

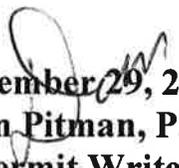
Statement of Basis

**Permit to Construct No. P-2009.0124
Project ID 62108**

**Pacific Ethanol Magic Valley LLC
Burley, Idaho**

Facility ID 031-00032

Final


**November 29, 2018
Dan Pitman, P.E.
Permit Writer**

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE 3

FACILITY INFORMATION 4

 Description 4

 Permitting History 4

 Application Scope 4

 Application Chronology 5

 Technical and Regulatory Review 5

 Permit Conditions Review..... 5

PUBLIC REVIEW 6

 Public Comment Opportunity 6

EXEMPTION REVIEW 6

APPENDIX A – FACILITY DRAFT COMMENTS

APPENDIX B – PROCESSING FEE

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

BRC	below regulatory concern
DEQ	Department of Environmental Quality
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
RTO	regenerative thermal oxidizer

FACILITY INFORMATION

Description

Pacific Ethanol is a fuel-grade ethanol facility with a maximum permitted capacity of 73.57MMGal/yr of denatured ethanol, and 70 million gallons of undenatured ethanol. The facility is located near Burley. The facility processes approximately 23.6 million bushels of corn per year. The facility has the ability for an additional 315,000 T/yr corn to be received and shipped. Corn load-out with a capacity of 20,000 bushels/hr is also part of the operations at the facility. The facility consists of the following operations:

- Grain Handling and Milling Operation
- Fermentation and Distillation Operations
- Storage Tanks
- Ethanol Load-Out Operations
- Boilers
- Corn receiving and shipping
- Corn Load-out

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

May 14, 2007	P-060450 issued for the initial construction of the ethanol production plant. (S)
March 28, 2008	P-2008.0025 install a RCO instead of a RTO. (S)
August 4, 2009	P-2009.0060 add ability to receive and ship whole and ground corn from the facility. (S)
November 10, 2009	P-2009.0124, add provisions of Consent Order No. E-2008.0020, including changing the catalytic oxidizer (RCO) to a regenerative thermal oxidizer (RTO). (S)
March 21, 2012	P-2009.0124, project 60885, to allow an increase in production of undenatured ethanol and add a flare. (S)
September 25, 2014	P-2009.0124, project 61373 to increase the annual undenatured ethanol production from 63 million gallons to 70 million gallons per year. (S by this permitting action)

Application Scope

This PTC is a revision of an existing PTC.

The applicant has proposed to:

- Use noncontact cooling water in the fermentation and vent gas scrubbers with or without freshwater instead of being limited to using freshwater only.
- Change temperature restrictions and monitoring requirements from the inlet to the regenerative thermal oxidizer (RTO) to the combustion chamber of the RTO.

Concurrent with the application to revise the permit as described above Pacific Ethanol submitted documentation that the addition of a cooling tower cell is exempt from permit to construct requirements. Pacific Ethanol did not request DEQ's concurrence with that determine, however; the documentation was reviewed and DEQ does concur with that exemption determination.

Additionally, Pacific Ethanol is going to add a condenser to the vent system to condense out ethanol before it has an opportunity to be emitted. The condenser is not an emission unit and does not need to be either permitted or exempted.

Application Chronology

September 6 and 7, 2018	DEQ received an application and an application fee, respectively.
September 11, 2018	DEQ determined that the application was complete.
October 9, 2018	DEQ made available the draft permit and statement of basis for peer and regional office review.
October 15, 2018	DEQ made available the draft permit and statement of basis for applicant review.
November 8, 2018	DEQ received the permit processing fee.

Technical and Regulatory Review

DEQ has determined that allowing the non-contact cooling tower water to be used in the fermentation and vent gas scrubbers and switching temperature requirements from the inlet of the RTO to the combustion chamber are insignificant revisions to the permit that do not increase emissions. The previous technical and regulatory analyses do not change. See the statement of basis dated September 25, 2014, for Permit to Construct. P-2009.0124 Project 61373 for the emission inventory and other technical and regulatory details.

Permit Conditions Review

This section describes the permit conditions for this initial permit or only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

Revised Permit Condition 3.8

This permit condition had required that only freshwater be used in the fermentation and vent gas scrubbers. Pacific Ethanol has requested to be able to use non-contact cooling water and/or fresh water. Pacific Ethanol conducted source tests while using non-contact cooling water and it reports that there is no substantial difference in emissions of formaldehyde, acetaldehyde, and total hydrocarbons between using fresh and non-contact cooling water.

Revised Permit Condition 3.9

Changed the temperature limitation from the inlet to the RTO to the combustion chamber of the RTO. This change more appropriately establishes limitations on the operation of RTO and was requested by Pacific Ethanol.

Revised Permit Condition 3.11

Changed temperature monitoring point from the inlet to the RTO to the combustion chamber of the RTO.

Revised Permit Condition 3.13

Changed the temperature monitoring point from the inlet of the RTO to the combustion chamber of the RTO.

Revised Permit Conditions 5.3.3 through 5.3.5 to remove references to permit conditions that do not exist.

Revised Permit Condition 6.3

Removed requirement to submit O&M manual within 60 days of permit issuance. The O&M should have already been submitted and requiring Pacific Ethanol to resubmit the plan within 60 days of this permits issuance would have not have added value.

