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84069
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AIR QUALITY CONSTRUCTION PERMIT

PERMIT NUMBER: CP13-010

Facility Name: AltEn, LLC

NDEQ Facility ID#: 084069

Mailing Address:

1344 County Road 10
Mead, Nebraska 68041

Facility Location:

1344 County Road 10
Mead, Saunders County, Nebraska

Project Description: SIGNIFICANT PERMIT REVISION for an ethanol manufacturing plant capable of producing approximately 24.1 million gallons of denatured ethanol annually

Standard Industrial Classification (SIC) Code: 2869, Industrial Organic Chemicals

Revised or Superseded Construction Permits: This construction permit supersedes all conditions of permit CP04-0008 (issued January 27, 2005) and permit CP06-0012 (issued January 25, 2007).

Pursuant to Chapter 14 of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of this proposed construction of an air contaminant source and the thirty (30) day period allowed for comments has elapsed. This construction permit approves the proposed project as identified in the air quality construction permit application #13-010 received February 14, 2013, including any supporting information received prior to issuance of this permit. Additional details of the proposed project, including estimated pollutant emissions caused by the project, 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. The permit holder, owner, and operator of the facility shall assure that the installation, operation, and maintenance of all equipment is in compliance with all of the conditions of this permit.

The undersigned issues this permit on behalf of the Director under the authority of Title 129 – Nebraska Air Quality Regulations as amended December 9, 2013.

2/20/14

Date

Shelley Schneider

Shelley Schneider, Air Administrator
Air Quality Division



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ABBREVIATIONS, SYMBOLS, and UNITS OF MEASURE

AD	Anaerobic Digester	NESHAP	National Emission Standards for Hazardous Air Pollutants
AP-42	Compilation of Air Pollutant Emission Factors, Volume I, Stationary Point and Area Sources	NO ₂	Nitrogen Dioxide
BACT	Best Available Control Technology	NO _x	Nitrogen Oxides
bhp	Brake Horsepower	NSPS	New Source Performance Standard
BMP	Best Management Practice	NSR	New Source Review
Btu	British Thermal Unit	PAL	Plant-wide Applicability Limit
bu	Bushel	Pb	Lead (chemical abbreviation)
CAA	Clean Air Act	PbR	Permit-by-Rule
CE	Control Equipment	PEMS	Parametric Emissions Monitoring System
CEM	Continuous Emissions Monitor	PM	Particulate Matter
CEMS	Continuous Emissions Monitoring System	PM ₁₀	Particulate Matter with and aerodynamic diameter equal to or less than 10 microns
cf	Cubic feet	PM _{2.5}	Particulate Matter with and aerodynamic diameter equal to or less than 2.5 microns
CFR	Code of Federal Regulations	ppb	Parts per Billion
CO	Carbon Monoxide	ppm	Parts per Million
CO ₂	Carbon Dioxide	ppmv	Parts per Million by volume
CP	Construction Permit	ppmvd	Parts per Million by volume, dry basis
DGS	Distiller's Grains with Solubles	PSD	Prevention of Significant Deterioration
DDGS	Dry Distillers Grains with Solubles	PTE	Potential to Emit
dscf	Dry Standard Cubic Feet	RVP	Reid Vapor Pressure
dscfm	Dry Standard Cubic Feet per Minute	RATA	Relative Accuracy Test Audit
EMIS	Emergency Management Information System	RMP	Risk Management Plan
EPA	Environmental Protection Agency	RTO	Regenerative Thermal Oxidizer
EQC	Environmental Quality Council	scf	Standard Cubic Feet
EP	Emission Point	SIC	Standard Industrial Classification
ESP	Electrostatic Precipitator	SIP	State Implementation Plan
EU	Emission Unit	SO ₂	Sulfur Dioxide
FID	Facility Identification Number	SO _x	Sulfur Oxides
FDCCP	Fugitive Dust Control Plan	TDS	Total Dissolved Solids
FGR	Flue Gas Recirculation	TO	Thermal Oxidizer
FIP	Federal Implementation Plan	TO/HRSG	Thermal Oxidizer with Heat Recovery Steam Generator
FR	Federal Register	tpy	Tons per year
ft	Feet	TRS	Total Reduced Sulfur
FTIR	Fourier Transform Infrared	TSP	Total Suspended Particulate Matter
H ₂ S	Hydrogen Sulfide	ULNB	Ultra Low-NO _x Burner
HAP	Hazardous Air Pollutant	UST	Underground Storage Tank
hp	Horsepower	UTM	Universal Transverse Mercator
hr	Hour	VHAP	Volatile Hazardous Air Pollutant
lb	Pound	VMT	Vehicle Miles Traveled
LDAR	Leak Detection and Repair	VOC	Volatile Organic Compound
LNB	Low-NO _x Burner	WDGS	Wet Distiller's Grains with Solubles
MACT	Maximum Achievable Control Technology		
Mgal	One Thousand gallons		
MMBtu	One Million British Thermal Units		
MMscf	One Million Standard Cubic Feet		
MSDS	Material Safety Data Sheet		
MW	Megawatt		
NAAQS	National Ambient Air Quality Standards		
NDEQ	Nebraska Department of Environmental Quality		

