TECHNICAL SUPPORT DOCUMENT
For
DRAFT/PROPOSED AIR EMISSION PERMIT NO. 16100035-004

This technical support document (TSD) is intended for all parties interested in the draft/proposed permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft/proposed permit.

1. General Information

1.1 Applicant and Stationary Source Location:

Table 1. Applicant and Source Address

Applicant/Address	Stationary Source/Address (SIC Code: 2869)
Guardian Energy, LLC 4745 380th Avenue Janesville, Minnesota 56048	Guardian Energy, LLC 4745 380th Ave Janesville, Waseca County
Contact: Mike Santo, phone: 507-234-5008	Email: MSanto@guardiannrg.com

1.2 Facility Description

Guardian Energy, LLC (formerly US Bioenergy, VeraSun, and RBF Acquisition V) is the owner of a fuel-grade ethanol production facility in Janesville, MN. The Facility uses corn as the primary raw material and produces Distillers Dried Grains and Solubles (DDGS) for animal feed as a byproduct. The Facility emits particulate matter (PM, PM_{10}, and $PM_{2.5}$), volatile organic compounds (VOC), nitrogen oxides (NO_X), and carbon monoxide (CO). PM, PM_{10}, and $PM_{2.5}$ are primarily emitted by corn receiving, handling, and milling and DDGS handling and loadout. VOC are primarily emitted by fermentation, distillation, and drying DDGS. NO_X and CO are primarily emitted by natural gas-fired thermal oxidizers (TO) and dryers. PM, PM_{10}, and $PM_{2.5}$ emissions are controlled by fabric filters, and VOC emissions are controlled by wet scrubbers, flares, and thermal oxidizers.

1.3 Description of any Changes Allowed with this Permit Issuance

The Facility was originally permitted to produce 120 million gallons per year of denatured ethanol product. This permit action allows the Facility to increase production to 140 million gallons of undenatured ethanol with no physical modifications. This permit action also changes the permit from a State Permit to Part 70 permit due to greenhouse gas (GHG) emissions. The MPCA has a combined operating and construction permitting program under Minnesota Rules Chapter 7007, and under Minn. R. 7007.0800, the MPCA has authority to include additional requirements in a permit. Under that authority, this permit action includes a reopening to incorporate a test frequency plan approved June 21, 2011.

1.4 Facility Emissions

Table 2. Total Facility Potential to Emit Summary

	PM tpy	**PM_{10}** tpy	**$PM_{2.5}$** tpy	**SO_2** tpy	**NO_X** tpy	**CO** tpy	**CO_2e** tpy	**VOC** tpy	**Single HAP** tpy	**All HAP** tpy
PTE Increase from the Modification	7.9	5.5	3.6	0	100.9	25.2	NR	8.6	0.2	3.1
Total Facility Limited PTE	102.9	76.3	70.0	88.7	195.8	116.4	227,027	103.5	9.0	20.4
Total Facility Actual Emissions (2009)	14.34	12.43	*	13.68	14.57	13.27	*	12.92	*	

NR – Not reported

*Not reported in MN emission inventory.

Table 3. Facility Classification

Classification	**Major/Affected Source**	**Synthetic Minor/Area**	**Minor/Area**
Prevention of Significant Deterioration (PSD)		PM, PM_{10}, $PM_{2.5}$, SO_2, NO_X, CO, VOC	
Part 70 Permit Program	CO_2e, PM, NO_X, CO, VOC	PM_{10}, $PM_{2.5}$, SO_2	
Part 63 NESHAP		HAP	

1.5 Changes to Permit

In addition to the changes described in Section 1.3 of this document, the following types of changes have been made:

Facility Description

- Created GP 006 to include permit conditions for EU 005 and EU 006, the thermal oxidizers as emission units
- Added SV 011 for Grain Silo #3 (EU 093) because EU 093 is not vented to SV 001 as it appeared in previous permits. SV 011 is a collection of vents in the silo that are vented to the atmosphere. This source will be modeled as a volume source but is not, for the purposes of air permitting, a fugitive source.
- Emissions previously at FS 001, uncaptured grain handling from EU 008, 009, 014, and 015, have been moved to SV 012. Although there is no physical stack or vent for this emission source, and it will be modeled as a volume source; it is not, for the purposes of air permitting, a fugitive source.
- Emissions previously at FS 002, uncaptured DDGS handling from EU 089, 091, and 092, have been moved to SV 013. Emissions from the DDGS storage pile have been moved from FS 002 to EU 094 and SV 014. Although there is no physical stack or vent for these emission sources, and

they will be modeled as a volume source; they are not, for the purposes of air permitting, fugitive sources.

- Removed CE 012 and CE 013 because road cleaning and leak detection and repair (LDAR) are not pollution control equipment.
- Grouped fabric filters (CE 002, CE 003, CE 007, and CE 009) into GP 003. Common requirements were moved to GP 003 and specific control efficiencies remain at the CE level.
- Grouped direct flame afterburners, or thermal oxidizers, (CE 010 and CE 011) into GP 005. All requirements are at the GP level; the control efficiencies are the same for each thermal oxidizer.
- Added FS 006 for temporary wetcake storage.
- Removed the methanators (EU 064-067) from GP 004 because they are not dryers and are not subject to the direct heating rule.

Permit Conditions

- Removed requirements to model for $PM_{2.5}$ based on a memo from Jeff Smith published May 26, 2011 (Attachment 4)
- Updated permit conditions at FS 004 from NSPS Subpart VV to Subpart VVa
- Added fuel restriction to the thermal oxidizers at GP 006 and to the dryers at GP 004
- Added a requirement for the dryers at GP 004 to vent to a thermal oxidizer (CE 010 or CE 011)
- Moved the wetcake storage limit from the dryers at GP 004 to FS 006
- Removed steam-assisted requirements from the flares (CE 005 and CE 006 in GP 002) because the flares are not steam-assisted
- Added requirements for NSPS Subpart IIII and NESHAP Subpart ZZZZZ to EU 076
- Added a requirement to EU 070 to vent to flare
- Updated or added control efficiencies for the control equipment
- Updated to reflect current MPCA templates and standard citation formatting
- Completed requirements and the requirements for equipment that has been removed have been deleted
- Some requirements have been reordered to help with clarity (i.e., similar requirements are grouped)

2. Regulatory and/or Statutory Basis

New Source Review

Guardian Energy, LLC has accepted limits on emissions so that this facility will not be a major source as defined in the federal New Source Review regulations.

Part 70 Permit Program

This facility has the potential to emit more than 100,000 tpy of non-biogenic carbon dioxide equivalent (CO_2e) and is therefore a major source under Title V and the Part 70 permit program. CO_2e expresses the amount of global warming potential the various greenhouse gases (GHG) have as a functionally equivalent amount of CO_2. The Facility became a major source under the federal Title V operating permit

regulation on July 1, 2011 (subject to action by Congress or US EPA which may change the federal regulations for GHG). Prior to July 1, 2011, the limits the Facility had accepted on production and emissions kept the potential-to-emit to less than the major source level for Part 70. The Facility as a whole is subject to Part 70; so the throughput limit is being increased with this permit action but operational restrictions remain in place to limit emissions.

New Source Performance Standards (NSPS)

Six product storage tanks (TK 001 to TK 006) are subject to Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Tanks. The requirements for these tanks are listed at GP 001.

Two thermal oxidizers with heat recovery steam generators, each with a rated heat input of 122 MMBtu/hr of natural gas (EU 005 and EU 006) are subject to Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.

One engine (EU 076) is subject to Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

The Facility was previously subject to Subpart VV but is now subject to Subpart VVa. EPA promulgated modifications to Subpart VV on November 16, 2007 and promulgated Subpart VVa - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006. Requirements for this subpart are located at FS 004.

This facility is not subject to Subpart DD – Standards of Performance for Grain Handling Facilities. Applicability is based on a grain elevator's storage capacity, which must exceed 2.5 million bushels for any grain storage facility not for human consumption. The storage capacity of grain elevators at this facility is 2,016,000 bushels; therefore, Subpart DD does not apply.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The Facility has accepted limits on VOC. Because most hazardous air pollutants (HAP) emitted from ethanol production are VOC, the limits on VOC effectively limit HAP. Test data from ethanol plants demonstrates that compliance with VOC emissions limits also limit HAP emissions, as demonstrated by the emissions calculations. Thus, no major source NESHAPs apply.

The Facility is required to conduct regular VOC performance tests. The VOC performance test method used by ethanol facilities, the Midwest Scaling Protocol, has speciated HAP results. The emission factors used to calculate HAP emissions are confirmed with performance test results.

Other measures taken into account include the liquid storage tanks with floating roofs and the Leak Detection and Repair (LDAR) program for piping leaks.

The engine (EU 076) is subject to area source NESHAP Subpart ZZZZ for Stationary Reciprocating Internal Combustion Engines.

The Facility is not subject to Subpart VVVVVV for Chemical Manufacturing Area. The Facility provided a letter dated January 18, 2011 (Attachment 5) with a summary of their applicability analysis.

Compliance Assurance Monitoring (CAM)

The Facility is a major source under 40 CFR Part 70, therefore, CAM applies. Because this is a first time Part 70 permit, only information about large pollutant specific emission unit (PSEU) sources is required to be submitted. For large pollutant specific emission units, records of the monitored parameter must be made at a minimum of 4 times per hour, or once every 15 minutes. For other PSEUs (not large), records must made at a minimum of once per 24 hours. The Facility has no large PSEUs as defined by 40 CFR Part 64. Information about other PSEUs at this facility is required to be submitted as part of the application for renewal of the Part 70 permit.

Table 4. CAM Summary

Emission Unit	Stack/Vent	Control	Applicability	Pollutant	Monitoring
EU 008-011, 014-018, 079-082	SV 002	CE 002 (fabric filter)	Other	PM/PM_{10}	Will be addressed at reissuance.
EU 012, 013, 019-023	SV 003	CE 003 (fabric filter)	Other	PM/PM_{10}	Will be addressed at reissuance.
EU 024-031	SV 004	CE 004 (adsorption column)	Other	VOC	Will be addressed at reissuance.
EU 070, 071	SV 005	CE 005 (flare)	Other	VOC	Will be addressed at reissuance.
EU 068	SV 006	CE 006 (flare)	Other	VOC	Will be addressed at reissuance.
EU 069	SV 007	CE 007 (fabric filter)	Other	PM/PM_{10}	Will be addressed at reissuance.
EU 075	SV 008	CE 008 (mist eliminator)	Other	PM/PM_{10}	Will be addressed at reissuance.
EU 072-074, 083-092	SV 009	CE 009 (fabric filter)	Other	PM/PM_{10}	Will be addressed at reissuance.
EU 001, 002, 007, 032-036, 039, 043-067, 077, 078	SV 001	CE 010 (thermal oxidizer)	Other	VOC, CO	Will be addressed at reissuance.
EU 003, 004, 007, 032-036, 038, 039, 042-067, 077, 078	SV 001	CE 011 (thermal oxidizer)	Other	VOC, CO	Will be addressed at reissuance.

Minnesota State Rules

Portions of the Facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0150 Standards of Performance for Preventing Particulate Matter from Becoming Airborne
- Minn. R. 7011.1005 Standards of Performance for Bulk Agricultural Handling Facilities
- Minn. R. 7011.0610 Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
- Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment

Table 5. Regulatory Overview of Facility

Level*	Applicable Regulations	Comments:
FC	Title I limits to avoid major source classification for 40 CFR §52.21 and to avoid major source classification for 40 CFR §63.2	Production limit of 140,000,000 gallons/yr of ethanol production. The production limit restricts allowable emissions to below major source thresholds and limits HAP emissions to avoid major source classification under NESHAPs.
	Minn. R. 7011.0150	MN Standards of Performance for Preventing Particulate Emissions from Becoming Airborne.
	Minn. R. 7011.1005	MN Standards of Performance for Bulk Agricultural Handling Facilities
GP 001 (tanks)	40 CFR pt. 60, subp. Kb - Standards of Performance for Petroleum Storage Vessels	Determination of applicable limits from rule: Tanks constructed after 7/23/1984 and greater than 151 m^3 (39,900 gallons)
GP 002 (flares)	Title I limits to avoid major source classification for 40 CFR §52.21 and to avoid major source classification for 40 CFR §63.2	Requirements to operate and maintain flare at all times emissions are vented to them and to achieve an overall control efficiency greater than 98% for VOC.
GP 003 (fabric filters)	Title I limits to avoid major source classification for 40 CFR §52.21	Requirements to operate and maintain fabric filters with specified pressure drop and without visible emissions. (specific requirements for fabric filters located at CE)
GP 004 (dryers)	Title I limits to avoid major source classification for 40 CFR §52.21	Requirement to vent all emissions to thermal oxidizer.
	Minn. R. 7011.0610 (Fossil-Fuel-Burning Direct Heating Equipment)	Applies to direct heating equipment for which a standard of performance has not been promulgated in a specific rule
	Minn. R. 7011.0715 (Industrial Process Equipment)	Applies to industrial process equipment for which a standard of performance has not been promulgated in a specific rule.
GP 005 (TO as CE)	Title I limits to avoid major source classification for 40 CFR §52.21 and to avoid major source classification for 40 CFR §63.2	Requirements to operate and maintain thermal oxidizers at all times emissions are vented to them at temperature ≥ 1400 F and to achieve an overall control efficiency ≥ 99% for VOC and 95% for CO.
GP 006 (TO as EU)	Minn. R. 7005.0100, subp 35a	Definition of potential to emit limits allowable fuel types.
	NSPS Subpart Db	Applicability based on: natural gas units with heat recovery steam generators, with heat input of 122 MMBtu/hr.
GP 007 (grain handling)	Minn. R. 7011.1005 (Bulk Agricultural Handling Facilities)	Requirements for truck unloading and commodities spilled on the Facility property.

Level*	Applicable Regulations	Comments:
SV 001	Title I limits to avoid major source classification for 40 CFR §52.21 and to avoid major source classification for 40 CFR §63.2	Limits on PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, and CO and requirement to vent all emissions to thermal oxidizers.
SV 002, SV 003, SV 007, SV 009	Title I limits to avoid major source classification for 40 CFR §52.21	Limits on PM, PM_{10}, $PM_{2.5}$.
SV 004	Title I limits to avoid major source classification for 40 CFR §52.21 and to avoid major source classification for 40 CFR §63.2	Limit on VOC.
EU 070	Minn. R. ch. 7009 *This is a state-only requirement and is not enforceable by the U.S. EPA Administrator and citizens under the Clean Air Act.*	Limits volume of ethanol transported by truck.
EU 076	Title I limits to avoid major source classification for 40 CFR §52.21 Minn. R. 7011.2300 40 CFR pt. 60, subp. IIII 40 CFR pt. 63, subp. ZZZZ	Limits on fuel and operating hours Applicability: this is an internal combustion engine; limits on opacity and SO_2. Applicability: this is a 300hp CI manufactured as a certified NFPA fire pump engine after July 1, 2006. Satisfied by complying with 40 CFR pt. 60, subp. IIII
CE 002, CE 009	Title I limits to avoid major source classification for 40 CFR §52.21 Minn 7007.0800, subp. 4, 5, and 14	Control efficiencies for PM, PM_{10}, $PM_{2.5}$. Annual hood evaluation to measure chosen air flow indication parameter.
CE 003, CE 007	Title I limits to avoid major source classification for 40 CFR §52.21	Control efficiencies for PM, PM_{10}, $PM_{2.5}$.
CE 004	Title I limits to avoid major source classification for 40 CFR §52.21 and to avoid major source classification for 40 CFR §63.2	Control efficiency to for VOC also limits HAP. Water flow rate to ensure control efficiency.
FS 004	NSPS Subpart VVa	Applicability: this facility produces ethanol (a synthetic organic chemical) and was constructed November 7, 2006
FS 009	Minn. R. ch. 7009 *This is a state-only requirement and is not enforceable by the U.S. EPA Administrator and citizens under the Clean Air Act.*	Haul roads requirements.

*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

3. Technical Information

3.1 Calculations of Potential to Emit and Emissions Increase Analysis

Attachment 1 to this TSD contains Form GI-07, which summarizes the PTE of the Facility, and Attachment 2 contains detailed spreadsheets and supporting information prepared by the MPCA and the Permittee.

Table 6. Total Facility Limited Potential Emissions Increase Summary

	PM tpy	**PM_{10}** tpy	**$PM_{2.5}$** tpy	**SO_2** tpy	**NO_X** tpy	**CO** tpy	**CO_2e** tpy	**VOC** tpy	**Single HAP** tpy	**All HAP** tpy
Pre-Modification	94.99	70.83	66.44	88.76	94.92	91.16	NR	94.91	8.83	17.34
Post-Modification	102.9	76.3	70.0	88.7	195.8	116.4	227,027	103.5	9.0	20.4
Mod. Change	7.9	5.5	3.6	0	100.9	25.2	NR	8.6	0.2	3.1

NR - Not reported

3.2 Dispersion Modeling

Per MPCA policy, as originally permitted, the Facility triggered the requirement to complete air dispersion modeling to show modeled compliance with the PM_{10} national ambient air quality standards (NAAQS). Several operating restrictions were assumed when the modeling was conducted, so these have been incorporated as permit limits in the draft/proposed Part 70 permit. In addition, per MPCA practice, a table of the modeled parameters has been added to the permit as in Appendix I. The purpose of listing the parameters in the permit appendix is to provide a benchmark for determining if and when additional modeling is required.

The Facility initially submitted modeling with the permit amendment application prior to determining that remodeling was not required. Based on the results from previous modeling, the Facility is not required to remodel solely to due an increase in emissions or a change in a modeled parameter; however, the Permittee shall still be required to remodel if the change triggers modeling under any other state or federal regulation.

3.3 Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the Facility to certify that the Facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considered the following:

- The likelihood of the Facility violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;

- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

Table 4 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 7. Periodic Monitoring

Level*	Requirement (basis)	Additional Monitoring	Discussion
FC	Production ≤ 140,000,000 gal/yr *(limit to avoid NSR and NESHAP)*	Daily record of production and monthly calculations of ethanol production.	Based on a flow meter of 200-proof ethanol transferred to the storage tanks.
GP001 (tanks)	Storage tanks with a fixed roof and an internal floating roof (*NSPS Subpart Kb*)	Annual inspections.	NSPS includes inspections, records, and notification provisions.
GP 002 (flares)	Control Efficiency: VOC ≥ 98% *(limit to avoid NSR and NESHAP)*	Monitor with thermocouple or equivalent.	
GP003 *(CE 002 CE 003 CE 007 CE 009)*	Control Efficiency for PM, PM, and $PM_{2.5}$ at CE level (*limit to avoid NSR*)	Performance testing at the SV level. Fabric Filter monitoring for visible emissions. Pressure drop monitoring. O & M and corrective actions.	Absence of visible emissions is an indicator of normal operation of the fabric filter and compliance with the efficiencies.
GP 004 (dryers)	PM ≤ 0.30 grains/dscf Opacity ≤ 20 % *(Minn. R. 7011.0610)*	This limit is met through compliance with the PM limit at SV 001	Applies to each of the emission units separately.
GP 005 (TO as CE)	Control Efficiency: VOC ≥ 98% CO ≥ 85% $PM/PM_{10}/PM_{2.5}$ ≥ 50% Temp ≥ 1522 F *(limit to avoid NSR and NESHAP)*	Performance testing at the SV level Continuous temperature records with daily verification.	
GP 006 (TO as EU)	SO_2 ≤ 0.20 lb/MMBtu NO_X ≤ 0.10 lb/MMBtu *(NSPS Subpart Db)*	Performance testing at the SV level.	
GP 007 (uncaptured grain handling)	Opacity ≤ 5 % *(Minn. R. 7011.1005)*	None.	

