
Notary Public (signature)

My commission expires: _____
**LINDA BRUNING
NOTARY PUBLIC
MY COMMISSION EXPIRES
DECEMBER 17, 2020**



(SEAL)

PLEASE ATTACH ANY ADDITIONAL INFORMATION NECESSARY TO DISCLOSE ALL FACTS AND DOCUMENTS PERTAINING TO SDCL 1-40-27 (1) (a) THROUGH (e). ALL VIOLATIONS MUST BE DISCLOSED, BUT WILL NOT AUTOMATICALLY RESULT IN THE REJECTION OF AN APPLICATION



Air Quality Permit Application

Baghouse

This form is to be submitted, if necessary, along with the Title V (Part 70) Operating Permit, Minor Operating Permit, or the General Permits.
 (please complete shaded areas)

Equipment and processes served by this baghouse (please list all equipment and processes):

Equipment and Processes

1.	Truck Receiving, Rail Receiving (Truck Dumps Pit #1 and #2 and Rail Dump Pit #1)
2.	Grain Elevators #1 and #2
3.	Conveyor #1 and #2
4.	Scalper #1
5.	Corn Bin #1 and #2

Manufacturer Information:

Manufacturer?	TBD		
Manufacturer date?	TBD	Installation date?	TBD
Manufacturer's designed control efficiency?	99		%
Type of baghouse (please check one)?			
<input type="checkbox"/> Reverse Air	<input type="checkbox"/> Pulse Jet	<input checked="" type="checkbox"/> Shaker	<input type="checkbox"/> Other (specify) _____
Type of bags?	TBD		
Number of bags?	TBD	Air/cloth ratio?	TBD

Baghouse Operation and Maintenance:

Pressure drop across baghouse?	TBD	inches water (minimum)	TBD	inches water (maximum)
Inlet Temperature?	Ambient	Fahrenheit (minimum)	Ambient	Fahrenheit (maximum)
Outlet Temperature?	Ambient	Fahrenheit (minimum)	Ambient	Fahrenheit (maximum)

Describe maintenance of baghouse (use of dye test, visual inspections, changing bag frequency, etc.):

Visual inspections and observing pressure drop across the baghouse, and visual emission checks

Stack Information: If this application is a renewal, contact the air program. We may have this information.

X- Coordinate or Easting: ¹	TBD	feet	or		meters
Y- Coordinate or Northing: ¹	TBD	feet	or		meters
Base Elevation of Stack: ¹	TBD	feet	or		meters
Stack Height:	135	feet	or		meters
Exit Stack Diameter	3.5	feet	or		meters
Exit Stack Temperature	Ambient	degrees Fahrenheit			

Exit Stack Velocity and/or Flow Rate:

Velocity: feet per second meters per second
and/or

Flow Rate: actual cubic feet per minute actual cubic meters per second

¹ - Portable asphalt plants, rock crushers, or concrete plants do not have to provide the requested information in these categories.



Air Quality Permit Application

Baghouse

This form is to be submitted, if necessary, along with the Title V (Part 70) Operating Permit, Minor Operating Permit, or the General Permits.
 (please complete shaded areas)

Equipment and processes served by this baghouse (please list all equipment and processes):

Equipment and Processes

1.	Surge Bin
2.	Conveyor #3
3.	Hammermill #1
4.	Hammermill #2
5.	Hammermill #3
6.	Hammermill #4

Manufacturer Information:

Manufacturer?	TBD		
Manufacturer date?	TBD	Installation date?	TBD
Manufacturer's designed control efficiency?	99		%
Type of baghouse (please check one)?			
<input type="checkbox"/> Reverse Air	<input type="checkbox"/> Pulse Jet	<input checked="" type="checkbox"/> Shaker	<input type="checkbox"/> Other (specify) _____
Type of bags?	TBD		
Number of bags?	TBD	Air/cloth ratio?	TBD

Baghouse Operation and Maintenance:

Pressure drop across baghouse?	TBD	inches water (minimum)	TBD	inches water (maximum)
Inlet Temperature?	Ambient	Fahrenheit (minimum)	Ambient	Fahrenheit (maximum)
Outlet Temperature?	Ambient	Fahrenheit (minimum)	Ambient	Fahrenheit (maximum)

Describe maintenance of baghouse (use of dye test, visual inspections, changing bag frequency, etc.):

Visual inspections and observing pressure drop across the baghouse, and visual emission checks

Stack Information: If this application is a renewal, contact the air program. We may have this information.

X- Coordinate or Easting: ¹	TBD	feet	or		meters
Y- Coordinate or Northing: ¹	TBD	feet	or		meters
Base Elevation of Stack: ¹	TBD	feet	or		meters
Stack Height:	135	feet	or		meters
Exit Stack Diameter	2.67	feet	or		meters
Exit Stack Temperature	Ambient	degrees Fahrenheit			

Exit Stack Velocity and/or Flow Rate:

Velocity: feet per second meters per second

and/or

Flow Rate: actual cubic feet per minute actual cubic meters per second

¹ - Portable asphalt plants, rock crushers, or concrete plants do not have to provide the requested information in these categories.



Air Quality Permit Application Wet Scrubber Data Sheet

This form is to be submitted, if necessary, along with the Title V (Part 70) Operating Permit, Minor Operating Permit, or the General Permits.
(please complete shaded areas)

Equipment and processes served by this wet scrubber (please list all equipment and processes):

Equipment and Processes

1.	Slurry Tank
2.	Liquefaction Tank #1 and #2
3.	Flash Tank
4.	Cook Tank
5.	Fermenter's #1, #2, #3, #4, #5, #6
6.	Beerwell

Manufacturer Information:

Manufacturer?	TBD		
Manufacturer date?	TBD	Installation date?	TBD
Manufacturer's designed control efficiency?	98		%
Type of wet scrubber (please check one)?			
<input type="checkbox"/> Venturi	<input type="checkbox"/> Demister	<input checked="" type="checkbox"/> Other (specify)	<input type="checkbox"/> Packed bed
Scrubbing Additives?	Sodium bi-sulfite or equivalent, water		

Wet Scrubber Operation and Maintenance:

Pressure drop across wet scrubber?	TBD	inches water (minimum)	TBD	inches water (maximum)
Inlet Temperature?	TBD	Fahrenheit (minimum)	TBD	Fahrenheit (maximum)
Outlet Temperature?	TBD	Fahrenheit (minimum)	TBD	Fahrenheit (maximum)
Water recycled (check one)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
If yes, number of pond(s):	<input type="text"/>	Pond size:	<input type="text"/>	Type of liner:
If no, describe type of treatment and location of any planned water discharge from the property:				
Water is recycled into the process				

Describe maintenance of wet scrubber (visual inspection, how often ponds are cleaned, etc.)

Visual inspections

Stack Information: If this application is a renewal, contact the air program. We may have this information.

X- Coordinate or Easting: ¹	TBD	feet	or		meters
Y- Coordinate or Northing: ¹	TBD	feet	or		meters
Base Elevation of Stack: ¹	TBD	feet	or		meters
Stack Height:	75	feet	or		meters
Exit Stack Diameter	2	feet	or		meters
Exit Stack Temperature	90	degrees Fahrenheit			

Exit Stack Velocity and/or Flow Rate:

Velocity: feet per second meters per second
and/or

Flow Rate: actual cubic feet per minute actual cubic meters per second

¹ - Portable asphalt plants, rock crushers, or concrete plants do not have to provide the requested information in these categories.



Air Quality Permit Application Form

Kiln or Dryer

This form is to be submitted, if necessary, along with the Title V (Part 70) Operating Permit or Minor Operating Permit. (please complete shaded areas)

1. Facility identification (i.e., Kiln #1, Unit #1, etc.):

2. Manufacturer: Manufacture date:

3. Model number:

4. Process (i.e., dry a product, produce a product, etc.)

5. Maximum designed operating rate of burner (name plate):
 million Btus per hour heat input

6. Maximum designed operating rate of process:
 tons per hour

7. Type of material processed?

8. Check the appropriate box(es) for primary and secondary fuels:

<input checked="" type="checkbox"/> Natural gas	<input checked="" type="checkbox"/> Propane
<input type="checkbox"/> Distillate oil	<input type="text"/> Sulfur content <input type="text"/> Weight percent
<input type="checkbox"/> Residual oil	<input type="text"/> Sulfur content <input type="text"/> Weight percent
<input type="checkbox"/> Bituminous Coal	<input type="text"/> Subbituminous Coal <input type="text"/> Lignite Coal
<input type="text"/> Coal sulfur content <input type="text"/> Weight percent	<input type="text"/> Coal ash content <input type="text"/> Weight percent
<input type="checkbox"/> Other (please specify)	<input type="text"/>

9. Has a stack test been conducted (check appropriate box)? Yes No

If a stack test has been conducted, please attach a copy of the most recent stack test report to this application. If the Department already has a copy of the most recent stack test, please specify the date of most recent stack test.

Date of most recent stack test:

Control Equipment: If applicable, types of air pollution control equipment (Examples: baghouse, cyclone, wet scrubber, electrostatic precipitator, thermal oxidizer, miscellaneous control device, etc.).

Please complete the appropriate air quality permit application form for each type of control equipment that controls air emissions from this operation.

Stack Information: If this application is a renewal, contact the air program. We may have this information.

X- Coordinate or Easting:	TBD	feet		meters
Y- Coordinate or Northing:	TBD	feet		meters
Base Elevation of Stack:	TBD	feet		meters
Stack Height:	125	feet		meters
Exit Stack Diameter	5	feet		meters
Exit Stack Temperature	240	degrees Fahrenheit		

Exit Stack Velocity and/or Flow Rate:

Velocity: feet per second meters per second

and/or

Flow Rate: 19,911 actual cubic feet per minute actual cubic meters per second



Air Quality Permit Application Form

Kiln or Dryer

This form is to be submitted, if necessary, along with the Title V (Part 70) Operating Permit or Minor Operating Permit.
(please complete shaded areas)

1. Facility identification (i.e., Kiln #1, Unit #1, etc.):

2. Manufacturer: Manufacture date:

3. Model number:

4. Process (i.e., dry a product, produce a product, etc.)

5. Maximum designed operating rate of burner (name plate):
 million Btus per hour heat input

6. Maximum designed operating rate of process:
 tons per hour

7. Type of material processed?

8. Check the appropriate box(es) for primary and secondary fuels:

<input checked="" type="checkbox"/> Natural gas	<input checked="" type="checkbox"/> Propane		
<input type="checkbox"/> Distillate oil	Sulfur content <input type="text"/>	Weight percent	
<input type="checkbox"/> Residual oil	Sulfur content <input type="text"/>	Weight percent	
<input type="checkbox"/> Bituminous Coal	<input type="text"/>	Subbituminous Coal	<input type="text"/>
Coal sulfur content <input type="text"/>	Weight percent	Coal ash content <input type="text"/>	Weight percent
<input type="checkbox"/> Other (please specify)	<input type="text"/>		

Propane - not in calculations

9. Has a stack test been conducted (check appropriate box)? Yes No

If a stack test has been conducted, please attach a copy of the most recent stack test report to this application. If the Department already has a copy of the most recent stack test, please specify the date of most recent stack test.

Date of most recent stack test:

Control Equipment: If applicable, types of air pollution control equipment (Examples: baghouse, cyclone, wet scrubber, electrostatic precipitator, thermal oxidizer, miscellaneous control device, etc.).

Please complete the appropriate air quality permit application form for each type of control equipment that controls air emissions from this operation.

Stack Information: If this application is a renewal, contact the air program. We may have this information.

X- Coordinate or Easting:	TBD	feet		meters
Y- Coordinate or Northing:	TBD	feet		meters
Base Elevation of Stack:	TBD	feet		meters
Stack Height:	125	feet		meters
Exit Stack Diameter	5	feet		meters
Exit Stack Temperature	240	degrees Fahrenheit		

Exit Stack Velocity and/or Flow Rate:

Velocity: feet per second meters per second
and/or

Flow Rate: actual cubic feet per minute actual cubic meters per second



Air Quality Permit Application Form

Thermal Oxidizer

This form is to be submitted, if necessary, along with the Title V (Part 70) Operating Permit, Minor Operating Permit, or the General Permits. (please complete shaded areas)

Equipment and processes served by this thermal oxidizer (please list all equipment and processes):

Equipment and Processes

1. DDGS Dryer #1 and #2
2. Distillation Process

Manufacturer Information:

Manufacturer?	TBD		
Manufacturer date?	TBD	Installation date?	TBD
Manufacturer's designed control efficiency?	TBD		%
Maximum heat input?	18		million Btus per hour
Lowest operating temperature?	TBD		Degrees Fahrenheit
Residence time?	TBD		Seconds
Type of fuel?	Natural Gas		Primary
			Secondary

Stack Information: If this application is a renewal, contact the air program. We may have this information.