I. GENERAL CONDITIONS

- (A) This permit is not transferable to another source or location. {Chapter 17}
- (B) Holding of this permit does not relieve the owner or operator of the source from the responsibility to comply with all applicable portions of the Nebraska Air Quality Regulations and any other requirements under local, State, or Federal law. 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 or permit revocation. {Chapter 41 and Chapter 17, Section 011}
- (C) Application for review of plans or advice furnished by the Director will not relieve the owner or operator of legal compliance with any provision of these regulations, or prevent the Director from enforcing or implementing any provision of these regulations. {Chapter 37}
- (D) Any owner or operator who failed to submit any relevant facts or who submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. If the owner or operator wishes to make changes at the source that will result in change(s) to values, specifications, and/or locations of emission points that were indicated in the permit application (or other supplemental information provided by the owner or operator and reviewed by the NDEQ in issuance of this permit), the owner or operator must receive approval from the NDEQ before the change(s) can be made. In addition, any modification which may result in an adverse change to the air quality impacts predicted by atmospheric dispersion modeling (such as changes in stack parameters or increases in emission rates, potential emissions, or actual emissions) shall have prior approval from the NDEQ. The owner or operator shall provide all necessary information to verify that there are no substantive changes affecting the basis upon which this permit was issued. Information may include, but not be limited to, additional engineering, modeling and ambient air quality studies. {Chapter 17, Sections 006, 007, and 008}
- (E) Approval to construct, reconstruct and/or modify the source will become invalid if a continuous program of construction is not commenced within 18 months after the date of issuance of the construction permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable period of time. {Chapter 17, Section 012}
- (F) The owner or operator shall allow the NDEQ, EPA or an authorized representative, upon presentation of credentials to: {Neb. Rev. Statute §81-1504}
- (1) Enter upon the owner or operator's premises at reasonable times where a source subject to this permit is located, emissions-related activity is conducted or records are kept, for the purpose of ensuring compliance with the permit or applicable requirements;
 - (2) Have access to and copy, at reasonable times, any records, for the purpose of ensuring compliance with the permit or applicable requirements;
 - (3) Inspect at reasonable times any facilities, pollution control equipment, including monitoring and air pollution control equipment, practices, or operations, for the purpose of ensuring compliance with the 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.
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- (G) When requested by the NDEQ, the owner or operator shall submit completed emission inventory forms for the preceding year to the NDEQ by March 31 of each year. {Chapter 6}
- (H) Open fires are prohibited except as allowed by Chapter 30.
- (I) Particulate Matter – General Requirements: {Chapter 32}
- (1) The owner or operator 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 owner or operator 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 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.
- (J) If and when the Director declares an air pollution episode as defined in Chapter 38, Section 003.01B, 003.01C, or 003.01D, the owner or operator shall immediately take all required actions listed in Title 129, Appendix I until the Director declares the air pollution episode terminated.
- (K) This permit may be revised (reopened and reissued) or revoked for cause in accordance with Title 129 and Title 115, Rules of Practice and Procedure. Conditions under which this permit will be revised or revoked for cause, include but are not limited to: {Chapter 15, Section 006}
- (1) A determination by the Director, or the Administrator of EPA that:
- (a) the permit must be revised 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.
- (2) The existence at the source of unresolved noncompliance with applicable requirements or a term or condition of the permit, and refusal of the owner or operator to agree to an enforceable schedule of compliance to resolve the noncompliance;
- (3) The submittal by the owner or operator of false, incomplete, or misleading information to the NDEQ or EPA;
- (4) A determination by the Director that the source or activity endangers human health or the environment and that the danger cannot be removed by a revision of the permit; or
- (5) The failure of the owner or operator to pay a penalty owed pursuant to court order, stipulation and agreement, or order issued by the Administrator of the EPA.
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II. SPECIFIC CONDITIONS