Level*	Requirement (basis)	Additional Monitoring	Discussion
SV 001	PM ≤ 7.40 lb/hr PM_{10} ≤ 7.40 lb/hr $PM_{2.5}$ ≤ 7.40 lb/hr SO_2 ≤ 20.25 lb/hr VOC ≤ 7.72 lb/hr CO ≤ 22.71 lb/hr *(limit to avoid NSR and NESHAP)* NO_X ≤ 0.10 lb/MMBtu *(repeated from GP 006)*	Performance test for PM, PM_{10}, $PM_{2.5}$, CO and VOC every 5 years.	
SV 002	PM ≤ 2.06 lb/hr PM_{10} ≤ 2.06 lb/hr $PM_{2.5}$ ≤ 2.06 lb/hr *(limit to avoid NSR)*	Performance test for PM, PM_{10}, $PM_{2.5}$ every 5 years.	See GP 003.
SV003	PM ≤ 1.20 lb/hr PM_{10} ≤ 1.20 lb/hr $PM_{2.5}$ ≤ 1.20 lb/hr *(limit to avoid NSR)*	Performance test for PM, PM_{10}, $PM_{2.5}$ every 5 years.	See GP 003.
SV 004	VOC ≤ 9.0 lb/hr *(limit to avoid NSR and NESHAP)*	Performance test VOC every 5 years.	
SV 007	PM ≤ 0.56 lb/hr PM_{10} ≤ 0.56 lb/hr $PM_{2.5}$ ≤ 0.56 lb/hr VOC ≤ 2.66 lb/hr *(limit to avoid NSR and NESHAP)*	Performance test for PM, PM_{10}, $PM_{2.5}$, and VOC every 5 years.	See GP 003.
SV009	PM ≤ 0.39 lb/hr PM_{10} ≤ 0.39 lb/hr $PM_{2.5}$ ≤ 0.39 lb/hr *(limit to avoid NSR)*	Performance test for PM, PM_{10}, $PM_{2.5}$ every 5 years.	See GP 003.
EU 070	Loadout to truck ≤ 42,000,000 gal/year *(limits from modeling)*	Daily records, monthly totals, and 12 month sum of loadout to trucks.	
EU 076	Opacity ≤ 20% SO_2 ≤ 0.5 lb/MMBtu *(Minn. R. 7011.2300)* Op. hours ≤ 100/yr *(limit to avoid NSR)* PM ≤ 0.40 g/hp-hr NMHC+NO_X ≤ 7.8 g/hp-hr CO ≤ 2.6 g/hp-hr (*NSPS Subpart IIII and NESHAP Subpart ZZZZ*)	Records of fuel type used. Hour meter.	Ensures the restriction on fuel use (diesel fuel oil), which guarantees meeting this limit, and fuel supplier certification is required.

Level*	Requirement (basis)	Additional Monitoring	Discussion
CE 002	Control Efficiency: PM ≥ 96.6% PM_{10} ≥ 94.1% $PM_{2.5}$ ≥ 79.6% *(limit to avoid NSR)*	See GP 003	
CE 003	Control Efficiency: PM ≥ 99.4% PM_{10} ≥ 98.8% $PM_{2.5}$ ≥ 98.8% *(limit to avoid NSR)*	See GP 003	
CE 004	Control Efficiency: VOC ≥ 95% *(limit to avoid NSR and NESHAP)*	Records of any startup, shutdown or malfunction.	
CE 007	Control Efficiency: PM ≥ 99.3% PM_{10} ≥ 98.6% $PM_{2.5}$ ≥ 98.6% *(limit to avoid NSR)*	See GP 003	
CE 009	Control Efficiency: PM ≥ 98.8% PM_{10} ≥ 97.6% $PM_{2.5}$ ≥ 86.1% *(limit to avoid NSR)*	See GP 003	
FS 004	*(NSPS Subpart VVa)*	None	Periodic monitoring to ensure minimization of VOC emissions from leaks.

*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

3.4 Insignificant Activities

Guardian Energy has several operations which are classified as insignificant activities under the MPCA's permitting rules. These are listed in Appendix III to the permit. The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per EPA guidance. The insignificant activities at this Facility are only subject to general applicable requirements. Using the criteria outlined earlier in this TSD, the table in the appendix has justification why no additional periodic monitoring is necessary for the current insignificant activities.

3.5 Permit Organization

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements. One area where this permit deviates slightly from Delta guidance is in the use of appendices. While appendices are fully enforceable parts of the permit, in general, any requirement that the MPCA thinks should be electronically tracked (e.g., limits, submittals, etc.), should be in Table A or B of the permit. The main reason is that the appendices are word processing sections and are not part of the electronic

tracking system. Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents. Staff must generate these

3.6 Comments Received

This section will be completed after the review periods.

Public Notice Period: <month> <day>, 2013 - <month> <day>, 2013

EPA 45-day Review Period: <month> <day>, 2013 - <month> <day>, 2013

4. Permit Fee Assessment

The fees for a first time Individual Part 70 permit were received with the permit application. This permit incorporates a throughput increase which is considered part of the first time Part 70 permit. The Facility will be charged additional fees for limits to avoid PSD and NESHAPs (see Attachment 6). This permit also includes a reopening which does not incur any fees.

5. Conclusion

Based on the information provided by Guardian Energy LLC, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 16100035-004 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Adriane Lenshek (permit writer/engineer)
Jennifer Carlson (enforcement)
Jim Kolar (stack testing)
Jim Robin (peer reviewer)

AQ File No. 4281; DQ 4098, DQ 3556

Attachments:
1. GI-07
2. PTE Summary and Emissions Increase Calculation Spreadsheets
3. Facility Description and CD-01 Forms
4. Air Dispersion Modeling Policy Memo
5. NESHAP Subpart VVVVVV for Chemical Manufacturing Area Applicability
6. Points Calculator

Attachment 1 – Form GI-07

GUARDIAN ENERGY, LLC

				Potential To Emit													
				PM			PM_{10}			$PM_{2.5}$			SO_2			NOx	
				unrestricted	limited		unrestricted	limited		unrestricted	limited		unrestricted	limited		unrestricted	limited
SV No.	CE No.	EU No.	Description	lb/hr	tpy	tpy	lb/hr	tpy	tpy	lb/hr	tpy	tpy	lb/hr	tpy	tpy	lb/hr	tpy	tpy
SV001	CE010/011	-	Distillation/DDGS/TOs	7.40	64.82	32.41	7.40	64.82	32.41	7.40	64.82	32.41	20.25	88.70	88.70	42.40	185.71	185.71
SV002	CE002	-	Unloading Baghouse	2.06	289.58	9.01	2.06	151.97	9.01	2.06	44.24	9.01	---	---	---	---	---	---
SV003	CE003	-	Milling Baghouse	1.20	921.05	5.26	1.20	451.39	5.26	1.20	443.73	5.26	---	---	---	---	---	---
SV004	CE004	-	Fermentation System	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SV005	CE005	071	Loadout Flare	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	1.20	1.20
SV006	CE006	068	Biomethanator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	8.41	8.41
SV007	CE007	069	Cooling Drum	0.67	431.05	2.93	0.67	215.53	2.93	0.67	215.53	2.93	---	---	---	---	---	---
SV008	CE008	075	Cooling Towers	3.87	16.97	16.97	3.87	16.97	16.97	3.87	16.97	16.97	---	---	---	---	---	---
SV009	CE009	-	DDGS Storage & Loadout	0.39	139.33	1.71	0.39	72.20	1.71	0.39	12.31	1.71	---	---	---	---	---	---
SV010	NA	076	Fire Pump	0.66	2.89	0.03	0.66	2.89	0.03	0.66	2.89	0.03	0.63	2.76	0.03	9.30	40.73	0.47
SV011	-	-	Grain Silo #3 Vent Filters	4.21	18.42	18.42	1.06	4.64	4.64	0.19	0.81	0.81	---	---	---	---	---	---
SV012	-	-	Uncaptured Grain Receiving	1.18	5.16	5.16	0.26	1.15	1.15	0.04	0.19	0.19	---	---	---	---	---	---
SV013	-	-	Uncaptured DDGS	0.04	0.16	0.16	0.01	0.04	0.04	0.01	0.04	0.04	---	---	---	---	---	---
SV014	-	094	DDGS Storage										---	---	---	---	---	---
NA	NA	TK001	190 Proof Tank	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NA	NA	TK002	200 Proof Tank	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NA	NA	TK003	Corrosion Inhibitor Tank	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NA	NA	TK004	Denat. Ethanol TK No. 1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NA	NA	TK005	Denat. Ethanol TK No. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NA	NA	TK006	Denaturant Tank	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NA	CE012	FS004	Fugitive Equipment Leaks	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NA	NA	FS006	Wetcake Storage	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NA	CE013	FS009	Paved Roads	2.29	10.02	10.02	0.46	2.00	2.00	0.11	0.49	0.49	---	---	---	---	---	---
					PM			PM_{10}			$PM_{2.5}$			SO_2			NOx	
TOTAL				lb/hr	tpy	tpy	lb/hr	tpy	tpy	lb/hr	tpy	tpy	lb/hr	tpy	tpy	lb/hr	tpy	tpy
				24.0	**1,899.4**	**102.1**	**18.0**	**983.6**	**76.2**	**16.6**	**802.0**	**69.9**	**20.9**	**91.5**	**88.7**	**55.6**	**236.1**	**195.8**

GUARDIAN ENERGY, LLC

				Potential To Emit										Potential To Emit			
				VOC			CO			Ind HAP (acetaldehyde)			Total HAPs		GHG	
				unrestricted	limited		unrestricted	limited		unrestricted	limited		unrestricted	limited	unrestricted	limited
SV No.	CE No.	EU No.	Description	lb/hr	tpy	tpy	lb/hr	tpy	tpy	lb/hr	tpy	tpy	lb/hr	tpy	tpy	Tons CO_2e	Tons CO_2e
SV001	CE010/011	-	Distillation/DDGS/TOs	7.72	1690.23	33.80	22.71	663.16	99.47	0.72	31.39	3.14	2.44	77.07	10.68	217,291	217,291
SV002	CE002	-	Unloading Baghouse	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SV003	CE003	-	Milling Baghouse	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SV004	CE004	-	Fermentation System	11.52	1009.42	50.47	---	---	---	0.93	40.60	4.06	1.32	52.32	5.79	---	---
SV005	CE005	071	Loadout Flare	13.80	515.61	3.02	4.71	2.81	2.81	---	---	---	---	---	---	6,355	6,355
SV006	CE006	068	Biomethanator	0.03	0.15	0.15	3.20	14.02	14.02	---	---	---	---	---	---	3,363	3,363
SV007	CE007	069	Cooling Drum	2.66	11.64	11.64	---	---	---	0.40	1.77	1.77	0.77	3.38	3.38	---	---
SV008	CE008	075	Cooling Towers	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SV009	CE009	-	DDGS Storage & Loadout	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SV010	NA	076	Fire Pump	0.75	3.29	0.04	2.01	8.80	0.10	0.0002	0.0008	0.0000	0.0083	0.0362	0.0004	1,562	18
SV011	-	-	Grain Silo #3 Vent Filters	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SV012	-	-	Uncaptured Grain Receiving	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SV013	-	-	Uncaptured DDGS	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SV014	-	094	DDGS Storage	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NA	NA	TK001	190 Proof Tank	0.13	0.57	0.57	---	---	---	0.0000	0.0001	0.0001	0.0001	0.0002	0.0002	---	---
NA	NA	TK002	200 Proof Tank	0.13	0.57	0.57	---	---	---	0.0000	0.0001	0.0001	0.0001	0.0002	0.0002	---	---
NA	NA	TK003	Corrosion Inhibitor Tank	0.003	0.01	0.01	---	---	---	---	---	---	0.0000	0.0000	0.0000	---	---
NA	NA	TK004	Denat. Ethanol TK No. 1	0.07	0.31	0.31	---	---	---	0.0000	0.0001	0.0001	0.0043	0.0187	0.0187	---	---
NA	NA	TK005	Denat. Ethanol TK No. 2	0.07	0.31	0.31	---	---	---	0.0000	0.0001	0.0001	0.0043	0.0187	0.0187	---	---
NA	NA	TK006	Denaturant Tank	0.16	0.71	0.71	---	---	---	---	---	---	0.0096	0.0422	0.0422	---	---
NA	CE012	FS004	Fugitive Equipment Leaks	0.30	1.30	1.30	---	---	---	0.0001	0.0003	0.0003	0.0175	0.0768	0.0768	---	---
NA	NA	FS006	Wetcake Storage	1.42	6.23	6.23	---	---	---	0.0095	0.0416	0.0416	0.0797	0.3490	0.3490	---	---
NA	CE013	FS009	Paved Roads	---	---	---	---	---	---	---	---	---	---	---	---	---	---
				VOC			CO			Ind HAP			HAPs		GHG	
TOTAL				lb/hr	tpy	tpy	lb/hr	tpy	tpy	lb/hr	tpy	tpy	lb/hr	tpy	tpy	Tons CO_2e	Tons CO_2e
				37.3	**3,234.1**	**102.9**	**32.6**	**688.8**	**116.4**	**2.1**	**73.8**	**9.0**	**4.7**	**133.3**	**20.4**	**228,571**	**227,027**

GUARDIAN ENERGY, LLC

			SV001			SV004			SV005	
			unrestricted	limited		unrestricted	limited		unrestricted	limited
Pollutant	CAS#	lb/hr	TPY	TPY	lb/hr	TPY	TPY	lb/hr	TPY	TPY
Formaldehyde	50000	5.615E-01	2.460E+01	2.460E+00	4.709E-02	2.062E+00	2.062E-01	1.021E-06	4.473E-06	4.473E-06
Methanol	67561	3.240E-01	1.419E+01	1.419E+00	9.135E-02	8.003E+00	4.001E-01			
Acetaldehyde	75070	7.166E-01	3.139E+01	3.139E+00	9.269E-01	4.060E+01	4.060E+00			
Acrolein	107028	8.216E-02	3.599E+00	3.599E-01	2.557E-01	1.660E+00	1.120E+00			
1,3-Butadiene	106990									
2-Methylnapthalene	94576	9.976E-06	4.370E-05	4.370E-05				2.918E-07	1.278E-06	1.278E-06
3-Methylchloranthrene	56495	7.482E-07	3.277E-06	3.277E-06				2.188E-08	9.584E-08	9.584E-08
7, 12-Dimethylbenz(a)anthracene	57976	6.651E-06	2.913E-05	2.913E-05				1.945E-07	8.520E-07	8.520E-07
Acenapthene	83329	7.482E-07	3.277E-06	3.277E-06				2.188E-08	9.584E-08	9.584E-08
Acenapthylene	203968	7.482E-07	3.277E-06	3.277E-06				2.188E-08	9.584E-08	9.584E-08
Anthracene	120127	9.976E-07	4.370E-06	4.370E-06				2.918E-08	1.278E-07	1.278E-07
Arsenic	7440382	8.314E-05	3.641E-04	3.641E-04				2.431E-06	1.065E-05	1.065E-05
Benz(a)anthracene	56553	7.482E-07	3.277E-06	3.277E-06				2.188E-08	9.584E-08	9.584E-08
Benzene	71432	8.729E-04	3.823E-03	3.823E-03				2.553E-05	1.118E-04	1.118E-04
Benzo(a)pyrene	50328	4.988E-07	2.185E-06	2.185E-06				1.459E-08	6.390E-08	6.390E-08
Benzo(b)fluoranthene	205992	7.482E-07	3.277E-06	3.277E-06				2.188E-08	9.584E-08	9.584E-08
Benzo(g,h,i)perylene	191242	4.988E-07	2.185E-06	2.185E-06				1.459E-08	6.390E-08	6.390E-08
Benzo(k)fluoranthene	205823	7.482E-07	3.277E-06	3.277E-06				2.188E-08	9.584E-08	9.584E-08
Beryllium	7440417	4.988E-06	2.185E-05	2.185E-05				1.459E-07	6.390E-07	6.390E-07
Cadmium	7440439	4.573E-04	2.003E-03	2.003E-03				1.337E-05	5.857E-05	5.857E-05
Chromium	7440473	5.820E-04	2.549E-03	2.549E-03				1.702E-05	7.455E-05	7.455E-05
Chrysene	218019	7.482E-07	3.277E-06	3.277E-06				2.188E-08	9.584E-08	9.584E-08
Cobalt	7440484	3.492E-05	1.529E-04	1.529E-04				1.021E-06	4.473E-06	4.473E-06
Dibenzo(a,h)anthracene	53703	4.988E-07	2.185E-06	2.185E-06				1.459E-08	6.390E-08	6.390E-08
Dichlorobenzene	25321226	4.988E-04	2.185E-03	2.185E-03				1.459E-05	6.390E-05	6.390E-05
Fluoranthene	206440	1.247E-06	5.462E-06	5.462E-06				3.647E-08	1.597E-07	1.597E-07
Fluorene	86737	1.164E-06	5.098E-06	5.098E-06				3.404E-08	1.491E-07	1.491E-07
Hexane	110543	7.482E-01	3.277E+00	3.277E+00				2.188E-02	9.584E-02	9.584E-02
Indeno(1,2,3-cd)pyrene	193395	7.482E-07	3.277E-06	3.277E-06				2.188E-08	9.584E-08	9.584E-08
Manganese	7439965	1.580E-04	6.919E-04	6.919E-04				4.620E-06	2.023E-05	2.023E-05
Mercury	7439976	1.081E-04	4.734E-04	4.734E-04				3.161E-06	1.384E-05	1.384E-05
Napthalene	91203	2.536E-04	1.111E-03	1.111E-03				7.416E-06	3.248E-05	3.248E-05
Nickel	7440020	8.729E-04	3.823E-03	3.823E-03				2.553E-05	1.118E-04	1.118E-04
Phenanathrene	85018	7.067E-06	3.095E-05	3.095E-05				2.067E-07	9.052E-07	9.052E-07
Pyrene	129000	2.078E-06	9.104E-06	9.104E-06				6.078E-08	2.662E-07	2.662E-07
Selenium	7782492	9.976E-06	4.370E-05	4.370E-05				2.918E-07	1.278E-06	1.278E-06
Toluene	108883	1.413E-03	6.190E-03	6.190E-03				4.133E-05	1.810E-04	1.810E-04
Xylene	1330207									