Table 1.1, Table 2.1, Table 3.1, and Permit Condition 3.6 were changed as requested by the applicant during review of the facility draft permit. These changes are described in Appendix A of this statement of basis. These changes do not affect actual emissions from the source; the name of some emissions units changed, and some of the emission units were originally permitted to vent through the vent gas scrubber and the RTO in actuality only vent through the RTO. Minor changes were made to Permit Condition 7.1 and 7.5 to address comments provided by the source as described in Appendix A.

All emissions units are vented to the RTO, and the RTO stack is periodically tested to assure compliance, any changes to the description of where emissions unit vent to will not affect actual emissions from the source.

PUBLIC REVIEW

Public Comment Opportunity

Because this permitting action does not authorize an increase in emissions, an opportunity for public comment period was not required or provided in accordance with IDAPA 58.01.01.209.04.

EXEMPTION REVIEW

Included with the permit application was a PTC exemption determination for the addition of a new cell to the existing cooling tower. Pacific Ethanol did not request DEQ concurrence with the exemption determination.

Documentation was provided that the potential uncontrolled emissions at maximum capacity of the cooling tower cell for PM, PM₁₀, and PM_{2.5} are 1.57, 1.10, and 0.66 tons per year respectively (See Table 1 below). These rates satisfy the exemption requirement that the source not exceed 100 tons per year (IDAPA 58.01.01.220.01(a)(i)). These emissions estimates are based on the maximum recirculation rate of the cooling tower cell of 430,000 gallons per hour and a drift loss of 0.005% based on a manufacturers’ guarantee.

The maximum capacity of the new cell to emit air pollution considering limitations on emissions for PM, PM₁₀, and PM_{2.5} are 1.10, 0.77, and 0.46 tons per year respectively. These emissions estimates are based on the an actual recirculation rate of the cooling tower cell of 300,000 gallons per hour and a drift loss of 0.005% based on a manufacturers’ guarantee. These pollutants emissions rates are less than 10% of significant for these pollutants and qualify the source for an exemption under IDAPA 58.01.01.221.01(Below Regulatory Concern).

It should be noted that the potential uncontrolled emissions at maximum capacity of the cooling tower cell for PM, PM₁₀, and PM_{2.5} are less than 10% of significant and the sources emissions at maximum capacity qualifies the source for the BRC exemption. Therefore source does not need to rely on controlling emissions to qualify for the exemption.

In summary, the source qualifies for the BRC exemption.

Table 1 PROJECT EMISSIONS INCREASE FOR CRITERIA POLLUTANTS COMPARED TO THE SIGNIFICANCE THRESHOLDS FOR PTC EXEMPTIONS

Pollutant	Project Emissions Increase¹ (T/yr)	10% of the Significance Threshold (T/yr)	Exceeds 10% of the Significance Threshold?
PM	1.57	2.5	No
PM ₁₀	1.10	1.5	No
PM _{2.5}	0.66	1.0	No

1) Emission rate at maximum capacity without consideration of controls.

APPENDIX A – FACILITY DRAFT COMMENTS

The following comments were received from the facility on November 20, 2018:

Facility Comments:

	<u>Emission unit</u>	<u>Control Equipment</u>	
Table 1.1	Scalper	Corn Handling Baghouse	Correct
Table 2.1	Scalper	BLANK	Incorrect
Table 3.1	Emissions Units	Emissions Control Devices don't match up with reality	
	Beer Column	Vent Gas Scrubber (VGS)	OK
	Stripper Column	VGS	No
	Rectifier Column	VGS	No
	Molecular Seive	VGS	Should be "Regen Receiver Tank"
	200 Proof Condenser	VGS	Should be "Reflux Vent Condenser"
	Evaporator	VGS	Should be "Evaporator Vacuum Receiver Tank"
	Maybe typos?		
Table 3.1 footnote	1) ...removal of TOC?	Should be VOC?	
paragraph 3.6	See Table 3.1 comments	Same comments as Table 3.1	
paragraph 7.1	Fire Pump Engine	" A 288 break horse-power..."	Should read "A 288 brake horsepower..."
paragraph 7.5	Fire Pump Engine	says stationary CI internal combustion engine.	Not sure what the IC is referring to unless it intended to say ICE as in paragraph 7.7

DEQ Response:

Table 1.1 lists the emissions units and control devices at the facility. Table 1.1 was edited to include the changes requested to be made to Table 3.1 for the same emissions units.

Table 2.1 was updated to list the scalper emissions are controlled by the Corn Handling Baghouse.

Table 3.1 was updated as requested.

Table 3.1 the mention of total organic compounds was deleted from the footnote as it was not necessary in describing the scrubber.

Permit Condition 3.6 was edited to as requested to include the same changes requested to Table 3.1.

All emissions units are vented to the RTO and the RTO stack is periodically tested to assure compliance, any changes to the description of where emissions unit vent to will not affect actual emissions from the source.

Permit Condition 7.1 was corrected as requested.

Permit Condition 7.5 – Use of the acronym "IC" (internal combustion) engine was removed from this condition. The permit condition now simply refers to the engine.

APPENDIX B – PROCESSING FEE

PTC Processing Fee Calculation Worksheet

Instructions:

Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

Company: Pacific Ethanol Magic Valley LLC
Address: 2600 Washington Avenue
City: Burley
State: Idaho
Zip Code: 83318
Facility Contact: Bill Rutherford
Title: EHS Manager
AIRS No.: 031-00032

- N Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N

- Y Did this permit require engineering analysis? Y/N

- N Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO _x	0.0	0	0.0
SO ₂	0.0	0	0.0
CO	0.0	0	0.0
PM10	0.0	0	0.0
VOC	0.0	0	0.0
Total:	0.0	0	0.0
Fee Due	\$ 1,000.00		

Comments: