STATE OF NEBRASKA

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Note: Flint Hills Resources acquired Fairmont Plant on December 7, 2012 from Advanced BioEnergy

AIR QUALITY CLASS I OPERATING PERMIT

PERMIT NUMBER: OP08S2-021

Source Name: ABE Fairmont, LLC	**NDEQ Facility ID#:** 86026
Mailing Address: 10201 Wayzata, Suite 250 Minneapolis, MN 55305	**Source Location:** 1214 Road G Fairmont, NE 68354

Project Description: This operating permit approves the operation of an existing denatured ethanol manufacturing facility producing approximately 126 million gallons of denatured ethanol annually.

Primary Standard Industrial Classification (SIC) Code: 2869

Revised or Superseded Operating Permits: None

Pursuant to Title 129, Chapter 14, of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of the proposed operation of an air contaminant source and the thirty (30) day period allowed for comments has elapsed. This operating permit approves the operation of an existing ethanol manufacturing facility with the capacity to produce 126 million gallons of denatured ethanol. This operating permit approves the operation of this source as identified in the Air Quality Operating Permit Application 08S2-021 received October 20, 2008, including any supporting information received prior to issuance of this permit. Additional details on the source, including estimated pollutant emissions, can be found in the accompanying Fact Sheet.

Compliance with this permit shall not be a defense to any enforcement action for violation of an ambient air quality standard. Unless otherwise noted, the conditions of this permit are enforceable by the United States Environmental Protection Agency (USEPA) and the Nebraska Department of Environmental Quality (NDEQ). The permit holder, owner, and operator of the source shall assure that the operation and maintenance of all equipment is in compliance with all of the conditions of this permit and the Attachments

The undersigned issues this document on behalf of the NDEQ Director in accordance with Title 129 – Nebraska Air Quality Regulations as amended January 9, 2011.

6/17/2011
Date

Shelley Schneider, Administrator
Air Quality Division

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ABBREVIATIONS, SYMBOLS, and UNITS OF MEASURE

AP-42	Compilation of Air Pollutant Emission Factors, Volume I, Stationary Point and Area Sources
BACT	Best Available Control Technology
btu	British Thermal Unit
bu	Bushel
CAA	Clean Air Act
CE	Control Equipment
cf	Cubic feet
CEMS	Continuous Emissions Monitoring System
CFC	Chlorofluorocarbons
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CP	Construction Permit
DDGS	Dry Distillers Grains with Solubles
Director	Director of the Nebraska Department of Environmental Quality
dscf	Dry Standard Cubic Feet
dscfm	Dry Standard Cubic Feet per Minute
EQC	Environmental Quality Council
EP	Emission Point
EU	Emission Unit
FIP	Federal Implementation Plan
FR	Federal Register
ft	Feet
FTIR	Fourier Transform Infrared
HAP	Hazardous Air Pollutant(s)
hp	Horsepower
hr	Hour
lb	Pound
LDAR	Leak Detection and Repair
LNB	Low NO_x Burner
MACT	Maximum Achievable Control Technology
Mgal	One Thousand Gallons
MMBtu	One Million British Thermal Units
MMgal	One Million Gallons
MMscf	One Million Standard Cubic Feet
n/a	Not Applicable
NAAQS	National Ambient Air Quality Standards
NDEQ	Nebraska Department of Environmental Quality
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standard
NSR	New Source Review
OP	Operating Permit
PAL	Plant-wide Applicability Limit
PEMS	Predictive Emissions Monitoring System
PM	Particulate Matter
PM_{10}	Particulate Matter with aerodynamic diameter equal to or less than 10 microns
ppb	Parts per Billion
ppm	Parts per Million
ppmv	Parts per Million by volume
ppmvd	Parts per Million by volume, dry basis
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
scf	Standard Cubic Feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
Title 129	Title 129, Nebraska Air Quality Regulations
TDS	Total Dissolved Solids
TO/HRSG	Thermal Oxidizer/Heat Recovery Steam Generators
tpy	Tons per year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulate Matter
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
VHAP	Volatile Hazardous Air Pollutant
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WDGS	Wet Distillers Grains with Solubles

I. GENERAL CONDITIONS

(A) Administrative amendment of this permit for a change in ownership or operational control of this source is allowed provided the NDEQ determines that no other change in the permit is necessary and a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the NDEQ [Title 129, Chapter 15, Section 001.01D].

(B) The permittee shall allow the NDEQ, USEPA or an authorized representative, upon presentation of credentials [Title 129, Chapter 8, Section 012.02] to:

(1) Enter upon the permittee's premises at reasonable times where a source subject to this permit is located, emissions-related activity is conducted, or where records must be kept under the conditions of this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(3) Inspect at reasonable times any facilities, pollution control equipment, including monitoring and air pollution control equipment, practices, or operations regulated or required under this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(4) Sample or monitor at reasonable times substances or parameters for the purpose of ensuring compliance with the permit or applicable requirements.

(C) Regulatory authority:

(1) Title 40 Protection of Environment, Code of Federal Regulations that apply to the source including those not currently delegated to Nebraska or not yet included in Title 129 - Nebraska Air Quality Regulations, and

(2) Title 129 - Nebraska Air Quality Regulations that apply to the source as amended January 9, 2011.

(D) The permittee shall comply with 40 CFR part 82, Protection of the Stratospheric Ozone. Affected controlled substances include, but are not limited to, chlorofluorocarbons and hydrochlorofluorocarbon refrigerants, halons, carbon tetrachloride, and methyl chloroform (specific affected controlled substances are listed in 40 CFR part 82, Subpart A, Appendices A, (Class I) and B (Class II) enforceable by the USEPA only.

The following subparts and sections of 40 CFR part 82 are conditions of this permit:

Subpart A - Production and Consumption Controls

Subpart B - Servicing of Motor Vehicle Air Conditioners

Subpart E - Labeling of Products Using Ozone-Depleting Substances: Sections 82.106 Warning statement requirements, 82.108 Placement of warning statement, 82.110 Form of label bearing warning statement, and 82.112 Removal of label bearing warning statement

Subpart F- Recycling and Emissions Reduction: Sections 82.156 Required practices, 82.158 Standards for recycling and recovery equipment, 82.161 Technician certification, and 82.166 Reporting and recordkeeping requirements

Subpart G -Significant New Alternatives Policy Program

(E) This permit is issued for a fixed term of five (5) years. A renewal application shall be submitted to the NDEQ a minimum of six (6) months and a maximum of eighteen (18) months before permit expiration. Provided their application is submitted within the above timeframe, the source may continue to operate without a permit from the date the application is determined to be complete until final action on the application is taken by the NDEQ [Title 129, Chapter 8, Section 003, and Chapter 7, Section 002.06 and Section 003.04]

(F) The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of the Nebraska Environmental Protection Act and the Federal Clean Air Act, and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application [Title 129, Chapter 8, Section 007.01].

(G) It shall not be a defense for a permittee in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit [Title 129, Chapter 8, Section 007.02].

(H) This permit may be modified; revoked, reopened, and reissued; or terminated for cause in accordance with Title 129 and Title 115, Rules of Practice and Procedure. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not supersede any permit condition [Title 129, Chapter 8, Section 007.03].

(I) Conditions under which this permit will be reopened, revoked and reissued or terminated during its term for cause, include but are not limited to [Title 129, Chapter 8, Section 010 and Chapter 15, Section 006]:

(1) Additional applicable requirements under the Nebraska Environmental Protection Act or the Federal Clean Air Act, which become applicable to this source with a remaining permit term of three (3) or more years. No such reopening will occur if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended;

(2) Additional requirements, including excess emissions requirements, that become applicable to an affected source under the acid rain program under Chapter 26;

(3) A determination by the Director, or the Administrator of USEPA that:

(a) The permit must be revoked and reissued to ensure compliance with the applicable requirements;

(b) The permit contains a material mistake or that inaccurate statements were made in the emissions standards or other terms or conditions of the permit;

(c) An applicable requirement or applicable requirement under the Federal Clean Air Act applies which was not identified by the permittee in its application;

(J) This permit may be revoked during its term for cause, including but not limited to [Title 129, Chapter 8, Section 010 and Chapter 15, Section 006.02]:

(1) The existence at the source of unresolved noncompliance with applicable requirements or a term or condition of this permit, and refusal of the permittee to agree to an enforceable schedule of compliance to resolve the noncompliance;

(2) The submittal by the permittee of false, incomplete, or misleading information to the NDEQ or USEPA;

(3) A determination by the Director that the permitted source or activity endangers human health or the environment and that the danger cannot be removed by a revision of this permit; or

(4) The failure of the permittee to pay a penalty owed pursuant to court order, stipulation and agreement, or order issued by the Administrator of the USEPA.

(K) This permit does not convey any property rights of any sort, or any exclusive privilege [Title 129, Chapter 8, Section 007.04].

(L) The permittee shall furnish to the NDEQ, within the time specified by the NDEQ, any information requested by the NDEQ in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the NDEQ copies of records required to be kept in accordance with the permit or, for information claimed to be confidential, the permittee may furnish such records along with a claim of confidentiality pursuant to Title 115 - Rules of Practice and Procedure [Title 129, Chapter 8, Section 007.05].

(M) The provisions of this permit supersede the provisions of any previously issued operating or construction permit. The applicable requirements of previously issued construction permits are now conditions of this permit [Title 129, Chapter 8, Sections 002 and 007.06]

(N) In the event of a challenge to any portions of this permit, the unchallenged permit requirements shall remain valid [Title 129, Chapter 8, Section 006]

(O) The following methods may be used to determine compliance with the terms and conditions in this permit [Title 129, Chapter 34, Section 008]:

(1) Any compliance test method specified in the State Implementation Plan;

(2) Any test or monitoring method approved for the source in a permit issued pursuant to Title 129, Chapters 8, 17, 19, or 26;

(3) Any test or monitoring method provided for in Title 129; or

(4) Any other test, monitoring, or information-gathering method that produces information comparable to that produced by any method described in (O)(1) through (3).

(P) Open fires are prohibited except as allowed by Title 129, Chapter 30.

(Q) Particulate Matter – General Requirements [Title 129, Chapter 32]:

(1) The permittee shall not cause or permit the handling, transporting or storage of any material in a manner which allows particulate matter to become airborne in such quantities and concentrations that it remains visible in the ambient air beyond the property line.

(2) The permittee shall not cause or permit the construction, use, repair or demolition of a building, its appurtenances, a road, a driveway, or an open area without applying all reasonable measures to prevent particulate matter from becoming airborne and remaining visible beyond the property line. Such measures include, but are not limited to, paving or frequent cleaning of roads, driveways and parking lots; application of dust-free surfaces; application of water; and planting and maintenance of vegetative ground cover.

(R) Application for review of plans or advice furnished by the Director will not relieve the permittee of legal compliance with any provision of these regulations, or prevent the Director from enforcing or implementing any provision of these regulations [Title 129, Chapter 37].

(S) If and when the Director declares an air pollution episode as defined in Title 129, Chapter 38, Section 003.01B, 003.01C, or 003.01D, the permittee shall immediately take all required actions listed in Title 129, Appendix I, Paragraph 1.1, 1.2, and 1.3, respectively, until the Director declares the air pollution episode terminated [Title 129, Chapter 38, Section 003].

II. SPECIFIC CONDITIONS

Terms and conditions of this permit are in accordance with the requirements of Title 129, Chapter 8, Section 001. The specific applicable requirement which is the basis for each specific permit condition is listed with each permit condition.

(A) Recordkeeping: To ensure compliance with this permit, records shall be maintained as outlined below. Records include, but are not limited to, copies of all application, notification, reports, test protocols, test results, and plans; and, originals of all monitoring results, measurements, inspections, and observations [Title 129, Chapter 8, Section 004.02B]:

(1) All records required by this permit shall be kept on-site for a minimum of five (5) years and shall be clear and readily accessible to NDEQ representatives, unless otherwise specified in this permit.

(2) Monthly calculations and records required throughout this permit shall be compiled no later than the fifteenth (15^{th}) day of each calendar month and shall include all records and calculations generated through the previous calendar month, unless otherwise specified in this permit.

(3) For each malfunction, start-up, and shutdown, the source shall keep the following records [Title 129, Chapter: 6, Sections 002 and 005; Chapter 8, Section 004.03B; Chapter 10; and Chapter 35, Sections 004 and 005]:

(i) The identity of the equipment

(ii) Reason for, or cause of, the malfunction, shutdown, or start-up

(iii) Duration of period of excess emissions

(iv) Date and time of the malfunction, shutdown, or start-up

(v) Physical and chemical composition of pollutants whose emissions are affected by the action

(vi) Methods, operating data, and/or calculations used to determine these emissions

(vii) Quantification of emissions in the units of the applicable emission control regulation

(viii) All measures utilized to minimize the extent and duration of excess emissions during the malfunction, shutdown, and start-up

(4) Records of maintenance performed on all permitted emission units, permitted control equipment, and required monitoring equipment [Title 129, Chapter 8, Section 004.01C; Chapter 11, Section 001; Chapter 34, Section 006; and Chapter 35, Sections 006.02 and 006.05].

(5) Except for electronically generated records, all manually entered records of opacity readings, instrument readings, visual equipment inspections, log book entries, and other record of equipment performance shall be initialed, or otherwise signed, by the individual who entered the record.

(6) Operation and maintenance manuals, or equivalent documentation, detailing proper operation and maintenance of all permitted emission

units, required control equipment and required monitoring equipment shall be kept for the life of the equipment.