(A) The owner/operator of the source shall provide the following notifications to the NDEQ:

- (1) The date construction, reconstruction or modification commenced as defined in Chapter 1. Notification shall be postmarked no later than 30 days after such date and include a summary description and whether the requirement to commence construction was met through: {Chapter 17, Section 012}
- (a) Initiating physical on-site construction activities of a permanent nature that meet the definition of "begin actual construction", or
 - (b) Entering into binding agreements or contractual obligations. If this option is used, the notice shall also include a brief summary of each binding agreement or contractual obligation entered into, the date of the agreement or contract, and why it cannot be cancelled or modified without substantial loss to the owner or operator.
- (2) The date on which the source or modification first becomes operational postmarked within 15 days after such date. {Chapter 7, Section 002.03}
- (3) When the source makes physical or operational changes to an emissions unit or associated control equipment that may cause the previous testing to not represent current operation conditions or emissions, the owner/operator shall submit notification of the change. Such notification shall be postmarked within 15 days after the change. The NDEQ may require performance testing based on review of the specific changes identified in the notification and the potential impact on emissions from the unit(s) and/or performance of the control equipment. {Chapter 34, Section 001}
- (a) This notification requirement applies to emissions units and/or control equipment which meet the following requirements, except as provided in condition II.(A)(3)(d):
 - (i) Emissions from the emissions unit and/or control equipment is subject to an emissions limit; and
 - (ii) A valid performance test has been conducted for the pollutant to which the emissions limit applies.
 - (b) Changes that may cause emissions to increase or render previous testing not representative of current operations include, but are not limited to, increasing the capacity of an emissions unit, changing the operational parameters of any control equipment outside of the range allowed for under this permit that makes the control equipment less efficient, changing the type of scrubber packing material, or increasing the inlet pollutant loading of any control equipment.
 - (c) The notification shall include the date of the changes, a description of the changes made, and an evaluation of the resulting impact on emissions from the emissions units and/or control equipment.

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- (d) The above notification requirements do not apply when compliance with the emission limitation is demonstrated through the use of a CEMS or PEMS.
 - (4) When an increase in actual production or operating throughput of process equipment, for which performance testing has been conducted, as follows: {Chapter 34, Sections 001 and 006}
 - (a) When there is a ten percent (10%) increase in production/throughput rate, based on the average calendar day rate, over the rate recorded during the most recent valid performance test; or,
 - (b) The above notification requirements do not apply to emission units that have been tested and use a CEMS or PEMS to demonstrate compliance.
 - (B) Recordkeeping: Records of all measurements, results, inspections, and observations as required to ensure compliance with all applicable requirements shall be maintained on-site as follows:
 - (1) All calculations and records required throughout this permit shall be completed no later than the fifteenth (15th) day of each calendar month and shall include all information through the previous calendar month, unless otherwise specified in this permit.
 - (2) All records required throughout this permit shall be kept for a minimum of five years and shall be clear and readily accessible to NDEQ representatives, unless otherwise specified in this permit.
 - (3) Copies of all notifications, reports, test results, and plans.
 - (4) Calibration records for all operating parameter monitoring equipment.
 - (5) 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.
 - (6) Records documenting equipment failures, malfunctions, or other variations, including date and time of occurrence, remedial action taken, and when corrections were made to each piece of permitted equipment, required control equipment, and required monitoring equipment.
 - (C) All permitted emission units, control equipment, and monitoring equipment shall be properly installed, operated, and maintained. {Chapter 34, Section 006 and Chapter 35 Sections 006.02 and 006.05}
 - (D) The performance tests required in the permit shall be completed and submitted to the NDEQ as follows: {Chapter 34}
 - (1) Performance tests shall be conducted while operating at maximum capacity (operating conditions producing the highest emissions or loading to the control device) within sixty (60) days after first reaching the maximum capacity, but not more than 180 days after the start-up of operations of each unit, unless otherwise specified by the NDEQ.
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- (2) Testing shall be conducted according to the methodologies found in Title 129, Chapter 34, Section 002, or other NDEQ approved methodologies.
- (3) 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.
- (4) 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. The owner or operator shall also provide the NDEQ with an emissions testing protocol at least thirty (30) days prior to testing.
- (5) The owner or operator shall monitor and record the operating parameters for process and control equipment during the performance testing required in the permit.
- (6) 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:
 - (a) A description of the source's operating parameters (i.e. production rates, firing rates of combustion equipment, fuel usage, etc.), control equipment parameters (i.e. baghouse fan speeds, scrubber liquid flow rates, etc.), and ambient conditions (i.e. weather conditions, etc.) during testing.
 - (b) Copies of all data sheets from the test run(s).
 - (c) A description and explanation of any erroneous data or unusual circumstance(s) and the cause for such situation.
 - (d) A final conclusion section describing the outcome of the testing.
- (E) Any emissions due to malfunctions, unplanned shutdowns, and ensuing start-ups that are, or may be, in excess of applicable emission limits shall be reported to the NDEQ in accordance with Chapter 35, Section 005.
- (F) Stack heights shall not be less than the following heights above ground level : {Chapter 4}:

Emission Point ID#	Emission Point Name	Minimum Stack Height (ft)
EP-1	Grain Receiving Baghouse	16
EP-3	Hammer Mill Baghouse	35
EP-4	Boiler Stack	79
EP-9	Anaerobic Digester Flare	33
EP-12	Vapor Combustion Unit	20
EP-13	Cooling Tower	28

A site survey, or similar documentation containing the as-built stack dimensions, shall be maintained on-site and kept for the life of the source. If stack dimensions do not comply with the table above, the owner or operator shall notify the NDEQ prior to start-up of any emission unit and, if requested, submit a revised air dispersion modeling analysis to the NDEQ to ensure that

the source will not interfere with the attainment or maintenance of the ambient air quality standards in Chapter 4.

- (G) Particulate matter (PM) emissions from each process unit shall not exceed limits in Title 129, Chapter 20, Section 001, as applicable. Compliance with this condition may be demonstrated through compliance with Conditions III.(A) and (H).
- (H) PM emissions from fuel combustion shall not exceed limits in Title 129, Chapter 20, Section 002, as applicable. Compliance with this condition may be demonstrated through compliance with Condition III.(E)(3)(d).
- (I) Opacity of visible emissions from each process unit and fuel-burning equipment shall not equal or exceed 20%, as evaluated by an EPA-approved method in accordance with Title 129, Chapter 20, Sections 004 and 006.

III.(A) Specific Conditions for Grain Handling and Milling

- (1) Permitted Emission Points: The source is permitted to construct the emission points and associated emission units identified in the following table, and shall be controlled by the required control equipment as indicated:

Emission Point ID#	Required Control Equipment ID# and Description	Emission Unit Description
EP-1	CE-01: Grain Unloading Baghouse	EU-01: Grain Receiving Station
		EU-03: Elevator Leg
		EU-04: Grain Storage Silos
EP2	CE-02: Scalper/Day Tank Baghouse	EU-09: Scalper
		EU-11: Day Tank
EP3	CE-03: Hammermill Baghouse	EU-13: Hammermill
		EU-14: Conveyor

- (2) Emission Limitations and Testing Requirements:

- (a) Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits:

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
EP-1	PM ₁₀	0.62 lbs/hr	1-hour	Chapters 4 and 19	Yes
EP-3	PM ₁₀	0.19 lbs/hr	1-hour	Chapters 4 and 19	Yes

- (b) The performance test shall be conducted while operating at maximum capacity during the first third quarter (July 1 - September 30) following the facility achieving startup of operations.

- (3) Operational and Monitoring Requirements and Limitations

- (a) Emissions from the emission units identified in Condition III.(A)(1) shall be controlled by pollution control equipment as specified in Condition III.(A)(1). {Chapters 4 and 20}
- (b) Operation and maintenance of each baghouse shall be in accordance with the following requirements: {Chapters 4, 20, and 34}
- (i) The baghouse shall be operated and be controlling emissions at all times when the associated emission units are in operation.
- (ii) The baghouse shall be equipped with an operational pressure differential indicator. Pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating.

- (iii) 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.
- (iv) Observations at least once each day during daylight hours of baghouse operation shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, or other indications that corrective action is needed. If corrective action is required, it shall occur immediately.
- (v) 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.