X- Coordinate or Easting:	TBD	feet	or		meters
Y- Coordinate or Northing:	TBD	feet	or		meters
Base Elevation of Stack:	TBD	feet	or		meters
Stack Height:	125	feet	or		meters
Exit Stack Diameter	5.0	feet	or		meters
Exit Stack Temperature	240	degrees Fahrenheit			

Exit Stack Velocity and/or Flow Rate:

Velocity: feet per second meters per second
 and/or
 Flow Rate: actual cubic feet per minute actual cubic meters per second



Air Quality Permit Application Form

Miscellaneous Control Device

This form is to be submitted, if necessary, along with the Title V (Part 70) Operating Permit, Minor Operating Permit, or the General Permits.

(please complete shaded areas)

Describe the miscellaneous control device and how it works:

Flare to control VOC's from ethanol truck loadout

Equipment and processes served by this baghouse (please list all equipment and processes):

Equipment and Processes

1. ethanol truck loadout
- 2.
- 3.
- 4.
- 5.

Manufacturer Information:

Manufacturer?	TBD		
Manufacturer date?	TBD	Installation date?	TBD
Manufacturer's designed control efficiency?	98		%

Miscellaneous Control Device Operation and Maintenance:

Pressure drop across control unit?	TBD	Inches water (minimum)	TBD	inches water (maximum)
Inlet Temperature?	TBD	Fahrenheit (minimum)	TBD	Fahrenheit (maximum)
Outlet Temperature?	TBD	Fahrenheit (minimum)	TBD	Fahrenheit (maximum)

Describe maintenance of control unit (use of visual inspections, maintenance schedule, etc.):

Visual inspections per manufacturer's recommendations

Stack Information: If this application is a renewal, contact the air program. We may have this information.

X- Coordinate or Easting: ¹	TBD	feet	or		meters
Y- Coordinate or Northing: ¹	TBD	feet	or		meters
Base Elevation of Stack: ¹	TBD	feet	or		meters
Stack Height:	25	feet	or		meters
Exit Stack Diameter	4	feet	or		meters
Exit Stack Temperature	850	degrees Fahrenheit			

Exit Stack Velocity and/or Flow Rate:

Velocity: feet per second meters per second

and/or

Flow Rate: 6,400 actual cubic feet per minute actual cubic meters per second

¹ - Portable asphalt plants, rock crushers, or concrete plants do not have to provide the requested information in these categories.



Air Quality Permit Application Form Boiler Turbine or Furnace

**This form is to be submitted, if necessary, along with
the Title V (Part 70) Operating Permit or Minor Operating Permit.
(please complete shaded areas)**

1. Facility identification (i.e., Boiler #1, Unit #1, etc): Boiler #1

2. Manufacturer: TBD Manufacture date: TBD

3. Model number: TBD

4. Type (i.e., steam boiler, simple cycle combustion turbine, generator, etc.)

Steam Boiler

5. Maximum designed operating rate (name plate):

210	million Btus per hour heat input
or	horsepower with boiler efficiency:
or	kilowatts with boiler efficiency:

6. Check the appropriate box(es) for primary and secondary fuels:

<input checked="" type="checkbox"/>	Natural gas	<input checked="" type="checkbox"/>	Propane
<input type="checkbox"/>	Distillate oil	<input type="checkbox"/>	Sulfur content Weight percent
<input type="checkbox"/>	Residual oil	<input type="checkbox"/>	Sulfur content Weight percent
<input type="checkbox"/>	Bituminous Coal	<input type="checkbox"/>	Subbituminous Coal
<input type="checkbox"/>	Coal sulfur content 	<input type="checkbox"/>	Lignite Coal
<input type="checkbox"/>	Weight percent	<input type="checkbox"/>	Coal ash content Weight percent
<input type="checkbox"/>	Other (please specify) 		

7. Has a stack test been conducted (check appropriate box)? Yes X No

If a stack test has been conducted, please attach a copy of the most recent stack test report to this application. If the Department already has a copy of the most recent stack test, please specify the date of most recent stack test.

Date of most recent stack test:

Control Equipment: If applicable, types of air pollution control equipment (Examples: baghouse, cyclone, wet scrubber, electrostatic precipitator, thermal oxidizer, miscellaneous control device, etc.).

None

Please complete the appropriate air quality permit application form for each type of control equipment that controls air emissions from this operation.

Stack Information: If this application is a renewal, contact the air program. We may have this information.

X- Coordinate or Easting:	TBD	feet		meters
Y- Coordinate or Northing:	TBD	feet		meters
Base Elevation of Stack:	TBD	feet		meters
Stack Height:	40	feet		meters
Exit Stack Diameter	5.0	feet		meters
Exit Stack Temperature	TBD	degrees Fahrenheit		

Exit Stack Velocity and/or Flow Rate:

Velocity: feet per second meters per second
and/or

Flow Rate: actual cubic feet per minute actual cubic meters per second



Air Quality Permit Application

Baghouse

This form is to be submitted, if necessary, along with the Title V (Part 70) Operating Permit, Minor Operating Permit, or the General Permits.
 (please complete shaded areas)

Equipment and processes served by this baghouse (please list all equipment and processes):

Equipment and Processes

1.	DDGS Elevator
2.	DDGS Loadout Spout
3.	
4.	
5.	

Manufacturer Information:

Manufacturer?	TBD		
Manufacturer date?	TBD	Installation date?	TBD
Manufacturer's designed control efficiency?	99		%
Type of baghouse (please check one)?			
<input type="checkbox"/> Reverse Air	<input checked="" type="checkbox"/> Pulse Jet	<input type="checkbox"/> Shaker	<input type="checkbox"/> Other (specify) _____
Type of bags?	TBD		
Number of bags?	TBD	Air/cloth ratio?	TBD

Baghouse Operation and Maintenance:

Pressure drop across baghouse?	TBD	inches water (minimum)	TBD	inches water (maximum)
Inlet Temperature?	Ambient	Fahrenheit (minimum)	Ambient	Fahrenheit (maximum)
Outlet Temperature?	Ambient	Fahrenheit (minimum)	Ambient	Fahrenheit (maximum)

Describe maintenance of baghouse (use of dye test, visual inspections, changing bag frequency, etc.):

Visual inspections and observing pressure drop across the baghouse, and visual emission checks

Stack Information: If this application is a renewal, contact the air program. We may have this information.

X- Coordinate or Easting: ¹	TBD	feet	or		meters
Y- Coordinate or Northing: ¹	TBD	feet	or		meters
Base Elevation of Stack: ¹	TBD	feet	or		meters
Stack Height:	40	feet	or		meters
Exit Stack Diameter	1.17	feet	or		meters
Exit Stack Temperature	Ambient	degrees Fahrenheit			

Exit Stack Velocity and/or Flow Rate:

Velocity: feet per second meters per second

and/or

Flow Rate: actual cubic feet per minute actual cubic meters per second

¹ - Portable asphalt plants, rock crushers, or concrete plants do not have to provide the requested information in these categories.



Air Quality Permit Application

Baghouse

This form is to be submitted, if necessary, along with the Title V (Part 70) Operating Permit, Minor Operating Permit, or the General Permits.

(please complete shaded areas)

Equipment and processes served by this baghouse (please list all equipment and processes):

Equipment and Processes

1. Cooling Cyclone

Manufacturer Information:

Manufacturer?	TBD		
Manufacturer date?	TBD	Installation date?	TBD
Manufacturer's designed control efficiency?	99		%
Type of baghouse (please check one)?			
<input checked="" type="checkbox"/> Reverse Air	<input type="checkbox"/> Pulse Jet	<input type="checkbox"/> Shaker	<input type="checkbox"/> Other (specify) _____
Type of bags?	TBD		
Number of bags?	TBD	Air/cloth ratio?	TBD

Baghouse Operation and Maintenance:

Pressure drop across baghouse?	0.1	inches water (minimum)	10	inches water (maximum)
Inlet Temperature?	Ambient	Fahrenheit (minimum)	Ambient	Fahrenheit (maximum)
Outlet Temperature?	Ambient	Fahrenheit (minimum)	Ambient	Fahrenheit (maximum)

Describe maintenance of baghouse (use of dye test, visual inspections, changing bag frequency, etc.):

Visual inspections and observing pressure drop across the baghouse, and visual emission checks

Stack Information: If this application is a renewal, contact the air program. We may have this information.

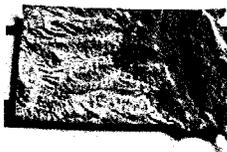
X- Coordinate or Easting: ¹	TBD	feet	or		meters
Y- Coordinate or Northing: ¹	TBD	feet	or		meters
Base Elevation of Stack: ¹	TBD	feet	or		meters
Stack Height:	135	feet	or		meters
Exit Stack Diameter	3	feet	or		meters
Exit Stack Temperature	Ambient	degrees Fahrenheit			

Exit Stack Velocity and/or Flow Rate:

Velocity: feet per second meters per second
and/or

Flow Rate: actual cubic feet per minute actual cubic meters per second

¹ - Portable asphalt plants, rock crushers, or concrete plants do not have to provide the requested information in these categories.



Air Quality Permit Application Form
Generators and Fire Pumps

This form is to be submitted, if necessary, along with
 the Title V (Part 70) Operating Permit or Minor Operating Permit.
 (please complete shaded areas)

1. Facility identification (e.g. Generator #1, Fire Pump #1, etc.):

2. Manufacturer:

3. Model number:

4. Type (e.g. compression ignition, spark ignition, fire pump, etc.)

5. Maximum designed operating rate (name plate):

horsepower with generator efficiency:

or mechanical kilowatts with generator efficiency:

6. Check the appropriate box(es) for primary and secondary fuels:

<input type="checkbox"/>	Natural gas	<input type="checkbox"/>	Propane
<input checked="" type="checkbox"/>	Distillate oil	<input type="text"/>	Sulfur content Weight percent
<input type="checkbox"/>	Residual oil	<input type="text"/>	Sulfur content Weight percent
<input type="checkbox"/>	Other (e.g. coal, wood, etc.) <input type="text"/>		

7. Is the unit equipped with a non-settable clock? Yes No

8. Manufacture date?

If the manufacture date is prior to July 11, 2005, skip to Question #11

9. Will the unit operate more than 100 hours per year? Yes No

If yes proceed to Question #10, if no skip to Question #11.

10. If the generator operates more than 500 hours per year and the manufacture date is after to July 11, 2005, will crankcase emissions be controlled? (If this is for a fire pump engine, skip Question #10 and proceed to Question #11)

Yes No If yes, please explain:

11. Does the emergency generator or fire pump operate less than 500 hours per year? Yes No

12. What is the displacement of the unit in liters?

13. How many cylinders does the unit have?

14. Please list the Manufacturer Guaranteed Emission Rates or Tier Emission Standards and attach supporting documentation in g/KW-hr or g/HP-hr. (circle the units reported for emissions)

NMHC + NO _x		NO _x	
HC		CO	
PM		Tier (if applicable)	

15. Has a stack test been conducted (check appropriate box)? Yes No

If a stack test has been conducted, please attach a copy of the most recent stack test report to this application. If the Department already has a copy of the most recent stack test, please specify the date of most recent stack test.

Date of most recent stack test:

Control Equipment: If applicable, types of air pollution control equipment (Examples: baghouse, cyclone, wet scrubber, electrostatic precipitator, thermal oxidizer, miscellaneous control device, etc.).

Please complete the appropriate air quality permit application form for each type of control equipment that controls air emissions from this operation.

Stack Information: If this application is a renewal, contact the air program to determine if we already have this information.

X- Coordinate or Easting:	<input type="text" value="TBD"/>	feet	<input type="text"/>	meters
Y- Coordinate or Northing:	<input type="text" value="TBD"/>	feet	<input type="text"/>	meters
Base Elevation of Stack:	<input type="text" value="TBD"/>	feet	<input type="text"/>	meters
Stack Height:	<input type="text" value="8"/>	feet	<input type="text"/>	meters
Exit Stack Diameter	<input type="text" value="0.25"/>	feet	<input type="text"/>	meters
Exit Stack Temperature	<input type="text" value="1,250"/>	degrees Fahrenheit		

Exit Stack Velocity and/or Flow Rate:

Velocity: feet per second meters per second

and/or

Flow Rate: actual cubic feet per minute actual cubic meters per second



Air Quality Permit Application Form

Storage Tanks

This form is to be submitted, if necessary, along with
 the Title V (Part 70) Operating Permit or Minor Operating Permit.
 (please complete shaded areas)

1. Facility identification (i.e., Tank #1, Unit #1, etc)? T64 – 200 Proof Tank

2. Manufacturer? TBD

3. Construction date? TBD 4. Model number? TBD

5. Check appropriate box: Aboveground Underground

6. Maximum designed storage capacity? 200,000 gallons

7. Check the appropriate box for the type of liquid stored in the storage tank:

<input type="checkbox"/>	Distillate oil	<input type="checkbox"/>	Residual oil
<input checked="" type="checkbox"/>	Ethanol	<input type="checkbox"/>	JP8 Jet Fuel
<input type="checkbox"/>	Other (please specify)		

8. Maximum true vapor pressure of liquid?
 millimeters mercury
 or 0.64 pounds per square inch absolute
 or kilo Pascal

9. Have plans and specifications been submitted to the Department? Yes No

If no, please attach a copy of the plans and design specifications to the application.