(7) Should there be inconsistency between the recordkeeping requirements specified in Condition II.(A) and applicable NSPS or NESHAP recordkeeping requirements, the recordkeeping requirements of Condition II.(A) shall take precedent unless they are less stringent.

(B) Submittals/Reporting:

All submittals, including reports, required by this permit shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete [Title 129, Chapter 1, Section 135; Chapter 7, Section 008; and Chapter 8, Sections 012.01].

The following shall be submitted to the NDEQ as specified:

(1) The permittee shall submit a report of applicable monitoring and all instances of deviations from permit requirements every six (6) calendar months to the NDEQ. The report for the first six (6) months (January through June) shall be submitted by September 30 of each year. The report for the second six (6) months (July through December) shall be submitted by March 31 of the following year [Title 129, Chapter 8, Sections 004.03A].

(2) The permittee shall report all deviations from permit requirements, including those attributable to start-ups, shutdowns or malfunctions, the probable cause of such deviations, and any corrective actions or preventive measures taken. The probable cause, corrective actions, or preventive measures do not have to be provided if that information has already been submitted in other reports to the DEQ, such as for 40 CFR 60.7, however reported deviations must reference these other reports. All reports of deviations must be submitted within the time frame as per Conditions II.(B)(2)(a), (b), and (c) below. The following schedule must be followed to report all deviations [Title 129, Chapter 8, Sections 004.03 and 004.04; Chapter 11; and Chapter 35, Sections 004 and 005].

(a) Any deviation resulting from emergency or upset conditions shall be reported within two (2) working days of the date on which the permittee first becomes aware of the deviation if the permittee wishes to assert the affirmative defense authorized under Chapter 11 of Title 129. The report may be submitted initially without a certification by the responsible official, as required by Condition II.(B) above, if an appropriate certification is provided within ten (10) days thereafter, together with the information required under Condition II.(A)(3) and any corrected or supplemental information required concerning the deviation.

(b) Any deviation that poses an imminent and substantial danger to public health, safety, or the environment shall be reported as

soon as is practicable. The report may be submitted initially without a certification by a responsible official in accordance with Condition II.(B) above, if an appropriate certification is provided within ten (10) days thereafter, together with any corrected or supplemental information required concerning the deviation.

(c) All other deviations shall be reported as per Condition II.(B)(1).

(3) The permittee shall submit completed emission inventory forms for the preceding calendar year to the NDEQ by March 31 of each year [Title 129, Chapter 6].

(4) The permittee shall submit fees, due July 1 of each year, based on the actual emission tonnage, up to and including 4,000 tons per year for each regulated pollutant for fee purposes, as established in the emission inventory for the previous calendar year [Title 129, Chapter 8, Section 008 and Chapter 29].

(5) Certification of compliance with the terms and conditions of this permit, including emission limitations, standards, or work practices, for the preceding calendar year, shall be submitted to the NDEQ and to USEPA Region VII's Air Compliance Coordinator by March 31 of each year. The report shall be certified by a responsible official in accordance with Condition II.(B) and shall include the following [Title 129, Chapter 8, Section 012.05].

(a) The identification of each term or condition of the permit that is the basis of the certification;

(b) The compliance status;

(c) A determination of whether compliance was continuous or intermittent; and

(d) The methods used for determining the compliance status of the source, currently and over the reporting period.

(6) Any emissions due to malfunctions, unplanned shutdowns, and ensuing start-ups that are, or may be in excess of applicable emission limitations shall be reported to the NDEQ in accordance with Condition II.(B)(2)(a).

(7) Should there be inconsistency between the reporting requirements specified in Condition II.(B) and applicable NSPS or NESHAP reporting requirements, the reporting requirements of Condition II.(B) shall take precedence unless they are less stringent.

(C) The permittee may make changes to the permitted source without a permit revision if the changes would not require a construction permit under Title 129, Chapter 17, 18, 19, 23, 27, or 28; the changes would not result in an exceedence of emissions allowable under this permit; the changes would not violate any terms of this permit related to monitoring, testing, recordkeeping, reporting or compliance certification; the changes would not violate any applicable requirements; and, a written notice is provided as described below [Title 129,

Chapter 15, Section 007].

(1) Notification requirements:

(a) Non emergencies - The written notification shall be received by the NDEQ a minimum of thirty (30) days in advance of the proposed changes;

(b) Emergencies:

(i) Initial notification shall be submitted within two working days of the date on which the permittee first becomes aware of the need for the change. This notification does not require certification by the responsible official;

(ii) A follow-up written notification, certified by the responsible official, shall be submitted as soon as practicable; and,

(iii) Include an explanation of the nature of the emergency.

(c) Required information:

(i) A brief description of the change within the permitted source;

(ii) The date on which the change will occur;

(iii) Any change in emissions;

(iv) Any permit term or condition that is no longer applicable as a result of the change; and,

(d) A copy of the notification shall be attached to the source's copy of the operating permit.

(2) Testing requirements:

(a) Testing may be required if a change reported under II.(C)(2) involves an emissions unit that was previously tested.

(b) For purposes of Condition II.(C), the terms "changes" and "change" shall mean any modification or replacement of an emissions unit where the source must evaluate the applicability of Title 129, Chapters 17, 18, 19, 23, 27, or 28.

(D) Testing:

(1) Except as provided in Condition II.(D)(1)(d) below, the owner or operator of the source shall conduct a performance test, using the procedures in Condition II.(D)(2), when the criteria in Conditions II.(D)(1)(a), (b), and (c) are met. Such tests shall be completed within 60 days of reaching maximum capacity but not later than 180 days of when (c) is met [Title 129, Chapter 8, Section 012.01 and Chapter 34, Section 001 and 007]

(a) A valid performance test has been conducted on the unit;

(b) The emissions unit has a limitation; and,

(c) The source makes changes that impact the data obtained from the most recent valid performance test. Examples of actions that would impact the data include, but are not limited to, increasing the capacity of an emissions unit or changing the operational parameters of control equipment that potentially makes the control equipment less efficient.

(d) The above provisions do not apply when compliance with the limitation is demonstrated through the use of a CEMS or PEMS.

(2) Performance tests shall be conducted on all emission points identified in Conditions III.(A) [excluding emission point S18], III.(B), and III.(C). These tests shall verify compliance with the emission limitations, listed in Conditions III.(A)(3), III.(B)(3), and III.(C)(3). Unless otherwise specified in this permit, the performance tests shall be conducted no more than twenty-four (24) months and no less than twelve (12) months before the expiration date of the current operating permit [Title 129, Chapter 8, Section 012.01 and Chapter 34, Section 001].

(3) Performance tests, as required in the permit or by NDEQ, shall be competed as follows:

(a) The owner or operator of a source shall provide the NDEQ at least thirty (30) days written notice prior to testing to afford the NDEQ an opportunity to have an observer present [Title 129, Chapter 34, Section 003].

(b) The owner or operator shall provide the NDEQ with an emissions testing protocol at least thirty (30) days prior to testing [Title 129, Chapter 8, Section 004.01B and 012.01].

(c) Testing shall be conducted according to the methodologies found in Title 129, Chapter 34, Section 002, or other NDEQ approved methodologies [Title 129, Chapter 34, Section 002].

(d) Performance tests shall be conducted while operating at full capacity, unless otherwise specified by the NDEQ [Title 129, Chapter 8, Sections 004.01B and 012.01].

(e) Performance tests shall be conducted for a minimum of three (3) one-hour runs unless another run-time is specified by the applicable Subpart or as deemed appropriate by the NDEQ [Title 129, Chapter 8, Section 004.01B and 012.01].

(f) The owner or operator shall monitor and record the operating parameters for process and control equipment during the performance testing required in the permit [Title 129, Chapter 8, Sections 004.01B and 012.01 and Chapter 34, Section 001].

(g) A written copy of the test results, signed by the person conducting the test, shall be provided to the NDEQ within forty-

five (45) days of completion of the test and will, at a minimum, contain the following items [Title 129, Chapter 8, Sections 004.01B and 012.01 and Chapter 34, Section 002.07]:

(i) A description of:

A. The operating parameters for the emissions unit during testing. Examples include, but are not limited to, production rates, process throughputs, firing rates of combustion equipment, or fuel usage;

B. The operating parameters for the control equipment during testing. Examples include, but are not limited to, baghouse fan speeds, scrubber liquid flow rates, or pressure drop across the control device; and,

C. The ambient environmental conditions during testing.

(ii) Copies of all data sheets from the test run(s).

(iii) A description and explanation of any erroneous data or unusual circumstance(s) and the cause for such situation.

(iv) A final conclusion section describing the outcome of the testing.

(E) A permit shield is granted [Title 129, Chapter 8, Section 014].

(1) During the term of this permit compliance with the Specific Conditions, identified in Conditions II.(A),(B), (C), (D), (H) and III., constitutes compliance with the underlying applicable requirements. The origin and/or authority for each applicable requirement is identified in the condition.

(2) The permit shield does not affect:

(a) The emergency provisions of Neb. Rev. Stat. §81-1507 of the Nebraska Environmental Protection Act;

(b) The USEPA's authority under the provisions of Section 303, Emergency Powers, of the Clean Air Act.

(c) Liability for any violation of applicable requirements or applicable requirements under the Federal Clean Air Act prior to or at the time of permit issuance;

(d) The applicable requirements of Chapter 26;

(e) The authority of the NDEQ or USEPA to obtain information; or

(f) Any other permit provisions, terms, or conditions, including, but not limited to, construction permits issued pursuant to Chapter 17 or permits issued pursuant to other State authorities and Titles.

(3) The NDEQ has determined the requirements specifically identified in the following table are not applicable to this source. Therefore a permit shield is granted as allowed under Title 129, Chapter 8, Section 014.02B:

Emission Point ID#	Emission Point Description	Requirement	Shield Request Basis
TK63 and TK 65	Anhydrous Ethanol and 190 Proof Ethanol Storage Tanks (Process Tanks)	40 CFR 60 Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)	These tanks are considered process tanks as defined in NSPS Subpart Kb. This subpart does not apply to process tanks.
S10	TO/HRSG	Title 129, Chapter 2, Section 008.1 (PSD)	NDEQ has determined that the heat input for the TO/HRSG (fossil fuel boilers) does not include the heat input from the four (4) dryers upstream of the TO/HRSG. Therefore, the TO/HRSG system does not meet the 250 MMBTU/hr applicability threshold in the regulation.
S10	Distillation Operations	40 CFR 60 Subpart NNN, Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemicals Manufacturing Industry (SOCMI) Distillation Operations	Ethanol is specifically listed as a chemical covered under this subpart. However, an EPA letter concerning applicability of the subpart to biomass ethanol production states that Subpart NNN does not apply to ethanol derived from biomass such as corn. The subpart only applies to a synthetic process to produce an organic chemical. Since ABE produces ethanol from biomass (a biological process), this subpart does not apply to the distillation operations
S40	Fermentation Operations	40 CFR 60 Subpart RRR, Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemicals Manufacturing Industry (SOCMI) Reactor Processes	Ethanol is specifically listed as a chemical covered under this subpart. However, an EPA letter concerning applicability of the subpart to biomass ethanol production states that Subpart RRR does not apply to ethanol derived from biomass such as corn. The subpart only applies to a synthetic process to produce an organic chemical. Since ABE produces ethanol from biomass (a biological process), this subpart does not apply to the fermentation operations

(F) All permitted emission units, required control equipment, and required monitoring equipment shall be properly installed, operated, and maintained [Title 129, Chapter 8, Section 004.01C; Chapter 11, Section 001; Chapter 34, Section 006; Chapter 35, Sections 006.02 and 006.05; and Condition II.(B), Oct. 4, 2007 CP].

(G) Requirements Becoming Effective During the Term of this Permit: The source will meet, in a timely manner, applicable requirements that become effective during the permit term, unless a more detailed schedule is expressly required by the applicable requirement. New Federal applicable requirements are only enforceable by USEPA until such time as they are adopted into Title 129 [Title 129, Chapter 7, Section 006.02H, and Chapter 8, Section 012.03].

(H) Source-Wide Limitations:

(1) Emission Limitations and Testing Requirements:

(a) Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit
All	Any Individual HAP	< 10 Tons Per Year	12 Month Rolling Total	Condition II.(F), October 4, 2007 CP; Title 129, Chapters 27 and 28
All	Total Combined HAPs	< 25 Tons Per Year	12 Month Rolling Total	Condition II.(F), October 4, 2007 CP; Title 129, Chapters 27 and 28

(i) Compliance with the emissions limitations above shall be demonstrated by performing emissions calculations every month using data obtained from the most current valid emissions test and the calculation methodology in Attachment A. Using the monthly emissions as calculated in this condition, the source shall determine rolling twelve (12) month total emissions every month [Condition II.(F), October 4, 2007 CP; Title 129, Chapter 8, Section 004.01].

1. When the scrubber operating parameters are not maintained at the levels required in Condition III.(B)(4)(b)(v), uncontrolled emission factors shall be used in emissions calculations.

(2) Operational and Monitoring Requirements

(a) To demonstrate compliance with Condition II.(D)(3)(d), the

permittee shall monitor the daily production/throughput rate for emissions units that have had a performance test [Title 129, Chapter 34, Section 006].