GUARDIAN ENERGY, LLC

			SV006			SV010			Facility	
			unrestricted	limited		unrestricted	limited		unrestricted	limited
Pollutant	CAS#	lb/hr	TPY	TPY	lb/hr	TPY	TPY	lb/hr	TPY	TPY
Formaldehyde	50000	4.706E-04	2.061E-03	2.061E-03	2.572E-03	1.127E-02	1.286E-04	6.117E-01	2.667E+01	2.668E+00
Methanol	67561							4.154E-01	2.219E+01	1.819E+00
Acetaldehyde	75070				1.672E-03	7.324E-03	8.360E-05	1.645E+00	7.199E+01	7.199E+00
Acrolein	107028				2.017E-04	8.832E-04	1.008E-05	3.381E-01	5.259E+00	1.480E+00
1,3-Butadiene	106990				8.524E-05	3.733E-04	4.262E-06	8.524E-05	3.733E-04	4.262E-06
2-Methylnapthalene	94576	1.506E-07	6.596E-07	6.596E-07				1.042E-05	4.563E-05	4.563E-05
3-Methylchloranthrene	56495	1.129E-08	4.947E-08	4.947E-08				7.814E-07	3.423E-06	3.423E-06
7, 12-Dimethylbenz(a)anthracene	57976	1.004E-07	4.397E-07	4.397E-07				6.946E-06	3.042E-05	3.042E-05
Acenapthene	83329	1.129E-08	4.947E-08	4.947E-08				7.814E-07	3.423E-06	3.423E-06
Acenapthylene	203968	1.129E-08	4.947E-08	4.947E-08				7.814E-07	3.423E-06	3.423E-06
Anthracene	120127	1.506E-08	6.596E-08	6.596E-08				1.042E-06	4.563E-06	4.563E-06
Arsenic	7440382	1.255E-06	5.496E-06	5.496E-06				8.682E-05	3.803E-04	3.803E-04
Benz(a)anthracene	56553	1.129E-08	4.947E-08	4.947E-08				7.814E-07	3.423E-06	3.423E-06
Benzene	71432	1.318E-05	5.771E-05	5.771E-05	2.034E-03	8.909E-03	1.017E-04	2.946E-03	1.290E-02	4.095E-03
Benzo(a)pyrene	50328	7.529E-09	3.298E-08	3.298E-08				5.209E-07	2.282E-06	2.282E-06
Benzo(b)fluoranthene	205992	1.129E-08	4.947E-08	4.947E-08				7.814E-07	3.423E-06	3.423E-06
Benzo(g,h,i)perylene	191242	7.529E-09	3.298E-08	3.298E-08				5.209E-07	2.282E-06	2.282E-06
Benzo(k)fluoranthene	205823	1.129E-08	4.947E-08	4.947E-08				7.814E-07	3.423E-06	3.423E-06
Beryllium	7440417	7.529E-08	3.298E-07	3.298E-07				5.209E-06	2.282E-05	2.282E-05
Cadmium	7440439	6.902E-06	3.023E-05	3.023E-05				4.775E-04	2.092E-03	2.092E-03
Chromium	7440473	8.784E-06	3.848E-05	3.848E-05				6.078E-04	2.662E-03	2.662E-03
Chrysene	218019	1.129E-08	4.947E-08	4.947E-08				7.814E-07	3.423E-06	3.423E-06
Cobalt	7440484	5.271E-07	2.309E-06	2.309E-06				3.647E-05	1.597E-04	1.597E-04
Dibenzo(a,h)anthracene	53703	7.529E-09	3.298E-08	3.298E-08				5.209E-07	2.282E-06	2.282E-06
Dichlorobenzene	25321226	7.529E-06	3.298E-05	3.298E-05				5.209E-04	2.282E-03	2.282E-03
Fluoranthene	206440	1.882E-08	8.245E-08	8.245E-08				1.302E-06	5.704E-06	5.704E-06
Fluorene	86737	1.757E-08	7.695E-08	7.695E-08				1.216E-06	5.324E-06	5.324E-06
Hexane	110543	1.129E-02	4.947E-02	4.947E-02				7.814E-01	3.423E+00	3.423E+00
Indeno(1,2,3-cd)pyrene	193395	1.129E-08	4.947E-08	4.947E-08				7.814E-07	3.423E-06	3.423E-06
Manganese	7439965	2.384E-06	1.044E-05	1.044E-05				1.650E-04	7.225E-04	7.225E-04
Mercury	7439976	1.631E-06	7.145E-06	7.145E-06				1.129E-04	4.944E-04	4.944E-04
Napthalene	91203	3.827E-06	1.676E-05	1.676E-05	1.849E-04	8.097E-04	9.243E-06	4.497E-04	1.970E-03	1.169E-03
Nickel	7440020	1.318E-05	5.771E-05	5.771E-05				9.116E-04	3.993E-03	3.993E-03
Phenanathrene	85018	1.067E-07	4.672E-07	4.672E-07				7.380E-06	3.232E-05	3.232E-05
Pyrene	129000	3.137E-08	1.374E-07	1.374E-07				2.171E-06	9.507E-06	9.507E-06
Selenium	7782492	1.506E-07	6.596E-07	6.596E-07				1.042E-05	4.563E-05	4.563E-05
Toluene	108883	2.133E-05	9.344E-05	9.344E-05	8.916E-04	3.905E-03	4.458E-05	2.368E-03	1.037E-02	6.509E-03
Xylene	1330207				6.213E-04	2.721E-03	3.107E-05	6.213E-04	2.721E-03	3.107E-05

Attachment 2 – PTE Summary and Emissions Increase Calculation Spreadsheets

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: Potential-to-emit (by item)

Show: Active and Pending Records
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

Item	Pollutant	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
EU 075							
	PM < 2.5 micron	PER 002		3.13E+00	1.37E+01	1.37E+01	
	PM < 2.5 micron	PER 004					
	PM < 10 micron	PER 001		3.23E+00	1.37E+01	1.37E+01	1.32E+01
	PM < 10 micron	PER 004					
	Total Particulate Matter	PER 001		3.23E+00	1.37E+01	1.37E+01	1.33E+01
	Total Particulate Matter	PER 004					
EU 076							
	Carbon Monoxide	PER 001		1.00E-02	5.00E-02	3.00E-02	9.00E-03
	Carbon Monoxide	PER 004					
	Nitrogen Oxides	PER 001		2.00E-01	8.60E-01	5.20E-01	1.80E-01
	Nitrogen Oxides	PER 004					
	PM < 2.5 micron	PER 002		6.00E-02	2.60E-01	1.00E-02	
	PM < 2.5 micron	PER 004					
	PM < 10 micron	PER 002		5.00E-03	2.00E-02	1.00E-02	
	PM < 10 micron	PER 004					
	Total Particulate Matter	PER 001		5.00E-03	2.00E-02	1.00E-02	1.00E-02
	Total Particulate Matter	PER 004					
	Sulfur Dioxide	PER 002		2.40E-02	1.00E-01	6.00E-02	
	Sulfur Dioxide	PER 004					
	Volatile Organic Compounds	PER 001		5.00E-03	2.00E-02	1.00E-02	5.00E-03
	Volatile Organic Compounds	PER 004					
FS 001							
	PM < 2.5 micron	PER 002		1.70E-02	8.00E-02	8.00E-02	
	PM < 2.5 micron	PER 004					
	PM < 10 micron	PER 002		5.73E+00	2.51E+01	4.26E-01	4.00E-01
	PM < 10 micron	PER 004					
	Total Particulate Matter	PER 002		1.32E+01	5.76E+01	1.64E+00	3.20E+00
	Total Particulate Matter	PER 004					
FS 002							
	PM < 2.5 micron	PER 002		4.00E-03	1.60E-02	1.60E-02	
	PM < 2.5 micron	PER 004					
	PM < 10 micron	PER 002		4.00E-02	1.60E-01	1.60E-02	1.00E-02
	PM < 10 micron	PER 004					
	Total Particulate Matter	PER 002		1.50E-01	6.40E-01	6.60E-02	3.10E-02
	Total Particulate Matter	PER 004					
FS 003							
	PM < 10 micron	PER 002		8.20E-01	3.60E+00		
	PM < 10 micron	PER 004					
	Total Particulate Matter	PER 002		1.64E+00	7.20E+00		
	Total Particulate Matter	PER 004					
FS 004							
	Acetaldehyde	PER 002		3.13E-01	2.74E+00	1.37E+00	
	Acetaldehyde	PER 004		1.00E-04	3.00E-04	3.00E-04	
	Acrolein	PER 002		9.10E-03	8.00E-02	4.00E-02	
	Formaldehyde	PER 002		3.40E-04	3.00E-03	1.50E-03	

FACILITY DESCRIPTION: Potential-to-emit (by item)

Show: Active and Pending Records
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

Item	Pollutant	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
FS 004							
	Methanol	PER 002		3.03E-02	2.65E-01	1.33E-01	
	HAPs - Total	PER 002		3.53E-01	3.09E+00	1.54E+00	
	HAPs - Total	PER 004		1.75E-02	7.68E-02	7.68E-02	
	Volatile Organic Compounds	PER 002		1.17E+01	5.11E+01	8.85E+00	7.68E+00
	Volatile Organic Compounds	PER 004		3.00E-01	1.30E+00	1.30E+00	
FS 006							
	Acetaldehyde	PER 004		9.50E-03	4.16E-02	4.16E-02	
	HAPs - Total	PER 004		7.97E-02	3.49E-01	3.49E-01	
	Volatile Organic Compounds	PER 002		1.50E-01	6.50E-01		
	Volatile Organic Compounds	PER 004		1.42E+00	6.23E+00	6.23E+00	
FS 007							
	Benzene	PER 002		1.01E-02	4.40E-02	4.40E-02	
	Benzene	PER 004					
	Cumene	PER 002		4.10E-03	1.80E-02	1.80E-02	
	Cumene	PER 004					
	Ethylbenzene	PER 002		8.30E-03	3.60E-02	3.60E-02	
	Ethylbenzene	PER 004					
	HAPs - Total	PER 002		1.66E-01	7.25E-01	7.28E-01	
	HAPs - Total	PER 004					
	Toluene	PER 002		6.20E-02	2.70E-01	2.70E-01	
	Toluene	PER 004					
	Xylenes (mixed isomers)	PER 002		5.00E-02	2.20E-01	2.20E-01	
	Xylenes (mixed isomers)	PER 004					
	Methyl tert butyl ether	PER 002		3.10E-02	1.40E-01	1.40E-01	
	Methyl tert butyl ether	PER 004					
	Volatile Organic Compounds	PER 002		4.10E-01	1.81E+00	1.81E+00	
	Volatile Organic Compounds	PER 004					
FS 008							
	Hexane	PER 002		7.40E-04	3.24E-03	3.24E-03	
	Hexane	PER 004					
	HAPs - Total	PER 002		7.40E-04	3.24E-03	3.24E-03	
	HAPs - Total	PER 004					
	Volatile Organic Compounds	PER 002		8.00E-02	3.60E-01	3.60E-01	
	Volatile Organic Compounds	PER 004					
FS 009							
	PM < 2.5 micron	PER 002		1.88E-01	1.17E+00	8.20E-01	
	PM < 2.5 micron	PER 004		1.10E-01	4.90E-01	4.90E-01	
	PM < 10 micron	PER 002		1.79E+00	7.83E+00	5.48E+00	6.73E+00
	PM < 10 micron	PER 004		4.60E-01	2.00E+00	2.00E+00	
	Total Particulate Matter	PER 002		9.16E+00	4.01E+01	2.81E+01	3.45E+01
	Total Particulate Matter	PER 004		2.29E+00	1.00E+01	1.00E+01	
GP 001							
	HAPs - Total	PER 002					
SV 001							
	Acetaldehyde	PER 002		5.00E-01	2.19E+01	2.19E+00	

FACILITY DESCRIPTION: Potential-to-emit (by item)

Show: Active and Pending Records
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Facility Name: Guardian Energy LLC

Item	Pollutant	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
SV 001							
	Acetaldehyde	PER 004		7.20E-01	3.14E+01	3.14E+00	
	Acrolein	PER 002		7.00E-02	3.20E+00	3.20E-01	
	Acrolein	PER 004		8.00E-02	3.60E+00	3.60E-01	
	Benzene	PER 002		8.73E-04	3.82E-03	3.82E-03	
	Arsenic compounds	PER 004		8.31E-05	3.64E-04	3.64E-04	
	Beryllium Compounds	PER 004		4.99E-06	2.18E-05	2.18E-05	
	Cadmium compounds	PER 002		4.57E-04	2.00E-03	2.00E-03	
	Carbon Monoxide	PER 001		1.96E+01	1.95E+03	8.31E+01	7.92E+01
	Carbon Monoxide	PER 004		2.27E+01	6.63E+02	9.95E+01	
	Cobalt compounds	PER 004		3.49E-05	1.53E-04	1.53E-04	
	Chromium compounds	PER 002		5.82E-04	2.55E-03	2.55E-03	
	Chromium compounds	PER 004		5.82E-04	2.55E-03	2.55E-03	
	1,4-Dichlorobenzene	PER 002		4.99E-04	2.18E-03	2.18E-03	
	Formaldehyde	PER 002		5.00E-01	2.19E+01	2.19E+00	
	Formaldehyde	PER 004		5.60E-01	2.46E+01	2.46E+00	
	Hexane	PER 002		7.50E-01	3.28E+00	3.28E+00	
	Hexane	PER 004		7.48E-01	3.28E+00	3.28E+00	
	Methanol	PER 002		2.90E-01	1.27E+01	1.27E+00	
	Methanol	PER 004		3.20E-01	1.42E+01	1.42E+00	
	Naphthalene	PER 004		2.54E-04	1.11E-03	1.11E-03	
	HAPs - Total	PER 002		2.12E+00	7.98E+00	9.27E+00	
	HAPs - Total	PER 004		2.44E+00	7.71E+01	1.07E+01	
	Mercury Compounds	PER 004		1.08E-04	4.73E-04	4.73E-04	
	Toluene	PER 002		1.41E-03	6.18E-03	6.18E-03	
	Toluene	PER 004		1.41E-03	6.19E-03	6.19E-03	
	7,12-Dimethylbenz(a)anthracene	PER 004		6.65E-06	2.91E-05	2.91E-05	
	3-Methylchloranthrene	PER 004		7.48E-07	3.28E-06	3.28E-06	
	2-Methylnaphthalene	PER 004		9.98E-06	4.37E-05	4.37E-05	
	Manganese compounds	PER 004		1.58E-04	6.92E-04	6.92E-04	
	Acenaphthene	PER 004		7.48E-07	3.28E-06	3.28E-06	
	Acenaphthylene	PER 004		7.48E-07	3.28E-06	3.28E-06	
	Anthracene	PER 004		9.98E-07	4.37E-06	4.37E-06	
	Benz(a)anthracene	PER 004		7.48E-07	3.28E-06	3.28E-06	
	Benzo(a)pyrene	PER 004		4.99E-07	2.18E-06	2.18E-06	
	Benzo(b)fluoranthene	PER 004		7.48E-07	3.28E-06	3.28E-06	
	Benzo(ghi)perylene	PER 004		4.99E-07	2.18E-06	2.18E-06	
	Benzo(k)fluoranthene	PER 004		7.48E-07	3.28E-06	3.28E-06	
	Chrysene	PER 004		7.48E-07	3.28E-06	3.28E-06	
	Dibenz(a,h)anthracene	PER 004		4.99E-07	2.18E-06	2.18E-06	
	Fluoranthene	PER 004		1.25E-06	5.46E-06	5.46E-06	
	Fluorene	PER 004		1.16E-06	5.10E-06	5.10E-06	
	Indeno(1,2,3-cd)pyrene	PER 004		7.48E-07	3.28E-06	3.28E-06	
	Phenanthrene	PER 004		7.07E-06	3.10E-05	3.10E-05	
	Pyrene	PER 004		2.08E-06	9.10E-06	9.10E-06	
	Nickel compounds	PER 002		1.00E-03	4.00E-03	4.00E-03	
	Nickel compounds	PER 004		8.73E-04	3.82E-03	3.82E-03	

FACILITY DESCRIPTION: Potential-to-emit (by item)

Show: Active and Pending Records
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

Item	Pollutant	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
SV 001							
	Nitrogen Oxides	PER 001		2.19E+01	9.29E+01	9.29E+01	9.03E+01
	Nitrogen Oxides	PER 004		4.24E+01	1.86E+02	1.86E+02	
	PM < 2.5 micron	PER 002		7.40E+00	3.24E+02	3.24E+01	
	PM < 2.5 micron	PER 004		7.40E+00	6.48E+01	3.24E+01	
	PM < 10 micron	PER 002		7.40E+00	3.24E+02	3.24E+01	1.85E+01
	PM < 10 micron	PER 004		7.40E+00	6.48E+01	3.24E+01	
	Total Particulate Matter	PER 002		7.40E+00	3.24E+02	3.24E+01	1.85E+01
	Total Particulate Matter	PER 004		7.40E+00	6.48E+01	3.24E+01	
	Selenium compounds	PER 004		9.98E-06	4.37E-05	4.37E-05	
	Sulfur Dioxide	PER 002		2.09E+01	8.87E+01	8.87E+01	8.45E+01
	Sulfur Dioxide	PER 004		2.03E+01	8.87E+01	8.87E+01	
	Volatile Organic Compounds	PER 002		6.45E+00	5.65E+02	2.83E+01	1.85E+01
	Volatile Organic Compounds	PER 004		7.72E+00	1.69E+03	3.38E+01	
SV 002							
	PM < 2.5 micron	PER 002		2.06E+00	9.02E+02	9.02E+00	
	PM < 2.5 micron	PER 004		2.06E+00	4.42E+01	9.01E+00	
	PM < 10 micron	PER 002		2.13E+00	9.01E+02	9.02E+00	5.26E+00
	PM < 10 micron	PER 004		2.06E+00	1.52E+02	9.01E+00	
	Total Particulate Matter	PER 002		2.13E+00	9.01E+02	9.02E+00	5.26E+00
	Total Particulate Matter	PER 004		2.06E+00	2.90E+02	9.01E+00	
SV 003							
	PM < 2.5 micron	PER 002		1.24E+00	5.26E+02	5.26E+00	
	PM < 2.5 micron	PER 004		1.20E+00	4.44E+02	5.26E+00	
	PM < 10 micron	PER 001		1.24E+00	5.26E+02	5.26E+00	5.11E+00
	PM < 10 micron	PER 004		1.20E+00	4.51E+02	5.26E+00	
	Total Particulate Matter	PER 001		1.24E+00	5.26E+02	5.26E+00	5.11E+00
	Total Particulate Matter	PER 004		1.20E+00	9.21E+02	5.26E+00	
SV 004							
	Acetaldehyde	PER 002		1.13E+00	4.96E+01	4.96E+00	
	Acetaldehyde	PER 004		9.30E-01	4.06E+01	4.06E+00	
	Acrolein	PER 002		1.20E-02	5.30E-01	5.30E-02	
	Acrolein	PER 004		2.60E-01	1.66E+00	1.12E+00	
	Formaldehyde	PER 002		1.20E-02	5.30E-01	5.30E-02	
	Formaldehyde	PER 004		5.00E-02	2.06E+00	2.10E-01	
	Methanol	PER 002		1.20E-02	5.30E-01	5.30E-02	
	Methanol	PER 004		9.00E-02	8.00E+00	4.00E-01	
	HAPs - Total	PER 002		1.17E+00	6.94E+00	5.12E+00	
	HAPs - Total	PER 004		1.32E+00	5.23E+01	5.79E+00	
	PM < 2.5 micron	PER 002		7.80E-02	3.30E+00	3.40E-01	
	PM < 2.5 micron	PER 004					
	PM < 10 micron	PER 002		7.80E-02	3.30E+00	3.40E-01	3.30E-01
	PM < 10 micron	PER 004					
	Total Particulate Matter	PER 002		1.49E-01	6.30E+00	6.50E-01	6.30E-01
	Total Particulate Matter	PER 004					
	Volatile Organic Compounds	PER 002		9.63E+00	8.44E+02	4.22E+01	4.00E+01
	Volatile Organic Compounds	PER 004		1.15E+01	1.01E+03	5.05E+01	

FACILITY DESCRIPTION: Potential-to-emit (by item)

Show: Active and Pending Records
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

Item	Pollutant	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
SV 005							
	Benzene	PER 004		2.55E-05	1.12E-04	1.12E-04	
	Arsenic compounds	PER 004		2.43E-06	1.06E-05	1.06E-05	
	Beryllium	PER 004		1.46E-07	6.39E-07	6.39E-07	
	Cadmium compounds	PER 004		1.34E-05	5.86E-05	5.86E-05	
	Carbon Monoxide	PER 001		4.60E+00	1.95E+01	7.38E+00	7.38E+00
	Carbon Monoxide	PER 004		4.71E+00	2.81E+00	2.81E+00	
	Cobalt compounds	PER 004		1.02E-06	4.47E-06	4.47E-06	
	Chromium compounds	PER 004		1.70E-05	7.45E-05	7.45E-05	
	1,4-Dichlorobenzene	PER 004		1.46E-05	6.39E-05	6.39E-05	
	Formaldehyde	PER 004		1.02E-06	4.47E-06	4.47E-06	
	Hexane	PER 004		2.19E-02	9.58E-02	9.58E-02	
	Naphthalene	PER 004		7.46E-06	3.25E-05	3.25E-05	
	HAPs - Total	PER 002					
	Mercury Compounds	PER 004		3.16E-06	1.38E-05	1.38E-05	
	Toluene	PER 004		4.13E-05	1.81E-04	1.81E-04	
	7,12-Dimethylbenz(a)anthracene	PER 004		1.95E-07	8.52E-07	8.52E-07	
	3-Methylchloranthrene	PER 004		2.19E-08	9.58E-08	9.58E-08	
	2-Methylnaphthalene	PER 004		2.92E-07	1.28E-06	1.28E-06	
	Manganese compounds	PER 004		4.62E-06	2.02E-05	2.02E-05	
	Acenaphthene	PER 004		2.19E-08	9.58E-08	9.58E-08	
	Acenaphthylene	PER 004		2.19E-08	9.58E-08	9.58E-08	
	Anthracene	PER 004		2.92E-08	1.28E-07	1.28E-07	
	Benz(a)anthracene	PER 004		2.19E-08	9.58E-08	9.58E-08	
	Benzo(a)pyrene	PER 004		1.46E-08	6.39E-08	6.39E-08	
	Benzo(b)fluoranthene	PER 004		2.19E-08	9.58E-08	9.58E-08	
	Benzo(ghi)perylene	PER 004		1.46E-08	6.39E-08	6.39E-08	
	Benzo(k)fluoranthene	PER 004		2.19E-08	9.58E-08	9.58E-08	
	Chrysene	PER 004		2.19E-08	9.58E-08	9.58E-08	
	Dibenz(a,h)anthracene	PER 004		1.46E-08	6.39E-08	6.39E-08	
	Fluoranthene	PER 004		3.65E-08	1.60E-07	1.60E-07	
	Fluorene	PER 004		3.40E-08	1.49E-07	1.49E-07	
	Indeno(1,2,3-cd)pyrene	PER 004		2.19E-08	9.58E-08	9.58E-08	
	Phenanthrene	PER 004		2.07E-07	9.05E-07	9.05E-07	
	Pyrene	PER 004		6.08E-08	2.66E-07	2.66E-07	
	Nickel compounds	PER 004		2.55E-05	1.12E-04	1.12E-04	
	Nitrogen Oxides	PER 001		8.60E-01	2.08E+00	1.39E+00	1.39E+00
	Nitrogen Oxides	PER 004		2.01E+00	1.20E+00	1.20E+00	
	PM < 2.5 micron	PER 002		9.00E-02	4.10E-01	4.10E-01	
	PM < 2.5 micron	PER 004					
	Selenium compounds	PER 004		2.92E-07	1.28E-06	1.28E-06	
	Volatile Organic Compounds	PER 002		6.40E-01	1.55E+02	1.03E+00	1.00E+00
	Volatile Organic Compounds	PER 004		1.38E+01	5.16E+02	3.02E+00	
SV 006							
	Benzene	PER 004		1.32E-05	5.77E-05	5.77E-05	
	Arsenic compounds	PER 004		1.25E-06	5.50E-06	5.50E-06	
	Beryllium	PER 004		7.53E-08	3.30E-07	3.30E-07	