10. If applicable, types of air pollution control equipment (i.e., wet scrubber, thermal oxidizer, etc.):
 Internal floating roof

Please complete the appropriate air quality permit application form for each type of control equipment that controls air emissions from this operation.



Air Quality Permit Application Form

Storage Tanks

This form is to be submitted, if necessary, along with
the Title V (Part 70) Operating Permit or Minor Operating Permit.
(please complete shaded areas)

1. Facility identification (i.e., Tank #1, Unit #1, etc)? T65 – 200 Proof Tank

2. Manufacturer? TBD

3. Construction date? TBD 4. Model number? TBD

5. Check appropriate box: Aboveground Underground

6. Maximum designed storage capacity? 200,000 gallons

7. Check the appropriate box for the type of liquid stored in the storage tank:

<input type="checkbox"/>	Distillate oil	<input type="checkbox"/>	Residual oil
<input checked="" type="checkbox"/>	Ethanol	<input type="checkbox"/>	JP8 Jet Fuel
<input type="checkbox"/>	Other (please specify)		

8. Maximum true vapor pressure of liquid?

<input type="checkbox"/>	millimeters mercury
or <input type="checkbox"/>	0.64 pounds per square inch absolute
or <input type="checkbox"/>	kilo Pascal

9. Have plans and specifications been submitted to the Department? Yes No

If no, please attach a copy of the plans and design specifications to the application.

10. If applicable, types of air pollution control equipment (i.e., wet scrubber, thermal oxidizer, etc.):

Internal floating roof

Please complete the appropriate air quality permit application form for each type of control equipment that controls air emissions from this operation.



Air Quality Permit Application Form

Storage Tanks

This form is to be submitted, if necessary, along with
the Title V (Part 70) Operating Permit or Minor Operating Permit.

(please complete shaded areas)

1. Facility identification (i.e., Tank #1, Unit #1, etc)? T63-Denaturant Tank

2. Manufacturer? TBD

3. Construction date? TBD 4. Model number? TBD

5. Check appropriate box: Aboveground Underground

6. Maximum designed storage capacity? 200,000 gallons

7. Check the appropriate box for the type of liquid stored in the storage tank:

<input type="checkbox"/>	Distillate oil	<input type="checkbox"/>	Residual oil
<input type="checkbox"/>	Ethanol	<input type="checkbox"/>	JP8 Jet Fuel
<input checked="" type="checkbox"/>	Other (please specify)	Gasoline (Denaturant)	

8. Maximum true vapor pressure of liquid?

<input type="checkbox"/>	millimeters mercury
or <input type="checkbox"/>	5.27 pounds per square inch absolute
or <input type="checkbox"/>	kilo Pascal

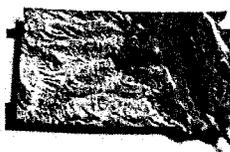
9. Have plans and specifications been submitted to the Department? Yes No

If no, please attach a copy of the plans and design specifications to the application.

10. If applicable, types of air pollution control equipment (i.e., wet scrubber, thermal oxidizer, etc.):

Internal floating roof

Please complete the appropriate air quality permit application form for each type of control equipment that controls air emissions from this operation.



Storage Tanks

This form is to be submitted, if necessary, along with
 the Title V (Part 70) Operating Permit or Minor Operating Permit.
 (please complete shaded areas)

1. Facility identification (i.e., Tank #1, Unit #1, etc)? T61 - Denatured Ethanol Tank

2. Manufacturer? TBD

3. Construction date? TBD 4. Model number? TBD

5. Check appropriate box: Aboveground Underground

6. Maximum designed storage capacity? 1,500,000 gallons

7. Check the appropriate box for the type of liquid stored in the storage tank:

<input type="checkbox"/>	Distillate oil	<input type="checkbox"/>	Residual oil
<input type="checkbox"/>	Ethanol	<input type="checkbox"/>	JP8 Jet Fuel
<input checked="" type="checkbox"/>	Other (please specify)	Denatured Ethanol (97.5% ethanol and 2.5% denaturant)	

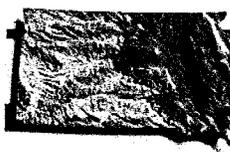
8. Maximum true vapor pressure of liquid?
 millimeters mercury
 or 0.63 pounds per square inch absolute
 or kilo Pascal

9. Have plans and specifications been submitted to the Department? Yes No

If no, please attach a copy of the plans and design specifications to the application.

10. If applicable, types of air pollution control equipment (i.e., wet scrubber, thermal oxidizer, etc.):
 Internal floating roof

Please complete the appropriate air quality permit application form for each type of control equipment that controls air emissions from this operation.



Storage Tanks

This form is to be submitted, if necessary, along with
 the Title V (Part 70) Operating Permit or Minor Operating Permit.
 (please complete shaded areas)

1. Facility identification (i.e., Tank #1, Unit #1, etc)?

2. Manufacturer?

3. Construction date? 4. Model number?

5. Check appropriate box: Aboveground Underground

6. Maximum designed storage capacity? gallons

7. Check the appropriate box for the type of liquid stored in the storage tank:

- | | | | |
|-------------------------------------|------------------------|--|--------------|
| <input type="checkbox"/> | Distillate oil | <input type="checkbox"/> | Residual oil |
| <input type="checkbox"/> | Ethanol | <input type="checkbox"/> | JP8 Jet Fuel |
| <input checked="" type="checkbox"/> | Other (please specify) | <input type="text" value="Denatured Ethanol (97.5% ethanol and 2.5% denaturant)"/> | |

8. Maximum true vapor pressure of liquid?
 millimeters mercury
 or pounds per square inch absolute
 or kilo Pascal

9. Have plans and specifications been submitted to the Department? Yes No

If no, please attach a copy of the plans and design specifications to the application.

10. If applicable, types of air pollution control equipment (i.e., wet scrubber, thermal oxidizer, etc.):

Please complete the appropriate air quality permit application form for each type of control equipment that controls air emissions from this operation.

**APPENDIX B – EMISSION CALCULATIONS
AND TANKS 4.0 REPORTS**

RING-NECK ENERGY & FEED, LLC

Facility Data

Facility Name: RING-NECK ENERGY & FEED, LLC
Facility Site Location: Onida, South Dakota
Permit: 00.0000-00

Facility Contact: Walt Wendland
Phone #: 641.420.5890
Email Address: walt@ringneckenergy.com
Responsible Official: Walt Wendland
Responsible Official's Title: General Manager

PERMITTED UNITS

The maximum production rate is 100,000,000 gallons per year of DENATURED ethanol.

Unit #1 Grain receiving, transfer, and storage bin loading. A baghouse controls particulate emissions

Unit #2 Grain milling. Four hammermills, a baghouse controls particulate emissions.

Unit #3 Fermentation system; six fermenters and one beer well. One wet scrubber controls air emissions.

Unit #4 RTO

Unit #5 Ethanol Loadout, flare

Unit #6 Boiler

Unit #7 DDGS Building, conveyor and loadout spout

Unit #8 A biomethanator flare.

Unit #9 Cooling Towers

Unit #10 DDGS Cooler

Unit #11 Fire Pump

Tank T61 An above ground storage tank equipped with a floating roof and capable of storing 1,500,000 gallons of denatured ethanol.

Tank T62 An above ground storage tank equipped with a floating roof and capable of storing 1,500,000 gallons of denatured ethanol.

Tank T63 An above ground storage tank equipped with a floating roof and capable of storing 200,000 gallons of gasoline.

Tank T64 An above ground storage tank equipped with a floating roof and capable of storing 200,000 gallons of ethanol.

Tank T65 An above ground storage tank equipped with a floating roof and capable of storing 200,000 gallons of ethanol.

PRODUCTION DATA

	POTENTIAL	UNITS
Denatured Ethanol throughput	100	MMGal/yr
	100,000,000	Gal/yr
Undenatured ethanol throughput:	98.51	MMGal/yr
	98,512,462	Gal/yr
Denaturant throughput:	1.49	MMGal/yr
Hours of Operation:	8760	Hours
Denaturant Rate:	1.5%	
Corrosion Inhibitor	10000	Gal/yr
Yield	2.68	Gal/bu
Corn Density:	56	lb/bu
Corn Processed:	36.8	MMBtu/yr
	1,029,235	TPY
	117.49	tons/hr
Grain Receiving Pit	20,000	bushels
DDGS Yield:	17.5	lb/bu
DDGS Processed:	321,636	TPY (dry mass)
	36.72	tons/hr
	881.19	tons/day
Wet Cake Processed:	1,005,112	TPY (wet)
	114.74	tons/hr
Biomethanator Flare, Maximum Annual:	8,760	hours/year
Biomethanator Flare, Maximum Design Capacity	6.4	MMBtu

RING-NECK ENERGY & FEED, LLC

Unit No.	Control Device	Emission Unit No.	Description	Potential To Emit												Potential To Emit					
				PM		PM10		PM2.5		SO2		NOx		VOC		CO		Ind HAP		HAPs	
				lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
1	Baghouse	S20	Grain Receiving	2.06	9.01	2.06	9.01	2.06	9.01	---	---	---	---	---	---	---	---	---	---	---	---
2	Baghouse	S30	Grain Milling	1.20	5.26	1.20	5.26	1.20	5.26	---	---	---	---	---	---	---	---	---	---	---	---
3	Scrubber	S40	Fermentation System	---	---	---	---	---	---	---	---	---	---	10.77	47.17	---	---	1.49	6.51	1.55	6.79
4	RTO	S10	RTO	6.00	26.29	6.00	26.29	6.00	26.29	0.09	0.39	6.78	29.70	12.19	53.38	8.68	38.04	0.00	0.00	0.00	0.00
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	0.09	0.12	0.09	0.12	0.09	0.12	0.01	0.01	0.08	0.11	25.46	13.26	4.59	5.96	---	---	---	---
6	Boiler	S60	Boiler #1	0.11	0.47	0.11	0.47	0.11	0.47	0.12	0.54	21.00	91.98	1.13	4.96	17.29	75.75	0.37	1.62	0.39	1.70
7	Baghouse	S90	DDGS Loadout	0.16	0.70	0.16	0.70	0.16	0.70	---	---	---	---	---	---	---	---	---	---	---	---
8	Flare	S120	Biomethanator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	8.41	0.00	0.00	3.20	14.02	---	---	---	---
9	NA	F80	Cooling Towers	2.06	9.03	2.06	9.03	2.06	9.03	---	---	---	---	---	---	---	---	---	---	---	---
10	Baghouse	S70	Cooling Drum	0.18	0.80	0.18	0.80	0.18	0.80	---	---	---	---	3.30	14.47	---	---	0.27	1.19	0.52	2.27
11	NA	S110	Fire Pump	0.66	0.03	0.66	0.03	0.66	0.03	0.63	0.03	9.30	0.47	0.75	0.04	2.01	0.10	---	---	---	---
12	NA	F001	Grain Receiving Fugitives	3.92	17.17	0.87	3.83	0.15	0.64	---	---	---	---	---	---	---	---	---	---	---	---
13	NA	F002	DDGS Loadout Fugitives	0.02	0.11	0.01	0.03	0.01	0.03	---	---	---	---	---	---	---	---	---	---	---	---
14	NA	F003	Paved Roads	2.55	11.15	0.51	2.23	0.12	0.55	---	---	---	---	---	---	---	---	---	---	---	---
15	NA	F004	Equipment Leaks	---	---	---	---	---	---	---	---	---	---	0.70	3.05	---	---	---	---	---	---
16	NA	F005	Wetcake Storage	---	---	---	---	---	---	---	---	---	---	0.96	4.19	---	---	---	---	---	---
17	NA	T64	200 Proof (200,000 gals)	---	---	---	---	---	---	---	---	---	---	0.26	---	---	---	0.00	0.00	0.00	0.00
18	NA	T65	200 Proof (200,000 gals)	---	---	---	---	---	---	---	---	---	---	0.26	---	---	---	0.00	0.00	0.00	0.00
19	NA	T63	Denaturant Tank (200,000 gals)	---	---	---	---	---	---	---	---	---	---	1.49	---	---	---	0.00	0.00	0.02	0.09
20	NA	T61	Denatured Ethanol #1 (1,500,000 gals)	---	---	---	---	---	---	---	---	---	---	0.23	---	---	---	0.00	0.00	0.00	0.00
21	NA	T62	Denatured Ethanol #2 (1,500,000 gals)	---	---	---	---	---	---	---	---	---	---	0.23	---	---	---	0.00	0.00	0.00	0.00
TOTAL				PM		PM10		PM2.5		SO2		NOx		VOC		CO		Ind HAP		HAPs	
				lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
				19.0	80.1	13.9	57.8	12.8	52.9	0.9	1.0	39.1	130.7	54.3	138.8	35.8	133.9	2.1	9.3	2.5	10.9