(3) Recordkeeping and Reporting Requirements

(a) To demonstrate compliance with Condition II.(H)(2)(a) above, the owner or operator of the source shall keep records of the daily production/throughput rate for all emission units that have had a performance test. Records shall include the daily production/throughput rate and the production/throughput rate on a 30-day rolling average basis [Title 129, Chapter 34, Section 006; Title 129, Chapter 8, Section 004].

(b) To demonstrate compliance with Condition II.(D)(3)(d), for emission units that have had a performance test, the permittee shall notify the NDEQ within fifteen (15) days of [Title 129, Chapter 34, Section 006]:

(i) When there is a ten (10) percent increase in daily production/throughput rate over the rate recorded during the most recent valid performance test.

(ii) Each cumulative five (5) percent increase in daily production/throughput rate, based on a 30-day rolling average, over the rate recorded during the most recent valid performance test.

(iii) Exemption: The reporting requirements of this condition do not apply to emissions units that have been tested and use a CEMS or PEMS to demonstrate compliance.

(c) For purposes of Conditions II.(H)(2)(a), II.(H)(3)(a), and II.(H)(3)(b) above, "rate" shall mean the production or throughput rate of an emissions unit as recorded in the most recent valid performance test and reported to the NDEQ in the source's written copy of the test results, or test report, documenting the maximum capacity of the unit(s). The rate shall be extrapolated to daily. Examples include, but are not limited to, converting pounds per hour to pounds per day or converting gallons per hour to gallons per day. If the source does not know the rate reported, they can contact the NDEQ to obtain the information.

(d) A site survey, or similar documentation containing as-built stack dimensions, shall be maintained on-site and kept for the life of the source [Condition II.(E), April 6, 2009 CP].

(e) A site survey, or similar documentation demonstrating compliance with the ambient air restriction plan shall be kept on site and readily accessible to NDEQ representatives. The site

survey or similar documentation shall provide sufficient detail to verify that an ambient air restriction plan has been fully implemented [Condition II.(E), April 6, 2009 CP].

(f) In order to demonstrate compliance with Condition II.(H)(1)(a), the permittee shall maintain records that document the results of HAP emissions calculations for each month and each period of twelve (12) consecutive months [Title 129, Chapter 8, Section 004.02].

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(A) Specific Conditions for Grain Receiving, Handling, Storage, and Hammermilling

(1) Permitted Emission Points:

The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Required Control Equipment ID# and Description	Emission Unit Description
S18	N/A	EU18: Grain Storage Pile
S20	C20: Baghouse	EU01A: Truck Dump Pit
		EU02: Elevator Leg
		EU03A: Storage Bin Fill Conveyor
		EU04: Corn Storage Bin
		EU05: Corn Storage Bin
		EU06: Corn Storage Conveyor
		EU08: Elevator Leg
		EU09: Corn Day Bin
S30	C30: Baghouse	EU30A: Hammermill #1
		EU30B: Hammermill #2
		EU30C: Hammermill #3
		EU30D: Hammermill #4

(2) Applicable NSPS and NESHAP Requirements:

NDEQ has not identified any NSPS or NESHAP requirements that apply to the emission points or emission units listed in Condition III.(A)(1).

(3) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
S20	PM/PM_{10}	1.79 lb/hr	3-hr or test method average	Title 129, Chapter 19; Condition III.(A)(2), October 4, 2007 CP	Yes
S30	PM/PM_{10}	1.18 lb/hr	3-hr or test method average	Title 129, Chapter 19; Condition III.(A)(2), October 4, 2007 CP	Yes
S18	PM	18.7 lb/hr[1]	1 Hour	Title 129, Chapter 20, Section 001	No
S20, S30	PM	55.0 lb/hr [2] (each)	1 Hour	Title 129, Chapter 20, Section 001	No

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
S18	Opacity	< 20% each[1]	6 Minutes	Title 129, Chapter 20, Section 004	No
S20, S30	Opacity	< 20% each[2]	6 Minutes	Title 129, Chapter 20, Section 004	No

[1] Testing and monitoring requirements are satisfied through compliance with Condition III.(A)(4)(d).
[2] Testing and monitoring requirements are satisfied through compliance with Condition III.(A)(4)(a), (b), and (d).

(4) Operational and Monitoring Requirements:

(a) Emissions from the emission units identified in Condition III.(A)(1), with the exception of the grain storage pile (S18), shall be controlled by pollution control equipment as follows: EU01A, EU02, EU03A, EU04, EU05, EU06, EU08, and EU09 shall be controlled by baghouse C20; and EU30A through 30D shall be controlled by baghouse C30 [Condition III.(A)(3)(a), October 4, 2007 CP].

(b) Operation and maintenance of each baghouse (C20 and C30) shall be in accordance with the following requirements:

(i) The baghouses shall be operated and be controlling emissions at all times when the associated emission units are in operation [Condition III.(A)(3)(b)(i), October 4, 2007 CP].

(ii) The baghouses shall be properly installed, operated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of the baghouses shall be kept on site and readily available to NDEQ representatives [Title 129, Chapter 8, Section 004].

(iii) Each baghouse shall be equipped with an operational pressure differential indicator. The pressure indicator shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, calibration, and maintenance of the pressure differential indicator shall be kept on site and readily available to NDEQ representatives [Condition III.(A)(3)(b)(ii), October 4, 2007 CP; Title 129, Chapter 8, Section 004].

(iv) Pressure differential indicator readings shall be manually recorded in a log book at least once each day that the associated baghouse is operating. The log book shall be kept on-site, and all log book entries shall be dated and

initialed by the person recording the pressure drop reading [Condition III.(A)(3)(b)(ii), October 4, 2007 CP; Title 129, Chapter 8, Section 004].

(v) Baghouse filter bags are to be inspected and/or replaced in accordance with the operation and maintenance manual or more frequently as indicated by pressure differential indicator readings or other indication of bag failure [Condition III.(A)(3)(b)(iii), October 4, 2007 CP; Title 129, Chapter 8, Section 004].

(vi) Routine observations (at least once each day during daylight hours of baghouse operation) shall be conducted on emission units C20 and C30 and on emission points S20 and S30 to determine whether there are visible emissions, atypical pressure differential readings, leaks, noise, or other indications that may necessitate corrective action. Corrective action, if necessary, shall be taken immediately [Condition III.(A)(3)(b)(iv), October 4, 2007 CP; Title 129, Chapter 8, Section 004].

1. For deviation reporting purposes, visible emissions from emission point C20 and C30 shall be considered a deviation in regard to the opacity limitation.

(vii) The permittee shall maintain an on-site inventory of spare bags of each type used source-wide to ensure rapid replacement in the event of bag failure [Condition III.(A)(3)(b)(v), October 4, 2007 CP].

(viii) Collected waste material from the baghouses shall be handled, transported, and stored in a manner that ensures compliance with Condition I.(Q) [Title 129, Chapter 8, Section 004].

(c) A source representative shall conduct a visible emissions survey of emission point S18 on a daily basis when grain is stored to determine if fugitive dust emissions remain visible beyond the property boundary of the source [Title 129, Chapter 5, Section 004; Chapter 8, Section 004.01; Chapter 32].

(i) The results of the visible emissions survey shall be recorded in a log. Each entry shall be dated and initialed by the person taking the visible emissions survey.

(ii) For deviation reporting purposes, visible emissions extending from emission point S18 that remain visible beyond the property boundary shall be considered a deviation.

(iii) If no visible emissions beyond the property boundary are documented in the log for 45 consecutive days when grain is stored, the survey frequency may be reduced to once per week. If visible emissions beyond the property boundary are observed at any time, the survey frequency shall revert back to daily.

(iv) Implementation of fugitive dust control shall be taken immediately upon observation of visible fugitive emissions from emission point S18 crossing the property boundary. The type of dust control implemented shall be noted in the log.

(d) Grain receiving operations shall be located inside a partially enclosed building and shall utilize choke feed practices during receipt of grain [Title 129, Chapters 19 and 20; Condition III.(A)(3)(c), October 4, 2007 CP].

(5) Recordkeeping and Reporting Requirements:

The permittee shall maintain the following records for the grain receiving, handling, storage, and hammermilling operations in order to demonstrate compliance with Condition III.(A)(4):

(a) Records documenting the date, time, visual emissions survey results, and pressure differential reading for each day the associated baghouse is in operation [Condition III.(A)(5)(a), October 4, 2007 CP; Title 129, Chapter 8, Section 004.02].

(b) Filter bag replacement records including the date the filter replacement occurred and the type of filter bags installed [Condition III.(A)(5)(b), October 4, 2007 CP].

(c) Records documenting the date, time, and routine observations taken for each day the associated baghouse is in operation [Condition III.(A)(5)(c), October 4, 2007 CP].

(d) Records documenting date, time, and type of corrective action taken anytime corrective action is taken on the associated baghouses [Condition III.(A)(5)(c), October 4, 2007 CP].

(e) Records documenting when routine maintenance and preventive actions were performed with a description of the maintenance and/or preventive action conducted [Title 129, Chapter 8, Section 004.02].

(f) The logbook documenting visible emissions surveys conducted on the grain storage pile (S18). The logbook shall be maintained on-site and be readily available to NDEQ representatives [Title 129, Chapter 8, Section 004.02].

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(B) Specific Conditions for Fermentation Operations

(1) Permitted Emission Points: The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Required Control Equipment ID# and Description	Emission Unit Description
S40	C40: CO_2 Scrubber with Chemical Injection	EU25: Fermentation Tank #1
		EU26: Fermentation Tank #2
		EU27: Fermentation Tank #3
		EU28: Fermentation Tank #4
		EU29: Fermentation Tank #5
		EU31: Fermentation Tank #6
		EU32: Fermentation Tank #7
		EU33: Beer Well

(2) Applicable NSPS and NESHAP Requirements:

NDEQ has not identified any NSPS or NESHAP requirements that apply to the emission points or emission units listed in Condition III.(B)(1).

(3) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
S40	PM/PM_{10}	0.25 lb/hr[1]	3-hour or test method average	Title 129, Chapter 17; Condition III.(B)(2)(a), July 28, 2008 CP.	No
	VOC	10.67 lb/hr[2]	3-hour or test method average	Title 129, Chapter 17; Condition III.(B)(2)(a), July 28, 2008 CP	Yes
	HAP	65% Control Efficiency or 20.0 ppmvd for combined HAPs	Speciation and Quantification of HAP composition at inlet and outlet	Title 129, Chapter 27; Condition III.(B)(2)(a), July 28, 2008 CP	Yes

[1] Testing and monitoring requirements for PM/PM_{10} are satisfied through compliance with Condition III.(B)(4)(a) and (b).
[2] Expressed as mass of VOC.

(4) Operational and Monitoring Requirements:

(a) Emissions from the emission units identified in Condition III.(B)(1) shall be controlled by pollution control equipment as

follows: EU25 through EU29 and EU31 through EU33 shall be controlled by the CO_2 scrubber with chemical injection (C40) [Condition III.(B)(3)(a), July 28, 2008 CP].

(b) Operation and maintenance of scrubber C40 shall be in accordance with the following requirements:

(i) The scrubber shall be operated and be controlling emissions at all times when the associated emission units are in operation [Condition III.(B)(3)(b)(i), July 28, 2008 CP].

(ii) The scrubber shall be properly designed, installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the scrubber shall be kept on site and readily available to NDEQ representatives [Title 129, Chapter 8, Section 004.01].

(iii) The scrubber shall be equipped with devices capable of monitoring the following operating parameters in the manner described below. The manufacturer's operation and maintenance manuals, or their equivalent, detailing proper operation, inspection, and maintenance of each monitoring device shall be kept on site and readily available to NDEQ representatives [Condition III.(B)(3)(b)(ii), July 28, 2008 CP; Title 129, Chapter 8, Section 004.01]:

1. Scrubbing liquid flow rate shall be monitored continuously;

2. Chemical addition flow rate shall be monitored continuously;

3. Scrubber pressure differential shall be monitored continuously; and,

4. Scrubber liquid temperature shall be monitored daily by direct measurement.

(iv) The total monthly amount of chemical added to the scrubber shall be monitored and recorded by the permittee [Title 129, Chapter 8, Section 004.01].

(v) The scrubber operating parameters shall be maintained at the levels recorded during the most recent valid performance test conducted at the source as described below [Condition III.(B)(3)(b)(iii), July 28, 2008 CP; Title 129, Chapter 8, Section 004]:

1. Scrubber liquid shall be comprised of only well water to ensure consistent liquid temperature. In the event that ABE Fairmont chooses to use an alternate scrubber liquid source or scrubber liquid recirculation, compliance testing will be required to determine an appropriate scrubber liquid temperature limit.

2. The scrubbing liquid flow rate, flow rate of chemical additions, and concentration of the chemical injected into the scrubber shall be maintained at or above the levels recorded.

(vi) Observations at least once each day during daylight hours of scrubber operation shall be conducted to determine whether there are visible emissions, leaks, noise, or other indications that corrective action is necessary. If corrective action is required, it shall occur immediately [Condition III.(B)(3)(b)(iv), July 28, 2008 CP].

(vii) Flow meters for recording scrubbing liquid and chemical addition flow rates shall be maintained and calibrated according to manufacturer's instructions [Title 129, Chapter 8, Section 004.01].

(c) In order to demonstrate compliance with the VOC and HAP limitations in Condition II.(H)(1)(a) and III.(B)(3), the permittee shall derive pounds per hour (lb/hr) emission factors by conducting performance testing on Scrubber C40. The performance testing shall be as described below: [Title 129, Chapter 8, Section 004.01 and Chapter 34].

(i) By March 31st of each year, the source shall calculate the source-wide rolling 12-month total emissions of the largest single HAP.

1. To calculate the tons per year (tons/yr) HAP emissions from the fermentation scrubber, the permittee shall use the emission factor derived from performance testing as required in Condition III.(B)(4)(c)(ii) below.

2. The source shall use the same calculation methodology as required in Condition II.(H)(1)(a)(i) to calculate HAP emissions from the fermentation scrubber.

3. The source shall submit to the air division their 12-month rolling total emissions, including supporting calculations, by April 30 of each year.

(ii) The testing frequency for Scrubber C40 is based upon the source-wide rolling 12-month total emissions of the largest single HAP as determined in Condition III.(B)(4)(c)(i) above. Testing frequency is determined each March 31 using the Tiers listed below:

Tier	Rolling 12-Month Total Emissions of Largest Single HAP	Testing Frequency
1	<2.5 tons per year	Twice per permit term
2	≥2.5 tons per year and <5 tons per year	Annual
3	≥ 5 tons per year and < 8 tons per year	Semi-Annual
4	≥ 8 tons per year	Quarterly

1. Under each tier, one test shall be completed during the third quarter (July through September) each year testing is required.

2. For Tier 1 sources:

   A. The first test shall be completed within one year of permit issuance or becoming a Tier 1 source; and,

   B. The second test shall be completed in the third quarter before the permit renewal application is due.

3. For Tier 3 and Tier 4 sources, the timeframe between tests shall be approximately the same.

(iii) Upon issuance of this permit, the initial testing frequency shall be in accordance with Tier 2 identified in Condition III.(B)(4)(c)(ii).

(iv) The protocol required in Condition II.(D)(3)(b) shall identify all operating ranges that testing, as required in this condition, will cover.

(v) Only one valid performance test may be conducted at each operating range when conducting performance tests on Scrubber C40.

1. Subsequent performance tests may be conducted if the source chooses to change any one or all operational parameters (chemical addition rate, type of chemical used, chemical concentration, and liquid flow rate) in order to demonstrate compliance with permitted limits.

(d) The operational, monitoring, and testing requirements in Conditions III.(B)(4)(b)(iii) through III.(B)(4)(b)(v) and Condition III.(B)(4)(c) are no longer in effect when the permittee

uses an approved CEMS or PEMS monitoring system [Title 129, Chapter 8, Section 004].

(i) If the permittee chooses to utilize a CEMS or PEMS monitoring system, the permittee shall notify the NDEQ at least sixty (60) days prior to installation of the monitoring system.

(ii) Upon installation of a CEMS or PEMS monitoring system, the permittee shall meet the following, as appropriate:

1. All CEMS shall:

A. Comply with applicable Performance Specifications found in 40 CFR Part 60, Appendix B and F; and,

B. Sample, analyze, and record data at least every 15 minutes while the emissions unit is operating.

2. All PEMS shall:

A. Comply with applicable Performance Specifications found in Title 129, Chapter 34, Section 004 through 015, or Appendix B, Performance Specification 16; and,

B. Sample, analyze, and record data at least every 15 minutes, or at another less frequent interval approved by the Department, while the emissions unit is operating.

Note: Condition III.(B)(4)(d) above differs from Condition III.(B)(3)(b)(iii) of the July 28, 2008 CP. This difference must be noted due to the provisions of Title 129, Chapter 8, Section 002.01. The original CP condition stated that alternate scrubber operating parameters could be used if test results or operation of a CEMs device demonstrated that the source was achieving better emissions control. However, NDEQ has determined that there is no need to adhere to scrubber operating parameters when a CEMs device is used to demonstrate compliance. Condition III.(B)(4)(d) has been altered to reflect this fact.

(5) Recordkeeping and Reporting Requirements:

The permittee shall maintain the following for the fermentation scrubber (C40) in order to demonstrate compliance with Condition III.(B)(4)(b)

and III.(B)(4)(d):

(a) Records that document the continuous operating parameter data for the scrubber. The records shall include [Conditions III.(B)(5)(a) and (c), July 28, 2008 CP; Title 129, Chapter 8, Section 004.02]:

(i) Scrubbing liquid flow rate;

(ii) Chemical addition flow rate; and

(iii) Scrubber pressure differential readings.

Note: Condition III.(B)(5)(a)(iii) differs from Conditions III.(A)(3)(b)(ii) and III.(A)(5)(a) of the July 28, 2008 CP. This difference must be noted due to the provisions of Title 129, Chapter 8, Section 002.01. The July 28, 2008 CP required pressure differential readings to be recorded once per day. NDEQ has determined that, in order to provide reasonable assurance that the scrubber is operating under normal conditions, scrubber pressure differential readings must be recorded and kept on a continuous basis.

(b) Monthly records that document the total amount of chemical injected into the water supplied to the scrubber [Title 129, Chapter 8, Section 004.02].

(c) Monthly records that document the purchase date, concentration, amount, and type of chemical purchased for chemical injection associated with the scrubber [Title 129, Chapter 8, Section 004.02].

(d) Records that document the operating parameters developed during the most recent valid performance test conducted at the source [Title 129, Chapter 8, Section 004.02].

(e) Records documenting date and time of daily observations with a description, including whether visible emissions were present, operating parameters (e.g., temperature), and atypical parameters observed, for each day the scrubber is in operation [Condition III.(B)(5)(b), July 28, 2008 CP; Title 129, Chapter 8, Section 004.02].

(f) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made on the scrubber. Reporting to the NDEQ shall be in accordance with Title 129, Chapter 35, Section 005 [Title 129, Chapter 8, Section 004.02].

(g) Records documenting the date, time, and type of corrective action taken anytime corrective action is necessary [Condition

III.(B)(5)(b), July 28, 2008 CP; Title 129, Chapter 8, Section 004.02].

(h) Records documenting when routine maintenance and preventive actions were performed with a description of the maintenance and/or preventive action performed [Title 129, Chapter 8, Section 004.02].

(i) Records that document the source-wide rolling 12 month total emissions of the single largest HAP [Title 129, Chapter 8, Section 004.02].

(j) If a CEMS or PEMS is utilized, all CEMS or PEMS recorded data shall be documented and kept on-site [Title 129, Chapter 8, Section 004.02].

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(C) Specific Conditions for TO/HRSG Operation

(1) Permitted Emission Points: The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Required Control Equipment ID# and Description	Emission Unit ID# and Description	Maximum Capacity (MMBtu/hr)	Permitted Fuel Type
S10	C10A: TO/HRSG #1 C10B: TO/HRSG #2	EU10A: Dryer	40	Natural Gas / Biogas
		EU10B: Dryer	40	Natural Gas / Biogas
		EU10C: Dryer	40	Natural Gas / Biogas
		EU10D: Dryer	40	Natural Gas / Biogas
		EU13: Mixer		
		EU14: Flash Tank		
		EU19: Yeast Tank		
		EU21: Yeast Tank		
		EU22: Cook Tube		
		EU23: Slurry Tanks		
		EU24: Slurry Tanks		
		EU34: Beer Column		
		EU35: Side Stripper		
		EU36: Rectifier Column		
		EU37: 190 Proof Condenser		
		EU38: Molecular Sieve		
		EU39: 200 Proof Condenser		
		EU41: Centrifuges		
		EU42: Centrifuges		
		EUC10A: TO/HRSG #1	120	Natural Gas
		EUC10B: TO/HRSG #2	120	Natural Gas

(2) Applicable NSPS and NESHAP Requirements:

Applicable Requirement	Title	Rule Citation
NSPS, Subpart A	General Provisions	Title 129, Chp. 18, Sec 001.01; 40 CFR 60.1
NSPS, Subpart Db	Industrial, Commercial, and Institutional Steam Generating Units	Title 129, Chp. 18, Sec. 001.22; 40 CFR 60.40b

(a) The NSPS for Industrial, Commercial, and Institutional Steam Generating Units, Subparts A and Db, [Title 129, Chapter 18, Sections 001.01 and 001.22] apply to both TO/HRSG units

(C10A and C10B) at ABE Fairmont, LLC [Condition III.(C)(4), April 6, 2009 CP]. In the event of any discrepancies between this condition and the NSPS standards, the NSPS standards take precedence unless they are less stringent.

(b) The NDEQ has not identified any NESHAP requirements that apply to the TO/HRSG units (C10A and C10B) at ABE Fairmont, LLC.

(3) Emission Limitations and Testing Requirements:

(a) Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
S10	PM/PM_{10}	4.074 lb/hr	3-hour or test method average	Title 129, Chapter 17; Condition III.(C)(2), April 6, 2009 CP.	Yes
	NO_x	0.1 lb/MMBtu[1]	30 day rolling average	40 CFR 60.40b; Title 129, Chapter 18; Condition III.(C)(2), April 6, 2009 CP	No
	SO_2	18.33 lb/hr	3-hour or test method average	Title 129, Chapter 17; Condition III.(C)(2), April 6, 2009 CP	Yes
	CO	20.78 lb/hr	3-hour or test method average	Title 129, Chapter 17; Condition III.(C)(2), April 6, 2009 CP	Yes
	VOC	4.07 lb/hr	3-hour or test method average	Title 129, Chapter 17; Condition III.(C)(2), April 6, 2009 CP	Yes
	HAP	N/A	Speciation and Quantification of HAP composition	Title 129, Chapter 27; Condition III.(C)(2), April 6, 2009 CP	Yes
	PM	43.97 lb/hr[2]	1 Hour	Title 129, Chapter 20, Section 001	No
	PM	101.61 lbs/hr[2]	1 Hour	Title 129, Chapter 20, Section 002	No
	Opacity	< 20 percent[2]	6 minutes	Title 129, Chapter 20, Section 004	No

[1] Testing is not required because a CEMS unit is required by NSPS Subpart Db and Condition III.(C)(4)(b)(iv).
[2] Monitoring and testing requirements are satisfied through compliance with Condition III.(C)(4).

(b) Two (2) performance tests shall be conducted on the TO/HRSG System (EP# S10) during the term of this permit for the

pollutants identified in Condition III.(C)(3)(a) [Title 129, Chapter 8, Section 004.01; Chapter 34, Section 001]:

(i) The first performance test shall be conducted within one (1) year of permit issuance.

(ii) The second performance test shall occur no more than twenty-four (24) months and no less than twelve (12) months before the expiration date of the current operating permit

(4) Operational and Monitoring Requirements:

(a) Emissions from the emission units identified in Condition III.(C)(1) shall be controlled by C10A (TO/HRSG #1) and C10B (TO/HRSG #2) [Condition III.(C)(3)(a), April 6, 2009 CP].

(b) Operation of the TO/HRSG systems (C10A and C10B) shall be in accordance with the following requirements:

(i) TO/HRSG systems shall be operated and be controlling emissions at all times when associated emission units are in operation [Condition III.(C)(3)(b)(i), April 6, 2009 CP].

(ii) TO/HRSG systems shall be properly designed, installed, operated, and maintained in accordance with the manufacturer's instructions. The manufacturer's operation and maintenance manuals, or its equivalent, detailing proper operation, inspection, and maintenance of the TO/HRSG system shall be kept on site and readily available to NDEQ representatives [Condition III.(C)(3)(b)(ii), April 6, 2009 CP].

(iii) Each TO/HRSG system shall be equipped with a thermocouple or equivalent device capable of continuously monitoring the temperature of the thermal oxidizer. The thermocouple or equivalent device shall monitor temperature on a continuous basis, with the one-hour average temperature recorded once per hour. The thermocouple or equivalent device shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of the thermocouple or equivalent device shall be kept on site and readily available to NDEQ representatives [Condition III.(C)(3)(b)(iii), April 6, 2009 CP].

(iv) TO/HRSG systems shall be equipped with an operational NO_x CEMS that is properly installed, operated, calibrated, and maintained in accordance with

NSPS Subpart Db [Condition III.(C)(3)(b)(iv), April 6, 2009 CP].

(v) All monitored operating parameters of the TO/HRSG systems shall be maintained at the levels recorded during the most recent performance test that demonstrated compliance with the permitted emissions limits. Alternative levels may be used provided the owner or operator can justify that better emissions control is being achieved. Combustion chamber temperature shall be averaged hourly from a minimum of one cycle of sampling, analyzing, and data recording for each successive fifteen minute period [Condition III.(C)(3)(b)(v), April 6, 2009 CP].

(vi) Routine observations of the TO/HRSG systems shall be conducted at least once each day, during daylight hours, to determine whether there are visible emissions from the stack, leaks, noise, or other indications that corrective action is necessary. If corrective action is required, it shall occur immediately [Condition III.(C)(3)(b)(vi), April 6, 2009 CP].

1. For deviation reporting purposes, visible emissions from C10A and C10B shall be considered a deviation in regard to the opacity limitation.

(c) The DDGS dryers, identified as emission units EU10A, EU10B, EU10C, and EU10D shall only combust natural gas or biogas from the biomethanators [Title 129, Chapter 8, Section 004.01, Condition III.(C)(1), April 6, 2009 CP].

(d) The TO/HRSG system, identified as control equipment C10A and C10B, shall only combust natural gas [Title 129, Chapter 8, Section 004.01, Condition III.(C)(1), April 6, 2009 CP].

(5) Recordkeeping and Reporting Requirements:

The following records for TO/HRSG operations shall be maintained by the permittee in order to demonstrate compliance with Condition III.(C)(4):

(a) Records documenting the date, time, and hourly-average temperatures for each day the associated TO/HRSG is in operation [Condition III.(C)(5)(d), April 6, 2009 CP].

(b) Records documenting the date, time, and observations for each day the associated TO/HRSG is in operation [Condition III.(C)(5)(e), April 6, 2009 CP].

(c) Records documenting the date, time, and type of corrective action taken anytime corrective action is necessary [Condition

III.(C)(5)(e), April 6, 2009 CP].

(d) Records documenting when routine maintenance and preventive actions were performed with a description of the maintenance and/or preventive action performed [Title 129, Chapter 8, Section 004.02].

(e) Records documenting fuels combusted in the DDGS dryers and TO/HRSG system [Title 129, Chapter 8, Section 004.02].

(f) Notification and recordkeeping as required by 40 CFR 60.7 [Condition III.(C)(5)(a), April 6, 2009 CP].

(g) Reporting and recordkeeping as required by 40 CFR 60.48b [Condition III.(C)(5)(b), April 6, 2009 CP].

(h) Reporting and recordkeeping as required by 40 CFR 60.48c [Condition III.(C)(5)(c), April 6, 2009 CP].

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(D) Specific Conditions for DDGS Coolers

(1) Permitted Emission Points: The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Required Control Equipment ID# and Description	Emission Unit ID# and Description
S70	C70A: Baghouse	EU70: Cooling Cyclone
	C70B: Baghouse	

(2) Applicable NSPS and NESHAP Requirements

NDEQ has not identified any NSPS or NESHAP requirements that apply to the emission points or emission units listed in III.(D)(1).

(3) Emission Limitations and Testing Requirements

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
S70	PM/PM_{10}	0.86 lb/hr[1]	3-hour or test method average	Title 129, Chapter 19; Condition III.(D)(2), July 28, 2008 CP	No
	VOC	4.07 lb/hr[1]	3-hour or test method average	Title 129, Chapter 19; Condition III.(D)(2), July 28, 2008 CP	No
	PM	44.0 lb/hr[1]	1 Hour	Title 129, Chapter 20, Section 001	No
	Opacity	< 20 percent[1]	6 minutes	Title 129, Chapter 20, Section 004	No

[1] Testing and monitoring requirements satisfied through compliance with Condition III.(D)(4).

(4) Operational and Monitoring Requirements

(a) Emissions from the emission units identified in Condition III.(D)(1) shall be controlled as follows: EU70 shall be controlled by baghouses C70a and C70b [Condition III.(D)(3)(a), July 28, 2008 CP].

(b) Operation and maintenance of each baghouse shall be in accordance with the following requirements:

(i) The baghouses shall be operated and be controlling emissions at all times when the associated emission units are in operation [Condition III.(D)(3)(b)(i), July 2008 CP].

(ii) The baghouses shall be properly installed, operated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, calibration, and maintenance of the baghouses shall be kept on site and readily available to NDEQ representatives [Title 129, Chapter 8, Section 004.01].

(iii) The baghouses shall be equipped with an operational pressure differential indicator. The pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating. The pressure indicator shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of the pressure differential indicator shall be kept on site and readily available to NDEQ representatives [Condition III.(D)(3)(b)(ii), July 28, 2008 CP; Title 129, Chapter 8, Section 004.01].

(iv) Baghouse filter bags are to be inspected and/or replaced in accordance with the operation and maintenance manual or more frequently as indicated by pressure differential indicator readings or other indication of bag failure [Condition III.(D)(3)(b)(iii), July 28, 2008 CP].

(v) Routine observations (at least once each day during daylight hours of baghouse operation) shall be conducted to determine whether there are visible emissions form the stack, leaks, noise, or other indications that corrective action is needed. If corrective action is required, it shall occur immediately [Condition III.(D)(3)(b)(iv), July 28, 2008 CP].

1. For deviation reporting purposes, visible emissions from C70A and C70B shall be considered a deviation in regard to the opacity limitation.

(vi) The permittee shall maintain an on-site inventory of spare bags of each type used to ensure rapid replacement in the event of bag failure [Condition III.(D)(3)(b)(v), July 2008 CP].

(vii) Collected waste material from the baghouses shall be handled, transported, and stored in a manner that ensures compliance with Condition I.(Q) [Title 129, Chapter 8, Section 004.01C].

(5) Recordkeeping and Reporting Requirements

The permittee shall maintain the following records for the DDGS Cooling operations in order to demonstrate compliance with Condition III.(D)(4):

(a) Records documenting the date, time, and pressure differential reading for each day the associated baghouse is in operation [Condition III.(D)(5)(a), July 28, 2008 CP].

(b) Filter replacement records including the date the filter replacement occurred and the type of filter installed [Condition III.(D)(5)(b), July 28, 2008 CP].

(c) Records documenting the date, time, observations and corrective actions taken for each day the associated baghouse is in operation [Condition III.(D)(5)(c), July 28, 2008 CP].

(d) Records documenting when routine maintenance and preventive actions were performed with a description of the maintenance and/or preventive action performed [Title 129, Chapter 8, Section 004.02].

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(E) Specific Conditions for Solid Product Storage and Loadout

(1) Permitted Emission Points: The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Required Control Equipment ID# and Description	Emission Unit ID# and Description
S90	C90: Baghouse	EU44: Truck/Rail Loadout
		EU90: DDGS Storage

(2) Applicable NSPS and NESHAP Requirements

NDEQ has not identified any NSPS or NESHAP requirements that apply to the emission points or emission units listed in III.(E)(1).

(3) Emission Limitations and Testing Requirements

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
S90	PM/PM_{10}	0.39 lb/hr[1]	3-hour or test method average	Title 129, Chapter 19; Condition III.(E)(2), October 4, 2007 CP	No
	PM	44.0 lb/hr[1]	1 Hour	Title 129, Chapter 20, Section 001	No
	Opacity	< 20 percent[1]	6 minutes	Title 129, Chapter 20, Section 004	No

[1] Testing and monitoring requirements satisfied through compliance with Condition III.(E)(4).

(4) Operational and Monitoring Requirements

(a) Emissions from the emission units identified in Condition III.(E)(1) shall be controlled as follows: EU44 and EU90 shall be controlled by baghouse C90 [Condition III.(E)(3)(a), October 4, 2007 CP].

(b) Operation and maintenance of each baghouse shall be in accordance with the following requirements:

(i) The baghouse shall be operated and be controlling emissions at all times when the associated emission units are in operation [Condition III.(E)(3)(b)(i), October 4, 2007 CP].

(ii) The baghouse shall be properly installed, operated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, calibration, and maintenance of the baghouses shall be kept on site and readily available to NDEQ representatives [Title 129, Chapter 8, Section 004.01].

(iii) Each baghouse shall be equipped with an operational pressure differential indicator. The pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating. The pressure indicator shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of the pressure differential indicator shall be kept on site and readily available to NDEQ representatives [Condition III.(E)(3)(b)(ii), October 4, 2007 CP; Title 129, Chapter 8, Section 004.01].

(iv) Baghouse filter bags are to be inspected and/or replaced as often as necessary to ensure proper operation or more frequently as indicated by pressure differential indicator readings or other indication of bag failure [Condition III.(E)(3)(b)(iii), October 4, 2007 CP].

(v) Routine observations (at least once each day during daylight hours of baghouse operation) shall be conducted to determine whether there are visible emissions form the stack, leaks, noise, or other indications that corrective action is needed. If corrective action is required, it shall occur immediately [Condition III.(E)(3)(b)(iv), October 4, 2007 CP].

1. For deviation reporting purposes, visible emissions from C90 shall be considered a deviation in regard to the opacity limitation.

(vi) The owner or operator shall maintain an on-site inventory of spare bags of each type used to ensure rapid replacement in the event of bag failure [Condition III.(E)(3)(b)(v), October 4, 2007 CP].

(vii) Collected waste material from the baghouse shall be handled, transported, and stored in a manner that ensures compliance with Condition I.(Q) [Title 129, Chapter 8,

Section 004.01].

(5) Recordkeeping and Reporting Requirements

The permittee shall maintain the following records for the solid product storage and loadout operations in order to demonstrate compliance with Condition III.(E)(4):

(a) Records documenting the date, time, and pressure differential reading for each day the associated baghouse is in operation [Condition III.(E)(5)(a), October 4, 2007 CP].

(b) Filter replacement records including the date the filter replacement occurred and the type of filter installed [Condition III.(E)(5)(b), October 4, 2007 CP].

(c) Records documenting the date, time, observations and corrective actions taken for each day the associated baghouse is in operation [Condition III.(E)(5)(c), October 4, 2007 CP].

(d) Records documenting when routine maintenance and preventive actions were performed with a description of the maintenance and/or preventive action performed [Title 129, Chapter 8, Section 004.02].

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(F) Specific Conditions for Tanks

(1) Permitted Emission Points: The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID# & Tank ID#	Maximum Storage Capacity (Gallons)	Product Stored in Tank
TK61	1,500,000	Denatured Ethanol (D-EtOH Tank #1)
TK62	1,500,000	Denatured Ethanol (D-EtOH Tank #2)
TK63	200,000	Anhydrous Ethanol (Process Tank)
TK64	200,000	Denaturant (Natural Gasoline)
TK65	200,000	190 Proof Ethanol Storage Tank (Process Tank)

(2) Applicable NSPS and NESHAP Requirements

Applicable Requirement	Title	Rule Citation
NSPS, Subpart A	General Provisions	Title 129, Chp. 18, Sec 001.01; 40 CFR 60.1
NSPS, Subpart Kb	Volatile Organic Liquid Storage Vessels (Including Liquid Storage Vessels)	Title 129, Chp. 18, Sec. 001.62; 40 CFR 60.110b

(a) The NSPS for Volatile Organic Liquid Storage Vessels (Including Liquid Storage Vessels), Subparts A and Kb, [Title 129, Chapter 18, Sections 001.01 and 001.22] apply to storage tanks TK61, TK62, and TK64 at ABE Fairmont, LLC Condition III.(F)(3)(c) and Condition III.(F)(4), October 4, 2007 CP]. In the event of any discrepancies between this condition and the NSPS standards, the NSPS standards take precedence unless they are less stringent.

(b) The NDEQ has not identified any NESHAP requirements that apply to the emission points or emission units listed in Condition III.(F)(1).

(3) Emission Limitations and Testing Requirements

For storage tanks TK61, TK62, and TK64, emission limitations and testing requirements are as established by NSPS Subpart Kb [Condition III.(F)(2), October 4, 2007 CP].

(4) Operational and Monitoring Requirements

(a) All tanks listed in III.(F)(1) shall be equipped with internal floating roofs, which meet the standards specified in 40 CFR 60.112b(a)(1). Operational and monitoring requirements are as specified by 40 CFR 60.112b(a)(1) and 60.113b(a) for all tanks [Condition III.(F)(3)(a), October 4, 2007 CP].

(b) The process tanks (TK63 and TK65) shall not have any direct product loadout capability/operations. All process tanks must loadout to additional processing equipment, other process tanks, or to the storage tanks at the source [Condition III.(F)(3)(b), October 4, 2007 CP].

(c) Tanks TK61, TK62, and TK64 are subject to all applicable requirements of NSPS Subpart Kb [Title 129, Chapter 18; Condition III.(F)(3)(c), October 4, 2007 CP].

(5) Recordkeeping and Reporting Requirements

The permittee shall maintain the following records for the Tanks in order to demonstrate compliance with Condition III.(F)(4):

(a) Notifications, reporting, and recordkeeping as required by 40 CFR 60.7 and 40 CFR 60.115b for Tanks TK61, TK62, and TK64 [Condition III.(F)(5)(a), October 4, 2007 CP].

(b) Operation and maintenance records for the internal floating roof tanks for Tanks TK63 and TK65, to demonstrate compliance with Condition III.(F)(4)(a), shall include the following [Condition III.(F)(5)(b), October 4, 2007 CP]:

(i) Records documenting when routine maintenance and preventive actions were conducted with a description of the maintenance and/or preventive action conducted.

(ii) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made. Reporting to the NDEQ shall be in accordance with Title 129, Chapter 35, Section 005.

(iii) Records of testing and monitoring conducted in accordance with Condition III.(F)(4)(a).

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(G) Specific Conditions for Ethanol Liquid Loading

(1) Permitted Emission Points: The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Control Equipment	Emission Unit ID# and Description	Maximum Capacity (MMBtu/hr)	Permitted Fuel Type
S50	C50: Flare	EU50 Ethanol Truck/Rail Loadout	N/A	N/A
		EUC50: Denatured Loadout Flare	12.4 MMBtu/hr, 0.1 MMBtu/hr pilot	Loadout Vapors, Natural Gas

(2) Applicable NSPS and NESHAP Requirements

NDEQ has not identified any NSPS or NESHAP requirements that apply to the emission points or emission units listed in III.(G)(1).

(3) Emission Limitations and Testing Requirements

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
S50	PM	7.07 lb/hr[1]	Hourly	Title 129, Chapter 20, Section 002	No
	Opacity	< 20 percent[2]	6 minutes	Title 129, Chapter 20, Section 004	No

[1] Emission factors for PM are below the permitted limit from Chapter 20 (See Fact Sheet Attachment A-11). Therefore, no monitoring or testing is required for this emission point.
[2] Compliance with Condition III.(G)(4)(c) and (e) satisfies the testing and monitoring requirements for opacity.