FACILITY DESCRIPTION: Potential-to-emit (by item)

Show: Active and Pending Records
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

Item	Pollutant	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
SV 006							
	Cadmium compounds	PER 004		6.90E-06	3.02E-05	3.02E-05	
	Carbon Monoxide	PER 001		1.23E+00	5.22E+00	6.30E-01	6.30E-01
	Carbon Monoxide	PER 004		3.20E+00	1.40E+01	1.40E+01	
	Cobalt compounds	PER 004		5.27E-07	2.31E-06	2.31E-06	
	Chromium compounds	PER 004		8.78E-06	3.85E-05	3.85E-05	
	1,4-Dichlorobenzene	PER 004		7.53E-06	3.30E-05	3.30E-05	
	Formaldehyde	PER 004		4.71E-04	2.06E-03	2.06E-03	
	Hexane	PER 002		1.13E-02	4.90E-02	2.82E-03	
	Hexane	PER 004		1.13E-02	4.95E-02	4.95E-02	
	Naphthalene	PER 004		3.83E-06	1.68E-05	1.68E-05	
	HAPs - Total	PER 002		1.13E-02	4.90E-02	2.83E-03	
	HAPs - Total	PER 004					
	Mercury Compounds	PER 004		1.63E-06	7.15E-06	7.15E-06	
	Toluene	PER 004		2.13E-05	9.34E-05	9.34E-05	
	7,12-Dimethylbenz(a)anthracene	PER 004		1.00E-07	4.40E-07	4.40E-07	
	3-Methylchloranthrene	PER 004		1.13E-08	4.95E-08	4.95E-08	
	2-Methylnaphthalene	PER 004		1.51E-07	6.60E-07	6.60E-07	
	Manganese compounds	PER 004		2.38E-06	1.04E-05	1.04E-05	
	Acenaphthene	PER 004		1.13E-08	4.95E-08	4.95E-08	
	Acenaphthylene	PER 004		1.13E-08	4.95E-08	4.95E-08	
	Anthracene	PER 004		1.51E-08	6.60E-08	6.60E-08	
	Benz(a)anthracene	PER 004		1.13E-08	4.95E-08	4.95E-08	
	Benzo(a)pyrene	PER 004		7.50E-09	3.30E-08	3.30E-08	
	Benzo(b)fluoranthene	PER 004		1.13E-08	4.95E-08	4.95E-08	
	Benzo(ghi)perylene	PER 004		7.50E-09	3.30E-08	3.30E-08	
	Benzo(k)fluoranthene	PER 004		1.13E-08	4.95E-08	4.95E-08	
	Chrysene	PER 004		1.13E-08	4.95E-08	4.95E-08	
	Dibenz(a,h)anthracene	PER 004		7.50E-09	3.30E-08	3.30E-08	
	Fluoranthene	PER 004		1.88E-08	8.24E-08	8.24E-08	
	Fluorene	PER 004		1.76E-08	7.70E-08	7.70E-08	
	Indeno(1,2,3-cd)pyrene	PER 004		1.13E-08	4.95E-08	4.95E-08	
	Phenanthrene	PER 004		1.07E-07	4.67E-07	4.67E-07	
	Pyrene	PER 004		3.14E-08	1.37E-07	1.37E-07	
	Nickel compounds	PER 004		1.32E-05	5.77E-05	5.77E-05	
	Nitrogen Oxides	PER 001		2.40E-01	1.00E+00	1.50E-01	1.80E-01
	Nitrogen Oxides	PER 004		1.92E+00	8.41E+00	8.41E+00	
	PM < 2.5 micron	PER 002		4.80E-02	2.10E-01	2.10E-01	
	PM < 2.5 micron	PER 004					
	PM < 10 micron	PER 002		5.00E-03	2.00E-02	2.00E-02	1.00E-02
	PM < 10 micron	PER 004					
	Total Particulate Matter	PER 002		5.00E-03	2.00E-02	1.30E-02	1.00E-02
	Total Particulate Matter	PER 004					
	Selenium compounds	PER 004		1.51E-07	6.60E-07	6.60E-07	
	Volatile Organic Compounds	PER 002		1.70E-01	7.30E+00	8.24E-02	8.00E-02
	Volatile Organic Compounds	PER 004		3.00E-02	1.50E-01	1.50E-01	

FACILITY DESCRIPTION: Potential-to-emit (by item)

Show: Active and Pending Records
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

Item	Pollutant	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
SV 007							
	Acetaldehyde	PER 002		7.10E-02	3.10E-01	3.10E-01	
	Acetaldehyde	PER 004		4.00E-01	1.77E+00	1.77E+00	
	Acrolein	PER 002		3.20E-02	1.40E-01	1.40E-01	
	Formaldehyde	PER 002		1.60E-02	7.00E-02	7.00E-02	
	Methanol	PER 002		1.60E-02	7.00E-02	7.00E-02	
	HAPs - Total	PER 002		1.35E-01	3.10E-01	5.90E-01	
	HAPs - Total	PER 004		7.70E-01	3.38E+00	3.38E+00	
	PM < 2.5 micron	PER 002		5.76E-01	2.44E+02	2.44E+00	
	PM < 2.5 micron	PER 004		6.70E-01	2.16E+02	2.93E+00	
	PM < 10 micron	PER 001		5.76E-01	2.44E+02	2.44E+00	2.37E+00
	PM < 10 micron	PER 004		6.70E-01	2.16E+02	2.93E+00	
	Total Particulate Matter	PER 001		5.76E-01	2.44E+02	2.44E+00	2.37E+00
	Total Particulate Matter	PER 004		6.70E-01	4.31E+02	2.93E+00	
	Volatile Organic Compounds	PER 001		2.30E+00	9.73E+01	9.73E+00	6.27E+00
	Volatile Organic Compounds	PER 004		2.66E+00	1.16E+01	1.16E+01	
SV 008							
	PM < 2.5 micron	PER 004		3.87E+00	1.70E+01	1.70E+01	
	PM < 10 micron	PER 004		3.87E+00	1.70E+01	1.70E+01	
	Total Particulate Matter	PER 004		3.87E+00	1.70E+01	1.70E+01	
SV 009							
	PM < 2.5 micron	PER 002		4.00E-01	1.71E+02	1.71E+00	
	PM < 2.5 micron	PER 004		3.90E-01	1.23E+01	1.71E+00	
	PM < 10 micron	PER 001		4.00E-01	1.71E+02	1.71E+00	1.00E+00
	PM < 10 micron	PER 004		3.90E-01	7.22E+01	1.71E+00	
	Total Particulate Matter	PER 001		4.00E-01	1.71E+02	1.71E+00	1.00E+00
	Total Particulate Matter	PER 004		3.90E-01	1.39E+02	1.71E+00	
	Sulfur Dioxide	PER 004		6.30E-01	2.76E+00	3.00E-02	
SV 010							
	Acetaldehyde	PER 004		2.00E-04	8.00E-04		
	Acrolein	PER 004		2.02E-04	8.83E-04	1.01E-05	
	Benzene	PER 004		2.03E-03	8.91E-03	1.02E-04	
	1,3-Butadiene	PER 004		8.52E-05	3.73E-04	4.26E-06	
	Carbon Monoxide	PER 004		2.01E+00	8.80E+00	8.80E+00	
	Formaldehyde	PER 004		2.57E-03	1.13E-02	1.28E-04	
	Naphthalene	PER 004		1.85E-04	8.10E-04	9.24E-06	
	HAPs - Total	PER 004		8.30E-03	3.62E-02	4.00E-04	
	Toluene	PER 004		8.92E-04	3.91E-03	4.46E-05	
	Xylenes (mixed isomers)	PER 004		6.21E-04	2.72E-03	3.11E-05	
	Nitrogen Oxides	PER 004		9.30E+00	4.07E+01		
	PM < 2.5 micron	PER 004		6.60E-01	2.89E+00	3.00E-02	
	PM < 10 micron	PER 004		6.60E-01	2.89E+00	3.00E-02	
	Total Particulate Matter	PER 004		6.60E-01	2.89E+00	3.00E-02	
	Volatile Organic Compounds	PER 004		7.50E-01	3.29E+00	4.00E-02	
SV 011							
	PM < 2.5 micron	PER 004		1.90E-01	8.10E-01	8.10E-01	
	PM < 10 micron	PER 004		1.06E+00	4.64E+00	4.64E+00	

FACILITY DESCRIPTION: Potential-to-emit (by item)

Show: Active and Pending Records
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

Item	Pollutant	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
SV 011							
	Total Particulate Matter	PER 004		4.21E+00	1.84E+01	1.84E+01	
SV 012							
	PM < 2.5 micron	PER 004		4.00E-02	1.90E-01	1.90E-01	
	PM < 10 micron	PER 004		2.60E-01	1.15E+00	1.15E+00	
	Total Particulate Matter	PER 004		1.18E+00	5.16E+00	5.16E+00	
SV 013							
	PM < 2.5 micron	PER 004		1.00E-02	4.00E-02	4.00E-02	
	PM < 10 micron	PER 004		1.00E-02	4.00E-02	4.00E-02	
	Total Particulate Matter	PER 004		4.00E-02	1.60E-01	1.60E-01	
TK 001							
	Acetaldehyde	PER 004			1.00E-04	1.00E-04	
	HAPs - Total	PER 004		1.00E-04	2.00E-04	2.00E-04	
	Volatile Organic Compounds	PER 002		1.10E-01	4.60E-01	4.70E-01	4.00E-01
	Volatile Organic Compounds	PER 004		1.30E-01	5.70E-01	5.70E-01	
TK 002							
	Acetaldehyde	PER 004			1.00E-04	1.00E-04	
	HAPs - Total	PER 004		1.00E-04	2.00E-04	2.00E-04	
	Volatile Organic Compounds	PER 002		1.10E-01	4.60E-01	4.90E-01	4.90E-01
	Volatile Organic Compounds	PER 004		1.30E-01	5.70E-01	5.70E-01	
TK 003							
	Volatile Organic Compounds	PER 002		1.40E-03	6.00E-03	6.00E-03	5.00E-03
	Volatile Organic Compounds	PER 004		3.00E-03	1.00E-02	1.00E-02	
TK 004							
	Acetaldehyde	PER 004			1.00E-04	1.00E-04	
	HAPs - Total	PER 004		4.30E-03	1.87E-02	1.87E-02	
	Volatile Organic Compounds	PER 002		6.00E-02	2.60E-01	3.40E-01	3.40E-01
	Volatile Organic Compounds	PER 004		7.00E-02	3.10E-01	3.10E-01	
TK 005							
	Acetaldehyde	PER 004			1.00E-04	1.00E-04	
	HAPs - Total	PER 004		4.30E-03	1.87E-02	1.87E-02	
	Volatile Organic Compounds	PER 002		6.00E-02	2.60E-01	3.40E-01	3.40E-01
	Volatile Organic Compounds	PER 004		7.00E-02	3.10E-01	3.10E-01	
TK 006							
	Benzene	PER 002		5.43E-04	2.38E-03	2.38E-03	
	Hexane	PER 002		1.09E-02	4.77E-02	4.77E-02	
	HAPs - Total	PER 002		1.30E-02	5.50E-02	5.50E-02	
	HAPs - Total	PER 004		9.60E-03	4.22E-02	4.22E-02	
	Toluene	PER 002		1.09E-03	4.77E-03	4.77E-03	
	Xylenes (mixed isomers)	PER 002		1.09E-04	4.77E-04	4.77E-04	
	Volatile Organic Compounds	PER 002		2.40E-01	1.05E+00	9.50E-01	9.50E-01
	Volatile Organic Compounds	PER 004		1.60E-01	7.10E-01	7.10E-01	

GUARDIAN ENERGY, LLC
SV001 EMISSIONS (CE010/CE011) - DISTILLATION/DDGS/TO

Pollutant	Air Flow Rate (DSCFM)	Outlet Concentration (ppmv,d)	Emission Factor Citation	Potential to Emit lb/hr	Potential to Emit unrestricted* TPY	Potential to Emit limited TPY
$PM/PM_{10}/PM_{2.5}$	94,127	---	Permit Limit	7.40	64.82	32.41
VOC (as Carbon)	94,127	14.65	Compiled Stack Test Data	2.58	564.26	11.29
VOC (as VOC)	94,127	---	Permit Limit**	7.72	1690.23	33.80
NOx***	94,127	0.1	NSPS Limit	42.40	185.71	185.71
SO2****	94,127	---	Permit Limit	20.25	88.70	88.70
CO	94,127	---	Permit Limit**	22.71	663.16	99.47
Formaldehyde	94,127	1.16	Compiled Stack Test Data	0.56	24.60	2.46
Methanol	94,127	0.69	Compiled Stack Test Data	0.32	14.19	1.42
Acetaldehyde	94,127	1.11	Compiled Stack Test Data	0.72	31.39	3.14
Acrolein	94,127	0.1	Compiled Stack Test Data	0.08	3.60	0.36

Pollutant	Gas Usage (mmscf/hr)	Emission Factor (lb/mmscf)	Emission Factor Citation	Potential to Emit lb/hr	Potential to Emit unrestricted TPY	Potential to Emit limited TPY
2-Methylnapthalene	0.4157	2.4E-05	AP-42 Section 1.4	1.0E-05	4.4E-05	4.4E-05
3-Methylchloranthrene	0.4157	1.8E-06	AP-42 Section 1.4	7.5E-07	3.3E-06	3.3E-06
7, 12-Dimethylbenz(a)anthracene	0.4157	1.6E-05	AP-42 Section 1.4	6.7E-06	2.9E-05	2.9E-05
Acenapthene	0.4157	1.8E-06	AP-42 Section 1.4	7.5E-07	3.3E-06	3.3E-06
Acenapthylene	0.4157	1.8E-06	AP-42 Section 1.4	7.5E-07	3.3E-06	3.3E-06
Anthracene	0.4157	2.4E-06	AP-42 Section 1.4	1.0E-06	4.4E-06	4.4E-06
Arsenic	0.4157	2.0E-04	AP-42 Section 1.4	8.3E-05	3.6E-04	3.6E-04
Benz(a)anthracene	0.4157	1.8E-06	AP-42 Section 1.4	7.5E-07	3.3E-06	3.3E-06
Benzene	0.4157	2.1E-03	AP-42 Section 1.4	8.7E-04	3.8E-03	3.8E-03
Benzo(a)pyrene	0.4157	1.2E-06	AP-42 Section 1.4	5.0E-07	2.2E-06	2.2E-06
Benzo(b)fluoranthene	0.4157	1.8E-06	AP-42 Section 1.4	7.5E-07	3.3E-06	3.3E-06
Benzo(g,h,i)perylene	0.4157	1.2E-06	AP-42 Section 1.4	5.0E-07	2.2E-06	2.2E-06
Benzo(k)fluoranthene	0.4157	1.8E-06	AP-42 Section 1.4	7.5E-07	3.3E-06	3.3E-06
Beryllium	0.4157	1.2E-05	AP-42 Section 1.4	5.0E-06	2.2E-05	2.2E-05
Cadmium	0.4157	1.1E-03	AP-42 Section 1.4	4.6E-04	2.0E-03	2.0E-03
Chromium	0.4157	1.4E-03	AP-42 Section 1.4	5.8E-04	2.5E-03	2.5E-03
Chrysene	0.4157	1.8E-06	AP-42 Section 1.4	7.5E-07	3.3E-06	3.3E-06
Cobalt	0.4157	8.4E-05	AP-42 Section 1.4	3.5E-05	1.5E-04	1.5E-04
Dibenzo(a,h)anthracene	0.4157	1.2E-06	AP-42 Section 1.4	5.0E-07	2.2E-06	2.2E-06
Dichlorobenzene	0.4157	1.2E-03	AP-42 Section 1.4	5.0E-04	2.2E-03	2.2E-03
Fluoranthene	0.4157	3.0E-06	AP-42 Section 1.4	1.2E-06	5.5E-06	5.5E-06
Fluorene	0.4157	2.8E-06	AP-42 Section 1.4	1.2E-06	5.1E-06	5.1E-06
Hexane	0.4157	1.8E+00	AP-42 Section 1.4	7.5E-01	3.3E+00	3.3E+00
Indeno(1,2,3-cd)pyrene	0.4157	1.8E-06	AP-42 Section 1.4	7.5E-07	3.3E-06	3.3E-06
Manganese	0.4157	3.8E-04	AP-42 Section 1.4	1.6E-04	6.9E-04	6.9E-04
Mercury	0.4157	2.6E-04	AP-42 Section 1.4	1.1E-04	4.7E-04	4.7E-04
Napthalene	0.4157	6.1E-04	AP-42 Section 1.4	2.5E-04	1.1E-03	1.1E-03
Nickel	0.4157	2.1E-03	AP-42 Section 1.4	8.7E-04	3.8E-03	3.8E-03
Phenanathrene	0.4157	1.7E-05	AP-42 Section 1.4	7.1E-06	3.1E-05	3.1E-05
Pyrene	0.4157	5.0E-06	AP-42 Section 1.4	2.1E-06	9.1E-06	9.1E-06
Selenium	0.4157	2.4E-05	AP-42 Section 1.4	1.0E-05	4.4E-05	4.4E-05
Toluene	0.4157	3.4E-03	AP-42 Section 1.4	1.4E-03	6.2E-03	6.2E-03

*Estimated 50% control for $PM/PM_{10}/PM_{2.5}$, 98% control for VOC, 85% control for CO and 90% control for HAPs

**Permit limit (15100026-003) scaled for increase in production capacity from 117 to 140 MMgal/yr

***NOx given in lb/MMBtu

****SO_2 given in lb/ton of DDGS

GUARDIAN ENERGY, LLC
SV002 (CE 002) - Unloading Baghouse

Description	Pollutant	Air Flow Rate (DSCFM)	Outlet Concentration (gr/dscf)	Emission Factor Citation	Potential to Emit lb/hr	Potential to Emit limited TPY
Unloading Baghouse	PM	48,000	0.005	Manufacturer	2.06	9.01
Unloading Baghouse	PM_{10}	48,000	0.005	Manufacturer	2.06	9.01
Unloading Baghouse	$PM_{2.5}$	48,000	0.005	Manufacturer	2.06	9.01