**RING-NECK ENERGY & FEED, LLC
UNIT #1 EMISSIONS**

Unit No.	Control Device	Emission		Pollutant	Air Flow	Outlet	Emission Factor	Potential to Emit	
		Unit No.	Description		Rate (DSCFM)	Concentration (gr/dscf)		Citation	lb/hr
1	Baghouse	S20	Grain Receiving	PM	48,000	0.005	Manufacturer	2.1	9.01
1	Baghouse	S20	Grain Receiving	PM10	48,000	0.005	Manufacturer	2.1	9.01
1	Baghouse	S20	Grain Receiving	PM2.5	48,000	0.005	Manufacturer	2.1	9.01

RING-NECK ENERGY & FEED, LLC

UNIT #2 EMISSIONS

Unit No.	Control Device	Emission Unit No.	Description	Pollutant	Air Flow	Outlet	Emission Factor Citation	Potential to Emit	
					Rate (DSCFM)	Concentration (gr/dscf)		lb/hr	TPY
2	Baghouse	S30	Grain Milling	PM	28,000	0.005	Manufacturer	1.2	5.26
2	Baghouse	S30	Grain Milling	PM10	28,000	0.005	Manufacturer	1.2	5.26
2	Baghouse	S30	Grain Milling	PM2.5	28,000	0.005	Manufacturer	1.2	5.26

**RING-NECK ENERGY & FEED, LLC
UNIT #3 EMISSIONS**

Unit No.	Control Device	Emission Unit No.	Description	Pollutant	Air Flow Rate (DSCFM)	Outlet Concentration (ppmv,d)	Emission Factor Citation	Potential to Emit	
								lb/hr	TPY
3	Scrubber	S40	Fermentation System	VOC (as Carbon)	12,885	140.0	Compiled Stack Test Data	3.37	14.76
3	Scrubber	S40	Fermentation System	VOC (as VOC)			Conversion plus safety factor of 1.5 Compiled Stack	10.8	47.17
3	Scrubber	S40	Fermentation System	Formaldehyde	12,885	0.39	Test Data Compiled Stack	0.03	0.11
3	Scrubber	S40	Fermentation System	Methanol	12,885	0.41	Test Data Compiled Stack	0.03	0.12
3	Scrubber	S40	Fermentation System	Acetaldehyde	12,885	16.81	Test Data Compiled Stack	1.49	6.51
3	Scrubber	S40	Fermentation System	Acrolein	12,885	0.11	Test Data	0.01	0.05

**RING-NECK ENERGY & FEED, LLC
UNIT #4 EMISSIONS**

Unit No.	Control Device	Emission Unit No.	Description	Pollutant	Air Flow Rate (DCSFM)	Outlet Concentration		Potential to Emit	
						(ppmv,d)	Emission Factor Citation	lb/hr	TPY
4	RTO	S10	RTO/DDGS Process Emissions	VOC (as Carbon)	19,911	140	Compiled Stack Test Data	5.21	22.81
4	RTO	S10	RTO/DDGS Process Emissions	VOC (as VOC)	19,911		Compiled Stack Test Data	12.19	53.38
4	RTO	S10	RTO/DDGS Process Emissions	NOx	19,911	47.47	Compiled Stack Test Data	6.78	29.70
4	RTO	S10	RTO/DDGS Process Emissions	SO2	19,911	0.450	Compiled Stack Test Data	0.09	0.39
4	RTO	S10	RTO/DDGS Process Emissions	CO	19,911	100.00	Compiled Stack Test Data	8.68	38.04
4	RTO	S10	RTO/DDGS Process Emissions	Formaldehyde	19,911	1.16	Compiled Stack Test Data	0.12	0.52
4	RTO	S10	RTO/DDGS Process Emissions	Methanol	19,911	0.69	Compiled Stack Test Data	0.07	0.30
4	RTO	S10	RTO/DDGS Process Emissions	Acetaldehyde	19,911	1.11	Compiled Stack Test Data	0.15	0.66
4	RTO	S10	RTO/DDGS Process Emissions	Acrolein	19,911	0.1	Compiled Stack Test Data	0.02	0.08
4	RTO	S10	RTO/DDGS Process Emissions	PM*	321,636	0.1635	Compiled Stack Test Data	6.00	26.29

* ton/yr of DDGS Processed

No.	Device	Unit No.	Description	Pollutant	HAPs		Emission Factor Citation	Potential to Emit	
					Capacity (MMBtu/hr)	(lb/MMBtu)		lb/hr	TPY
4	RTO	S10	RTO/DDGS Process Emissions	2-Methylnaphthalene	2.35E-08	1.76E-09	AP-42 Section 1.4	4.15E-17	1.82E-16
4	RTO	S10	RTO/DDGS Process Emissions	3-Methylchloranthrene	1.76E-09	1.57E-08	AP-42 Section 1.4	2.77E-17	1.21E-16
4	RTO	S10	RTO/DDGS Process Emissions	7, 12-Dimethylbenz(a)anthracene	1.57E-08	1.76E-09	AP-42 Section 1.4	2.77E-17	1.21E-16
4	RTO	S10	RTO/DDGS Process Emissions	Acenaphthene	1.76E-09	1.76E-09	AP-42 Section 1.4	3.11E-18	1.36E-17
4	RTO	S10	RTO/DDGS Process Emissions	Acenaphthylene	1.76E-09	2.35E-09	AP-42 Section 1.4	4.15E-18	1.82E-17
4	RTO	S10	RTO/DDGS Process Emissions	Anthracene	2.35E-09	1.96E-07	AP-42 Section 1.4	4.61E-16	2.02E-15
4	RTO	S10	RTO/DDGS Process Emissions	Arsenic	1.96E-07	1.76E-09	AP-42 Section 1.4	3.46E-16	1.52E-15
4	RTO	S10	RTO/DDGS Process Emissions	Benz(a)anthracene	1.76E-09	2.06E-06	AP-42 Section 1.4	3.63E-15	1.59E-14
4	RTO	S10	RTO/DDGS Process Emissions	Benzene	2.06E-06	1.18E-09	AP-42 Section 1.4	2.42E-15	1.06E-14
4	RTO	S10	RTO/DDGS Process Emissions	Benzo(a)pyrene	1.18E-09	1.76E-09	AP-42 Section 1.4	2.08E-18	9.09E-18
4	RTO	S10	RTO/DDGS Process Emissions	Benzo(b)fluoranthene	1.76E-09	1.18E-09	AP-42 Section 1.4	2.08E-18	9.09E-18
4	RTO	S10	RTO/DDGS Process Emissions	Benzo(g,h,i)perylene	1.18E-09	1.76E-09	AP-42 Section 1.4	2.08E-18	9.09E-18
4	RTO	S10	RTO/DDGS Process Emissions	Benzo(k)fluoranthene	1.76E-09	1.18E-08	AP-42 Section 1.4	2.08E-17	9.09E-17
4	RTO	S10	RTO/DDGS Process Emissions	Beryllium	1.18E-08	1.08E-06	AP-42 Section 1.4	1.27E-14	5.56E-14
4	RTO	S10	RTO/DDGS Process Emissions	Cadmium	1.08E-06	1.37E-06	AP-42 Section 1.4	1.48E-12	6.48E-12
4	RTO	S10	RTO/DDGS Process Emissions	Chromium	1.37E-06	1.76E-09	AP-42 Section 1.4	2.42E-15	1.06E-14
4	RTO	S10	RTO/DDGS Process Emissions	Chrysene	1.76E-09	8.24E-08	AP-42 Section 1.4	1.45E-16	6.37E-16
4	RTO	S10	RTO/DDGS Process Emissions	Cobalt	8.24E-08	1.18E-09	AP-42 Section 1.4	9.69E-17	4.24E-16
4	RTO	S10	RTO/DDGS Process Emissions	Dibenzo(a,h)anthracene	1.18E-09	1.18E-06	AP-42 Section 1.4	1.38E-15	6.06E-15
4	RTO	S10	RTO/DDGS Process Emissions	Dichlorobenzene	1.18E-06	2.94E-09	AP-42 Section 1.4	3.46E-15	1.52E-14
4	RTO	S10	RTO/DDGS Process Emissions	Fluoranthene	2.94E-09	2.75E-09	AP-42 Section 1.4	8.07E-18	3.54E-17
4	RTO	S10	RTO/DDGS Process Emissions	Fluorene	2.75E-09	7.35E-05	AP-42 Section 1.4	2.02E-13	8.84E-13
4	RTO	S10	RTO/DDGS Process Emissions	Formaldehyde	7.35E-05	1.76E-03	AP-42 Section 1.4	1.30E-07	5.68E-07
4	RTO	S10	RTO/DDGS Process Emissions	Hexane	1.76E-03	1.76E-09	AP-42 Section 1.4	3.11E-12	1.36E-11
4	RTO	S10	RTO/DDGS Process Emissions	Indeno(1,2,3-cd)pyrene	1.76E-09	3.73E-07	AP-42 Section 1.4	6.57E-16	2.88E-15
4	RTO	S10	RTO/DDGS Process Emissions	Manganese	3.73E-07	2.55E-07	AP-42 Section 1.4	9.50E-14	4.16E-13
4	RTO	S10	RTO/DDGS Process Emissions	Mercury	2.55E-07	5.98E-07	AP-42 Section 1.4	1.52E-13	6.68E-13
4	RTO	S10	RTO/DDGS Process Emissions	Napthalene	5.98E-07	2.06E-06	AP-42 Section 1.4	1.23E-12	5.39E-12
4	RTO	S10	RTO/DDGS Process Emissions	Nickel	2.06E-06	1.67E-08	AP-42 Section 1.4	3.43E-14	1.50E-13
4	RTO	S10	RTO/DDGS Process Emissions	Phenanathrene	1.67E-08	4.90E-09	AP-42 Section 1.4	8.17E-17	3.58E-16
4	RTO	S10	RTO/DDGS Process Emissions	Pyrene	4.90E-09	2.35E-08	AP-42 Section 1.4	1.15E-16	5.05E-16
4	RTO	S10	RTO/DDGS Process Emissions	Selenium	2.35E-08	1.18E+02	AP-42 Section 1.4	2.77E-06	1.21E-05
4	RTO	S10	RTO/DDGS Process Emissions	Toluene	3.33E-06	2.25E-03	AP-42 Section 1.4	7.52E-09	3.29E-08