(4) Operational and Monitoring Requirements

(a) During any period of twelve (12) consecutive calendar months, ethanol liquid loadout by truck shall not exceed 27,500,000 gallons [Condition III.(G)(3), October 4, 2007 CP].

(b) The truck loadout operations shall be equipped with a flow meter to record the amount of ethanol loaded out. The flow meter shall

be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of the flow meter shall be kept on site and readily available to NDEQ representatives [Condition III.(G)(3)(a), October 4, 2007 CP].

(c) Truck and rail loadout of liquid product shall be controlled by a closed vapor recovery system with flare (C50) at all times liquid product loadout is occurring [Condition III.(G)(3)(b), October 4, 2007 CP].

(i) Operation of the closed vapor recovery system with flare shall be in accordance with the following requirements [Condition III.(G)(3)(e), October 4, 2007 CP]:

1. The closed vapor recovery system and flare shall be properly designed, installed, operated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of the vapor recovery system and flare shall be kept on site and readily available to NDEQ representatives.

2. When ethanol loadout is occurring, a flame shall be present at the flare. The source must install an appropriate safety device or flame monitoring system to ensure that truck and rail loadout cannot occur without the presence of a flame. The safety device or flame monitoring system shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection, and maintenance of the flare monitoring device/system shall be kept on site and readily available to NDEQ representatives.

(d) The flare (C50) associated with the truck and rail loadout operations shall not exceed 3,000 hours of operating time per any period of twelve (12) consecutive calendar months. The pilot for the flare may operate continuously [Condition III.(G)(3)(c), October 4, 2007 CP].

(i) The flare shall be equipped with a non-resettable hour meter to record operating hours.

(e) The flare (C50) shall only combust liquid loadout vapors or natural gas [Condition III.(G)(1), Oct. 4, 2007 CP; Title 129, Chapter 20].

(f) The permittee shall use submerged loading when transferring liquid product from the storage tanks to tanker railcar or tanker truck [Condition III.(G)(3)(d), October 4, 2007 CP].

(5) Recordkeeping and Reporting Requirements

The permittee shall maintain the following records for the ethanol liquid loading operations in order to demonstrate compliance with Condition III.(G)(4):

(a) Gallons of ethanol loadout to trucks and gallons of ethanol loadout to railcars for each calendar month and each period of twelve (12) consecutive calendar months [Condition III.(G)(5)(a), October 4, 2007 CP; Title 129, Chapter 8, Section 004.02].

(b) Records documenting when routine maintenance and preventive actions were performed on the vapor recovery system with flare with a description of the maintenance and/or preventive action performed [Condition III.(G)(5)(b), October 4, 2007 CP].

(c) Records documenting equipment failures, malfunctions, or other variations, including the time of occurrence, remedial action taken, and when corrections were made on the vapor recovery system with flare. Reporting to the NDEQ shall be in accordance with Title 129, Chapter 35, Section 005 [Condition III.(G)(5)(c), October 4, 2007 CP].

(d) Record of hours of operation for the flare for each calendar month and each period of twelve (12) consecutive calendar months [Condition III.(G)(5)(d), October 4, 2007 CP].

(e) Records documenting fuel combusted by the flare [Title 129, Chapter 8, Section 004.02].

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(H) Specific Conditions for Equipment Leaks

(1) Permitted Emission Points: Each valve, pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, flange, or other connector in VOC service, and any device or system required by NSPS Subpart VV located throughout the ethanol plant is considered a permitted emission point.

(2) Applicable NSPS and NESHAP Requirements

Applicable Requirement	Title	Rule Citation
NSPS, Subpart A	General Provisions	Title 129, Chp. 18, Sec 001.01; 40 CFR 60.1
NSPS, Subpart VV	Equipment Leaks in the Synthetic Organic Chemicals Manufacturing Industry	Title 129, Chp. 18, Sec. 001.14; 40 CFR 60.480

(a) The NSPS for Equipment Leaks in the Synthetic Organic Chemicals Manufacturing Industry, Subparts A and VV, [Title 129, Chapter 18, Sections 001.01 and 001.14] apply to equipment leaks at ABE Fairmont, LLC [Condition III.(H)(4), October 4, 2007 CP]. In the event of any discrepancies between this condition and the NSPS standards, the NSPS standards take precedence unless they are less stringent.

(b) The NDEQ has not identified any NESHAP requirements that apply to the emission points or emission units listed in Condition III.(H)(1).

(3) Emission Limitations and Testing Requirements

Emission limitations and testing requirements are as established by 40 CFR 60 Subpart VV [Condition III.(H)(2), October 4, 2007 CP].

(4) Operational and Monitoring Requirements

Operational and monitoring requirements are as established by 40 CFR 60 Subpart VV [Condition III.(H)(3), October 4, 2007 CP].

(5) Recordkeeping and Reporting Requirements

The permittee shall maintain the following records for equipment leaks at the source:

(a) Notifications and recordkeeping as required by 40 CFR 60.7 [Condition III.(H)(5)(a), October 4, 2007 CP].

(b) Recordkeeping and reporting as required by 40 CFR 60.486 and 40 CFR 60.487 [Condition III.(H)(5)(b), October 4, 2007 CP].

(c) Records documenting the date in which leak detection testing occurred; which valves, pumps, seals, open-ended lines, flanges, connectors, etc. were tested, and who conducted the testing [Condition III.(H)(5)(c), October 4, 2007 CP].

(d) The owner or operator shall submit a semi-annual leak detection and repair report every six (6) calendar months to the NDEQ. Reports for each six (6) calendar month reporting period shall be submitted within 45 days following June 30 and December 31 of each year. Each report must be certified by a responsible official and include the following items [Condition III.(H)(5)(d), October 4, 2007 CP; Title 129, Chapter 8, Section 004.01]:

(i) Date and time testing occurred;

(ii) Who conducted the testing;

(iii) Test methods and equipment calibration methods used during testing; and

(iv) Additional information required to be reported to NDEQ in accordance with 40 CFR 60.480.

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(I) Specific Conditions for Haul Roads

(1) Permitted Emission Points

All on-site haul roads with production related truck traffic shall be paved [Condition III.(I)(1), April 6, 2009 CP].

(2) Applicable NSPS and NESHAP Requirements

NDEQ has not identified any NSPS or NESHAP requirements that apply to the emission points or emission units listed in Condition III.(I)(1)

(3) Emission Limitations and Testing Requirements

The haul road silt loading shall not exceed 1.0 g/m^2 [Condition III.(I)(2)(a), April 6, 2009 CP].

(4) Operational and Monitoring Requirements

(a) The owner or operator shall develop, maintain, and implement a Fugitive Dust Control Plan (FDCP) to control emissions from haul roads to comply with Condition I.(Q) and the silt loading limitation [Condition III.(I)(3)(a), April 6, 2009 CP].

(b) For each day of operation, the owner or operator shall conduct a survey of the plant property and haul roads to determine if visible fugitive emissions are being generated and leaving plant property. Implementation of fugitive dust control shall be taken upon observation of visible fugitive emissions leaving plant property or more frequently in accordance with the FDCP. Documentation of all corrective actions and daily surveys shall be maintained in a log that shall accompany the FDCP [Condition III.(I)(3)(b), April 6, 2009 CP].

(5) Recordkeeping and Reporting Requirements

The permittee shall maintain the following records for haul roads at the source:

(a) The FDCP shall be kept onsite and, upon request, be readily available to NDEQ representatives [Condition III.(I)(5)(a), April 6, 2009 CP].

(b) Records documenting use of fugitive dust control measures on haul roads [Condition III.(I)(5)(b), April 6, 2009 CP].

(c) Records of haul road visible emission checks taken daily during operation and a description of corrective action taken, if needed [Condition III.(I)(5)(c), April 6, 2009 CP].

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(J) Specific Conditions for Cooling Tower

(1) Permitted Emission Points: The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Control Equipment	Emission Unit ID# and Description	Number of Cooling Tower Cells	Maximum Circulation Rate (gal/hr)
F80	N/A	EU80: Cooling Tower	4	3,000,000 (total)

(2) Applicable NSPS and NESHAP Requirements

NDEQ has not identified any NSPS or NESHAP requirements that apply to the emission points or emission units listed in III.(J)(1).

(3) Emission Limitations and Testing Requirements

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
F80	PM	115 lb/hr[1]	Hourly	Title 129, Chapter 20, Section 001	No

[1] Testing and monitoring requirements satisfied through compliance with Condition III.(J)(4).

(4) Operational and Monitoring Requirements

(a) Drift loss from each cooling tower shall be limited to 0.005 percent. Verification of drift loss shall be by manufacturer's specification [Condition III.(J)(3)(a), October 4, 2007 CP].

(b) TDS concentration of the cooling water in each cooling tower shall not exceed 2,500 ppm. A representative TDS sample shall be collected and tested from each cooling tower a minimum of once per calendar month. The test method used to determine TDS concentration shall be in accordance with an EPA approved method and be documented [Condition III.(J)(3)(b), October 4, 2007 CP].

(5) Recordkeeping and Reporting Requirements

(a) The permittee shall maintain records of TDS concentration in the cooling tower water for each sampling event and test method

used to demonstrate compliance with Condition III.(J)(4) [Title 129, Chapter 8, Section 004.02; Condition III.(J)(5), October 4, 2007 CP].

(b) Manufacturer's drift loss specification shall be kept on site and readily available to NDEQ representatives, upon request, for the life of the unit [Condition III.(J)(3)(a), October 4, 2007 CP].

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(K) Specific Conditions for Biomethanator Operations

(1) Permitted Emission Points: The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Control Equipment ID# and Description	Emission Unit ID# and Description	Maximum Capacity (MMBtu/hr)	Permitted Fuel Type
S60	C60: Biomethanator Flare	EU11A: Biomethanator #1[1]	N/A	N/A
		EU11B: Biomethanator #2[1]	N/A	N/A
		EU11C: Biomethanator #3[1]	N/A	N/A
		EU11D: Biomethanator #4[1]	N/A	N/A
		CE16: Biomethanator Flare	6.4 MMBtu/hr flare; 0.1 MMBtu/hr pilot	Natural Gas

[1] Alternatively, biogas may be combusted in the dryers (EUs 10A, 10B, 10C, and 10D).

(2) Applicable NSPS and NESHAP Requirements

NDEQ has not identified any NSPS or NESHAP requirements that apply to the emission points or emission units listed in III.(K)(1).

(3) Emission Limitations and Testing Requirements

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
S60	PM	3.9 lb/hr[1]	Hourly	Title 129, Chapter 20, Section 002	No
	Opacity	< 20 percent[2]	6 minutes	Title 129, Chapter 20, Section 004	No

[1] Emission factor for PM is below the permitted limit from Chapters 20 (See Fact Sheet Attachment A-17). Therefore, no monitoring or testing is required for this emission point.
[2] Compliance with Condition III.(K)(4)(d) satisfies the testing and monitoring requirements for opacity.

(4) Operational and Monitoring Requirements

(a) Emissions from the emission units identified in Condition III.(K)(1) shall be controlled as follows: EU11A through EU11D shall be controlled by flare C60 or combusted in dryers EU10A through EU10D [Condition III.(K)(3)(1), October 4, 2007 CP].

(b) The biomethanator flare (excluding the pilot) shall be limited to 500 operating hours per any period of twelve (12) consecutive calendar months [Condition III.(K)(3)(b), October 4, 2007 CP].

(i) The biomethanator flare shall be equipped with a non-resettable hour meter to record the operating hours.

(c) When emissions are being routed to the biomethanator flare, a flame shall be present at the flare. The source must install an appropriate safety device or flame monitoring system to ensure that emissions cannot be sent to the biomethanator flare without the presence of a flame [Condition III.(K)(3)(c), October 4, 2007 CP].

(d) The four biomethanators, flare, flame safety device or flame monitoring system, and non-resettable hour meter shall be properly designed, installed, operated and maintained. The manufacturer's operation and maintenance manuals, or their equivalent, detailing proper operation, inspection and maintenance of the four biomethanators, flare, flame safety device, and hour meter shall be kept on site and readily available to NDEQ representatives [Title 129, Chapter 8, Section 004.01].

(5) Recordkeeping and Reporting Requirements

(a) The permittee shall maintain records that document the operating hours of the biomethanator flare for each calendar month and each period of twelve (12) consecutive calendar months in order to demonstrate compliance with Condition III.(K)(4) [Title 129, Chapter 8, Section 004.02; Condition III.(K)(5), October 4, 2007 CP].

(b) In order to demonstrate compliance with Condition III.(K)(4)(d), operation and maintenance records for the biomethanator, flare, flame safety device, and non-resettable hour meter shall include the following [Title 129, Chapter 8, Section 004.02]:

(i) Records documenting when routine maintenance and preventive actions were performed with a description of the maintenance and/or preventive action performed.