UNCONTROLLED EMISSIONS

Description	Pollutant	Annual Throughput (tons/yr)	Emission Factor (lbs/ton)	Emission Factor Citation	Capture Efficiency	Potential to Emit unrestricted TPY
Truck Receiving Dump Pit and Conveyor #1	PM	736,842	0.035	AP-42 Section 9.9	80%	10.3
Truck Receiving Dump Pit and Conveyor #2	PM	736,842	0.035	AP-42 Section 9.9	80%	10.3
Receiving Conveyor #1	PM	1,473,684	0.061	AP-42 Section 9.9	100%	44.9
Grain Elevator #1	PM	1,473,684	0.061	AP-42 Section 9.9	100%	44.9
Rail Receiving Dump Pit and Conveyor*	PM	0	0.032	AP-42 Section 9.9	80%	0.0
Receiving Transfer Conveyor #2*	PM	0	0.061	AP-42 Section 9.9	80%	0.0
Reclaim Conveyor #3	PM	491,228	0.061	AP-42 Section 9.9	100%	15.0
Reclaim Bucket Elevator #2	PM	1,473,684	0.061	AP-42 Section 9.9	100%	44.9
Scalping Bin	PM	1,473,684	0.06	AP-42 Section 9.9**	100%	44.2
Upper Receiving Conveyor #1	PM	736,842	0.061	AP-42 Section 9.9	100%	22.5
Upper Receiving Conveyor #2	PM	736,842	0.061	AP-42 Section 9.9	100%	22.5
Silo Reclaim Conveyor #1	PM	491,228	0.061	AP-42 Section 9.9	100%	15.0
Silo Reclaim Conveyor #2	PM	491,228	0.061	AP-42 Section 9.9	100%	15.0
				Total SV002 Uncontrolled PM		***289.6***
Truck Receiving Dump Pit and Conveyor #1	PM_{10}	736,842	0.0078	AP-42 Section 9.9	80%	2.3
Truck Receiving Dump Pit and Conveyor #2	PM_{10}	736,842	0.0078	AP-42 Section 9.9	80%	2.3
Receiving Conveyor #1	PM_{10}	1,473,684	0.034	AP-42 Section 9.9	100%	25.1
Grain Elevator #1	PM_{10}	1,473,684	0.034	AP-42 Section 9.9	100%	25.1
Rail Receiving Dump Pit and Conveyor*	PM_{10}	0	0.0078	AP-42 Section 9.9	80%	0.0
Receiving Transfer Conveyor #2*	PM_{10}	0	0.034	AP-42 Section 9.9	80%	0.0
Reclaim Conveyor #3	PM_{10}	491,228	0.034	AP-42 Section 9.9	100%	8.4
Reclaim Bucket Elevator #2	PM_{10}	1,473,684	0.034	AP-42 Section 9.9	100%	25.1
Scalping Bin	PM_{10}	1,473,684	0.03	AP-42 Section 9.9**	100%	22.1
Upper Receiving Conveyor #1	PM_{10}	736,842	0.034	AP-42 Section 9.9	100%	12.5
Upper Receiving Conveyor #2	PM_{10}	736,842	0.034	AP-42 Section 9.9	100%	12.5
Silo Reclaim Conveyor #1	PM_{10}	491,228	0.034	AP-42 Section 9.9	100%	8.4
Silo Reclaim Conveyor #2	PM_{10}	491,228	0.034	AP-42 Section 9.9	100%	8.4
				Total SV002 Uncontrolled PM_{10}		***152.0***
Truck Receiving Dump Pit and Conveyor #1	$PM_{2.5}$	736,842	0.0013	AP-42 Section 9.9	80%	0.4
Truck Receiving Dump Pit and Conveyor #2	$PM_{2.5}$	736,842	0.0013	AP-42 Section 9.9	80%	0.4
Receiving Conveyor #1	$PM_{2.5}$	1,473,684	0.0058	AP-42 Section 9.9	100%	4.3
Grain Elevator #1	$PM_{2.5}$	1,473,684	0.0058	AP-42 Section 9.9	100%	4.3
Rail Receiving Dump Pit and Conveyor*	$PM_{2.5}$	0	0.00013	AP-42 Section 9.9	80%	0.0
Receiving Transfer Conveyor #2*	$PM_{2.5}$	0	0.0058	AP-42 Section 9.9	80%	0.0
Reclaim Conveyor #3	$PM_{2.5}$	491,228	0.0058	AP-42 Section 9.9	100%	1.4
Reclaim Bucket Elevator #2	$PM_{2.5}$	1,473,684	0.0058	AP-42 Section 9.9	100%	4.3
Scalping Bin	$PM_{2.5}$	1,473,684	0.03	AP-42 Section 9.9**	100%	22.1
Upper Receiving Conveyor #1	$PM_{2.5}$	736,842	0.0058	AP-42 Section 9.9	100%	2.1
Upper Receiving Conveyor #2	$PM_{2.5}$	736,842	0.0058	AP-42 Section 9.9	100%	2.1
Silo Reclaim Conveyor #1	$PM_{2.5}$	491,228	0.0058	AP-42 Section 9.9	100%	1.4
Silo Reclaim Conveyor #2	$PM_{2.5}$	491,228	0.0058	AP-42 Section 9.9	100%	1.4
				Total SV002 Uncontrolled $PM_{2.5}$		***44.2***

*Assume 100% received by truck for highest unrestricted PTE calculation

**Cleaning house seperators emission factor back calculated assuming 80% control for a cyclone

GUARDIAN ENERGY, LLC
SV003 EMISSIONS

SV No.	CE No.	Description	Pollutant	Air Flow Rate (DSCFM)	Outlet Concentration (gr/dscf)	Emission Factor Citation	Potential to Emit lb/hr	Potential to Emit limited TPY
SV003	CE003	Milling Baghouse	PM	28,000	0.005	Manufacturer	1.20	5.26
SV003	CE003	Milling Baghouse	PM_{10}	28,000	0.005	Manufacturer	1.20	5.26
SV003	CE003	Milling Baghouse	$PM_{2.5}$	28,000	0.005	Manufacturer	1.20	5.26

UNCONTROLLED EMISSIONS

EU No.	CE No.	Description	Pollutant	Annual Throughput (tons/yr)	Emission Factor (lbs/ton)	Emission Factor Citation	Capture Efficiency	Potential to Emit unrestricted TPY
012	---	Grain Bin #1	PM	736,842	0.025	AP-42 Section 9.9	100%	9.2
013	---	Grain Bin #2	PM	736,842	0.025	AP-42 Section 9.9	100%	9.2
019	---	Hammermill Feed Surge Bin	PM	1,473,684	0.025	AP-42 Section 9.9	100%	18.4
020	---	Hammermill #1	PM	368,421	1.2	AP-42 Section 9.9*	100%	221.1
021	---	Hammermill #2	PM	368,421	1.2	AP-42 Section 9.9*	100%	221.1
022	---	Hammermill #3	PM	368,421	1.2	AP-42 Section 9.9*	100%	221.1
023	---	Hammermill #4	PM	368,421	1.2	AP-42 Section 9.9*	100%	221.1
						Total SV002 Uncontrolled PM		***921.1***
012	---	Grain Bin #1	PM_{10}	736,842	0.0063	AP-42 Section 9.9	100%	2.3
013	---	Grain Bin #2	PM_{10}	736,842	0.0063	AP-42 Section 9.9	100%	2.3
019	---	Hammermill Feed Surge Bin	PM_{10}	1,473,684	0.0063	AP-42 Section 9.9	100%	4.6
020	---	Hammermill #1	PM_{10}	368,421	0.6	AP-42 Section 9.9*	100%	110.5
021	---	Hammermill #2	PM_{10}	368,421	0.6	AP-42 Section 9.9*	100%	110.5
022	---	Hammermill #3	PM_{10}	368,421	0.6	AP-42 Section 9.9*	100%	110.5
023	---	Hammermill #4	PM_{10}	368,421	0.6	AP-42 Section 9.9*	100%	110.5
						Total SV002 Uncontrolled PM $_{10}$		***451.4***
012	---	Grain Bin #1	$PM_{2.5}$	736,842	0.0011	AP-42 Section 9.9	100%	0.4
013	---	Grain Bin #2	$PM_{2.5}$	736,842	0.0011	AP-42 Section 9.9	100%	0.4
019	---	Hammermill Feed Surge Bin	$PM_{2.5}$	1,473,684	0.0011	AP-42 Section 9.9	100%	0.8
020	---	Hammermill #1	$PM_{2.5}$	368,421	0.6	AP-42 Section 9.9*	100%	110.5
021	---	Hammermill #2	$PM_{2.5}$	368,421	0.6	AP-42 Section 9.9*	100%	110.5
022	---	Hammermill #3	$PM_{2.5}$	368,421	0.6	AP-42 Section 9.9*	100%	110.5
023	---	Hammermill #4	$PM_{2.5}$	368,421	0.6	AP-42 Section 9.9*	100%	110.5
						Total SV002 Uncontrolled PM $_{2.5}$		***443.7***

*Hammermill emission factor back calculated assuming 99% control for a baghouse

GUARDIAN ENERGY, LLC
SV004 EMISSIONS (CE004) - Fermentation System

Pollutant	Air Flow Rate (DSCFM)	Outlet Concentration (ppmv,d)	Emission Factor Citation	lb/hr	Potential to Emit unrestricted* TPY	limited TPY
VOC (as Carbon)	18,312	140.08	Compiled Stack Test Data	4.79	419.85	20.99
VOC (as VOC)	18,312	---	Permit Limit**	11.52	1,009.42	50.47
Formaldehyde	18,312	0.5	Stack Test Data	0.05	2.06	0.21
Methanol	18,312	1.0	Stack Test Data	0.09	8.00	0.40
Acetaldehyde	18,312	7.38	Compiled Stack Test Data	0.93	40.60	4.06
Acrolein	18,312	1.6	Stack Test Data	0.26	1.66	1.12

*Estimated 95% control for VOC and methanol; 90% control for formaldehyde and acetaldehyde; and 32.5% for acrole
**Permit limit (15100026-003) scaled for increase in production capacity from 117 to 140 MMgal/yr

GUARDIAN ENERGY, LLC
SV005 EMISSIONS (CE 005) - Loadout Flare

Pollutant	Throughput (1000 Gal/hr)	Emission Factor (lb/1000 Gal)	Emission Factor Citation	Potential to Emit unrestricted lb/hr	Potential to Emit unrestricted TPY	Potential to Emit limited TPY
VOC (truck)	96	0.14	AP-42 Section 5.2	13.80	515.61	3.02
VOC (rail)	120	0.01	AP-42 Section 5.2	0.98	29.36	0.59
NOx	120	0.017	Manufacturer	2.01	1.20	1.20
SO_2*	120	0	Manufacturer	0.00	0.00	0.00
CO	120	0.039	Manufacturer	4.71	2.81	2.81
$PM/PM_{10}/PM_{2.5}$*	120	0	Manufacturer	0.00	0.00	0.00

Pollutant	Flare Capacity (MMscf/hr)	Emission Factor (lb/MMscf)	Emission Factor Citation	Potential to Emit unrestricted lb/hr	Potential to Emit unrestricted TPY	Potential to Emit limited TPY
2-Methylnapthalene	0.0122	2.40E-05	AP-42 Section 1.4	2.9E-07	1.3E-06	1.3E-06
3-Methylchloranthrene	0.0122	1.80E-06	AP-42 Section 1.4	2.2E-08	9.6E-08	9.6E-08
7, 12-Dimethylbenz(a)anthracene	0.0122	1.60E-05	AP-42 Section 1.4	1.9E-07	8.5E-07	8.5E-07
Acenapthene	0.0122	1.80E-06	AP-42 Section 1.4	2.2E-08	9.6E-08	9.6E-08
Acenapthylene	0.0122	1.80E-06	AP-42 Section 1.4	2.2E-08	9.6E-08	9.6E-08
Anthracene	0.0122	2.40E-06	AP-42 Section 1.4	2.9E-08	1.3E-07	1.3E-07
Arsenic	0.0122	2.00E-04	AP-42 Section 1.4	2.4E-06	1.1E-05	1.1E-05
Benz(a)anthracene	0.0122	1.80E-06	AP-42 Section 1.4	2.2E-08	9.6E-08	9.6E-08
Benzene	0.0122	2.10E-03	AP-42 Section 1.4	2.6E-05	1.1E-04	1.1E-04
Benzo(a)pyrene	0.0122	1.20E-06	AP-42 Section 1.4	1.5E-08	6.4E-08	6.4E-08
Benzo(b)fluoranthene	0.0122	1.80E-06	AP-42 Section 1.4	2.2E-08	9.6E-08	9.6E-08
Benzo(g,h,i)perylene	0.0122	1.20E-06	AP-42 Section 1.4	1.5E-08	6.4E-08	6.4E-08
Benzo(k)fluoranthene	0.0122	1.80E-06	AP-42 Section 1.4	2.2E-08	9.6E-08	9.6E-08
Beryllium	0.0122	1.20E-05	AP-42 Section 1.4	1.5E-07	6.4E-07	6.4E-07
Cadmium	0.0122	1.10E-03	AP-42 Section 1.4	1.3E-05	5.9E-05	5.9E-05
Chromium	0.0122	1.40E-03	AP-42 Section 1.4	1.7E-05	7.5E-05	7.5E-05
Chrysene	0.0122	1.80E-06	AP-42 Section 1.4	2.2E-08	9.6E-08	9.6E-08
Cobalt	0.0122	8.40E-05	AP-42 Section 1.4	1.0E-06	4.5E-06	4.5E-06
Dibenzo(a,h)anthracene	0.0122	1.20E-06	AP-42 Section 1.4	1.5E-08	6.4E-08	6.4E-08
Dichlorobenzene	0.0122	1.20E-03	AP-42 Section 1.4	1.5E-05	6.4E-05	6.4E-05
Fluoranthene	0.0122	3.00E-06	AP-42 Section 1.4	3.6E-08	1.6E-07	1.6E-07
Fluorene	0.0122	2.80E-06	AP-42 Section 1.4	3.4E-08	1.5E-07	1.5E-07
Formaldehyde	0.0122	7.50E-02	AP-42 Section 1.4	9.1E-04	4.0E-03	4.0E-03
Hexane	0.0122	1.80E+00	AP-42 Section 1.4	2.2E-02	9.6E-02	9.6E-02
Indeno(1,2,3-cd)pyrene	0.0122	1.80E-06	AP-42 Section 1.4	2.2E-08	9.6E-08	9.6E-08
Manganese	0.0122	3.80E-04	AP-42 Section 1.4	4.6E-06	2.0E-05	2.0E-05
Mercury	0.0122	2.60E-04	AP-42 Section 1.4	3.2E-06	1.4E-05	1.4E-05
Napthalene	0.0122	6.10E-04	AP-42 Section 1.4	7.4E-06	3.2E-05	3.2E-05
Nickel	0.0122	2.10E-03	AP-42 Section 1.4	2.6E-05	1.1E-04	1.1E-04
Phenanathrene	0.0122	1.70E-05	AP-42 Section 1.4	2.1E-07	9.1E-07	9.1E-07
Pyrene	0.0122	5.00E-06	AP-42 Section 1.4	6.1E-08	2.7E-07	2.7E-07
Selenium	0.0122	2.40E-05	AP-42 Section 1.4	2.9E-07	1.3E-06	1.3E-06
Toluene	0.0122	3.40E-03	AP-42 Section 1.4	4.1E-05	1.8E-04	1.8E-04

*negligible emissions

Assumptions:

$L = 12.46 \cdot S \cdot P \cdot M \div T$

where:

L = Loading Loss, lb VOC/1000 gal of liquid loaded
S = Saturation Factor (AP-42 Table 5.2-1)
P = True Vapor Pressure of Liquid Loaded, psia
M = Molecular Weight of Vapors, lb/lb-mole
T = Temperature of Bulk Liquid Loaded, R

Truck

Saturation Factor:
1
Molecular Weight:
66
Product Temperature (R):
512.19
TVP (PSIA):
4.4758
Flare Control:
98%
Loading Rate (gpm):
1600
Limited Loading Rate (MMgpy):
42.0

Rail

Saturation Factor:
0.6
Molecular Weight:
46.07
Product Temperature (R):
512.19
TVP (PSIA):
0.6086
Flare Control:
98%
Loading Rate (gpm):
2000
Loading Rate (MMgpy):
143.5

GUARDIAN ENERGY, LLC
SV006 EMISSIONS (CE006) - Biomethanator

Pollutant	Capacity (MMBtu/hr)	Emission Factor (lb/MMBtu)	Emission Factor Citation	Potential to Emit lb/hr	unrestricted TPY	limited TPY
VOC	6.4	0.005	AP-42 Section 1.4	0.03	0.15	0.15
NOx	6.4	0.3	Manufacturer	1.92	8.41	8.41
SO_2*	6.4	0	Manufacturer	0.00	0.00	0.00
CO	6.4	0.5	Manufacturer	3.20	14.02	14.02
$PM/PM_{10}/PM_{2.5}$*	6.4	0	Manufacturer	0.00	0.00	0.00

Pollutant	Flare Capacity (MMscf/hr)	Emission Factor (lb/MMscf)	Emission Factor Citation	Potential to Emit lb/hr	unrestricted TPY	limited TPY
2-Methylnapthalene	0.0063	2.40E-05	AP-42 Section 1.4	1.5E-07	6.6E-07	6.6E-07
3-Methylchloranthrene	0.0063	1.80E-06	AP-42 Section 1.4	1.1E-08	4.9E-08	4.9E-08
7, 12-Dimethylbenz(a)anthracene	0.0063	1.60E-05	AP-42 Section 1.4	1.0E-07	4.4E-07	4.4E-07
Acenapthene	0.0063	1.80E-06	AP-42 Section 1.4	1.1E-08	4.9E-08	4.9E-08
Acenapthylene	0.0063	1.80E-06	AP-42 Section 1.4	1.1E-08	4.9E-08	4.9E-08
Anthracene	0.0063	2.40E-06	AP-42 Section 1.4	1.5E-08	6.6E-08	6.6E-08
Arsenic	0.0063	2.00E-04	AP-42 Section 1.4	1.3E-06	5.5E-06	5.5E-06
Benz(a)anthracene	0.0063	1.80E-06	AP-42 Section 1.4	1.1E-08	4.9E-08	4.9E-08
Benzene	0.0063	2.10E-03	AP-42 Section 1.4	1.3E-05	5.8E-05	5.8E-05
Benzo(a)pyrene	0.0063	1.20E-06	AP-42 Section 1.4	7.5E-09	3.3E-08	3.3E-08
Benzo(b)fluoranthene	0.0063	1.80E-06	AP-42 Section 1.4	1.1E-08	4.9E-08	4.9E-08
Benzo(g,h,i)perylene	0.0063	1.20E-06	AP-42 Section 1.4	7.5E-09	3.3E-08	3.3E-08
Benzo(k)fluoranthene	0.0063	1.80E-06	AP-42 Section 1.4	1.1E-08	4.9E-08	4.9E-08
Beryllium	0.0063	1.20E-05	AP-42 Section 1.4	7.5E-08	3.3E-07	3.3E-07
Cadmium	0.0063	1.10E-03	AP-42 Section 1.4	6.9E-06	3.0E-05	3.0E-05
Chromium	0.0063	1.40E-03	AP-42 Section 1.4	8.8E-06	3.8E-05	3.8E-05
Chrysene	0.0063	1.80E-06	AP-42 Section 1.4	1.1E-08	4.9E-08	4.9E-08
Cobalt	0.0063	8.40E-05	AP-42 Section 1.4	5.3E-07	2.3E-06	2.3E-06
Dibenzo(a,h)anthracene	0.0063	1.20E-06	AP-42 Section 1.4	7.5E-09	3.3E-08	3.3E-08
Dichlorobenzene	0.0063	1.20E-03	AP-42 Section 1.4	7.5E-06	3.3E-05	3.3E-05
Fluoranthene	0.0063	3.00E-06	AP-42 Section 1.4	1.9E-08	8.2E-08	8.2E-08
Fluorene	0.0063	2.80E-06	AP-42 Section 1.4	1.8E-08	7.7E-08	7.7E-08
Formaldehyde	0.0063	7.50E-02	AP-42 Section 1.4	4.7E-04	2.1E-03	2.1E-03
Hexane	0.0063	1.80E+00	AP-42 Section 1.4	1.1E-02	4.9E-02	4.9E-02
Indeno(1,2,3-cd)pyrene	0.0063	1.80E-06	AP-42 Section 1.4	1.1E-08	4.9E-08	4.9E-08
Manganese	0.0063	3.80E-04	AP-42 Section 1.4	2.4E-06	1.0E-05	1.0E-05
Mercury	0.0063	2.60E-04	AP-42 Section 1.4	1.6E-06	7.1E-06	7.1E-06
Napthalene	0.0063	6.10E-04	AP-42 Section 1.4	3.8E-06	1.7E-05	1.7E-05
Nickel	0.0063	2.10E-03	AP-42 Section 1.4	1.3E-05	5.8E-05	5.8E-05
Phenanathrene	0.0063	1.70E-05	AP-42 Section 1.4	1.1E-07	4.7E-07	4.7E-07
Pyrene	0.0063	5.00E-06	AP-42 Section 1.4	3.1E-08	1.4E-07	1.4E-07
Selenium	0.0063	2.40E-05	AP-42 Section 1.4	1.5E-07	6.6E-07	6.6E-07
Toluene	0.0063	3.40E-03	AP-42 Section 1.4	2.1E-05	9.3E-05	9.3E-05