(4) Applicable NSPS, NESHAP, and MACT Requirements:

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

(5) Reporting and Recordkeeping Requirements:

Inspection and maintenance records for each fabric dust collector, to show compliance with Condition III.(A)(3)(b), shall include the following:

- (a) Records documenting when routine observations were conducted with a description, including operating parameters (e.g., pressure differential readings) and any atypical observations. The records shall include the operating ranges for each operating parameter.
- (b) Records documenting when routine maintenance and preventive actions were performed with a description of the maintenance and/or preventive action performed.
- (c) Filter replacement records including filter position, type, and date of filter installation.
- (d) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.

III.(B) Specific Conditions for Fermentation and Distillation Operations

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

Emission Point ID#	Required Control Equipment ID# and Description	Emission Unit Description
EP-6	CE-06: Fermentation & Distillation Scrubber	EU-29a: Fermenter #1
		EU-29b: Fermenter #2
		EU-29c: Fermenter #3
		EU-29d: Fermenter #4
		EU-44: Beer Well
		EU-18: Mash Tank
		EU-23: Liquefaction Tank
		EU-37: Yeast Slurry Tank
		EU-73: Stillage Tank #1
		EU-77: Stillage Tank #2
		EU-48: Beer Stripper
		EU-58: Rectifier
		EU-65a: Molecular Sieves #1
		EU-65b: Molecular Sieves #2

- (2) Emission Limitations and Testing Requirements:

- (a) Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits.

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
EP-6	VOC	12.0 lbs/hr	1-hour or test method average	Chapter 17	Yes
	Acetaldehyde	2.17 lbs/hr	1-hour or test method average	Chapter 17	Yes
	HAP	-	Speciation and Quantification of HAP composition at outlet	Chapters 27 and 28	Yes

- (b) The performance test shall be conducted while operating at maximum capacity during the first third quarter (July 1 - September 30) following the facility achieving startup of operations.

- (3) Operational and Monitoring Requirements and Limitations

- (a) Emissions from the emission units identified in Condition III.(B)(1) shall be controlled by pollution control equipment as specified in Condition III.(B)(1). {Chapters 19 and 27}
- (b) Operation and maintenance of the fermentation and distillation scrubber (CE-06) shall be

in accordance with the following requirements until the issuance of an operating permit to the source (Chapters 17 and 27):

- (i) The scrubber shall be operated and be controlling emissions at all times when the associated emission units are in operation.
- (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.
- (iii) The scrubber shall be equipped with devices capable of monitoring the following operating parameters in the manner described below.
 - 1. Scrubbing liquid flow rate shall be monitored and recorded continuously;
 - 2. Chemical addition flow rate shall be monitored and recorded continuously if chemical addition is utilized;
 - 3. Scrubber pressure differential shall be monitored and recorded continuously; and,
 - 4. Scrubber liquid temperature shall be monitored by direct measurement and recorded at least once each day.
- (iv) If chemical addition is utilized the total monthly amount of chemical, in gallons, added to the scrubber shall be monitored and recorded by the permittee.
- (v) Chemical draw down checks shall be performed upon request by NDEQ personnel to verify that the flow meter is working correctly.
- (vi) The scrubber operating parameters shall be maintained at the levels recorded during the most recent valid performance test conducted at the facility.
- (vii) Observations at least once each day during daylight hours of scrubber operation shall be conducted to determine whether there are leaks, noise, or other indications that corrective action is necessary. If corrective action is necessary, it shall occur immediately.
- (viii) Flow meters for recording scrubbing liquid and chemical addition flow rates shall be maintained and calibrated according to manufacturer's instructions.

(4) Applicable NSPS, NESHAP, and MACT Requirements:

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

(5) Reporting and Recordkeeping Requirements:

- (a) Records that document the operating parameter data for the scrubber, including the date and time of the readings. The records shall include:
 - (i) Scrubbing liquid flow rate;
 - (ii) Chemical addition flow rate;

- (iii) Scrubber pressure differential readings; and
- (iv) Scrubbing liquid temperature readings.
- (b) Monthly records that document the amount, concentration, and type of chemical injected into the water supplied to the scrubber.
- (c) Monthly records that document the purchase date, concentration, amount, and type of chemical purchased for chemical injection associated with the scrubber.
- (d) Records that document the operating parameters developed during the most recent valid performance test conducted at the facility.
- (e) Records documenting date and time of routine observations with a description, including operating parameters, atypical parameters observed, and any corrective actions taken, for each day the scrubber is in operation
- (f) Each corrective action taken shall be documented upon occurrence, including the date, time, observations, and a description of the corrective action.
- (g) Records documenting when routine maintenance and preventive actions were performed with a description of the maintenance and/or preventive action performed.

III.(C) Specific Conditions for Storage Tanks

- (1) Permitted Emission Points: The source is permitted to construct the storage and process tanks identified in the following table at the capacities and for the storage of the products listed:

Emission Point ID# & Tank ID#	Maximum Storage Capacity (gallons)	Product Stored in Tank
TK-801A	22,600	Anhydrous Ethanol
TK-801B	22,600	Anhydrous Ethanol
TK-803	22,600	Off-spec Ethanol
TK-808	22,600	Denaturant (Natural Gasoline)
TK-810	535,830	Denatured Ethanol
TK-899	21,193	Distillate Fuel Oil

- (2) Emission Limitations and Testing Requirements:

TK-808 and TK-810 shall comply with applicable emission limitations and testing requirements of 40 CFR 60, Subparts A and Kb. {Chapter 18}

- (3) Operational and Monitoring Requirements and Limitations:

- (a) TK-808 and TK-810 shall each be equipped with an internal floating roof in accordance with the specifications in 40 CFR 60, Subpart Kb. {Chapters 18 and 27}
- (b) TK-808 and TK-810 shall be visibly inspected and repaired in accordance with testing and procedures per 40 CFR 60, Subpart Kb. {Chapters 18 and 27}
- (c) TK-808 and TK-810 shall comply with all applicable operational and monitoring requirements and limitations of 40 CFR 60, Subparts A and Kb. {Chapter 18}

- (4) Applicable NSPS, NESHAP, and MACT Standards:

The following standards apply to TK-808 and TK-810:

Applicable Standard	Title	Rule Citation
NSPS, Subpart A	General Provisions	Chapter 18, Sec. <u>001.01</u> 40 CFR 60.1
NSPS, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	Chapter 18, Sec. <u>001.62</u> 40 CFR 60.110b

- (5) Reporting and Recordkeeping Requirements:

The owner or operator of the affected tanks shall report and keep records as described in 40 CFR 60, Subparts A and Kb.

III.(D) Specific Conditions for Liquid Loadout

- (1) Permitted Emission Points: The source is permitted to construct the emission points and associated emission units identified in the following table at the capacity and using the fuel types listed:

Emission Point ID#	Control Equipment ID# and Description	Emission Unit (EU) / EP ID# and Description	Maximum Capacity	Permitted Fuel Type
EP-12	CE-12: Loadout Vapor Combustion Unit	EU-10: Ethanol Truck Loadout	-	-
		EU-12: Loadout Vapor Combustion Unit	4.8 MMBtu/hr, with 54 scf pilot	Natural Gas

- (2) Emission Limitations and Testing Requirements:

This condition does not establish any additional emission limitations or testing requirements.

- (3) Operational and Monitoring Requirements and Limitations:

- (a) The source shall use submerged loading when transferring liquid product from the storage tanks. {Chapters 19 and 27}
- (b) The ethanol loadout facility shall be equipped with a vapor collection and control system that collects and routes the vapors generated from ethanol product loadout to a vapor combustion unit (EP-12). The operation of the vapor collection and control system shall be in accordance with the following requirements: {Chapters 19, 27 and 34}
- (i) The vapor collection and control system shall be operated whenever the ethanol loadout facility is in operation.
- (ii) The vapor collection and control system shall be properly designed, installed, operated, and maintained. Manufacturer's specifications and instructions shall be kept on site and readily available to Department representatives.
- (iii) When ethanol loadout is occurring, a flame shall be present at the flare. The facility must install an appropriate safety device or flame monitoring system to ensure that ethanol loadout cannot occur without the presence of a flame.

- (4) Applicable NSPS, NESHAP, and MACT Requirements:

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

- (5) Reporting and Recordkeeping Requirements:

Records documenting when routine maintenance and preventive actions were performed on the vapor recovery system and flare with a description of the maintenance and/or preventative action performed.