(ii) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(L) Specific Conditions for Emergency Equipment

(1) Permitted Emission Points: The source is permitted to operate the emission points and associated emission units identified in the following table:

Emission Point ID#	Control Equipment	Emission Unit ID# and Description	Maximum Capacity (hp)	Permitted Fuel Type
S100	N/A	EU100: Emergency Fire Pump	460	Diesel Fuel

(2) Applicable NSPS and NESHAP Requirements

Applicable Requirement	Title	Rule Citation
NSPS, Subpart A	General Provisions	Title 129, Chp. 18, Sec 001.01; 40 CFR 60.1
NSPS, Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	Title 129, Chp. 18, Sec. 001.76; 40 CFR 60.480
NESHAP, Subpart ZZZZ	Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	Title 129, Chp. 28, Sec. 001.88; 40 CFR 63.6585

(a) The NSPS for Stationary Compression Ignition Internal Combustion Engines, [Title 129, Chapter 18, Sections 001.01 and 001.76] applies to the emergency fire pump engine at ABE Fairmont, LLC [Condition III.(L)(4), April 6, 2009 CP]. In the event of any discrepancies between this condition and the NSPS standards, the NSPS standards take precedence unless they are less stringent

Note: The April 6, 2009 CP correctly identifies the emergency fire pump engine as subject to NSPS Subpart IIII and identifies the appropriate Federal regulatory citation. However, the title of the NSPS and the Nebraska Title 129 regulatory citation in the CP are incorrect. Given that CP requirements become applicable requirements under the Title V Operating Permit Program and must be included in operating permit documents, the name and citation discrepancies from the construction permit must be corrected. Therefore, under the provisions of Title 129, Chapter 8, Section 002.01, this operating permit identifies the difference between the operating permit condition and the applicable requirement (CP condition) and uses the appropriate NSPS Subpart IIII title and Title 129 rule citation.

(b) The NESHAP for Stationary Reciprocating Internal Combustion Engines, Subpart ZZZZ, is applicable to the fire pump engine [Title 129, Chapter 28, Section 001.88]. However, per §63.6590(c), the applicable requirements of Subpart ZZZZ are met through compliance with the applicable requirements of NSPS Subpart IIII.

(3) Emission Limitations and Testing Requirements

(a) Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Performance testing, if required, shall be conducted in accordance with Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
S100	NMHC + NO_x	7.8 g/hp-hr[1]	Test Method Average	40 CFR 60.4205(c): Table 4 to Subpart IIII	No
	PM	0.40 g/hp-hr[1]	Test Method Average	40 CFR 60.4205(c): Table 4 to Subpart IIII	No
	CO	2.6 g/hp-hr[1]	Test Method Average	40 CFR 60.4205(c): Table 4 to Subpart IIII	No
	PM	1.93 lb/hr[1]	1 Hour	Title 129, Chapter 20, Section 002	No
	Opacity	< 20 percent[1]	6 minutes	Title 129, Chapter 20, Section 004	No

[1] Testing and monitoring requirements satisfied through compliance with Condition III.(L)(4)(c).

(b) Refer to NSPS, Subpart IIII for additional emission limitations and testing requirements that apply to the emergency fire pump engine [Condition III.(L)(2), April 6, 2009 CP].

(4) Operational and Monitoring Requirements

(a) The emergency fire pump (S100) shall be limited to 300 operating hours per any period of twelve (12) consecutive calendar months [Condition III.(L)(3)(a), April 6, 2009 CP].

(b) The emergency fire pump engine shall be equipped with a non-resettable hour meter to record the operating hours [Condition III.(L)(3)(b), April 6, 2009 CP].

(c) Diesel fuel shall be the only fuel combusted in the fire pump engine [Condition III.(L)(1), April 6, 2009 CP].

(d) The sulfur content of the diesel fuel shall not exceed 15 ppm [40 CFR 60.4207(b)].

Note: Condition III.(L)(4)(d) differs from Condition III.(L)(3)(c) of the April 6, 2009 Construction Permit. The Construction Permit required that sulfur content of the diesel fuel not exceed 0.05% by weight. However, beginning October 1, 2010, NSPS Subpart IIII requires that the sulfur content of diesel fuel used by the engines not exceed 15 ppm. The more stringent limit from the NSPS is included in this Operating permit.

(5) Recordkeeping and Reporting Requirements

The permittee shall maintain the following records for the emergency fire pump engine (S100) in order to demonstrate compliance with Condition III.(L)(4):

(a) Fuel receipts for the diesel fuel from the supplier for the fuel combusted in the fire pump engine. Fuel receipts shall state the sulfur content in the distillate fuel [Condition III.(L)(5)(a), April 6, 2009 CP].

(b) Hours of operation for the emergency firewater pump engine for each calendar month and for each period of twelve (12) consecutive calendar months [Condition III.(L)(5)(b), April 6, 2009 CP].

(c) Notifications and recordkeeping as required by 40 CFR 60.7 [Condition III.(L)(5)(c), April 6, 2009 CP].

(d) Recordkeeping as required by 40 CFR 60.4214 [Condition III.(L)(5)(d), April 6, 2009 CP].

III. SPECIFIC CONDITIONS FOR AFFECTED EMISSION POINTS:

(M) Specific Conditions for Insignificant Activities:

(1) The source is permitted for the insignificant activities in the following table:

Unit Description	Insignificance Criteria
Diesel Fuel Storage Tank, Installed 2007, Storage Capacity of 500 Gallons (Approx. 1.89 m^3)	Annual Fuel Throughput for Entire Source < 1,000,000 Gallons

(2) Emission Limitations and Testing Requirements:

NDEQ has not identified any specific emission limitations or testing requirements for the insignificant activities identified in Condition III.(M)(1)

(3) Operational and Monitoring Requirements:

The insignificant activities identified in Condition III.(M)(1) are exempt from specific operational and monitoring requirements

(4) Recordkeeping and Reporting Requirements:

A written notification in accordance with Condition II.(C) of this permit shall be made to the NDEQ if there are additions, or changes, to the list of insignificant activities in Specific Condition III.(M)(1) [insignificant activities are as defined in Operating Permit Application Forms]. Notification is only required for those insignificant activities that must be included in an application.

Attachment A:

HAP Emission Calculation Methodology

IV. Attachments

(A) HAP Emission Calculation Methodology

To demonstrate compliance with Specific Condition II.(H)(2), emissions shall be calculated each calendar month using data from the following sources listed in descending order. When testing data is available for a unit or process, the test results shall be used in HAP emission calculations. For cases where testing data is not available, the permittee shall continue down the list until the required information is available. For example, when a unit or process has not been tested, the permittee shall use manufacturer's guarantees and MSDS to calculate emissions. If guarantees and MSDS are not available, the permittee shall continue down the list to option c and use manufacturer/engineering estimates to calculate HAP emissions. When the information specified in options a, b, and c are unavailable, the permittee shall use information in AP-42 or other EPA published documents to calculate HAP emissions.

a. Most recent, valid performance test results
b. Manufacturer's guarantees and Material Safety Data Sheet (MSDS)
c. Manufacturer/engineering estimates
d. Emission factors from AP-42 or other EPA published documents

Emission factors and pound per hour (lb/hr) emission rates presented in Attachment A shall be replaced with data obtained from the most current, valid emissions test conducted in accordance with Specific Condition II.(D).

If it is necessary to convert uncontrolled to controlled emissions, multiply the uncontrolled emissions by one minus the overall control efficiency (fraction) of the control equipment.

Additional individual HAPs not specifically addressed in this calculation method that are found to be emitted from the emission points listed below must be incorporated into the source-wide HAP calculation.

Fermentation Operations

Emissions from the fermentation scrubber shall be calculated using Equation (1).

$$E_S = (CEF_S) \times (OH) / (2000 \text{ lbs/ton}) \qquad (1)$$

Where E_S = Emissions from Scrubber (tons/month)
CEF_S = Controlled process emission factor (lbs/hr)
OH = Operation Hours (hr/month)

The permittee shall use the lb/hr emission factors from the most recent valid performance test at the source to compute emissions (E_s) from the scrubber.

Recuperative Thermal Oxidizer (TO/HRSG) System

Emissions from the TO/HRSG system stack shall be calculated using Equations 2 or 3.

$$E_{TO} = E_{DD} + E_{DF} + E_{TF} \qquad (2)$$

Where E_{TO} = Emissions from TO/HRSG system (tons/month)
E_{DD} = Process emissions from dryers (tons/month)
E_{DF} = Fuel combustion emissions from dryers (tons/month)
E_{TF} = Fuel combustion emissions from the thermal oxidizer (tons/month)

Process emissions from the dryers (E_{DD}) shall be calculated using Equations 2a.1, 2a.2, 2a.3, 2a.4 or 2a.5.

$E_{DD} = (CEF_M) \times (P_M) / (2{,}000 \text{ lbs/ton})$ (2a.1)

Where E_{DD} = Process emissions from dryers (tons/month)
CEF_M = Controlled process emission factor from MWDGS drying (lbs/ton of MWDGS produced)
P_M = MWDGS production rate (tons/month)

$E_{DD} = (CHE_M) \times (OH_M) / (2{,}000 \text{ lbs/ton})$ (2a.2)

Where: E_{DD} = Process emissions from dryers (tons/month)
CHE_M = Controlled process emissions from MWDGS drying (lbs/hr)
OH_M = Operating hours of dryers from MWDGS drying (hrs/month)

$E_{DD} = (CEF_{DD}) \times (P_{DD}) / (2{,}000 \text{ lbs/ton})$ (2a.3)

Where E_{DD} = Process emissions from dryers (tons/month)
CEF_{DD} = Controlled process emission factor from DDGS drying (lbs/ton of DDGS produced)
P_{DD} = DDGS production rate (tons/month)

$E_{DD} = (CHE_{DD}) \times (OH_{DD}) / (2{,}000 \text{ lbs/ton})$ (2a.4)

Where: E_{DD} = Process emissions from dryers (tons/month)
CHE_{DD} = Controlled process emissions from DDGS drying (lbs/hr)
OH_{DD} = Operating hours of dryers from DDGS drying (hrs/month)

$E_{DD} = E_{DD}A + E_{DD}B$ (2a.5)
{Use if both MWDGS and DDGS are produced in a single month}

Where E_{DD} = Process emissions from dryers (tons/month)
$E_{DD}A$ = Process emissions from MWDGS drying (tons/month), using Equations 2a.1 or 2a.2.
$E_{DD}B$ = Process emissions from DDGS drying (tons/month), using Equations 2a.3 or 2a.4.

Fuel combustion emissions from dryers (E_{DF}) shall be calculated using Equations 2b.1, 2b.2, 2b.3 or 2b.4. These calculations are for each pollutant that is not calculated using Equations 2a.1 through 2a.5.

$E_{DF} = (NEF_{DF}) \times (NQ_{DF}) \times (HN) / (2{,}000 \text{ lbs/ton})$ (2b.1)

Where: E_{DF} = Fuel combustion emissions from dryers (tons/month)
NEF_{DF} = Natural gas combustion emission factor (lb/MMBtu)
NQ_{DF} = Natural gas usage rate in the dryers (MMscf/month)
HN = Heat content of natural gas (MMBtu/MMscf)

$$E_{DF} = (\{(NEF_{DF}) \times (NQ_{DF}) \times (HN)\} + \{(MEF_{DF}) \times (MQ_{DF}) \times (HM)\}) / (2{,}000 \text{ lbs/ton}) \quad (2b.2)$$

Where: E_{DF} = Fuel combustion emissions from dryers (tons/month)
NEF_{DF} = Natural gas combustion emission factor (lb/MMBtu)
NQ_{DF} = Natural gas usage rate in the dryers (MMscf/month)
HN = Heat content of natural gas (MMBtu/MMscf)
MEF_{DF} = Methane combustion emission factor (lbs/MMscf)
MQ_{DF} = Methane usage rate in the dryers (MMscf/month)
HM = Heat content of methane (MMBtu/MMscf)

$$E_{DF} = (NEF_{DF}) \times (NQ_{DF}) / (2{,}000 \text{ lbs/ton}) \quad (2b.3)$$

Where: E_{DF} = Fuel combustion emissions from dryers (tons/month)
NEF_{DF} = Natural gas combustion emission factor (lb/MMscf)
NQ_{DF} = Natural gas usage rate in the dryers (MMscf/month)

$$E_{DF} = (\{(NEF_{DF}) \times (NQ_{DF})\} + \{(MEF_{DF}) \times (MQ_{DF})\}) / (2{,}000 \text{ lbs/ton}) \quad (2b.4)$$

Where: E_{DF} = Fuel combustion emissions from dryers (tons/month)
NEF_{DF} = Natural gas combustion emission factor (lb/MMscf)
NQ_{DF} = Natural gas usage rate in the dryers (MMscf/month)
MEF_{DF} = Methane combustion emission factor (lbs/MMscf)
MQ_{DF} = Methane usage rate in the dryers (MMscf/month)

Fuel combustion emissions from thermal oxidizer (E_{TF}) shall be calculated using Equations 2c.1 or 2c.2. These calculations are for each pollutant that is not calculated using Equations 2a.1 through 2a.5.

$$E_{TF} = (NEF_{TF}) \times (NQ_{TF}) \times (HN) / (2{,}000 \text{ lbs/ton}) \quad (2c.1)$$

Where: E_{TF} = Fuel combustion emissions from thermal oxidizer (tons/month)
NEF_{TF} = Natural gas combustion emission factor (lb/MMBtu)
NQ_{TF} = Natural gas usage rate in the thermal oxidizer (MMscf/month)
HN = Heat content of natural gas (MMBtu/MMscf)

$$E_{TF} = (NEF_{TF}) \times (NQ_{TF}) / (2{,}000 \text{ lbs/ton}) \quad (2c.2)$$

Where: E_{TF} = Fuel combustion emissions from thermal oxidizer (tons/month)
NEF_{TF} = Natural gas combustion emission factor (lb/MMscf)
NQ_{TF} = Natural gas usage rate in the thermal oxidizer (MMscf/month)

$$E_{TO} = (CHE_{TO}) \times (OH_{TO}) / (2{,}000 \text{ lbs/ton}) \quad (3)$$

Where: E_{TO} = Emissions from TO/HRSG system stack (tons/month)

CHE_{TO} = Controlled emissions from TO/HRSG system stack (lbs/hr)
OH_{TO} = Operating hours of TO/HRSG system (hrs/month)

Cooling Cyclone

Emissions from the cooling cyclone shall be calculated using Equation 4a or 4b.