RING-NECK ENERGY & FEED, LLC
UNIT #5 EMISSIONS

Unit No.	Control Device	Emission Unit No.	Description	Pollutant	Capacity (MMBtu/hr)	Emission Factor (lb/MMBtu)	Emission Factor Citation	Potential to Emit	
								lb/hr	TPY
Emissions Included with Loading Emissions Below									
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	VOC	12.4	1.40E+02			
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	NOx	12.4	6.80E-03	AP-42, Table 13.5-1	8.43E-02	1.10E-01
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	SO2	12.4	5.88E-04	AP-42 Section 1.4	7.29E-03	9.48E-03
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	CO	12.4	3.70E-01	AP-42, Table 13.5-1	4.59E+00	5.96E+00
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	PM	12.4	7.45E-03	AP-42 Section 1.4	9.24E-02	1.20E-01
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	PM10	12.4	7.45E-03	AP-42 Section 1.4	9.24E-02	1.20E-01
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	PM2.5	12.4	7.45E-03	AP-42 Section 1.4	9.24E-02	1.20E-01
HAPs									
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	2-Methylnaphthalene	12.4	2.35E-08	AP-42 Section 1.4	2.92E-07	3.79E-07
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	3-Methylchloranthrene	12.4	1.76E-09	AP-42 Section 1.4	2.19E-08	2.84E-08
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	7,12-Dimethylbenz(a)anthracene	12.4	1.57E-08	AP-42 Section 1.4	1.95E-07	2.53E-07
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Acenaphthene	12.4	1.76E-09	AP-42 Section 1.4	2.19E-08	2.84E-08
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Acenaphthylene	12.4	1.76E-09	AP-42 Section 1.4	2.19E-08	2.84E-08
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Anthracene	12.4	2.35E-09	AP-42 Section 1.4	2.92E-08	3.79E-08
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Benzo(b)fluoranthene	12.4	1.18E-09	AP-42 Section 1.4	1.46E-08	1.90E-08
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Benzo(g,h,i)perylene	12.4	1.76E-09	AP-42 Section 1.4	2.19E-08	2.84E-08
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Benzo(k)fluoranthene	12.4	1.18E-09	AP-42 Section 1.4	1.46E-08	1.90E-08
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Chrysene	12.4	1.76E-09	AP-42 Section 1.4	2.19E-08	2.84E-08
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Dibenzo(a,h)anthracene	12.4	1.18E-08	AP-42 Section 1.4	1.46E-07	1.90E-07
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Dichlorobenzene	12.4	1.08E-06	AP-42 Section 1.4	1.34E-05	1.74E-05
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Fluoranthene	12.4	1.37E-06	AP-42 Section 1.4	1.70E-05	2.21E-05
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Fluorene	12.4	1.76E-09	AP-42 Section 1.4	2.19E-08	2.84E-08
Emissions Included with Loading Emissions Below									
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Hexane	12.4	1.18E-09	AP-42 Section 1.4	1.46E-08	1.90E-08
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Indeno(1,2,3-cd)pyrene	12.4	1.18E-06	AP-42 Section 1.4	1.46E-05	1.90E-05
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Naphthalene	12.4	1.18E-06	AP-42 Section 1.4	1.46E-05	1.90E-05
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Phenanthrene	12.4	2.94E-09	AP-42 Section 1.4	3.65E-08	4.74E-08
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Pyrene	12.4	2.75E-09	AP-42 Section 1.4	3.40E-08	4.43E-08
Emissions Included with Loading Emissions Below									
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Toluene	12.4	1.76E-03	AP-42 Section 1.4	2.19E-02	2.84E-02
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Arsenic	12.4	1.76E-09	AP-42 Section 1.4	2.19E-08	2.84E-08
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Beryllium	12.4	3.73E-07	AP-42 Section 1.4	4.62E-06	6.01E-06
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Cadmium	12.4	2.55E-07	AP-42 Section 1.4	3.16E-06	4.11E-06
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Chromium	12.4	5.98E-07	AP-42 Section 1.4	7.42E-06	9.64E-06
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Cobalt	12.4	2.06E-06	AP-42 Section 1.4	2.55E-05	3.32E-05
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Manganese	12.4	1.67E-08	AP-42 Section 1.4	2.07E-07	2.69E-07
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Mercury	12.4	4.90E-09	AP-42 Section 1.4	6.08E-08	7.90E-08
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Nickel	12.4	2.35E-08	AP-42 Section 1.4	2.92E-07	3.79E-07
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Selenium	12.4	3.33E-06	AP-42 Section 1.4	4.13E-05	5.37E-05
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	Selenium	12.4	1.18E+02	AP-42 Section 1.4	1.46E+03	1.90E+03
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	CO2	12.4	2.25E-03	AP-42 Section 1.4	2.80E-02	3.63E-02
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	CH4	12.4	2.16E-03	AP-42 Section 1.4	2.67E-02	3.48E-02
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	N2O	12.4	2.16E-03	AP-42 Section 1.4	2.67E-02	3.48E-02
5	Flare/Dedicated Fleet	S50/F50	Ethanol Loadout	CO2e	12.4			1.47E+03	6.43E+03
Loading Rack - Trucks									
5	Flare/Dedicated Fleet	S50/F50	Loading Rack - Trucks	Benzene	60	1.82E-05	AP-42 Section 5.2	1.09E-03	0.00E+00
5	Flare/Dedicated Fleet	S50/F50	Loading Rack - Trucks	Ethylbenzene	60	5.53E-07	AP-42 Section 5.2	3.32E-05	0.00E+00
5	Flare/Dedicated Fleet	S50/F50	Loading Rack - Trucks	Hexane	60	2.31E-04	AP-42 Section 5.2	1.39E-02	0.00E+00
5	Flare/Dedicated Fleet	S50/F50	Loading Rack - Trucks	Toluene	60	3.02E-05	AP-42 Section 5.2	1.81E-03	0.00E+00
5	Flare/Dedicated Fleet	S50/F50	Loading Rack - Trucks	VOC	60	1.26E-01	AP-42 Section 5.2	7.54E+00	0.00E+00
5	Flare/Dedicated Fleet	S50/F50	Loading Rack - Trucks	Xylene	60	1.11E-05	AP-42 Section 5.2	6.63E-04	0.00E+00
Loading Rack - Rails									
5	Flare/Dedicated Fleet	S50/F50	Loading Rack - Rails	Benzene	96	3.85E-05	AP-42 Section 5.2	3.70E-03	1.93E-03
5	Flare/Dedicated Fleet	S50/F50	Loading Rack - Rails	Ethylbenzene	96	1.17E-06	AP-42 Section 5.2	1.12E-04	5.83E-05
5	Flare/Dedicated Fleet	S50/F50	Loading Rack - Rails	Hexane	96	4.87E-04	AP-42 Section 5.2	4.68E-02	2.44E-02
5	Flare/Dedicated Fleet	S50/F50	Loading Rack - Rails	Toluene	96	6.36E-05	AP-42 Section 5.2	6.11E-03	3.18E-03
5	Flare/Dedicated Fleet	S50/F50	Loading Rack - Rails	VOC	96	2.65E-01	AP-42 Section 5.2	2.55E+01	1.33E+01
5	Flare/Dedicated Fleet	S50/F50	Loading Rack - Rails	Xylene	96	2.33E-05	AP-42 Section 5.2	2.24E-03	1.17E-03

LOADING RACK ASSUMPTIONS

Denatured Ethanol Loadout: Emissions calculated using the AP-42 equation for loading petroleum liquid, Eq. 1, Chapter 5, Section 2, January 1995. Maximum denatured ethanol loadout based on maximum pump capacity. It is conservatively assumed that fumes from loading trucks with ethanol are that of gasoline. Compared the emissions using all trucks and all rail and used the more conservative total per pollutant.

Percent of Ethanol Loadout by Truck ¹	0%
Percent of Ethanol Loadout by Rail	100%
Composition of Denaturant in Denatured Ethanol 2.00%	

[1] The percent loadout can be changed based on split between truck and rail.

Truck Loading (Flared)

$$L_L = 12.46 * S * P * M / T$$

Where:

S = Saturation factor from Table 5.2-1:	1	dimensionless
P = True vapor pressure of liquid loaded: ¹	3.8571	psia
M = Molecular weight of vapors:	66	lb/lb-mole
T = Temperature of bulk liquid loaded:	504.87	°R
L _L = Loading loss for liquid loaded:	0.1257	lb-VOC/1,000-gal
	1.82E-05	lb-Benzene/1,000-gal
	5.53E-07	lb-Ethylbenzene/1,000-gal
	2.31E-04	lb-Hexane/1,000-gal
	3.02E-05	lb-Toluene/1,000-gal
	1.11E-05	lb-Xylene/1,000-gal

Maximum denatured ethanol loadout rates.

Maximum pump rate:	1,000	gallons/minute
	60,000	gallons/hour
Annual denatured ethanol loadout:	100,000,000	gallons/year
Product Loadout (Trucks):	0	gallons/year
Maximum Annual Loadout Hours	0	hours/year

[1] True vapor pressure, molecular weight of vapors, bulk liquid temperature, and vapor mass fraction taken from TANKS output for denatured ethanol storage tanks.

Rail Loading (Dedicated Fleet without Flaring)

$$L_L = 12.46 * S * P * M / T$$

Where:

S = Saturation factor from Table 5.2-1:	0.6	dimensionless
P = True vapor pressure of liquid loaded: ¹	0.3887	psia
M = Molecular weight of vapors:	46.07	lb/lb-mole
T = Temperature of bulk liquid loaded:	504.84	°R
L _L = Loading loss for liquid loaded:	0.2652	lb-VOC/1,000-gal
	3.85E-05	lb-Benzene/1,000-gal
	1.17E-06	lb-Ethylbenzene/1,000-gal
	4.87E-04	lb-Hexane (-n)/1,000-gal
	6.36E-05	lb-Toluene/1,000-gal
	2.33E-05	lb-Xylene (-m)/1,000-gal

Maximum denatured ethanol loadout rates.

Maximum pump rate: ²	1,600	gallons/minute
	96,000	gallons/hour
Annual denatured ethanol loadout:	100,000,000	gallons/year
Product Loadout (Rail):	100,000,000	gallons/year
Maximum Annual Loadout Hours	1041.666667	hours/year

[1] True vapor pressure, molecular weight of vapors, bulk liquid temperature, and vapor mass fraction taken from TANKS output for denatured ethanol storage tanks.

[2] Two loadouts at 1,200 gpm each, taken from initial information request dated January 2012.

RING-NECK ENERGY & FEED, LLC
UNIT #6 EMISSIONS

Unit No.	Control Device	Emission Unit No.	Description	Pollutant	Capacity (MMBtu/hr)	Emission Factor		Potential to Emit	
						(lb/MMBtu)	Emission Factor Citation	lb/hr	TPY
6	Boiler	S60	Boiler #1	VOC	210	5.39E-03	AP-42 Section 1.4	1.13	4.96
6	Boiler	S60	Boiler #1	NOx	210	0.10	40 CFR 60 Supart Db	21.00	91.98
6	Boiler	S60	Boiler #1	SO2	210	5.88E-04	AP-42 Section 1.4	0.12	0.54
6	Boiler	S60	Boiler #1	CO	210	8.24E-02	AP-42 Section 1.4	17.29	75.75
6	Boiler	S60	Boiler #1	PM	210	5.10E-04	AP-42 Section 1.4	0.11	0.47
6	Boiler	S60	Boiler #1	PM10	210	5.10E-04	AP-42 Section 1.4	0.11	0.47
6	Boiler	S60	Boiler #1	PM2.5	210	5.10E-04	AP-42 Section 1.4	0.11	0.47
6	Boiler	S60	Boiler #1	2-Methylnaphthalene	210	2.35E-08	AP-42 Section 1.4	4.94E-06	2.16E-05
6	Boiler	S60	Boiler #1	3-Methylchloranthrene	210	1.76E-09	AP-42 Section 1.4	3.71E-07	1.62E-06
6	Boiler	S60	Boiler #1	7, 12-Dimethylbenz(a)anthracene	210	1.57E-08	AP-42 Section 1.4	3.29E-06	1.44E-05
6	Boiler	S60	Boiler #1	Acenaphthene	210	1.76E-09	AP-42 Section 1.4	3.71E-07	1.62E-06
6	Boiler	S60	Boiler #1	Acenaphthylene	210	1.76E-09	AP-42 Section 1.4	3.71E-07	1.62E-06
6	Boiler	S60	Boiler #1	Anthracene	210	2.35E-09	AP-42 Section 1.4	4.94E-07	2.16E-06
6	Boiler	S60	Boiler #1	Arsenic	210	1.96E-07	AP-42 Section 1.4	4.12E-05	1.80E-04
6	Boiler	S60	Boiler #1	Benzo(b)fluoranthene	210	1.76E-09	AP-42 Section 1.4	3.71E-07	1.62E-06
6	Boiler	S60	Boiler #1	Benzo(g,h,i)perylene	210	1.18E-09	AP-42 Section 1.4	2.47E-07	1.08E-06
6	Boiler	S60	Boiler #1	Benzo(k)fluoranthene	210	1.76E-09	AP-42 Section 1.4	3.71E-07	1.62E-06
6	Boiler	S60	Boiler #1	Beryllium	210	1.18E-08	AP-42 Section 1.4	2.47E-06	1.08E-05
6	Boiler	S60	Boiler #1	Cadmium	210	1.08E-06	AP-42 Section 1.4	2.26E-04	9.92E-04
6	Boiler	S60	Boiler #1	Chromium	210	1.37E-06	AP-42 Section 1.4	2.88E-04	1.26E-03
6	Boiler	S60	Boiler #1	Chrysene	210	1.76E-09	AP-42 Section 1.4	3.71E-07	1.62E-06
6	Boiler	S60	Boiler #1	Cobalt	210	8.24E-08	AP-42 Section 1.4	1.73E-05	7.57E-05
6	Boiler	S60	Boiler #1	Dibenzo(a,h)anthracene	210	1.18E-09	AP-42 Section 1.4	2.47E-07	1.08E-06
6	Boiler	S60	Boiler #1	Dichlorobenzene	210	1.18E-06	AP-42 Section 1.4	2.47E-04	1.08E-03
6	Boiler	S60	Boiler #1	Fluoranthene	210	2.94E-09	AP-42 Section 1.4	6.18E-07	2.71E-06
6	Boiler	S60	Boiler #1	Fluorene	210	2.75E-09	AP-42 Section 1.4	5.76E-07	2.52E-06
6	Boiler	S60	Boiler #1	Formaldehyde	210	7.35E-05	AP-42 Section 1.4	1.54E-02	6.76E-02
6	Boiler	S60	Boiler #1	Hexane	210	1.76E-03	AP-42 Section 1.4	3.71E-01	1.62E+00
6	Boiler	S60	Boiler #1	Indeno(1,2,3-cd)pyrene	210	1.76E-09	AP-42 Section 1.4	3.71E-07	1.62E-06
6	Boiler	S60	Boiler #1	Manganese	210	3.73E-07	AP-42 Section 1.4	7.82E-05	3.43E-04
6	Boiler	S60	Boiler #1	Mercury	210	2.55E-07	AP-42 Section 1.4	5.35E-05	2.34E-04
6	Boiler	S60	Boiler #1	Napthalene	210	5.98E-07	AP-42 Section 1.4	1.26E-04	5.50E-04
6	Boiler	S60	Boiler #1	Nickel	210	2.06E-06	AP-42 Section 1.4	4.32E-04	1.89E-03
6	Boiler	S60	Boiler #1	Phenanathrene	210	1.67E-08	AP-42 Section 1.4	3.50E-06	1.53E-05
6	Boiler	S60	Boiler #1	Pyrene	210	4.90E-09	AP-42 Section 1.4	1.03E-06	4.51E-06
6	Boiler	S60	Boiler #1	Selenium	210	2.35E-08	AP-42 Section 1.4	4.94E-06	2.16E-05
6	Boiler	S60	Boiler #1	Toluene	210	3.33E-06	AP-42 Section 1.4	7.00E-04	3.07E-03

