



# **Air Quality Permitting Statement of Basis**

**June 14, 2006**

**Tier II Operating Permit and Permit to Construct  
No. T2-050051**

**Tyson Fresh Meats, Kuna  
Facility ID No. 001-00030**

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**FINAL**

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## Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EI	emissions inventory
EPA	Environmental Protection Agency
HAPs	hazardous air pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pounds per hour
m	meter(s)
MACT	Maximum Achievable Control Technology
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operations and maintenance
PM	particulate matter
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PTC	permit to construct
Rules	Rules for the Control of Air Pollution in Idaho
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	synthetic minor
SO <sub>2</sub>	sulfur dioxide
T/yr	tons per year
Tyson	Tyson Fresh Meats, Kuna
VOC	volatile organic compound
UTM	Universal Transverse Mercator

## 1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01 Sections 201 and 404.04, Rules for the Control of Air Pollution in Idaho (Rules) for Tier II operating permits and Permits to Construct.

## 2. FACILITY DESCRIPTION

Tyson Fresh Meats, Inc (Tyson) in Kuna is a beef processing and rendering facility which processes about 225 head of cattle per hour. The cattle are butchered, cleaned, split in half, quickly chilled to about 31 degrees Fahrenheit (°F), and sent to Pasco, Washington, for further processing. The hides are removed and sent to Pacific Hides in Nampa. The contents of the stomach are removed and piped to a truck loadout. The rest of the animal parts are ground up and rendered. The rendered material is separated into liquid and solid products. The liquid, edible product is used for deep fat frying. The solid product is used for animal food. The blood is dried and used for animal feed.

## 3. FACILITY / AREA CLASSIFICATION

Tyson is defined as a synthetic minor facility because without permit limits on the potential to emit the SO<sub>2</sub> emissions could exceed 100 tons per year. The AIRS classification is "SM80" because the potential to emit SO<sub>2</sub> is limited to 80% or greater of the applicable major source level, 100 T/yr.

The facility is located within AQCR 64 and UTM zone 11. The facility is located in Ada County which is classified attainment for PM<sub>10</sub> and CO, and unclassifiable for all other criteria pollutants.

The AIRS information provided in Appendix A defines the classification for each regulated air pollutant at Tyson. This required information is entered into the EPA AIRS database.

## 4. APPLICATION SCOPE

The facility requested to allow use of biofuel (edible tallow, inedible tallow and flotation tallow) as an alternative fuel in their existing East and West boilers. The boilers are currently allowed to use natural gas, and No.1 and No.2 fuel oil.

### 4.1 *Application Chronology*

November 7, 2005	DEQ received application
December 23, 2005	DEQ declared application complete
February 21, 2006	DEQ issued the draft permit for applicant to review
May 1, 2006	DEQ received applicant's email with no comments on the draft permit.

## 5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this Tier II and PTC.

### 5.1 *Equipment Listing*

A 1,000 gallon heated tank is added right before the fuel feeding system. The tank is used to heat the biofuel to reach the similar viscosity as No.2 fuel oil before biofuel is fed to the burner. The tank is heated by the steam generated from the boiler itself. No change is made to the boiler burner.

## 5.2 Emissions Inventory

A detailed emissions inventory (EI) was provided in the application. The emission factors used in the emissions estimation for biofuel were EPA source test data provided in the application. The EI has been reviewed by DEQ and appears to accurately reflect emissions from the facility. Table 5.2 provides a summary of the EI. The facility's EI can be found in Appendix B of the statement of basis.

**Table 5.2 EAST AND WEST BOILERS EMISSIONS ESTIMATES**

Fuel	Operating Hours for East and West Boilers	PM <sub>10</sub> /PM		SO <sub>2</sub>		VOC		NO <sub>x</sub>		CO	
		lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Natural Gas	1,538 hr/yr	0.38	0.29	0.03	0.02	0.27	0.21	4.94	3.8	4.15	3.19
Biofuel		0.71	0.55	0.35	0.27	---	---	5.95	4.57	0.91	0.70
Fuel Oil	2,600,000 gal/yr (7,222.hr/yr)	1.19	4.30	25.26	92.30	0.09	0.32	7.20	1.8	1.80	6.50
Worst Case Emissions	---	1.19	4.83	25.56	92.57	0.27	0.53	7.20	30.57	4.15	9.69
Permit Limits in the Former Existing Permit	---	1.20	4.58	25.56	92.32	---	---	7.2	29.8	---	---

## 5.3 Modeling

The short term emissions in pounds per hour due to burning biofuel are less than those that were permitted in the existing permit issued May 28, 2002, and revised January 27, 2006. The annual emissions due to burning biofuel increase. For PM/PM<sub>10</sub>, the annual emissions increase from 4.58 tons per year to 4.83 tons per year. For SO<sub>2</sub>, the annual emissions increase from 92.32 tons per year to 92.57 tons per year. For NO<sub>x</sub> the annual emissions increase from 29.80 tons per year to 30.57 tons per year. Using the modeling information for the original permit issued May 28, 2002, the ambient impact of PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub> will not exceed their respective annual NAAQSs. Therefore, the facility has demonstrated compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard.

## 5.4 Regulatory Review

This section describes the regulatory review of the applicable air quality rules with respect to this Tier II operating permit revision.

IDAPA 58.01.01.201 ..... Permit to Construct Required

The facility requested to allow use of biofuel (edible tallow, inedible tallow and flotation tallow) as an alternative fuel in their existing East and West boilers while the boilers maintain the capability to combust natural gas, and No.1 and No.2 fuel oil. The change in the method of operation causes the annual emissions increase of regulated air pollutants. The proposed project does not qualify for an exemption under Sections 220 through 223 of the Rules; therefore, a Permit to Construction is required.

IDAPA 58.01.01.203.02..... NAAQS

"No permit to construct shall be granted for a new or modified stationary source unless the applicant shows to the satisfaction of the Department all of the following: ....02. NAAQS...."

The facility has demonstrated compliance, to DEQ's satisfaction, that this project will not cause or significantly contribute to a violation of any ambient air quality standards of PM<sub>10</sub>, NO<sub>2</sub>, and SO<sub>2</sub>. CO emissions are not increased due to this permit revision. Therefore, modeling is not required for CO.

*IDAPA 58.01.01.203.03..... Toxic Air Pollutants*

*"No permit to construct shall be granted for a new or modified stationary source unless the applicant shows to the satisfaction of the Department all of the following: ....03. Toxic Air Pollutants Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586."*

Toxic emissions information for biofuel (edible tallow, inedible tallow and flotation tallow) combustion is not available at this time. However, it is reasonable to conclude that emissions from burning biofuel are no worse than burning No. 2 fuel oil, which the facility is already allowed to burn.

*40 CFR 60 Subpart Dc..... New Source Performance Standards*

Modification is defined in 40 CFR 60.14 as

*"(a) Except as provided under paragraphs (e) and (f) of this section, any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere.*

.....

*(e) The following shall not, by themselves, be considered modifications under this part:*

.....

*(4) Use of an alternative fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type, as provided by §60.1, the existing facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change. Conversion to coal required for energy considerations, as specified in section 111(a)(8) of the Act, shall not be considered a modification."*

The biofuel is not readily burned in the boilers unless it is heated to reach certain viscosity. A 1,000 gallon heat tank is added right before the fuel feeding system. The tank is used to heat the biofuel to reach the similar viscosity as No.2 fuel oil before biofuel is fed to the burner. The tank is heated by the steam generated by the boiler itself. No change is made to the boiler burner.

The affected facility in 40 CFR 60 Subpart Dc is each *steam generating unit* with certain capacity and constructed, modified or reconstructed after certain time.

- In 40 CFR 60.41c "*Steam generating unit* means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart."

- In 40 CFR 60.41c “*Process heater* means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.”

It appears that the heat tank is a process heater and is not included in the definition of steam generating unit under 40 CFR 60 Subpart Dc. Therefore, the addition of the heat tank doesn't trigger the boilers to be subject to 40 CFR 60 Subpart Dc.

40 CFR 61 and 63..... *National Emission Standards for Hazardous Air Pollutants & MACT*

This facility is not subject to NESHAP or MACT.

## 5.5 Fee Review

Tyson submitted the \$1,000 PTC application fee on November 15, 2005, as required by IDAPA 58.01.01.224. Tyson's emissions increase is between 1 to 10 tons range. In accordance with IDAPA 58.01.01.225, a PTC processing fee of \$2,500 applies. Tyson submitted the \$2,500 processing fee on June 12, 2006.

**Table 5.1 PTC PROCESSING FEE TABLE**

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO <sub>x</sub>	0.77	0	0.0
SO <sub>2</sub>	0.25	0	0.0
CO	0.0	0	0.0
PM <sub>10</sub>	0.25	0	0.0
VOC	0.0	0	0.0
TAPS/HAPS	0.0	0	0.0
Total:	1.27	0	1.27
Fee Due	\$ 2,500.00		

## 6. PERMIT CONDITIONS

This section describes only those permit conditions that have been revised, modified, or deleted as a result of this permit modification. All other permit conditions remain unchanged.

- 6.1 Permit Conditions 1.1 and 1.2 are revised to reflect the purpose for this permit action.
- 6.2 Biofuel is added to Table 1.1, Permit Conditions 3.1 and 3.5.
- 6.3 Permit Condition 2.11 is revised to require records of each fuel oil sulfur content analysis and its corresponding fuel shipment receipt be kept on site.
- 6.4 Permit Condition 3.6 is reworded to make the requirement clearer:

### “3.6 Distillate Fuel Oil Throughput Limit

(old) The permittee shall not combust more than 2,600,000 gallons of distillate fuel oil in aggregate in the East and West Boilers in any consecutive 12-month period.

**3.6 Distillate Fuel Oil Throughput Limit**

(new) The sum of distillate fuel combusted in the East and West Boilers shall not exceed 2,600,000 gallons of distillate fuel oil in any consecutive 12-month period.”

- 6.5 Permit Conditions 5.14, 6.9, and 7.9 are revised. The O&M manual and the manufacturer specifications are required to remain onsite at all times and to be made available to DEQ representatives upon request. A copy of the O&M manual and the manufacturer specifications is required to submit to DEQ’s Boise Regional Office.
- 6.6 Annual emissions limits for East and West boilers are revised to reflect the emissions increase due to this permit modification.
- 6.7 Item 8 in the permit cover page is revised to add PTC related conditions.
- 6.8 General Provision is revised to add requirements applying to a PTC.

**7. PERMIT REVIEW**

**7.1 *Public Comment***

An opportunity for public comment period on the Tier II operating permit application was provided in accordance with IDAPA 58.01.01.404.c., and no public comment period was requested.

**7.2 *Regional Facility Review of Draft Permit***

A facility draft permit was provided to Boise Regional Office on February 7, 2006. The comments were received on February 16, 2006. The comments that directly related to this permit action are incorporated in the permit.

**7.3 *Facility Review of Draft Permit***

A facility draft permit was provided to the facility on February 21, 2006. The facility e-mailed DEQ on May 1, 2006, and indicated no comments on the draft permit.

**8. RECOMMENDATION**

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends that DEQ issue final Tier II Operating Permit/PTC No. T2-050051 to Tyson Fresh Meats of Kuna, Idaho.

SYC\bf Permit No. T2-050051

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# **APPENDIX A**

## **AIRS INFORMATION**

**Tier II Operating Permit and Permit to Construct  
No. T2-050051**

**Tyson Fresh Meats, Kuna**

**Facility ID No. 001-00030**

**AIRS/AFS FACILITY-WIDE CLASSIFICATION DATA ENTRY FORM**

<b>AIR PROGRAM</b>	<b>SIP</b>	<b>PSD</b>	<b>NSPS (Part 60)</b>	<b>NESHAP (Part 61)</b>	<b>MACT (Part 63)</b>	<b>TITLE V</b>	<b>AREA CLASSIFICATION</b>
<b>POLLUTANT</b>							<b>A – Attainment U – Unclassifiable N – Nonattainment</b>
<b>SO<sub>2</sub></b>	SM					SM80	U
<b>NO<sub>x</sub></b>	B						U
<b>CO</b>	B						Maintenance
<b>PM<sub>10</sub></b>	B						Maintenance
<b>PT (Particulate)</b>	B						
<b>VOC</b>	B						U
<b>THAP (Total HAPs)</b>	B						
			<b>APPLICABLE SUBPART</b>				

**AIRS/AFS Classification Codes:**

- A** = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant, which is below the 10 T/yr threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
- SM** = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B** = Actual and potential emissions below all applicable major source thresholds.
- C** = Class is unknown.
- ND** = Major source thresholds are not defined (e.g., radionuclides).

## **APPENDIX B**

### **EMISSIONS INVENTORY FROM THE APPLICANT**

**Tier II Operating Permit and Permit to Construct  
No. T2-050051**

**Tyson Fresh Meats, Kuna**

**Facility ID No. 001-00030**