*negligible emissions

GUARDIAN ENERGY, LLC
SV007 EMISSIONS (CE 007) - Cooling Drum

Pollutant	Production Rate (tons/hr)	Emission Factor (lb/ton)	Emission Factor Citation	lb/hr	Potential to Emit unlimited TPY	limited TPY
VOC (as Carbon)	55	0.12	Compiled Stack Test Data	6.31	27.66	27.66
VOC (as VOC)	55	---	Permit Limit*	2.66	11.64	11.64
Formaldehyde	55	0.0023	Compiled Stack Test Data	0.13	0.56	0.56
Methanol	55	0.0036	Compiled Stack Test Data	0.20	0.86	0.86
Acetaldehyde	55	0.0074	Compiled Stack Test Data	0.40	1.77	1.77
Acrolein	55	0.0008	Compiled Stack Test Data	0.04	0.20	0.20
$PM/PM_{10}/PM_{2.5}$	55	---	Permit Limit*	0.67	see below	2.93

*Permit limit (15100026-003) scaled for increase in production capacity from 117 to 140 MMgal/yr

UNCONTROLLED EMISSIONS

Pollutant	Annual Throughput (tons/yr)	Emission Factor (lbs/ton)	Emission Factor Citation	Capture Efficiency	Potential to Emit unlimited TPY
PM	478,947	1.80	AP-42 Section 9.9**	100%	431.1
			Total SV002 Uncontrolled PM		***431.1***
PM_{10}	478,947	0.90	AP-42 Section 9.9**	100%	215.5
			Total SV002 Uncontrolled PM_{10}		***215.5***
$PM_{2.5}$	478,947	0.90	AP-42 Section 9.9**	100%	215.5
			Total SV002 Uncontrolled $PM_{2.5}$		***215.5***

**Pellet cooler emission factor back calculated assuming 80% control for a cyclone

GUARDIAN ENERGY, LLC
COOLING TOWER EMISSIONS

SV No.	CE No.	Description	Pollutant	Circulating Flow Rate (gpm)	Drift Loss	Emission Factor Citation	Potential to Emit lb/hr	Potential to Emit unrestricted TPY	Potential to Emit limited TPY
SV008	CE008	Cooling Towers	PM	50,000	0.005%	Manufacturer	3.87	16.97	16.97
SV008	CE008	Cooling Towers	PM_{10}	50,000	0.005%	Manufacturer	3.87	16.97	16.97
SV008	CE008	Cooling Towers	$PM_{2.5}$	50,000	0.005%	Manufacturer	3.87	16.97	16.97

Assumptions:

TDS Concentration:
3100 ppm

GUARDIAN ENERGY, LLC
SV009 EMISSIONS (CE 009) - DDGS and Loadout

SV No.	Description	Pollutant	Air Flow Rate (DSCFM)	Outlet Concentration (gr/dscf)	Emission Factor Citation	Potential to Emit lb/hr	Potential to Emit limited TPY
SV009	DDGS Storage & Loadout	PM	9,100	0.005	Manufacturer	0.39	1.71
SV009	DDGS Storage & Loadout	PM_{10}	9,100	0.005	Manufacturer	0.39	1.71
SV009	DDGS Storage & Loadout	$PM_{2.5}$	9,100	0.005	Manufacturer	0.39	1.71

UNCONTROLLED EMISSIONS

EU No.	Description	Pollutant	Annual Throughput (tons/yr)	Emission Factor (lbs/ton)	Emission Factor Citation	Capture Efficiency	Potential to Emit unlimited TPY
072	DDGS Transfer Incline Conveyor	PM	478,947	0.061	AP-42 Section 9.9	100%	14.6
073	DDGS Transfer Storage Conveyor	PM	478,947	0.061	AP-42 Section 9.9	100%	14.6
074	DDGS Pile Storage Conveyor	PM	478,947	0.061	AP-42 Section 9.9	100%	14.6
083	DDGS Reclaim Conveyor	PM	478,947	0.061	AP-42 Section 9.9	100%	14.6
084	DDGS Silo Bucket Elevator	PM	478,947	0.061	AP-42 Section 9.9	100%	14.6
085	DDGS Recycle Conveyor	PM	478,947	0.061	AP-42 Section 9.9	100%	14.6
086	DDGS Silo Storage Conveyor	PM	478,947	0.061	AP-42 Section 9.9	100%	14.6
087	DDGS Silo Bin #1	PM	239,474	0.025	AP-42 Section 9.9	100%	3.0
088	DDGS Silo Bin #2	PM	239,474	0.025	AP-42 Section 9.9	100%	3.0
089	DDGS Loadout Conveyor #1	PM	239,474	0.086	AP-42 Section 9.9	80%	8.2
090	DDGS Bucket Elevator	PM	478,947	0.061	AP-42 Section 9.9	100%	14.6
091	DDGS Loadout Conveyor #2	PM	239,474	0.086	AP-42 Section 9.9	80%	8.2
092	DDGS Loadout Conveyor #3*	PM	0	0.027	AP-42 Section 9.9	80%	0.0
					Total SV002 Uncontrolled PM		***139.3***
072	DDGS Transfer Incline Conveyor	PM_{10}	478,947	0.034	AP-42 Section 9.9	100%	8.1
073	DDGS Transfer Storage Conveyor	PM_{10}	478,947	0.034	AP-42 Section 9.9	100%	8.1
074	DDGS Pile Storage Conveyor	PM_{10}	478,947	0.034	AP-42 Section 9.9	100%	8.1
083	DDGS Reclaim Conveyor	PM_{10}	478,947	0.034	AP-42 Section 9.9	100%	8.1
084	DDGS Silo Bucket Elevator	PM_{10}	478,947	0.034	AP-42 Section 9.9	100%	8.1
085	DDGS Recycle Conveyor	PM_{10}	478,947	0.034	AP-42 Section 9.9	100%	8.1
086	DDGS Silo Storage Conveyor	PM_{10}	478,947	0.034	AP-42 Section 9.9	100%	8.1
087	DDGS Silo Bin #1	PM_{10}	239,474	0.0063	AP-42 Section 9.9	100%	0.8
088	DDGS Silo Bin #2	PM_{10}	239,474	0.0063	AP-42 Section 9.9	100%	0.8
089	DDGS Loadout Conveyor #1	PM_{10}	239,474	0.029	AP-42 Section 9.9	80%	2.8
090	DDGS Bucket Elevator	PM_{10}	478,947	0.034	AP-42 Section 9.9	100%	8.1
091	DDGS Loadout Conveyor #2	PM_{10}	239,474	0.029	AP-42 Section 9.9	80%	2.8
092	DDGS Loadout Conveyor #3*	PM_{10}	0	0.0022	AP-42 Section 9.9	80%	0.0
					Total SV002 Uncontrolled PM $_{10}$		***72.2***
072	DDGS Transfer Incline Conveyor	$PM_{2.5}$	478,947	0.0058	AP-42 Section 9.9	100%	1.4
073	DDGS Transfer Storage Conveyor	$PM_{2.5}$	478,947	0.0058	AP-42 Section 9.9	100%	1.4
074	DDGS Pile Storage Conveyor	$PM_{2.5}$	478,947	0.0058	AP-42 Section 9.9	100%	1.4
083	DDGS Reclaim Conveyor	$PM_{2.5}$	478,947	0.0058	AP-42 Section 9.9	100%	1.4
084	DDGS Silo Bucket Elevator	$PM_{2.5}$	478,947	0.0058	AP-42 Section 9.9	100%	1.4
085	DDGS Recycle Conveyor	$PM_{2.5}$	478,947	0.0058	AP-42 Section 9.9	100%	1.4
086	DDGS Silo Storage Conveyor	$PM_{2.5}$	478,947	0.0058	AP-42 Section 9.9	100%	1.4
087	DDGS Silo Bin #1	$PM_{2.5}$	239,474	0.0011	AP-42 Section 9.9	100%	0.1
088	DDGS Silo Bin #2	$PM_{2.5}$	239,474	0.0011	AP-42 Section 9.9	100%	0.1
089	DDGS Loadout Conveyor #1	$PM_{2.5}$	239,474	0.0049	AP-42 Section 9.9	80%	0.5
090	DDGS Bucket Elevator	$PM_{2.5}$	478,947	0.0058	AP-42 Section 9.9	100%	1.4
091	DDGS Loadout Conveyor #2	$PM_{2.5}$	239,474	0.0049	AP-42 Section 9.9	80%	0.5
092	DDGS Loadout Conveyor #3*	$PM_{2.5}$	0	0.00037	AP-42 Section 9.9	80%	0.0
					Total SV002 Uncontrolled PM $_{2.5}$		***12.3***

*Assume 100% received by truck for highest unlimited PTE calculation

GUARDIAN ENERGY, LLC
EU076 EMISSIONS

SV No.	CE No.	Description	Pollutant	Capacity (hp)	Emission Factor (lb/hp-hr)	Emission Factor Citation	lb/hr	Potential to Emit unrestricted TPY	Potential to Emit limited TPY
SV010	NA	Fire Pump	VOC	300.0	0.0025	AP-42 Section 3.3	0.75	3.29	0.04
SV010	NA	Fire Pump	NOx	300.0	0.031	AP-42 Section 3.3	9.30	40.73	0.47
SV010	NA	Fire Pump	SO_2	300.0	0.0021	AP-42 Section 3.3	0.63	2.76	0.03
SV010	NA	Fire Pump	CO	300.0	0.0067	AP-42 Section 3.3	2.01	8.80	0.10
SV010	NA	Fire Pump	PM	300.0	0.0022	AP-42 Section 3.3	0.66	2.89	0.03
SV010	NA	Fire Pump	PM_{10}	300.0	0.0022	AP-42 Section 3.3	0.66	2.89	0.03
SV010	NA	Fire Pump	$PM_{2.5}$	300.0	0.0022	AP-42 Section 3.3	0.66	2.89	0.03
SV010	NA	Fire Pump	1,3-Butadiene*	2.18	3.9E-05	AP-42 Section 3.3	8.52E-05	3.73E-04	4.26E-06
SV010	NA	Fire Pump	Acetaldehyde*	2.18	7.7E-04	AP-42 Section 3.3	1.67E-03	7.32E-03	8.36E-05
SV010	NA	Fire Pump	Acrolein*	2.18	9.3E-05	AP-42 Section 3.3	2.02E-04	8.83E-04	1.01E-05
SV010	NA	Fire Pump	Benzene*	2.18	9.3E-04	AP-42 Section 3.3	2.03E-03	8.91E-03	1.02E-04
SV010	NA	Fire Pump	Formaldehyde*	2.18	1.2E-03	AP-42 Section 3.3	2.57E-03	1.13E-02	1.29E-04
SV010	NA	Fire Pump	Napthalene*	2.18	8.5E-05	AP-42 Section 3.3	1.85E-04	8.10E-04	9.24E-06
SV010	NA	Fire Pump	Toluene*	2.18	4.1E-04	AP-42 Section 3.3	8.92E-04	3.91E-03	4.46E-05
SV010	NA	Fire Pump	Xylene*	2.18	2.9E-04	AP-42 Section 3.3	6.21E-04	2.72E-03	3.11E-05

*emission factor listed as lb/MMBtu

Assumptions:

Maximum Firing Capacity:
- 2.18 MMBtu/hr
- 300 hp
- 16.8 gallons/hr (@129,500 Btu/gal)

Maximum Hours of Operation:
- 8760 hours per year

Limited Hours of Operation:
- 100 hours per year

GUARDIAN ENERGY, LLC
FUGITIVE EMISSIONS

SV No.	CE No.	EU No.	Description	Pollutant	Annual Average Throughput (tons/hr)	Emission Factor (lb/ton)	Emission Factor Citation	Potential to Emit		
								lb/hr	unrestricted TPY	limited TPY
SV012	-	08, 09, 014, 015	Unloading Baghouse	PM	34	0.035	AP-42 Section 9.9	1.18	5.16	5.16
SV013	-	089, 091, 092	DDGS Loadout	PM	11	0.0033	AP-42 Section 9.9	0.04	0.16	0.16
SV014	-	094	DDGS Storage	PM	55	0.0033	AP-42 Section 9.9	0.18	0.79	0.79
SV012	-	08, 09, 014, 015	Unloading Baghouse	PM_{10}	34	0.0078	AP-42 Section 9.9	0.26	1.15	1.15
SV013	-	089, 091, 092	DDGS Loadout	PM_{10}	11	0.0008	AP-42 Section 9.9	0.01	0.04	0.04
SV014	-	094	DDGS Storage	PM_{10}	55	0.0008	AP-42 Section 9.9	0.04	0.19	0.19
SV012	-	08, 09, 014, 015	Unloading Baghouse	$PM_{2.5}$	34	0.0013	AP-42 Section 9.9	0.04	0.19	0.19
SV013	-	089, 091, 092	DDGS Loadout	$PM_{2.5}$	11	0.0008	AP-42 Section 9.9	0.01	0.04	0.04
SV014	-	094	DDGS Storage	$PM_{2.5}$	55	0.0008	AP-42 Section 9.9	0.04	0.19	0.19

Assumptions:

CE002 Capture:	80%	Grain Receiving Throughput:		Miles per Truck:	k
CE009 Capture:	80%	168 tons/hr		1.5 miles	0.011 PM
EU094 Capture:	0%	DDGS Loadout Throughput:		Silt Loading (g/m2)	0.0022 PM_{10}
.		55 tons/hr		0.40	0.00054 $PM_{2.5}$
		DDGS Storage Throughput:		Average vehicle weight:	
		55 tons/hr		29 tons	

PAVED ROADS (FS009)

SV No.	CE No.	EU No.	Description	Pollutant	VMT	Emission Factor (lb/VMT)	Emission Factor Citation	Potential to Emit		
								lb/hr	unrestricted TPY	limited TPY
---	---	FS009	Grain Receiving	PM	88,421	0.15	AP-42 Section 13.2	1.50	6.55	6.55
---	---	FS009	DDGS Shipping	PM	19,158	0.15	AP-42 Section 13.2	0.32	1.42	1.42
---	---	FS009	Denaturant Delivery	PM	656	0.15	AP-42 Section 13.2	0.01	0.05	0.05
---	---	FS009	Ethanol Shipping	PM	26,906	0.15	AP-42 Section 13.2	0.46	1.99	1.99
---	---	FS009	Grain Receiving	PM_{10}	88,421	0.030	AP-42 Section 13.2	0.30	1.31	1.31
---	---	FS009	DDGS Shipping	PM_{10}	19,158	0.030	AP-42 Section 13.2	0.06	0.28	0.28
---	---	FS009	Denaturant Delivery	PM_{10}	656	0.030	AP-42 Section 13.2	0.00	0.01	0.01
---	---	FS009	Ethanol Shipping	PM_{10}	26,906	0.030	AP-42 Section 13.2	0.09	0.40	0.40
---	---	FS009	Grain Receiving	$PM_{2.5}$	88,421	0.007	AP-42 Section 13.2	0.07	0.32	0.32
---	---	FS009	DDGS Shipping	$PM_{2.5}$	19,158	0.007	AP-42 Section 13.2	0.02	0.07	0.07
---	---	FS009	Denaturant Delivery	$PM_{2.5}$	656	0.007	AP-42 Section 13.2	0.00	0.00	0.00
---	---	FS009	Ethanol Shipping	$PM_{2.5}$	26,906	0.007	AP-42 Section 13.2	0.02	0.10	0.10

Grain Silo #3 (FS010)

SV No.	CE No.	EU No.	Description	Pollutant	Annual Average Throughput (tons/hr)	Emission Factor (lb/ton)	Emission Factor Citation	Potential to Emit		
								lb/hr	unrestricted TPY	limited TPY
093	---	093	Grain Silo #3	PM	168	0.025	AP-42 Section 9.9	4.21	18.42	18.42
093	---	093	Grain Silo #3	PM_{10}	168	0.0063	AP-42 Section 9.9	1.06	4.64	4.64
093	---	093	Grain Silo #3	$PM_{2.5}$	168	0.0011	AP-42 Section 9.9	0.19	0.81	0.81

GUARDIAN ENERGY, LLC
EQUIPMENT LEAKS (FS004)

Process Area	Source	Product	Component Count	Emission Factor (Kg/comp-hr)	Uncontrolled Emission Rate	Subpart VV Control Efficiency	Controlled Emission Rate (lb/hr)	TOC weight	VOC Emissions		
									lb/hr	unrestricted TPY	limited TPY
Fermentation	Valves	G/V	581	0.00597	7.63	0.87	0.99	13%	0.13	0.56	0.56
Fermentation	Valves	LL	0	0.00403	0.00	0.84	0.00	13%	0.00	0.00	0.00
Fermentation	Pumps	LL	28	0.0199	1.23	0.69	0.38	13%	0.05	0.22	0.22
Fermentation	Compressor Seals	G/V	0	0.228	0.00	0.75	0.00	13%	0.00	0.00	0.00
Fermentation	Pressure-Relief Valves	G/V	0	0.104	0.00	0.87	0.00	13%	0.00	0.00	0.00
Fermentation	Sampling Connections	All	213	0.015	7.03	0.87	0.91	13%	0.12	0.52	0.52
Fermentation	Open-ended Lines	All	0	0.0017	0.00	0.84	0.00	13%	0.00	0.00	0.00
Fermentation	Flanges	All	0	0.00183	0.00	0.84	0.00	13%	0.00	0.00	0.00
Distillation	Valves	G/V	0	0.00597	0.00	0.87	0.00	82%	0.00	0.00	0.00
Distillation	Valves	LL	0	0.00403	0.00	0.84	0.00	82%	0.00	0.00	0.00
Distillation	Pumps	LL	0	0.0199	0.00	0.69	0.00	82%	0.00	0.00	0.00
Distillation	Compressor Seals	G/V	0	0.228	0.00	0.75	0.00	82%	0.00	0.00	0.00
Distillation	Pressure-Relief Valves	G/V	0	0.104	0.00	0.87	0.00	82%	0.00	0.00	0.00
Distillation	Sampling Connections	All	0	0.015	0.00	0.87	0.00	82%	0.00	0.00	0.00
Distillation	Open-ended Lines	All	0	0.0017	0.00	0.84	0.00	82%	0.00	0.00	0.00
Distillation	Flanges	All	0	0.00183	0.00	0.84	0.00	82%	0.00	0.00	0.00
Tank Farm	Valves	G/V	0	0.00597	0.00	0.87	0.00	100%	0.00	0.00	0.00
Tank Farm	Valves	LL	0	0.00403	0.00	0.84	0.00	100%	0.00	0.00	0.00
Tank Farm	Pumps	LL	0	0.0199	0.00	0.69	0.00	100%	0.00	0.00	0.00
Tank Farm	Compressor Seals	G/V	0	0.228	0.00	0.75	0.00	100%	0.00	0.00	0.00
Tank Farm	Pressure-Relief Valves	G/V	0	0.104	0.00	0.87	0.00	100%	0.00	0.00	0.00
Tank Farm	Sampling Connections	All	0	0.015	0.00	0.87	0.00	100%	0.00	0.00	0.00
Tank Farm	Open-ended Lines	All	0	0.0017	0.00	0.84	0.00	100%	0.00	0.00	0.00
Tank Farm	Flanges	All	0	0.00183	0.00	0.84	0.00	100%	0.00	0.00	0.00
TOTAL			**822**		**15.89**		**2.29**		**0.30**	**1.30**	**1.30**