RING-NECK ENERGY & FEED, LLC

UNIT #7 EMISSIONS

Unit No.	Control Device	Emission Unit No.	Description	Pollutant	Air Flow	Outlet	Emission Factor Citation	Potential to Emit	
					Rate (DSCFM)	Concentration (gr/dscf)		lb/hr	TPY
7	Baghouse	S90	DDGS Loadout	PM	3,750	0.005	Manufacturer	0.16	0.70
7	Baghouse	S90	DDGS Loadout	PM10	3,750	0.005	Manufacturer	0.16	0.70
7	Baghouse	S90	DDGS Loadout	PM2.5	3,750	0.005	Manufacturer	0.16	0.70

**RING-NECK ENERGY & FEED, LLC
UNIT #9 EMISSIONS**

Unit No.	Control Device	Emission Unit No.	Description	Pollutant	Circulating Flow Rate (gpm)	Drift Loss	Emission Factor Citation	Potential to Emit	
								lb/hr	TPY
10	Baghouse	S70	Cooling Towers	PM	33,000	0.005%	Manufacturer	2.06	9.03
10	Baghouse	S70	Cooling Towers	PM10	33,000	0.005%	Manufacturer	2.06	9.03
10	Baghouse	S70	Cooling Towers	PM2.5	33,000	0.005%	Manufacturer	2.06	9.03

Assumptions:

<u>Assumptions:</u>	
Drift Loss	0.005%
Circulating Flow Rate	50,000 gpm
TDS Concentration:	2500 ppm

**RING-NECK ENERGY & FEED, LLC
UNIT #10 EMISSIONS**

Unit No.	Control Device	Emission Unit No.	Description	Pollutant	Production	Emission Factor (lb/ton)	Emission Factor	Potential to Emit	
					Rate (tons/hr)		Citation	lb/hr	TPY
10	Baghouse	S70	Cooling Drum	VOC (as Carbon)	36.7	0.12	Compiled Stack Test Data	4.41	19.30
10	Baghouse	S70	Cooling Drum	VOC (as VOC)	36.7	0.09	Compiled Stack Test Data	3.30	14.47
10	Baghouse	S70	Cooling Drum	Formaldehyde	36.7	0.0023	Compiled Stack Test Data	0.09	0.37
10	Baghouse	S70	Cooling Drum	Methanol	36.7	0.0036	Compiled Stack Test Data	0.13	0.58
10	Baghouse	S70	Cooling Drum	Acetaldehyde	36.7	0.0074	Compiled Stack Test Data	0.27	1.19
10	Baghouse	S70	Cooling Drum	Acrolein	36.7	0.0008	Test Data	0.03	0.13
10	Baghouse	S70	Cooling Drum	PM	36.7	0.0050	Manufacturer	0.18	0.80
10	Baghouse	S70	Cooling Drum	PM10	36.7	0.0050	Manufacturer	0.18	0.80
10	Baghouse	S70	Cooling Drum	PM2.5	36.7	0.0050	Manufacturer	0.18	0.80

**RING-NECK ENERGY & FEED, LLC
UNIT #11 EMISSIONS**

Unit No.	Control Device	Emission Unit No.	Description	Pollutant	Capacity (hp)	Emission Factor (lb/hp-hr)	Emission Factor Citation	Potential to Emit	
								lb/hr	TPY
11	NA	9	Fire Pump	VOC	300.0	0.0025	AP-42 Section 3.3	0.75	0.04
11	NA	9	Fire Pump	NOx	300.0	0.031	AP-42 Section 3.3	9.30	0.47
11	NA	9	Fire Pump	SO2	300.0	0.0021	AP-42 Section 3.3	0.63	0.03
11	NA	9	Fire Pump	CO	300.0	0.0067	AP-42 Section 3.3	2.01	0.10
11	NA	9	Fire Pump	PM	300.0	0.0022	AP-42 Section 3.3	0.66	0.03
11	NA	9	Fire Pump	PM10	300.0	0.0022	AP-42 Section 3.3	0.66	0.03

Assumptions:

Maximum Firing Capacity:

2.18 MMBtu/hr

300 hp

100 hours of operation FROM NSPS

**RING-NECK ENERGY & FEED, LLC
UNIT #12 - 13 FUGITIVE EMISSIONS**

Unit No.	Control Device	Emission Unit No.	Description	Pollutant	Annual Average Throughput (tons/hr)	Emission Factor (lb/ton)	Emission Factor Citation	Controlled Emissions	
								lb/hr	TPY
12	NA	F001	Receiving Pit	PM	560	0.0350	AP-42 Section 9.9	3.92	17.17
12	NA	F001		PM10		0.0078		0.87	3.83
12	NA	F001		PM2.5		0.0013		0.15	0.64
13	NA	F002	DDGS Loadout	PM	36.8	0.0033	AP-42 Section 9.9	0.02	0.11
13	NA	F002		PM10		0.0008		0.01	0.03
13	NA	F002		PM2.5		0.0008		0.01	0.03

Assumptions:

F001	Receiving Pit	Receiving Pit:	117 tons/hr	Miles per Truck:	0.5 miles
80%				Surface silt content:	2.1 g/m ²
F002	DDGS Loadout	DDGS Loadout Throughput:	36.7 tons/hr	Average vehicle weight:	29 tons
80%					
	k				
PM	0.011				
PM10	0.0022				
PM2.5	0.00054				

**PAVED ROAD EMISSIONS
UNIT #14 FUGITIVE EMISSIONS**

Unit No.	Control Device	Emission Unit No.	Description	Pollutant	VMT	Emission Factor (lb/VMT)	Emission Factor Citation	Potential to Emit	
								lb/hr	TPY
14	NA	F003	Grain Receiving	PM	20,585	0.67	AP-42 Section 13.2	1.6	6.9
14	NA	F003		PM10	20,585	0.13		0.3	1.4
14	NA	F003		PM2.5	20,585	0.03		0.1	0.3
14	NA	F003	DDGS Shipping	PM	6,433	0.67	AP-42 Section 13.2	0.5	2.2
14	NA	F003		PM10	6,433	0.13		0.1	0.4
14	NA	F003		PM2.5	6,433	0.03		0.02	0.1
14	NA	F003	Denaturant Delivery	PM	93	0.67	AP-42 Section 13.2	0.01	0.03
14	NA	F003		PM10	93	0.13		0.001	0.01
14	NA	F003		PM2.5	93	0.03		0.0003	0.002
14	NA	F003	Ethanol Shipping	PM	6,157	0.67	AP-42 Section 13.2	0.5	2.1
14	NA	F003		PM10	6,157	0.13		0.1	0.4
14	NA	F003		PM2.5	6,157	0.03		0.02	0.1

RING-NECK ENERGY & FEED, LLC

UNIT #15 Equipment Leaks

Process Area	Source	Product	Component Count	Emission Factor	Uncontrolled Emission Rate	Subpart VV Control Efficiency	Controlled Emission Rate	TOC weight	VOC Emissions	
				(Kg/comp-hr)	(lb/hr)		(lb/hr)	lb/hr	TPY	
Fermentation	Valves	G/V	0	0.00597	0.00	140	0.00	13%	0.00	0.00
Fermentation	Valves	LL	146	0.00403	1.29	0.84	0.21	13%	0.03	0.12
Fermentation	Pumps	LL	12	0.0199	0.53	0.69	0.16	13%	0.02	0.09
Fermentation	Compressor Seals	G/V	0	0.228	0.00	0.75	0.00	13%	0.00	0.00
Fermentation	Pressure-Relief Valves	G/V	8	0.104	1.83	0.87	0.24	13%	0.03	0.14
Fermentation	Sampling Connections	All	0	0.015	0.00	0.87	0.00	13%	0.00	0.00
Fermentation	Open-ended Lines	All	14	0.0017	0.05	0.84	0.01	13%	0.00	0.00
Fermentation	Flanges	All	164	0.00183	0.66	0.84	0.11	13%	0.01	0.06
Distillation	Valves	G/V	206	0.00597	2.71	0.87	0.35	82%	0.29	1.26
Distillation	Valves	LL	0	0.00403	0.00	0.84	0.00	82%	0.00	0.00
Distillation	Pumps	LL	9	0.0199	0.39	0.69	0.12	82%	0.10	0.44
Distillation	Compressor Seals	G/V	0	0.228	0.00	0.75	0.00	82%	0.00	0.00
Distillation	Pressure-Relief Valves	G/V	1	0.104	0.23	0.87	0.03	82%	0.02	0.11
Distillation	Sampling Connections	All	0	0.015	0.00	0.87	0.00	82%	0.00	0.00
Tank Farm	Valves	LL	53	0.00403	0.47	0.84	0.08	100%	0.08	0.33
Tank Farm	Pumps	LL	5	0.0199	0.22	0.69	0.07	100%	0.07	0.30
Tank Farm	Compressor Seals	G/V	0	0.228	0.00	0.75	0.00	100%	0.00	0.00
Tank Farm	Pressure-Relief Valves	G/V	0	0.104	0.00	0.87	0.00	100%	0.00	0.00
Tank Farm	Sampling Connections	All	0	0.015	0.00	0.87	0.00	100%	0.00	0.00
Tank Farm	Open-ended Lines	All	14	0.0017	0.05	0.84	0.01	100%	0.01	0.04
Tank Farm	Flanges	All	61	0.00183	0.25	0.84	0.04	100%	0.04	0.17
TOTAL			693		8.68		1.42		0.70	3.05

WETCAKE EMISSIONS

UNIT #16 Wetcake Storage

Stack No.	Control Device	Emission Unit No.	Reference Rate (tons/hr)	Emission Factor (lb/ton)	Scaling Factor	Pollutant	Potential to Emit	
							lb/hr	TPY
NA	NA	F005	18	0.004	6.4	VOC (as Carbon)	0.45	1.95
NA	NA	F005	18	0.008	6.4	VOC (as VOC)	0.96	4.19

* Negligible HAP emissions

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification: RNE_TK001_200 Proof-PTE
 City: Onida
 State: South Dakota
 Company: Ring-Neck Energy Feed, LLC
 Type of Tank: Internal Floating Roof Tank
 Description: 200 Proof Storage Tank

Tank Dimensions

Diameter (ft): 33.00
 Volume (gallons): 200,000.00
 Turnovers: 246.28
 Self Supp. Roof? (y/n): N
 No. of Columns: 1.00
 Eff. Col. Diam. (ft): 1.00

Paint Characteristics

Internal Shell Condition: Light Rust
 Shell Color/Shade: White/White
 Shell Condition: Good
 Roof Color/Shade: White/White
 Roof Condition: Good

Rim-Seal System

Primary Seal: Vapor-mounted
 Secondary Seal: None

Deck Characteristics

Deck Fitting Category: Typical
 Deck Type: Bolted
 Construction: Sheet
 Deck Seam: Sheet: 5 Ft Wide
 Deck Seam Len. (ft): 171.06

Deck Fitting/Status

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	11
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Stub Drain (1-in. Diameter)/Slit Fabric Seal 10% Open	9
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meteorological Data used in Emissions Calculations: Aberdeen, South Dakota (Avg Atmospheric Pressure = 14.05 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

RNE_TK001_200 Proof-PTE - Internal Floating Roof Tank
Onida, South Dakota

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Ethyl alcohol	Jan	29.51	25.01	34.02	43.45	0.2143	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Feb	32.76	28.13	37.38	43.45	0.2433	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Mar	38.89	34.02	43.86	43.45	0.3089	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Apr	46.27	40.06	52.48	43.45	0.4046	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	May	52.00	45.21	58.79	43.45	0.4974	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Jun	56.43	49.52	63.34	43.45	0.5814	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Jul	59.23	51.94	66.52	43.45	0.6406	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Aug	57.87	50.71	65.04	43.45	0.6113	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Sep	52.41	45.90	58.91	43.45	0.5046	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Oct	46.49	40.58	52.41	43.45	0.4080	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Nov	38.44	34.00	42.87	43.45	0.3025	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Dec	31.68	27.54	35.82	43.45	0.2333	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

RNE_TK001_200 Proof-PTE - Internal Floating Roof Tank
Onida, South Dakota

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	3.2622	3.7074	4.7173	6.2011	7.6482	8.9681	9.9016	9.4385	7.7613	6.2526	4.6185	3.5536
Seal Factor A (lb-mole/ft-yr):	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000
Seal Factor B (lb-mole/ft-yr (mph)/m):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Value of Vapor Pressure Function:	0.0036	0.0044	0.0056	0.0073	0.0090	0.0106	0.0117	0.0111	0.0091	0.0074	0.0054	0.0042
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2143	0.2433	0.3089	0.4048	0.4974	0.5814	0.6406	0.6113	0.5046	0.4080	0.3025	0.2333
Tank Diameter (ft):	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290
Number of Columns:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Effective Column Diameter (ft):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Net Throughput (gal/mo.):	4,104,685.9160	4,104,685.9160	4,104,685.9160	4,104,685.9160	4,104,685.9160	4,104,685.9160	4,104,685.9160	4,104,685.9160	4,104,685.9160	4,104,685.9160	4,104,685.9160	4,104,685.9160
Shell Clingage Factor (bb/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100
Tank Diameter (ft):	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000
Deck Fitting Losses (lb):	4.2828	4.8442	6.1839	8.1027	9.8935	11.7182	12.9379	12.3328	10.1413	8.1700	6.0347	4.6434
Value of Vapor Pressure Function:	0.0038	0.0044	0.0056	0.0073	0.0090	0.0106	0.0117	0.0111	0.0091	0.0074	0.0054	0.0042
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact. (lb-mole/yr):	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000
Deck Seam Losses (lb):	0.4499	0.5113	0.6506	0.8552	1.0548	1.2368	1.3655	1.3017	1.0704	0.8623	0.6369	0.4901
Deck Seam Length (ft):	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400
Deck Seam Length Factor (ft/sqft):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Tank Diameter (ft):	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	36.5036	37.5918	40.0607	43.6880	47.2254	50.4521	52.7340	51.6020	47.5020	43.8139	39.8191	37.2160
Roof Fitting/Status	Roof Fitting Loss Factors											
	Quantity	KFa (lb-mole/yr)		KFb (lb-mole/yr mph^{1/2}/ft)		m		Losses (lb)				
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00		5.90		1.20		12.4099				
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00		5.40		1.10		4.8261				
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungasketed	1	47.00		0.00		0.00		16.2018				
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1	76.00		0.00		0.00		26.1986				
Roof Leg or Hanger Well/Adjustable	11	7.90		0.00		0.00		29.3550				
Sample Pipe or Well (24-in. Diam.)/SR Fabric Seal 10% Open	1	12.00		0.00		0.00		4.1368				
Stub Drain (1-in. Diameter)/	9	1.20		0.00		0.00		3.7230				
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gasket	1	6.20		1.20		0.94		2.1373				

**TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals**

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

**RNE_TK001_200 Proof-PTE - Internal Floating Roof Tank
Onida, South Dakota**

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
Ethyl alcohol	76.03	342.35	99.35	10.49	528.21

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification: RNE_TK002_200 Proof-PTE
 City: Onida
 State: South Dakota
 Company: Ring-Neck Energy Feed, LLC
 Type of Tank: Internal Floating Roof Tank
 Description: 200 Proof Tank

Tank Dimensions

Diameter (ft): 33.00
 Volume (gallons): 200,000.00
 Turnovers: 246.28
 Self Supp. Roof? (y/n): N
 No. of Columns: 1.00
 Eff. Col. Diam. (ft): 1.00

Paint Characteristics

Internal Shell Condition: Light Rust
 Shell Color/Shade: White/White
 Shell Condition: Good
 Roof Color/Shade: White/White
 Roof Condition: Good

Rim-Seal System

Primary Seal: Vapor-mounted
 Secondary Seal: None

Deck Characteristics

Deck Fitting Category: Typical
 Deck Type: Bolted
 Construction: Sheet
 Deck Seam: Sheet: 5 Ft Wide
 Deck Seam Len. (ft): 171.06

Deck Fitting/Status

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	11
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Stub Drain (1-in. Diameter)/Slit Fabric Seal 10% Open	9
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meteorological Data used in Emissions Calculations: Aberdeen, South Dakota (Avg Atmospheric Pressure = 14.05 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

RNE_TK002_200 Proof-PTE - Internal Floating Roof Tank
Onida, South Dakota

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Ethyl alcohol	Jan	29.51	25.01	34.02	43.45	0.2143	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Feb	32.76	28.13	37.38	43.45	0.2433	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Mar	38.99	34.02	43.96	43.45	0.3089	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Apr	46.27	40.06	52.48	43.45	0.4046	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	May	52.00	45.21	58.79	43.45	0.4974	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Jun	58.43	49.52	63.34	43.45	0.5814	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Jul	59.23	51.94	66.52	43.45	0.6406	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Aug	57.87	50.71	65.04	43.45	0.6113	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Sep	52.41	45.90	58.91	43.45	0.5046	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Oct	46.49	40.58	52.41	43.45	0.4080	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Nov	38.44	34.00	42.87	43.45	0.3025	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52
Ethyl alcohol	Dec	31.68	27.54	35.82	43.45	0.2333	N/A	N/A	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

RNE_TK002_200 Proof-PTE - Internal Floating Roof Tank
Onida, South Dakota

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	3.2622	3.7074	4.7173	6.2011	7.6482	8.9681	8.9016	9.4385	7.7613	6.2526	4.6185	3.5536
Seal Factor A (lb-mole/ft-yr):	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000
Seal Factor B (lb-mole/ft-yr (mph) ^{1/2}):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Value of Vapor Pressure Function:	0.0038	0.0044	0.0056	0.0073	0.0090	0.0106	0.0117	0.0111	0.0091	0.0074	0.0054	0.0042
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2143	0.2433	0.3089	0.4046	0.4974	0.5814	0.6406	0.6113	0.5046	0.4080	0.3025	0.2333
Tank Diameter (ft):	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290	28.5290
Number of Columns:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Effective Column Diameter (ft):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Net Throughput (gal/mo.):	4,104,685.8330	4,104,685.8330	4,104,685.8330	4,104,685.8330	4,104,685.8330	4,104,685.8330	4,104,685.8330	4,104,685.8330	4,104,685.8330	4,104,685.8330	4,104,685.8330	4,104,685.8330
Shell Clingage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100
Tank Diameter (ft):	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000
Deck Fitting Losses (lb):	4.2628	4.8442	6.1639	8.1027	9.8935	11.7182	12.0379	12.3328	10.1413	8.1700	6.0347	4.6434
Value of Vapor Pressure Function:	0.0038	0.0044	0.0056	0.0073	0.0090	0.0106	0.0117	0.0111	0.0091	0.0074	0.0054	0.0042
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000
Deck Seam Losses (lb):	0.4499	0.5113	0.6506	0.8552	1.0548	1.2368	1.3655	1.3017	1.0704	0.8623	0.6369	0.4901
Deck Seam Length (ft):	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400
Deck Seam Length Factor(ft/100ft):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Tank Diameter (ft):	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	36.5036	37.5918	40.6077	43.6880	47.2254	50.4521	52.7340	51.6020	47.5020	43.8139	39.8191	37.2160
Roof Fitting/Status	Roof Fitting Loss Factors											
	Quantity	KFa(lb-mole/yr)		KFb(lb-mole/(yr mph ^{1/2}))		m		Losses(lb)				
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	12.4099							
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	4.8261							
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1	47.00	0.00	0.00	16.2018							
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1	78.00	0.00	0.00	25.1986							
Roof Leg or Hanger Well/Adjustable	11	7.90	0.00	0.00	29.9550							
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	4.1368							
Stub Drain (1-in. Diameter)/	9	1.20	0.00	0.00	3.7230							
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	2.1373							

**TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals**

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

**RNE_TK002_200 Proof-PTE - Internal Floating Roof Tank
Onida, South Dakota**

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
Ethyl alcohol	76.03	342.35	99.35	10.49	528.21

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification: RNE_TK003_Denaturant-PTE
 City: Onida
 State: South Dakota
 Company: Ring-Neck Energy Feed, LLC
 Type of Tank: Internal Floating Roof Tank
 Description: Denaturant Storage Tank

Tank Dimensions

Diameter (ft): 33.00
 Volume (gallons): 200,000.00
 Turnovers: 7.44
 Self Supp. Roof? (y/n): N
 No. of Columns: 1.00
 Eff. Col. Diam. (ft): 1.00

Paint Characteristics

Internal Shell Condition: Light Rust
 Shell Color/Shade: White/White
 Shell Condition: Good
 Roof Color/Shade: White/White
 Roof Condition: Good

Rim-Seal System

Primary Seal: Vapor-mounted
 Secondary Seal: None

Deck Characteristics

Deck Fitting Category: Typical
 Deck Type: Bolted
 Construction: Sheet
 Deck Seam: Sheet: 5 Ft Wide
 Deck Seam Len. (ft): 171.06

Deck Fitting/Status

	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	11
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Stub Drain (1-in. Diameter)/Slit Fabric Seal 10% Open	9
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meteorological Data used in Emissions Calculations: Huron, South Dakota (Avg Atmospheric Pressure = 14.05 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

RNE_TK003_Denaturant-PTE - Internal Floating Roof Tank
Onida, South Dakota

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Gasoline (RVP 10)	Jan	31.87	27.28	36.47	45.20	2.9132	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
Gasoline (RVP 10)	Feb	34.96	30.27	39.65	45.20	3.1135	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
Gasoline (RVP 10)	Mar	40.83	35.86	46.01	45.20	3.5328	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
Gasoline (RVP 10)	Apr	47.75	41.49	54.01	45.20	4.0659	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
Gasoline (RVP 10)	May	53.14	46.33	59.95	45.20	4.5318	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
Gasoline (RVP 10)	Jun	57.98	51.04	64.91	45.20	4.9853	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
Gasoline (RVP 10)	Jul	60.88	53.80	67.96	45.20	5.2746	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
Gasoline (RVP 10)	Aug	58.38	52.51	66.26	45.20	5.1238	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
Gasoline (RVP 10)	Sep	53.91	47.41	60.41	45.20	4.6018	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
Gasoline (RVP 10)	Oct	47.92	42.08	53.77	45.20	4.0802	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
Gasoline (RVP 10)	Nov	40.37	35.84	44.90	45.20	3.4916	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3
Gasoline (RVP 10)	Dec	33.88	29.63	38.13	45.20	3.0421	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

RNE_TK003_Denaturant-PTE - Internal Floating Roof Tank
Onida, South Dakota

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	70.5609	76.0653	87.8982	103.8022	118.0088	132.6940	142.4283	137.3169	120.2309	104.0368	88.7059	74.0878
Seal Factor A (lb-mole/ft-yr):	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000
Seal Factor B (lb-mole/ft-yr (mph) ⁿ):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Value of Vapor Pressure Function:	0.0580	0.0625	0.0723	0.0852	0.0970	0.1091	0.1171	0.1129	0.0989	0.0856	0.0713	0.0609
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.9132	3.1135	3.5328	4.0659	4.5318	4.9653	5.2746	5.1238	4.6018	4.0802	3.4916	3.0421
Tank Diameter (ft):	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000
Vapor Molecular Weight (lb/lb-mole):	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	0.7299	0.7299	0.7299	0.7299	0.7299	0.7299	0.7299	0.7299	0.7299	0.7299	0.7299	0.7299
Number of Columns:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Effective Column Diameter (ft):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Net Throughput (gal/mo.):	123,961.5000	123,961.5000	123,961.5000	123,961.5000	123,961.5000	123,961.5000	123,961.5000	123,961.5000	123,961.5000	123,961.5000	123,961.5000	123,961.5000
Shell Clingage Factor (lb/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000
Tank Diameter (ft):	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000
Deck Fitting Losses (lb):	92.1983	99.3789	114.8390	135.3717	154.1960	173.3844	186.1011	178.4249	157.0985	135.8396	113.2942	96.8068
Value of Vapor Pressure Function:	0.0580	0.0625	0.0723	0.0852	0.0970	0.1091	0.1171	0.1129	0.0989	0.0856	0.0713	0.0609
Vapor Molecular Weight (lb/lb-mole):	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000	288.9000
Deck Seam Losses (lb):	8.7311	10.4890	12.1207	14.2878	16.2746	18.2999	19.8421	18.9374	16.5811	14.3478	11.9577	10.2175
Deck Seam Length (ft):	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596	171.0596
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400
Deck Seam Length Factor(1/ysqft):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Tank Diameter (ft):	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000	33.0000
Vapor Molecular Weight (lb/lb-mole):	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	173.2203	186.6540	215.5778	253.9917	289.2093	325.1082	348.8994	336.4091	294.6414	255.0541	212.6877	181.8420
Roof Fitting/Status	Quantity		KFa(lb-mole/yr)		Kfb(lb-mole/yr mphⁿ)		m	Losses(lb)				
Access Hatch (24-in. Diam.)\Unbolted Cover, Ungasketed	1		36.00		5.90		1.20	204.4369				
Automatic Gauge Float Well\Unbolted Cover, Ungasketed	1		14.00		5.40		1.10	79.5032				
Column Well (24-in. Diam.)\Built-Up Col.-Sliding Cover, Ungask.	1		47.00		0.00		0.00	268.8038				
Ladder Well (36-in. Diam.)\Sliding Cover, Ungasketed	1		76.00		0.00		0.00	431.5891				
Roof Leg or Hanger Well\Adjustable	11		7.90		0.00		0.00	493.4880				
Sample Pipe or Well (24-in. Diam.)\Silt Fabric Seal 10% Open	1		12.00		0.00		0.00	68.1456				
Stub Drain (1-in. Diameter)\Y	9		1.20		0.00		0.00	61.3311				
Vacuum Breaker (10-in. Diam.)\Weighted Mech. Actuation, Gask.	1		6.20		1.20		0.94	35.2086				

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

RNE_TK003_Denaturant-PTE - Internal Floating Roof Tank
Onida, South Dakota

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
Gasoline (RVP 10)	1,253.61	8.76	1,638.03	172.89	3,073.29

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification: RNE_TK004_Denatured Storage #1-PTE
 City: Onida
 State: South Dakota
 Company: Ring-Neck Energy Feed, LLC
 Type of Tank: Internal Floating Roof Tank
 Description: Denatured Ethanol Storage Tank #1

Tank Dimensions

Diameter (ft): 65.00
 Volume (gallons): 1,500,000.00
 Turnovers: 33.33
 Self Supp. Roof? (y/n): N
 No. of Columns: 1.00
 Eff. Col. Diam. (ft): 1.00

Paint Characteristics

Internal Shell Condition: Light Rust
 Shell Color/Shade: White/White
 Shell Condition: Good
 Roof Color/Shade: White/White
 Roof Condition: Good

Rim-Seal System

Primary Seal: Vapor-mounted
 Secondary Seal: None

Deck Characteristics

Deck Fitting Category: Typical
 Deck Type: Bolted
 Construction: Sheet
 Deck Seam: Sheet 5 Ft Wide
 Deck Seam Len. (ft): 663.66

Deck Fitting/Status

	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	19
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Stub Drain (1-in. Diameter)/Slit Fabric Seal 10% Open	34
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meteorological Data used in Emissions Calculations: Aberdeen, South Dakota (Avg Atmospheric Pressure = 14.05 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

RNE_TK004_Denatured Storage #1-PTE - Internal Floating Roof Tank
 Onida, South Dakota

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Denatured ethanol	Jan	29.51	25.01	34.02	43.45	0.2060	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured ethanol	Feb	32.76	28.13	37.38	43.45	0.2345	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured ethanol	Mar	38.99	34.02	43.96	43.45	0.2981	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured ethanol	Apr	46.27	40.06	52.48	43.45	0.3939	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured ethanol	May	52.00	45.21	58.79	43.45	0.4859	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured ethanol	Jun	56.43	49.52	63.34	43.45	0.5694	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured ethanol	Jul	59.23	51.94	66.52	43.45	0.6283	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured ethanol	Aug	57.87	50.71	65.04	43.45	0.5991	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured ethanol	Sep	52.41	45.90	58.91	43.45	0.4931	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured ethanol	Oct	46.49	40.58	52.41	43.45	0.3971	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured ethanol	Nov	38.44	34.00	42.87	43.45	0.2928	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured ethanol	Dec	31.68	27.54	35.82	43.45	0.2247	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

RNE_TK004_Denatured Storage #1-PTE - Internal Floating Roof Tank
Onida, South Dakota

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	6.1742	7.0356	8.8953	11.8844	14.7099	17.2824	19.1210	18.2135	14.9311	11.9848	8.8032	6.7379
Seal Factor A (lb-mole/ft-yr):	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000
Seal Factor B (lb-mole/ft-yr (mph) ^{1/2}):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Value of Vapor Pressure Function:	0.0037	0.0042	0.0054	0.0071	0.0088	0.0103	0.0114	0.0109	0.0089	0.0072	0.0053	0.0040
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2060	0.2345	0.2991	0.3939	0.4859	0.5694	0.6283	0.5991	0.4931	0.3971	0.2928	0.2247
Tank Diameter (ft):	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898
Number of Columns:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Effective Column Diameter (ft):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Net Throughput (gal/mo.):	4,166,666.6660	4,166,666.6660	4,166,666.6660	4,166,666.6660	4,166,666.6660	4,166,666.6660	4,166,666.6660	4,166,666.6660	4,166,666.6660	4,166,666.6660	4,166,666.6660	4,166,666.6660
Shell Clingage Factor (bb/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100
Tank Diameter (ft):	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000
Deck Fitting Losses (lb):	5.4171	6.1729	7.8923	10.4271	12.9062	15.1720	16.7764	15.9803	13.1003	10.5153	7.7239	5.9118
Value of Vapor Pressure Function:	0.0037	0.0042	0.0054	0.0071	0.0088	0.0103	0.0114	0.0109	0.0089	0.0072	0.0053	0.0040
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact. (lb-mole/yr):	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000
Deck Seam Losses (lb):	1.6772	1.9112	2.4435	3.2283	3.9958	4.6973	5.1941	4.9476	4.0559	3.2556	2.3913	1.8303
Deck Seam Length (ft):	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609
Deck Seam Loss per Unit Length (lb-mole/ft-yr):	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400
Deck Seam Length Factor (ft/sqft):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Tank Diameter (ft):	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	27.7583	28.6094	33.8208	40.0296	46.1017	51.6515	55.6312	53.6312	46.5771	40.2454	33.4080	28.9698
Roof Fitting/Status	Roof Fitting Loss Factors											
	Quantity	KFa (lb-mole/yr)		KFB (lb-mole/yr mph ^{1/2})		m		Losses (lb)				
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	12.0894							
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	4.7014							
Column Well (24-in. Diam.)/Bull-Up Col.-Sliding Cover, Ungask.	1	47.00	0.00	0.00	15.7833							
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1	78.00	0.00	0.00	25.5220							
Roof Leg or Hanger Well/Adjustable	19	7.90	0.00	0.00	50.4059							
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	4.0288							
Stub Drain (1-in. Diameter)	34	1.20	0.00	0.00	13.7013							
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	2.0621							

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

RNE_TK004_Denatured Storage #1-PTE - Internal Floating Roof Tank
Onida, South Dakota

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawal Loss	Deck Fitting Loss	Deck Seam Loss	
Denatured ethanol	145.88	173.88	128.00	39.63	487.38

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification: RNE_TK005_Denatured Storage #2_PTE
 City: Onida
 State: South Dakota
 Company: Ring-Neck Energy Feed, LLC
 Type of Tank: Internal Floating Roof Tank
 Description: Denatured Ethanol Storage Tank #2

Tank Dimensions

Diameter (ft): 65.00
 Volume (gallons): 1,500,000.00
 Turnovers: 33.33
 Self Supp. Roof? (y/n): N
 No. of Columns: 1.00
 Eff. Col. Diam. (ft): 1.00

Paint Characteristics

Internal Shell Condition: Light Rust
 Shell Color/Shade: White/White
 Shell Condition: Good
 Roof Color/Shade: White/White
 Roof Condition: Good

Rim-Seal System

Primary Seal: Vapor-mounted
 Secondary Seal: None

Deck Characteristics

Deck Fitting Category: Typical
 Deck Type: Bolted
 Construction: Sheet
 Deck Seam: Sheet: 5 Ft Wide
 Deck Seam Len. (ft): 663.66

Deck Fitting/Status

	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	19
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Stub Drain (1-in. Diameter)/Slit Fabric Seal 10% Open	34
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meteorological Data used in Emissions Calculations: Aberdeen, South Dakota (Avg Atmospheric Pressure = 14.05 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

RNE_TK005_Denatured Storage #2_PTE - Internal Floating Roof Tank
Onida, South Dakota

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Denatured Ethanol	Jan	29.51	25.01	34.02	43.45	0.2060	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured Ethanol	Feb	32.76	28.13	37.38	43.45	0.2345	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured Ethanol	Mar	38.99	34.02	43.96	43.45	0.2591	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured Ethanol	Apr	46.27	40.06	52.48	43.45	0.3839	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured Ethanol	May	52.00	45.21	58.79	43.45	0.4959	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured Ethanol	Jun	56.43	49.52	63.34	43.45	0.5694	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured Ethanol	Jul	59.23	51.94	66.52	43.45	0.6253	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured Ethanol	Aug	57.87	50.71	65.04	43.45	0.5891	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured Ethanol	Sep	52.41	45.90	58.91	43.45	0.4931	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured Ethanol	Oct	46.49	40.58	52.41	43.45	0.3971	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured Ethanol	Nov	38.44	34.00	42.87	43.45	0.2928	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726
Denatured Ethanol	Dec	31.68	27.54	35.82	43.45	0.2247	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

RNE_TK005_Denatured Storage #2_PTE - Internal Floating Roof Tank
Onida, South Dakota

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	6.1742	7.0356	8.9953	11.8844	14.7089	17.2524	19.1210	18.2138	14.9311	11.9848	8.8032	6.7379
Seal Factor A (lb-mole/ft-yr):	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000	6.7000
Seal Factor B (lb-mole/ft-yr (mph) ^{1/2}):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Value of Vapor Pressure Function:	0.0037	0.0042	0.0054	0.0071	0.0088	0.0103	0.0114	0.0109	0.0089	0.0072	0.0053	0.0040
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2060	0.2345	0.2991	0.3939	0.4959	0.5884	0.6283	0.5891	0.4931	0.3971	0.2928	0.2247
Tank Diameter (ft):	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898	14.4898
Number of Columns:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Effective Column Diameter (ft):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Net Throughput (gal/mo.):	4,166,666.6680	4,166,666.6680	4,166,666.6680	4,166,666.6680	4,166,666.6680	4,166,666.6680	4,166,666.6680	4,166,666.6680	4,166,666.6680	4,166,666.6680	4,166,666.6680	4,166,666.6680
Shell Clingage Factor (bb/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	8.6100	8.6100	8.6100	8.6100	8.6100	8.6100	8.6100	8.6100	8.6100	8.6100	8.6100	8.6100
Tank Diameter (ft):	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000
Deck Fitting Losses (lb):	5.4171	6.1729	7.8923	10.4271	12.9062	15.1720	16.7764	15.9803	13.1003	10.5153	7.7238	5.9118
Value of Vapor Pressure Function:	0.0037	0.0042	0.0054	0.0071	0.0088	0.0103	0.0114	0.0109	0.0089	0.0072	0.0053	0.0040
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000	382.1000
Deck Seam Losses (lb):	1.6772	1.9112	2.4435	3.2283	3.9958	4.6973	5.1941	4.9476	4.0558	3.2556	2.3913	1.8303
Deck Seam Length (ft):	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609	663.6609
Deck Seam Loss per Unit Length												
Factor (lb-mole/ft-yr):	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400
Deck Seam Length Factor(R/sqft):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Tank Diameter (ft):	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000	65.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	27.7583	29.6084	33.8208	40.0296	46.1017	51.6515	55.5812	53.6312	46.5771	40.2454	33.4080	28.9698
Roof Fitting/Status	Roof Fitting Loss Factors											
	Quantity	KFa (lb-mole/yr)		KFb (lb-mole/yr mph^{1/2})		m		Losses (lb)				
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00		5.90		1.20		12.0894				
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00		5.40		1.10		4.7014				
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1	47.00		0.00		0.00		15.7833				
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1	76.00		0.00		0.00		25.5220				
Roof Leg or Hanger Well/Adjustable	19	7.90		0.00		0.00		50.4058				
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00		0.00		0.00		4.0298				
Stub Drain (1-in. Diameter)	34	1.20		0.00		0.00		13.7013				
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20		1.20		0.94		2.0821				

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

RNE_TK005_Denatured Storage #2_PTE - Internal Floating Roof Tank
Onida, South Dakota

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawal Loss	Deck Fitting Loss	Deck Seam Loss	
Denatured Ethanol	145.88	173.88	128.00	39.63	487.38