III.(E) Specific Conditions for Anaerobic Digestion and Steam Generation

- (1) Permitted Emission Points: The source is permitted to construct the emission points and associated emission units identified in the following table at the capacity and using the fuel types listed:

Emission Point ID#	Control Equipment ID# and Description	Emission Unit ID# and Description	Capacity (MMBtu/hr)	Permitted Fuel Type
EP-4	-	EU-89a: Boiler #1	54.0	Natural Gas and Biogas
	-	EU-89b: Boiler #2	49.59	Natural Gas and Biogas
EP-15	-	EU-94: Auxiliary Boiler	20	Natural Gas
EP-9	-	EU-95: Digester Flare	54.0	Natural Gas and Biogas
EP-4 and/or EP-9	EU-95: Digester Flare, EU-89a: Boiler #1, or EU-89b: Boiler #2	EU90a: Anaerobic Digester #1	N/A	N/A
		EU90b: Anaerobic Digester #2	N/A	N/A

- (2) Emission Limitations and Testing Requirements:

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

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Performance Testing Required (Yes/No)
EP-4 and EP-9	SO ₂	22.10 lbs/hr (combined)	24-hour Block Average	Chapter 19	Yes

- (b) Emissions of TRS from digesters to EU-89a, EU-89b, and EU-95 combined shall not exceed 11.6 lbs/hr (24-hour block average). {Chapters 4 and 19}
- (c) AltEn, LLC shall have a stack test performed on EP-4 while operating at maximum capacity during the first third quarter (July 1 - September 30) following the facility achieving startup of operations. Both EU-89a and EU-89b shall be operating at full capacity and shall be combusting biogas. Emission rates for NO_x and SO₂ shall be tested. {Chapter 34}
- (3) Operational and Monitoring Requirements and Limitations:
- (a) EU-89a, EU-89b, and EU-95 shall only combust natural gas and biogas. {Chapters 19 and 20}
- (b) One or more of the following emission units shall be used to combust biogas at all times biogas is being produced by the anaerobic digesters; EU-89a, EU-89b, or EU-95. {Chapter 4}

- (c) EU-95 shall be operated with a flame present whenever biogas is flowing to the unit. A monitoring system, including a data recorder capable of continuously monitoring and recording the presence of a flame and biogas flow to EU-95, shall be installed to ensure that biogas flow to the flare cannot occur without the presence of a flame. The monitoring system shall be equipped with an alarm to notify plant personnel of biogas flow to the flare when no combustion is taking place. The monitoring device shall be properly installed, operated, calibrated and maintained. Manufacturer's instructions, or the equivalent, shall be kept on site and readily available to Department representatives. {Chapter 4}
- (d) SO₂ emissions from the boilers and enclosed flare shall be calculated for each 24-hour block period by using the following equation. The biogas emission factor of 173.3 lb/MMscf shall be revised based on the results of the most recent valid performance test: {Chapters 4 and 19}

$$E_{SO_2} = (F_{NG} * 0.6 \text{ lb/MMscf} + F_{BG} * 173.3 \text{ lbs/MMscf}) / 24 \text{ hours}$$

where,

E_{SO_2} = SO₂ Emission Rate (lb/hr)

F_{NG} = Natural Gas combusted in the boilers and enclosed flare (MMscf/24 hours)

F_{BG} = Biogas combusted in the boilers and enclosed flare (MMscf/ 24 hours)

- (e) The natural gas and biogas piping that supplies the boilers and enclosed flare with fuel shall each be equipped with an operational flow meter to record the fuel flow rates to the boiler and enclosed flare. The flow meters shall be installed, operated, and maintained in accordance with manufacturer's documentation, or the equivalent. The flow meters shall be calibrated at least once per year or more frequently per manufacturer's instructions. {Chapters 4 and 17}
- (f) The biogas piping from EU-90a and EU-90b outlets to the boilers and enclosed flare shall be equipped with a continuous TRS monitor which complies with the following requirements unless written approval is obtained from the Department. {Chapters 4, 17, and 34}
- (i) 40 CFR 60.13.
- (ii) 40 CFR 60 Appendix B Performance Specification 5.
1. The span value of the continuous emissions monitoring system is two times the applicable emission limit, expressed as a concentration.
- (iii) 40 CFR 60 Appendix F Performance Specification 1.
1. All valid data shall be used in calculating emissions concentrations.
- (g) EU-89a, EU-89b, and EU-94 shall comply with all applicable operational and monitoring requirements and limitations of 40 CFR 60, Subparts A and Dc. {Chapter 18}

(4) Applicable NSPS, NESHAP, and MACT Requirements:

The following standards apply to all Boilers at AltEn (EU-89a, EU-89b, and EU-94):

Applicable Standard	Title	Rule Citation
NSPS, Subpart A	General Provisions	Chapter 18, Sec. 001.01 40 CFR 60.1
NSPS, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	Chapter 18, Sec. 001.52 40 CFR 60.40c

(5) Reporting and Recordkeeping Requirements:

- (a) Records of flame presence and biogas flow to demonstrate compliance with Condition III.(E)(3)(c)
- (b) Records documenting the pound per hour (lb/hr) sulfur dioxide emissions (24-hour block average) to demonstrate compliance with Condition III.(E)(2)(a).
- (c) Records of the amount of natural gas and biogas combusted in the boilers and enclosed flare each day to demonstrate compliance with Condition III.(E)(3)(d).
- (d) Records of hourly averaged TRS concentration of the Anaerobic Digester unit outlets to the flare and boilers. TRS quantities in the Anaerobic Digester unit outlets to the flare and boilers shall be compiled within 15 days after the end of each calendar month and the calculations shall be kept on file to document compliance with Condition III.(E)(2)(b).
- (e) EU-89a, EU-89b, and EU-94 shall comply with applicable reporting and recordkeeping requirements of 40 CFR 60, Subparts A and Dc.

III.(F) Specific Conditions for Haul Roads

- (1) Permitted Emission Points: All on-site haul roads with production-related truck traffic shall be paved. The paved haul roads shall comply with the following conditions. {Chapter 4}

- (2) Emission Limitations and Testing Requirements:

Haul roads are subject to the requirements of Title 129, Chapter 32, Section 002.

- (3) Operational and Monitoring Requirements and Limitations:

- (a) The owner or operator shall utilize best management practices (BMP) to control emissions from haul roads to comply with Condition I.(I). The effectiveness of the BMP to minimize emissions from haul roads will be demonstrated by compliance with Condition I.(I). {Chapter 32}
- (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. {Chapter 32}

- (4) Applicable NSPS, NESHAP, and MACT Requirements:

The NDEQ has not identified any NSPS, NESHAP, or MACT requirements that apply to the haul roads.

- (5) Reporting and Recordkeeping Requirements:

- (a) Records shall be kept documenting the use of BMPs on haul roads.
- (b) Records shall be kept of haul road visible emissions checks taken daily during operation and a description of corrective action taken, if needed.

III.(G) 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.

- (2) Emission Limitations and Testing Requirements:

The source shall comply with all applicable emission limitations and testing requirements as established by 40 CFR 60, Subparts A and VV. {Chapter 18}

- (3) Operational and Monitoring Requirements and Limitations:

The source shall comply with all applicable operational and Monitoring Requirements and Limitations as established by 40 CFR 60, Subparts A and VV. {Chapter 18}

- (4) Applicable NSPS, NESHAP, and MACT Requirements

Applicable Standard	Title	Rule Citation
NSPS, Subpart A	General Provisions	Chapter 18, Sec. <u>001.01</u> 40 CFR 60.1
NSPS, Subpart VV	Equipment Leaks in the Synthetic Organic Chemicals Manufacturing Industry	Chapter 18, Sec. <u>001.14</u> 40 CFR 60.480

- (5) Reporting and Recordkeeping Requirements:

The source shall comply with all applicable reporting and recordkeeping requirements as established by 40 CFR 60, Subparts A and VV.

III.(H) Specific Conditions for Cooling Towers

- (1) Permitted Emission Points: The source is permitted to construct the emission points and associated emission units identified in the following table with the number of cooling tower cells and at the circulation rate listed:

Emission Point ID#	Control Equipment ID# and Description	Emission Unit ID# and Description	Number of Cooling Tower Cells	Maximum Circulation Rate (gal/hr)
EP-13	-	EU-86: Cooling Tower	2	866,640 (total)

- (2) Emission Limitations and Testing Requirements:

This condition does not establish any additional emission limitations or testing requirements.

- (3) Operational and Monitoring Requirements and Limitations:

- (a) Drift loss from each cooling tower shall be limited to 0.005 percent. Verification of drift loss shall be by manufacturer's design specification. Manufacturer's drift loss specifications shall be kept on site and readily available to NDEQ representatives, upon request, for the life of the unit. {Chapter 19}
- (b) TDS concentration of the cooling water in each cooling tower shall not exceed 2,400 ppm. A representative TDS sample shall be collected and tested from the cooling tower a minimum of once per calendar month. {Chapters 4 and 19}

- (4) Applicable NSPS, NESHAP, and MACT Requirements:

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

- (5) Reporting and Recordkeeping Requirements:

- (a) Manufacturer's drift loss design specifications shall be kept on site.
- (b) Records of TDS concentration in cooling tower water for each sampling event and the test method used shall be kept on site.