$E_{CC} = (UEF_{CC}) \times (P_{DDCC}) / (2{,}000 \text{ lbs/ton})$ (4a)

Where E_{CC} = Emissions from the cooling cyclone (tons/month)
UEF_{CC} = Uncontrolled emission factor from cooling cyclone (lbs/ton of DDGS produced)
P_{DDCC} = DDGS production rate (tons/month)

The permittee shall use the lb/hr emission factors from the most recent valid performance test at the source to compute emissions (E_{cc}) from the cooling cyclone.

$E_{CC} = (UHE_{CC}) \times (OH_{DDCC}) / (2{,}000 \text{ lbs/ton})$ (4b)

Where: E_{CC} = Emissions from the cooling cyclone (tons/month)
UHE_{CC} = Uncontrolled emissions from cooling cyclone (lbs/hr)
OH_{DDCC} = Operating hours of DDGS drying (hrs/month)

The permittee shall use the lb/hr emission factors from the most recent valid performance test at the source to compute emissions (E_{cc}) from the cooling cyclone.

Wet Cake Storage

Emissions from the WDGS storage shall be calculated using Equation (5).

$E_{WC} = (EF_{WC}) \times (P_{WC}) / (2{,}000 \text{ lbs/ton})$ (5)

Where: E_{WC} = Emissions from WDGS storage (tons/month)
EF_{WC} = Emission factor for WDGS storage (lbs/ton WDGS)
P_{wc} = WDGS stored as product (tons WDGS/month)

Pollutant	Emission Factor (lb/ton)
Acetaldehyde	1.11E-04
Acrolein	1.67E-05
Formaldehyde	2.22E-04
Methanol	4.44E-05

Total HAPs	3.94E-04

Storage Tanks

VOC emissions from storage tanks shall be calculated using the EPA's TANKS program. HAP emissions from each of the storage tanks shall be calculated using Equation (6).

$E_{ST\text{-}HAP} = (E_{ST\text{-}VOC})$ x (HAP Fraction) (6)

Where: $E_{ST\text{-}HAP}$ = Individual HAP emissions from storage tank (tons/month)
$E_{ST\text{-}VOC}$ = VOC emissions from storage tank (tons/month) from TANKS
HAP Fraction = HAP Fraction in material stored in storage tank.

Material	Hazardous Air Pollutant	HAP Fraction
Anhydrous Ethanol	Acetaldehyde	2.00E-04
	Methanol	2.00E-04
Denaturant	Benzene	2.50E-03
	Carbon disulfide	2.00E-05
	Cumene	1.00E-04
	Ethyl Benzene	5.00E-05
	n-Hexane	5.00E-02
	Toluene	5.00E-03
	Xylenes	5.00E-04

Ethanol Loadout

Emissions from liquid product loadout shall each be calculated using Equations (7a) through (7j).

$E_{VOC,LL} = E_{VOC,LL,T} + E_{VOC,LL,R}$ (7a)

$E_{VOC,LL,T} = E_{VOC,LL,T,G} + E_{VOC,LL,T,E} + E_{VOC,LL,T,D}$ (7b)

$E_{VOC,LL,T} = \{[(EF_{VOC,LL,T,G}) \times (P_{LL,T})] + [(EF_{VOC,LL,T,E}) \times (P_{LL,T})] + [(EF_{VOC,LL,T,D}) \times (P_{LL,T})]\} / (2000 \text{ lbs/ton})$ (7c)

$E_{VOC,LL,R} = E_{VOC,LL,R,E} + E_{VOC,LL,R,D}$ (7d)

$E_{VOC,LL,R} = \{[(EF_{VOC,LL,R,E}) \times (P_{LL,R})] + [(EF_{VOC,LL,R,D}) \times (P_{LL,R})]\} / (2000 \text{ lbs/ton})$ (7e)

Where

$E_{VOC,LL}$ = VOC Emissions from Liquid Loadout (tons/month)
$E_{VOC,LL,T}$ = VOC Emissions from Liquid Loadout into Trucks (tons/month)
$E_{VOC,LL,R}$ = VOC Emissions from Liquid Loadout into Railcars (tons/month)
$E_{VOC,LL,T,G}$ = VOC Emissions from displacing Gasoline from Trucks (tons/month)
$E_{VOC,LL,T,E}$ = VOC Emissions from Loading Ethanol into Trucks (tons/month)
$E_{VOC,LL,T,D}$ = VOC Emissions from Loading Denaturant into Trucks (tons/month)
$EF_{VOC,LL,T,G}$ = VOC Controlled Emission Factor for displacing gasoline from Trucks (lbs/Mgal)
$EF_{VOC,LL,T,E}$ = VOC Controlled Emission Factor for loading ethanol into Trucks (lbs/Mgal)
$EF_{VOC,LL,T,D}$ = VOC Controlled Emission Factor for loading denaturant into Trucks (lbs/Mgal)
$P_{LL,T}$ = Product loaded into Trucks (Mgal/month)
$E_{VOC,LL,T,E}$ = VOC Emissions from Loading Ethanol into Trucks (tons/month)
$E_{VOC,LL,T,E}$ = VOC Emissions from Loading Denaturant into Trucks (tons/month)
$EF_{VOC,LL,R,E}$ = VOC Controlled Emission Factor for loading ethanol into Railcars (lbs/Mgal)
$EF_{VOC,LL,R,D}$ = VOC Controlled Emission Factor for loading denaturant into Railcars (lbs/Mgal)
$P_{LL,T}$ = Product loaded into Railcars (Mgal/month)

Pollutant	Controlled Emission Factors (lbs/Mgal)	
	Truck Loadout	Rail Loadout
VOC		
Gasoline	0.248	
Ethanol	0.113	0.408
Denaturant	0.031	0.111

$$E_{HAP,LL} = E_{HAP,LL,T} + E_{HAP,LL,R} \quad (7f)$$

$$E_{HAP,LL,T} = E_{HAP,LL,T,G} + E_{HAP,LL,T,E} + E_{HAP,LL,T,D} \quad (7g)$$

$$E_{HAP,LL,T} = (E_{VOC,LL,T,G} \times WF_{HAP,G}) + (E_{VOC,LL,T,E} \times WF_{HAP,E}) + (E_{VOC,LL,T,D} \times WF_{HAP,D}) \quad (7h)$$

$$E_{HAP,LL,R} = E_{HAP,LL,R,E} + E_{HAP,LL,R,D} \quad (7i)$$

$$E_{HAP,LL,R} = (E_{VOC,LL,R,E} \times WF_{HAP,E}) + (E_{VOC,LL,R,D} \times WF_{HAP,D}) \quad (7j)$$

Where:

$E_{HAP,LL}$ = HAP emissions from liquid loadout (tons/month)
$E_{HAP,LL,T}$ = HAP Emissions from Liquid Loadout into Trucks (tons/month)
$E_{HAP,LL,R}$ = HAP Emissions from Liquid Loadout into Railcars (tons/month)
$E_{HAP,LL,T,G}$ = HAP Emissions from displacing Gasoline from Trucks (tons/month)
$E_{HAP,LL,T,E}$ = HAP Emissions from Loading Ethanol into Trucks (tons/month)
$E_{HAP,LL,T,D}$ = HAP Emissions from Loading Denaturant into Trucks (tons/month)
$W_{FHAP,G}$ = Weight Fraction of HAP in Gasoline (HAP/VOC)
$W_{FHAP,E}$ = Weight Fraction of HAP in Ethanol (HAP/VOC)
$W_{FHAP,D}$ = Weight Fraction of HAP in Denaturant (HAP/VOC)
$E_{HAP,LL,R,E}$ = HAP Emissions from Loading Ethanol into Railcars (tons/month)
$E_{HAP,LL,R,D}$ = HAP Emissions from Loading Denaturant into Railcars (tons/month)

Pollutants	Weight Fraction of HAP Emissions		
	Gasoline	Ethanol	Denaturant
Individual HAPs			
Acetaldehyde	N/A	2.00E-04	N/A
Benzene	2.50E-03	N/A	2.50E-03
Carbon disulfide	2.00E-05	N/A	2.00E-05
Cumene	1.00E-04	N/A	1.00E-04
Ethyl benzene	5.00E-05	N/A	5.00E-05
n-Hexane	5.00E-02	N/A	5.00E-02
Methanol	N/A	2.00E-04	N/A
Toluene	5.00E-03	N/A	5.00E-03
Xylene	5.00E-04	N/A	5.00E-04
Total HAPs	5.82E-02	4.00E-04	5.82E-02

Biomethanator Flare Pilot

Methane combustion emissions from the biomethanator flare and its pilot burner shall be calculated using Equation 8.

$$E_{BF} = (\{(NEF_{BF}) \times (NQ_{BF}) \times (HN)\} + \{(MEF_{BF}) \times (DR_{BF}) \times (OH_{BF})\}) / (2{,}000 \text{ lbs/ton}) \quad (8)$$

Where:

E_{DF} = Fuel combustion emissions from pilot on flare (tons/month)
NEF_{BF} = Natural gas combustion emission factor (lb/MMBtu)
NQ_{BF} = Natural gas usage rate in the pilot on flare (MMscf/month)
HN = Heat content of natural gas (MMBtu/MMscf)
MEF_{BF} = Methane combustion emission factor (lbs/MMBtu)

DR_{BF} = Biomethanator flare design rating (MMBtu/hr)
OH_{BF} = Operating hours of biomethanator flare (hrs/month)

Emergency Firewater Pump Engine

Emissions from the emergency firewater pump engine shall be calculated using Equation (9).

$E_E = (EF_E) \times (HI_E) \times OT / (2000 \text{ lbs/ton})$ (9)

Where
E_E = Emissions from Engine (tons/month)
EF_E = Emission factor for Engine (lbs/MMBtu)
HI_E = Heat Input of Engine (MMBtu/hr)
OT = Operating Time of Engine (hours/month)

Pollutant	Emission Factor (lb/MMBtu)
Individual Hazardous Air Pollutants (HAP)	
Acetaldehyde	7.67E-04
Acrolein	9.25E-04
Benzene	9.33E-04
1,3-Butadiene	3.91E-05
Formaldehyde	1.80E-03
Naphthalene	8.48E-05
Polycyclic Organic Matter	8.32E-05
Toluene	4.09E-04
Xylenes	2.85E-04
Total HAPs	4.71E-03

Equipment Leaks

VOC emissions from equipment leaks shall be calculated using Equation (10a). HAP emissions from equipment leaks shall be calculated using Equation (10b). These equations are based on compliance with the LDAR program.

$LK, _{VOC} = \{\Sigma[(N\text{-}LK) \times (EF\text{-}LK) \times (1-(CE\text{-}LK/100))]\} \times (OH\text{-}LK) \times (2.21 \text{ lbs/kg})/(2{,}000 \text{ lbs/ton})$ (10a)

Where:
$LK, _{VOC}$ = VOC emissions from equipment leaks (tons/month)
Σ = Summation over all types of components
N-LK = Number of components in each type
EF-LK= Equipment leak emission factor (kg/hr/source)
CE-LK = Control efficiency of LDAR system (%)
OH-LK = Operating hours = 720 or 744 (hrs/month)

$LK, _{HAP} = (LK, _{VOC}) \times (PPM\text{-}LK/10^6)$ (10b)

Where: $LK, _{HAP}$ = HAP emissions from equipment leaks (tons/month)
$LK, _{VOC}$ = VOC emissions from equipment leaks (tons/month)
PPM-LK = HAP content of anhydrous ethanol (ppm by weight)

Liquefaction Tanks and Cook Water Tank

Emissions from the Liquefaction Tanks and Cook Water Tank shall be calculated using Equation (11a) or (11b).

$E_E = (EF_E) \times GP / (2000 \text{ lbs/ton})$ (11a)

Where E_E = Emissions from Liquefaction Tanks or Cook Water Tank (tons/month)
EF_E = Emission factor for Liquefaction Tanks or Cook Water Tanks (lbs/Gal)
GP = Gallons of denatured ethanol produced (Gal/month)

Pollutant	lbs/gallon of denatured ethanol (liquefaction tank)	lbs/gallon of denatured ethanol (cook water tank)
Methanol	3.92E-07	9.61E-07
Acetaldehyde	1.81E-06	4.36E-06
Acrolein	1.20E-08	1.25E-06

$E_E = (EH_E) \times OT / (2000 \text{ lbs/ton})$ (11b)

Where E_E = Emissions from Liquefaction Tanks (tons/month)
EH_E = Hourly emissions from the Liquefaction Tanks or Cook Water Tank (lbs/hr)
OT = Operating Time of facility (hours/month)

Pollutant	lbs/hr (liquefaction tank)	lbs/hr (cook water tank)
Methanol	5.64E-03	1.38E-02
Acetaldehyde	2.60E-02	6.27E-02
Acrolein	1.72E-04	1.80E-02