Stack No.	Control Device	Emission Unit No.	Pollutant	CAS No.	Scaling Factor	Emission Factor Citation	Potential to Emit		
							lb/hr	unrestricted TPY	limited TPY
---	---	---	Acetaldyhyde	75070	2.00E-04	Nebraska DEQ Guidance	5.94E-05	2.60E-04	2.60E-04
---	---	---	Methanol	67561	2.00E-04	Nebraska DEQ Guidance	5.94E-05	2.60E-04	2.60E-04
---	---	---	Benzene	71432	2.50E-03	Nebraska DEQ Guidance	7.43E-04	3.25E-03	3.25E-03
---	---	---	Carbon Disulfide	75150	2.00E-05	Nebraska DEQ Guidance	5.94E-06	2.60E-05	2.60E-05
---	---	---	Cumene	98828	1.00E-03	Nebraska DEQ Guidance	2.97E-04	1.30E-03	1.30E-03
---	---	---	Ethylbenzene	100414	5.00E-05	Nebraska DEQ Guidance	1.49E-05	6.51E-05	6.51E-05
---	---	---	Hexane	110543	5.00E-02	Nebraska DEQ Guidance	1.49E-02	6.51E-02	6.51E-02
---	---	---	Toluene	108883	5.00E-03	Nebraska DEQ Guidance	1.49E-03	6.51E-03	6.51E-03

WETCAKE EMISSIONS (FS006)

Stack No.	Control Device	Emission Unit No.	Reference Rate (tons/hr)	Emission Factor (lb/ton)	Scaling Factor	Pollutant		Potential to Emit		
							CAS No.	lb/hr	unrestricted TPY	limited TPY
---	---	FS005	18	0.004	9.5	VOC (as Carbon)	---	0.66	2.91	2.91
---	---	FS005	18	0.008	9.5	VOC (as VOC)	---	1.42	6.23	6.23
---	---	FS005	18	5.56E-05	9.5	Acetaldehyde	75070	0.01	0.04	0.04
---	---	FS005	18	8.33E-06	9.5	Acrolein	107028	0.00	0.01	0.01
---	---	FS005	18	3.33E-04	9.5	Formaldehyde	50000	0.06	0.25	0.25
---	---	FS005	18	6.94E-05	9.5	Methanol	67561	0.01	0.05	0.05

GUARDIAN ENERGY, LLC
TANKS EMISSIONS

Tank #	Tank Description	TANKS 4.0.9 Emissions (lbs)	VOC Emissions (lb/hr)	Pollutant	CAS No.	Scaling Factor	Emission Factor Citation	Potential to Emit lb/hr	Potential to Emit Unrestricted TPY	Potential to Emit Limited TPY
TK001	190-Proof Tank	1134.19	0.13	Acetaldyhyde	75070	2.00E-04	Nebraska DEQ Guidance	2.59E-05	1.13E-04	1.13E-04
				Methanol	67561	2.00E-04	Nebraska DEQ Guidance	2.59E-05	1.13E-04	1.13E-04
TK002	200-Proof Tank	1134.19	0.13	Acetaldyhyde	75070	2.00E-04	Nebraska DEQ Guidance	2.59E-05	1.13E-04	1.13E-04
				Methanol	67561	2.00E-04	Nebraska DEQ Guidance	2.59E-05	1.13E-04	1.13E-04
TK003	Corrosion Inhibitor Tank	22.91	0.0026	Xylene	13300207	2.00E-04	MSDS	5.23E-07	2.29E-06	2.29E-06
TK004	Denatured Ethanol Tank #1	629.54	0.07	Acetaldyhyde	75070	2.00E-04	Nebraska DEQ Guidance	1.44E-05	6.30E-05	6.30E-05
				Methanol	67561	2.00E-04	Nebraska DEQ Guidance	1.44E-05	6.30E-05	6.30E-05
				Benzene	71432	2.50E-03	Nebraska DEQ Guidance	1.80E-04	7.87E-04	7.87E-04
				Carbon Disulfide	75150	2.00E-05	Nebraska DEQ Guidance	1.44E-06	6.30E-06	6.30E-06
				Cumene	98828	1.00E-03	Nebraska DEQ Guidance	7.19E-05	3.15E-04	3.15E-04
				Ethylbenzene	100414	5.00E-05	Nebraska DEQ Guidance	3.59E-06	1.57E-05	1.57E-05
				Hexane	110543	5.00E-02	Nebraska DEQ Guidance	3.59E-03	1.57E-02	1.57E-02
				Toluene	108883	5.00E-03	Nebraska DEQ Guidance	3.59E-04	1.57E-03	1.57E-03
				Xylene	1330207	5.00E-04	Nebraska DEQ Guidance	3.59E-05	1.57E-04	1.57E-04
TK005	Denatured Ethanol Tank #2	629.54	0.07	Acetaldyhyde	75070	2.00E-04	Nebraska DEQ Guidance	1.44E-05	6.30E-05	6.30E-05
				Methanol	67561	2.00E-04	Nebraska DEQ Guidance	1.44E-05	6.30E-05	6.30E-05
				Benzene	71432	2.50E-03	Nebraska DEQ Guidance	1.80E-04	7.87E-04	7.87E-04
				Carbon Disulfide	75150	2.00E-05	Nebraska DEQ Guidance	1.44E-06	6.30E-06	6.30E-06
				Cumene	98828	1.00E-03	Nebraska DEQ Guidance	7.19E-05	3.15E-04	3.15E-04
				Ethylbenzene	100414	5.00E-05	Nebraska DEQ Guidance	3.59E-06	1.57E-05	1.57E-05
				Hexane	110543	5.00E-02	Nebraska DEQ Guidance	3.59E-03	1.57E-02	1.57E-02
				Toluene	108883	5.00E-03	Nebraska DEQ Guidance	3.59E-04	1.57E-03	1.57E-03
				Xylene	1330207	5.00E-04	Nebraska DEQ Guidance	3.59E-05	1.57E-04	1.57E-04
TK006	Denaturant Tank	1428.84	0.16	Benzene	71432	2.50E-03	Nebraska DEQ Guidance	4.08E-04	1.79E-03	1.79E-03
				Carbon Disulfide	75150	2.00E-05	Nebraska DEQ Guidance	3.26E-06	1.43E-05	1.43E-05
				Cumene	98828	1.00E-03	Nebraska DEQ Guidance	1.63E-04	7.14E-04	7.14E-04
				Ethylbenzene	100414	5.00E-05	Nebraska DEQ Guidance	8.16E-06	3.57E-05	3.57E-05
				Hexane	110543	5.00E-02	Nebraska DEQ Guidance	8.16E-03	3.57E-02	3.57E-02
				Toluene	108883	5.00E-03	Nebraska DEQ Guidance	8.16E-04	3.57E-03	3.57E-03
				Xylene	1330207	5.00E-04	Nebraska DEQ Guidance	8.16E-05	3.57E-04	3.57E-04

GUARDIAN ENERGY, LLC
UNRESTRICTED GREENHOUSE GAS EMISSIONS

Type	Unit	Capacity*	Through-put**	Total	Units	CO_2 Em. Factor (lb/MMBtu)	CH_4 Em. Factor (lb/MMBtu)	N_2O Em. Factor (lb/MMBtu)	CO_2 Emissions (tons/yr)	CH_4 Emissions (tons/yr)	N_2O Emissions (tons/yr)	CO_2e Emissions (tons/yr)
Nat. Gas	Dryer A (EU001)	44,117.65	386.47	394,200	MMBtu	116.89	0.0022	0.00022	23039	0.43	0.04	23062
Nat. Gas	Dryer B (EU002	44,117.65	386.47	394,200	MMBtu	116.89	0.0022	0.00022	23039	0.43	0.04	23062
Nat. Gas	Dryer C (EU003)	44,117.65	386.47	394,200	MMBtu	116.89	0.0022	0.00022	23039	0.43	0.04	23062
Nat. Gas	Dryer D (EU004)	44,117.65	386.47	394,200	MMBtu	116.89	0.0022	0.00022	23039	0.43	0.04	23062
Nat. Gas	TO #1 (EU005)	119,607.84	1,047.76	1,068,720	MMBtu	116.89	0.0022	0.00022	62461	1.18	0.12	62522
Nat. Gas	TO #2 (EU006)	119,607.84	1,047.76	1,068,720	MMBtu	116.89	0.0022	0.00022	62461	1.18	0.12	62522
Nat. Gas	Methanator (EU068)	6,274.51	54.96	56,064	MMBtu	116.89	0.0022	0.00984	3277	0.06	0.28	3363
Nat. Gas	Loadout Flare (EU071)	12,156.86	106.49	108,624	MMBtu	116.89	0.0022	0.00022	6349	0.12	0.01	6355
Diesel	Fire Pump (EU076)	16.83	147,466	19,096.80	MMBtu	163.05	0.0066	0.00132	1557	0.06	0.01	1562
								Total	**228,261**	**4.33**	**0.71**	**228,571**

GUARDIAN ENERGY, LLC
LIMITED GREENHOUSE GAS EMISSIONS

Type	Unit	Capacity*	Limited Through-put**	Total	Units	CO_2 Em. Factor (lb/MMBtu)	CH_4 Em. Factor (lb/MMBtu)	N_2O Em. Factor (lb/MMBtu)	CO_2 Emissions (tons/yr)	CH_4 Emissions (tons/yr)	N_2O Emissions (tons/yr)	CO_2e Emissions (tons/yr)
Nat. Gas	Dryer A (EU001)	44,117.65	386.47	394,200	MMBtu	116.89	0.0022	0.00022	23039	0.43	0.04	23062
Nat. Gas	Dryer B (EU002	44,117.65	386.47	394,200	MMBtu	116.89	0.0022	0.00022	23039	0.43	0.04	23062
Nat. Gas	Dryer C (EU003)	44,117.65	386.47	394,200	MMBtu	116.89	0.0022	0.00022	23039	0.43	0.04	23062
Nat. Gas	Dryer D (EU004)	44,117.65	386.47	394,200	MMBtu	116.89	0.0022	0.00022	23039	0.43	0.04	23062
Nat. Gas	TO #1 (EU005)	119,607.84	1,047.76	1,068,720	MMBtu	116.89	0.0022	0.00022	62461	1.18	0.12	62522
Nat. Gas	TO #2 (EU006)	119,607.84	1,047.76	1,068,720	MMBtu	116.89	0.0022	0.00022	62461	1.18	0.12	62522
Nat. Gas	Methanator (EU068)	6,274.51	54.96	56,064	MMBtu	116.89	0.0022	0.00984	3277	0.06	0.28	3363
Nat. Gas	Loadout Flare (EU071)	12,156.86	106.49	108,624	MMBtu	116.89	0.0022	0.00022	6349	0.12	0.01	6355
Diesel	Fire Pump (EU076)	16.83	1,683	218.00	MMBtu	163.05	0.0066	0.00132	18	0.00	0.00	18
								Total	**226,722**	**4.27**	**0.70**	**227,027**

*Capacity listed is cf/hr for natural gas; and gallons/hr for diesel

**Throughput listed is MMCf/yr for natural gas; and total gallons/yr for diesel

GUARDIAN ENERGY, LLC
2011 ACTUAL GREENHOUSE GAS EMISSIONS

Type	Unit	Year	Annual Through-put**	Total	Units	CO_2 Em. Factor (lb/MMBtu)	CH_4 Em. Factor (lb/MMBtu)	N_2O Em. Factor (lb/MMBtu)	CO_2 Emissions (tons/yr)	CH_4 Emissions (tons/yr)	N_2O Emissions (tons/yr)	CO_2e Emissions (tons/yr)
Nat. Gas	Facility	2010	2,972	3,031,440	MMBtu	116.89	0.0022	0.00022	177173	3.33	0.33	177346
Diesel	Fire Pump (EU076)	2010	739.20	95.73	MMBtu	163.05	0.0066	0.00132	8	0.00	0.00	8
Nat. Gas	Facility	2011	3,092	3,153,840	MMBtu	116.89	0.0022	0.00022	184326	3.47	0.35	184507
Diesel	Fire Pump (EU076)	2011	470.40	60.92	MMBtu	163.05	0.0066	0.00132	5	0.00	0.00	5
								2-yr Average	**180,756**	**3**	**0**	**180,933**

**Throughput listed is MMCf/yr for natural gas; and total gallons/yr for diesel

Natural Gas: 1,020 Btu/cf
Diesel: 129,500 Btu/gal

Assumptions for Global Warming Potential	
CO_2	1
CH_4	21
N_2O	310

Note: All Global Warming Potential data were obtained from 40 CFR 98 Table A-1
Note: Unless otherwise noted, all emission factors were obtained from 40 CFR 98 Tables C-1 and C-2

Attachment 3 – Facility Description and CD-01 Forms

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: GROUPS (GP)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Group Status	Added By (Action)	Retired By (Action)	Include in EI	Operator ID for Item	Group Description	Group Items
1	GP 001	Active	PER 001		☐		Floating roof tanks	TK 001, TK 002, TK 004, TK 005, TK 006
2	GP 002	Active	PER 001		☐		Flares	CE 005, CE 006
3	GP 003	Active	PER 001		☐		Fabric Filter Baghouse Requirements	CE 002, CE 003, CE 007, CE 009
4	GP 003	Active	PER 004		☐		Fabric Filter Requirements	CE 002, CE 003, CE 007, CE 009
5	GP 004	Active	PER 002		☐		Dryers	EU 001, EU 002, EU 003, EU 004, EU 064, EU 065, EU 066, EU 067
6	GP 004	Active	PER 004		☐		Dryers	EU 001, EU 002, EU 003, EU 004
7	GP 005	Active	PER 004		☐		Direct Flame Afterburners w/Heat Exchanger	CE 010, CE 011
8	GP 006	Active	PER 004		☐		Thermal Oxidizers with HRSG	EU 005, EU 006, MR 001, SV 001
9	GP 007	Active	PER 004		☐		Uncaptured Grain Receiving/Handling/Storage	EU 008, EU 009, EU 014, EU 015, EU 089, EU 091, EU 092

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: STACK/VENTS (SV)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Stack/ Vent Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Operators Description	Height of Opening From Ground (feet)	Inside Dimensions		Design Flow Rate at Top (ACFM)	Exit Gas Temperature at Top (ºF)	Flow Rate/ Temperature Information Source	Discharge Direction
								Diameter or Length (feet)	Width (feet)				
1	SV 001	Active	PER 002			Dryers/TO Stack (CE010 and CE011)	125	10.08		220000	300	Estimate	Up, No Cap
2	SV 002	Active	PER 002			Unloading Baghouse (CE002)	160	4.0		48000	68	Estimate	Up, No Cap
3	SV 003	Active	PER 002			Milling Baghouse (CE003)	160	3.33		28000	68	Estimate	Up, No Cap
4	SV 004	Active	PER 002			Fermentation (CO2) Scrubber (CE004)	75	2.25		11000	65	Estimate	Up, No Cap
5	SV 005	Active	PER 002			Loadout Flare (CE005)	30	5.0		34000	1800	Estimate	Up, No Cap
6	SV 006	Active	PER 002			Biomethanator Flare (CE006)	34	2.0		6400	1800	Estimate	Up, No Cap
7	SV 007	Active	PER 002			Cooling Drum Baghouse (CE007)	100	4.0		13000	110	Estimate	Horizontal
8	SV 008	Active	PER 001			Cooling Tower (4 cells, per cell)	40	25.33		780000	85	Estimate	Up, No Cap
9	SV 009	Active	PER 002			DDGS Storage & Loadout Baghouse (CE009)	40	2.17		9100	68	Estimate	Up, No Cap
10	SV 010	Active	PER 001			Diesel Lean Burn Engine (300 hp)	8	0.25		1740	770	Estimate	Up, No Cap
11	SV 011	Active	PER 004			Grain Silo #3 Vent (volume source)							
12	SV 012	Active	PER 004			Uncaptured Grain Receiving/Handling/Storage (volume source)							
13	SV 013	Active	PER 004			Uncaptured DDGS loadout (volume source)							
14	SV 014	Active	PER 004			DDGS Storage							

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
1	EU 001	Active	PER 001		☐		SV 001 (M)	CE 010	Dryer A	ICM	NA	2869	21		Ton	Hr	45
2	EU 001	Active	PER 004		☐		SV 001 (M)	CE 010	Dryer A	ICM	NA	2869	21		Ton	Hr	45
3	EU 002	Active	PER 001		☐		SV 001 (M)	CE 010	Dryer B	ICM	NA	2869	21		Ton	Hr	45
4	EU 002	Active	PER 004		☐		SV 001 (M)	CE 010	Dryer B	ICM	NA	2869	21		Ton	Hr	45
5	EU 003	Active	PER 001		☐		SV 001 (M)	CE 011	Dryer C	ICM	NA	2869	21		Ton	Hr	45
6	EU 003	Active	PER 004		☐		SV 001 (M)	CE 011	Dryer C	ICM	NA	2869	21		Ton	Hr	45
7	EU 004	Active	PER 001		☐		SV 001 (M)	CE 011	Dryer D	ICM	NA	2869	21		Ton	Hr	45
8	EU 004	Active	PER 004		☐		SV 001 (M)	CE 011	Dryer D	ICM	NA	2869	21		Ton	Hr	45
9	EU 005	Active	PER 001		☐		SV 001 (M)		Thermal Oxidizer with HRSG C10	ICM	NA	2869	122	Heat	Mmbtu		122
10	EU 005	Active	PER 004		☐		SV 001 (M)		Thermal Oxidizer with HRSG C10	ICM	NA	2869	122	Heat	Mmbtu		122
11	EU 006	Active	PER 001		☐		SV 001 (M)		Thermal Oxidizer with HRSG C11	ICM	NA	2869	122	Heat	Mmbtu		122
12	EU 006	Active	PER 004		☐		SV 001 (M)		Thermal Oxidizer with HRSG C11	ICM	NA	2869	122	Heat	Mmbtu		122
13	EU 007	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Process/Distillation Vents	ICM	NA	2869					
14	EU 007	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Process/Distillation Vents	ICM	NA	2869					
15	EU 008	Active	PER 002		☐		SV 002 (M)	CE 002	Truck Receiving Dump Pit and Conveyor #1	NA	NA	2869	20000		Bushel	Hr	
16	EU 008	Active	PER 004		☐		SV 002 (M) SV 012 (O)	CE 002	Truck Receiving Dump Pit and Conveyor #1	NA	NA	2869	20000		Bushel	Hr	
17	EU 009	Active	PER 002		☐		SV 002 (M)	CE 002	Truck Receiving Dump Pit and Conveyor #2	NA	NA	2869	20000		Bushel	Hr	
18	EU 009	Active	PER 004		☐		SV 002 (M) SV 012 (O)	CE 002	Truck Receiving Dump Pit and Conveyor #2	NA	NA	2869	20000		Bushel	Hr	
19	EU 010	Active	PER 002		☐		SV 002 (M)	CE 002	Receiving Transfer Conveyor #1	NA	NA	2869	20000		Bushel	Hr	
20	EU 010	Active	PER 004		☐		SV 002 (M)	CE 002	Receiving Transfer Conveyor #1	NA	NA	2869	20000		Bushel	Hr	
21	EU 011	Active	PER 002		☐		SV 002 (M)	CE 002	Receiving Bucket Elevator #1	NA	NA	2869	20000		Bushel	Hr	
22	EU 011	Active	PER 004		☐		SV 002 (M)	CE 002	Receiving Bucket Elevator #1	NA	NA	2869	20000		Bushel	Hr	

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
1	EU 001	Active	PER 001							
2	EU 001	Active	PER 004	01/01/2007	11/01/2009					
3	EU 002	Active	PER 001							
4	EU 002	Active	PER 004	01/01/2007	11/01/2009					
5	EU 003	Active	PER 001							
6	EU 003	Active	PER 004	01/01/2007	11/01/2009					
7	EU 004	Active	PER 001							
8	EU 004	Active	PER 004	01/01/2007	11/01/2009					
9	EU 005	Active	PER 001							
10	EU 005	Active	PER 004	01/01/2007	11/01/2009					
11	EU 006	Active	PER 001							
12	EU 006	Active	PER 004	01/01/2007	11/01/2009					
13	EU 007	Active	PER 001							
14	EU 007	Active	PER 004	01/01/2007	11/01/2009					
15	EU 008	Active	PER 002							
16	EU 008	Active	PER 004	01/01/2007	11/01/2009					
17	EU 009	Active	PER 002							
18	EU 009	Active	PER 004	01/01/2007	11/01/2009					
19	EU 010	Active	PER 002							
20	EU 010	Active	PER 004	01/01/2007	11/01/2009					
21	EU 011	Active	PER 002							
22	EU 011	Active	PER 004	01/01/2007	11/01/2009					

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
23	EU 012	Active	PER 003		☐		SV 003 (M)	CE 003	Grain Silo Bin #1	NA	NA	2869	500000		Bushel		
24	EU 012	Active	PER 004		☐		SV 003 (M)	CE 003	Grain Silo Bin #1	NA	NA	2869	500000		Bushel		
25	EU 013	Active	PER 003		☐		SV 003 (M)	CE 003	Grain Silo Bin #2	NA	NA	2869	500000		Bushel		
26	EU 013	Active	PER 004		☐		SV 003 (M)	CE 003	Grain Silo Bin #2	NA	NA	2869	500000		Bushel		
27	EU 014	Active	PER 002		☐		SV 002 (M)	CE 002	Rail Receiving Dump Pit and Conveyor	NA	NA	2869	20000		Bushel	Hr	
28	EU 014	Active	PER 004		☐		SV 002 (M) SV 012 (O)	CE 002	Rail Receiving Dump Pit and Conveyor	NA	NA	2869	20000		Bushel	Hr	
29	EU 015	Active	PER 002		☐		SV 002 (M)	CE 002	Receiving Transfer Conveyor #2	NA	NA	2869	20000		Bushel	Hr	
30	EU 015	Active	PER 004		☐		SV 002 (M) SV 012 (O)	CE 002	Receiving Transfer Conveyor #2	NA	NA	2869	20000		Bushel	Hr	
31	EU 016	Active	PER 002		☐		SV 002 (B)	CE 002	Reclaim Conveyor #3	NA	NA	2869	10000		Bushel	Hr	
32	EU 016	Active	PER 004		☐		SV 002 (B)	CE 002	Reclaim Conveyor #3	NA	NA	2869	10000		Bushel	Hr	
33	EU 017	Active	PER 002		☐		SV 002 (M)	CE 002	Receiving Bucket Elevator #2	NA	NA	2869	20000		Bushel	Hr	
34	EU 017	Active	PER 004		☐		SV 002 (M)	CE 002	Receiving Bucket Elevator #2	NA	NA	2869	20000		Bushel	Hr	
35	EU 018	Active	PER 002		☐		SV 002 (M)	CE 002	Scalping Bin	TBD	TBD	2869	20000		Bushel		
36	EU 018	Active	PER 004		☐		SV 002 (M)	CE 002	Scalping Bin	TBD	TBD	2869	20000		Bushel		
37	EU 019	Active	PER 002		☐		SV 003 (M)	CE 003	Hammermill Feed Surge Bin	TBD	TBD	2869	9000		Bushel		
38	EU 019	Active	PER 004		☐		SV 003 (M)	CE 003	Hammermill Feed Surge Bin	TBD	TBD	2869	9000		Bushel		
39	EU 020	Active	PER 002		☐		SV 003 (M)	CE 003	Hammermill 1	TBD	TBD	2869	1500		Bushel	Hr	
40	EU 020	Active	PER 004		☐		SV 003 (M)	CE 003	Hammermill 1	TBD	TBD	2869	1500		Bushel	Hr	
41	EU 021	Active	PER 002		☐		SV 003 (M)	CE 003	Hammermill 2	TBD	TBD	2869	1500		Bushel	Hr	
42	EU 021	Active	PER 004		☐		SV 003 (M)	CE 003	Hammermill 2	TBD	TBD	2869	1500		Bushel	Hr	
43	EU 022	Active	PER 002		☐		SV 003 (M)	CE 003	Hammermill 3	TBD	TBD	2869	1500		Bushel	Hr	
44	EU 022	Active	PER 004		☐		SV 003 (M)	CE 003	Hammermill 3	TBD	TBD	2869	1500		Bushel	Hr	
45	EU 023	Active	PER 002		☐		SV 003 (M)	CE 003	Hammermill 4	TBD	TBD	2869	1500		Bushel	Hr	
46	EU 023	Active	PER 004		☐		SV 003 (M)	CE 003	Hammermill 4	TBD	TBD	2869	1500		Bushel	Hr	
47	EU 024	Active	PER 001		☐		SV 004 (M)	CE 004	Fermenter 1	TBD	TBD	2869	807000		Gal		

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
23	EU 012	Active	PER 003							
24	EU 012	Active	PER 004	01/01/2007	11/01/2009					
25	EU 013	Active	PER 003							
26	EU 013	Active	PER 004	01/01/2007	11/01/2009					
27	EU 014	Active	PER 002							
28	EU 014	Active	PER 004	01/01/2007	11/01/2009					
29	EU 015	Active	PER 002							
30	EU 015	Active	PER 004	01/01/2007	11/01/2009					
31	EU 016	Active	PER 002							
32	EU 016	Active	PER 004	01/01/2007	11/01/2009					
33	EU 017	Active	PER 002							
34	EU 017	Active	PER 004	01/01/2007	11/01/2009					
35	EU 018	Active	PER 002							
36	EU 018	Active	PER 004	01/01/2007	11/01/2009					
37	EU 019	Active	PER 002							
38	EU 019	Active	PER 004	01/01/2007	11/01/2009					
39	EU 020	Active	PER 002							
40	EU 020	Active	PER 004	01/01/2007	11/01/2009					
41	EU 021	Active	PER 002							
42	EU 021	Active	PER 004	01/01/2007	11/01/2009					
43	EU 022	Active	PER 002							
44	EU 022	Active	PER 004	01/01/2007	11/01/2009					
45	EU 023	Active	PER 002							
46	EU 023	Active	PER 004	01/01/2007	11/01/2009					
47	EU 024	Active	PER 001							

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity		Max Fuel Input (mil Btu)
														Materials	Units n Units d	
48	EU 024	Active	PER 004		☐		SV 004 (M)	CE 004	Fermenter 1	TBD	TBD	2869	807000		Gal	
49	EU 025	Active	PER 001		☐		SV 004 (M)	CE 004	Fermenter 2	TBD	TBD	2869	807000		Gal	
50	EU 025	Active	PER 004		☐		SV 004 (M)	CE 004	Fermenter 2	TBD	TBD	2869	807000		Gal	
51	EU 026	Active	PER 001		☐		SV 004 (M)	CE 004	Fermenter 3	TBD	TBD	2869	807000		Gal	
52	EU 026	Active	PER 004		☐		SV 004 (M)	CE 004	Fermenter 3	TBD	TBD	2869	807000		Gal	
53	EU 027	Active	PER 001		☐		SV 004 (M)	CE 004	Fermenter 4	TBD	TBD	2869	807000		Gal	
54	EU 027	Active	PER 004		☐		SV 004 (M)	CE 004	Fermenter 4	TBD	TBD	2869	807000		Gal	
55	EU 028	Active	PER 001		☐		SV 004 (M)	CE 004	Fermenter 5	TBD	TBD	2869	807000		Gal	
56	EU 028	Active	PER 004		☐		SV 004 (M)	CE 004	Fermenter 5	TBD	TBD	2869	807000		Gal	
57	EU 029	Active	PER 001		☐		SV 004 (M)	CE 004	Fermenter 6	TBD	TBD	2869	807000		Gal	
58	EU 029	Active	PER 004		☐		SV 004 (M)	CE 004	Fermenter 6	TBD	TBD	2869	807000		Gal	
59	EU 030	Active	PER 001		☐		SV 004 (M)	CE 004	Fermenter 7	TBD	TBD	2869	807000		Gal	
60	EU 030	Active	PER 004		☐		SV 004 (M)	CE 004	Fermenter 7	TBD	TBD	2869	807000		Gal	
61	EU 031	Active	PER 001		☐		SV 004 (M)	CE 004	Beerwell	TBD	TBD	2869	1080000		Gal	
62	EU 031	Active	PER 004		☒		SV 004 (M)	CE 004	Beerwell	TBD	TBD	2869	1080000		Gal	
63	EU 032	Active	PER 002		☐		SV 001 (M)	CE 010 CE 011	Slurry Blender	TBD	TBD	2869	6000		Bushel Hr	
64	EU 032	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Slurry Blender	TBD	TBD	2869	6000		Bushel Hr	
65	EU 033	Active	PER 002		☐		SV 001 (M)	CE 010 CE 011	Slurry Tank 1	TBD	TBD	2869	25000		Gal	
66	EU 033	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Slurry Tank 1	TBD	TBD	2869	25000		Gal	
67	EU 034	Active	PER 002		☐		SV 001 (M)	CE 010 CE 011	Slurry Tank 2	TBD	TBD	2869	29000		Gal	
68	EU 034	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Slurry Tank 2	TBD	TBD	2869	29000		Gal	
69	EU 035	Active	PER 002		☐		SV 001 (M)	CE 010 CE 011	Cook Tube	TBD	TBD	2869	10000		Gal	
70	EU 035	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Cook Tube	TBD	TBD	2869	10000		Gal	

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
48	EU 024	Active	PER 004	01/01/2007	11/01/2009					
49	EU 025	Active	PER 001							
50	EU 025	Active	PER 004	01/01/2007	11/01/2009					
51	EU 026	Active	PER 001							
52	EU 026	Active	PER 004	01/01/2007	11/01/2009					
53	EU 027	Active	PER 001							
54	EU 027	Active	PER 004	01/01/2007	11/01/2009					
55	EU 028	Active	PER 001							
56	EU 028	Active	PER 004	01/01/2007	11/01/2009					
57	EU 029	Active	PER 001							
58	EU 029	Active	PER 004	01/01/2007	11/01/2009					
59	EU 030	Active	PER 001							
60	EU 030	Active	PER 004	01/01/2007	11/01/2009					
61	EU 031	Active	PER 001							
62	EU 031	Active	PER 004	01/01/2007	11/01/2009					
63	EU 032	Active	PER 002							
64	EU 032	Active	PER 004	01/01/2007	11/01/2009					
65	EU 033	Active	PER 002							
66	EU 033	Active	PER 004	01/01/2007	11/01/2009					
67	EU 034	Active	PER 002							
68	EU 034	Active	PER 004	01/01/2007	11/01/2009					
69	EU 035	Active	PER 002							
70	EU 035	Active	PER 004	01/01/2007	11/01/2009					

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
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ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
71	EU 036	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Flash Tank	TBD	TBD	2869	10400		Gal		
72	EU 036	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Flash Tank	TBD	TBD	2869	10400		Gal		
73	EU 037	Active	PER 002		☐				Not installed			2869					
74	EU 037	Removed	PER 004		☐				Not installed			2869					
75	EU 038	Active	PER 002		☐		SV 001 (M)	CE 010 CE 011	Liquefaction Tank 1	TBD	TBD	2869	128400		Gal		
76	EU 038	Active	PER 004		☐		SV 001 (M)	CE 011	Liquefaction Tank 1	TBD	TBD	2869	128400		Gal		
77	EU 039	Active	PER 002		☐		SV 001 (M)	CE 010 CE 011	Liquefaction Tank 2	TBD	TBD	2869	128400		Gal		
78	EU 039	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Liquefaction Tank 2	TBD	TBD	2869	128400		Gal		
79	EU 040	Active	PER 002		☐				Not installed			2869					
80	EU 040	Removed	PER 004		☐				Not installed			2869					
81	EU 041	Active	PER 002		☐				Not installed			2869					
82	EU 041	Removed	PER 004		☐				Not installed			2869					
83	EU 042	Active	PER 002		☐		SV 001 (M)	CE 010 CE 011	Yeast Tank 1	TBD	TBD	2869	20000		Gal		
84	EU 042	Active	PER 004		☐		SV 001 (M)	CE 011	Yeast Tank 1	TBD	TBD	2869	20000		Gal		
85	EU 043	Active	PER 002		☐		SV 001 (M)	CE 010 CE 011	Yeast Tank 2	TBD	TBD	2869	20000		Gal		
86	EU 043	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Yeast Tank 2	TBD	TBD	2869	20000		Gal		
87	EU 044	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Beer Column	TBD	TBD	2869	105		Mgal	Yr	
88	EU 044	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Beer Column	TBD	TBD	2869	105		Mgal	Yr	
89	EU 045	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Side Stripper	TBD	TBD	2869	105		Mgal	Yr	
90	EU 045	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Side Stripper	TBD	TBD	2869	105		Mgal	Yr	
91	EU 046	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Rectifier Column	TBD	TBD	2869	105		Mgal	Yr	

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
71	EU 036	Active	PER 001							
72	EU 036	Active	PER 004	01/01/2007	11/01/2009					
73	EU 037	Active	PER 002							
74	EU 037	Removed	PER 004							
75	EU 038	Active	PER 002							
76	EU 038	Active	PER 004	01/01/2007	11/01/2009					
77	EU 039	Active	PER 002							
78	EU 039	Active	PER 004	01/01/2007	11/01/2009					
79	EU 040	Active	PER 002							
80	EU 040	Removed	PER 004							
81	EU 041	Active	PER 002							
82	EU 041	Removed	PER 004							
83	EU 042	Active	PER 002							
84	EU 042	Active	PER 004	01/01/2007	11/01/2009					
85	EU 043	Active	PER 002							
86	EU 043	Active	PER 004	01/01/2007	11/01/2009					
87	EU 044	Active	PER 001							
88	EU 044	Active	PER 004	01/01/2007	11/01/2009					
89	EU 045	Active	PER 001							
90	EU 045	Active	PER 004	01/01/2007	11/01/2009					
91	EU 046	Active	PER 001							

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
92	EU 046	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Rectifier Column	TBD	TBD	2869	105		Mgal	Yr	
93	EU 047	Active	PER 001		☐		SV 001 (B)	CE 010 CE 011	190 Proof Condenser	TBD	TBD	2869	105		Mgal	Yr	
94	EU 047	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	190 Proof Condenser	TBD	TBD	2869	105		Mgal	Yr	
95	EU 048	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Molecular Sieve	TBD	TBD	2869	105		Mgal	Yr	
96	EU 048	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Molecular Sieve	TBD	TBD	2869	105		Mgal	Yr	
97	EU 049	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	200 Proof Condenser	TBD	TBD	2869	105		Mgal	Yr	
98	EU 049	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	200 Proof Condenser	TBD	TBD	2869	105		Mgal	Yr	
99	EU 050	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Centrifuge 1	TBD	TBD	2869	20		Ton	Hr	
100	EU 050	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Centrifuge 1	TBD	TBD	2869	20		Ton	Hr	
101	EU 051	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Centrifuge 2	TBD	TBD	2869	20		Ton	Hr	
102	EU 051	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Centrifuge 2	TBD	TBD	2869	20		Ton	Hr	
103	EU 052	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Centrifuge 3	TBD	TBD	2869	20		Ton	Hr	
104	EU 052	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Centrifuge 3	TBD	TBD	2869	20		Ton	Hr	
105	EU 053	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Centrifuge 4	TBD	TBD	2869	20		Ton	Hr	
106	EU 053	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Centrifuge 4	TBD	TBD	2869	20		Ton	Hr	
107	EU 054	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Centrifuge 5	TBD	TBD	2869	20		Ton	Hr	
108	EU 054	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Centrifuge 5	TBD	TBD	2869	20		Ton	Hr	
109	EU 055	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Centrifuge 6	TBD	TBD	2869	20		Ton	Hr	
110	EU 055	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Centrifuge 6	TBD	TBD	2869	20		Ton	Hr	

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
92	EU 046	Active	PER 004	01/01/2007	11/01/2009					
93	EU 047	Active	PER 001							
94	EU 047	Active	PER 004	01/01/2007	11/01/2009					
95	EU 048	Active	PER 001							
96	EU 048	Active	PER 004	01/01/2007	11/01/2009					
97	EU 049	Active	PER 001							
98	EU 049	Active	PER 004	01/01/2007	11/01/2009					
99	EU 050	Active	PER 001							
100	EU 050	Active	PER 004	01/01/2007	11/01/2009					
101	EU 051	Active	PER 001							
102	EU 051	Active	PER 004	01/01/2007	11/01/2009					
103	EU 052	Active	PER 001							
104	EU 052	Active	PER 004	01/01/2007	11/01/2009					
105	EU 053	Active	PER 001							
106	EU 053	Active	PER 004	01/01/2007	11/01/2009					
107	EU 054	Active	PER 001							
108	EU 054	Active	PER 004	01/01/2007	11/01/2009					
109	EU 055	Active	PER 001							
110	EU 055	Active	PER 004	01/01/2007	11/01/2009					

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
111	EU 056	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Evaporators 1	TBD	TBD	2869	20		Ton	Hr	
112	EU 056	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Evaporators 1	TBD	TBD	2869	20		Ton	Hr	
113	EU 057	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Evaporators 2	TBD	TBD	2869	20		Ton	Hr	
114	EU 057	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Evaporators 2	TBD	TBD	2869	20		Ton	Hr	
115	EU 058	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Evaporators 3	TBD	TBD	2869	20		Ton	Hr	
116	EU 058	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Evaporators 3	TBD	TBD	2869	20		Ton	Hr	
117	EU 059	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Evaporators 4	TBD	TBD	2869	20		Ton	Hr	
118	EU 059	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Evaporators 4	TBD	TBD	2869	20		Ton	Hr	
119	EU 060	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Evaporators 5	TBD	TBD	2869	20		Ton	Hr	
120	EU 060	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Evaporators 5	TBD	TBD	2869	20		Ton	Hr	
121	EU 061	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Evaporators 6	TBD	TBD	2869	20		Ton	Hr	
122	EU 061	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Evaporators 6	TBD	TBD	2869	20		Ton	Hr	
123	EU 062	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Evaporators 7	TBD	TBD	2869	20		Ton	Hr	
124	EU 062	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Evaporators 7	TBD	TBD	2869	20		Ton	Hr	
125	EU 063	Active	PER 001		☐		SV 001 (M)	CE 010 CE 011	Evaporators 8	TBD	TBD	2869	20		Ton	Hr	
126	EU 063	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Evaporators 8	TBD	TBD	2869	20		Ton	Hr	
127	EU 064	Active	PER 002		☐		SV 001 (M)	CE 010 CE 011	Methanator 1	TBD	TBD	2869	14		Ft3	Min	
128	EU 064	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Methanator 1	TBD	TBD	2869	14		Ft3	Min	
129	EU 065	Active	PER 002		☐		SV 001 (M)	CE 010 CE 011	Methanator 2	TBD	TBD	2869	14		Ft3	Min	

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
111	EU 056	Active	PER 001							
112	EU 056	Active	PER 004	01/01/2007	11/01/2009					
113	EU 057	Active	PER 001							
114	EU 057	Active	PER 004	01/01/2007	11/01/2009					
115	EU 058	Active	PER 001							
116	EU 058	Active	PER 004	01/01/2007	11/01/2009					
117	EU 059	Active	PER 001							
118	EU 059	Active	PER 004	01/01/2007	11/01/2009					
119	EU 060	Active	PER 001							
120	EU 060	Active	PER 004	01/01/2007	11/01/2009					
121	EU 061	Active	PER 001							
122	EU 061	Active	PER 004	01/01/2007	11/01/2009					
123	EU 062	Active	PER 001							
124	EU 062	Active	PER 004	01/01/2007	11/01/2009					
125	EU 063	Active	PER 001							
126	EU 063	Active	PER 004	01/01/2007	11/01/2009					
127	EU 064	Active	PER 002							
128	EU 064	Active	PER 004	01/01/2007	11/01/2009					
129	EU 065	Active	PER 002							

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
130	EU 065	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Methanator 2	TBD	TBD	2869	14		Ft3	Min	
131	EU 066	Active	PER 002		☐		SV 001	CE 010 CE 011	Methanator 3	TBD	TBD	2869	14		Ft3	Min	
132	EU 066	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Methanator 3	TBD	TBD	2869	14		Ft3	Min	
133	EU 067	Active	PER 002		☐		SV 001	CE 010 CE 011	Methanator 4	TBD	TBD	2869	14		Ft3	Min	
134	EU 067	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Methanator 4	TBD	TBD	2869	14		Ft3	Min	
135	EU 068	Active	PER 002		☐		SV 006 (M)	CE 006	Bioethanator Flare	TBD	TBD	2869	60		Ft3	Min	6.4
136	EU 068	Active	PER 004		☐		SV 006 (M)	CE 006	Bioethanator Flare	TBD	TBD	2869	60		Ft3	Min	6.4
137	EU 069	Active	PER 001		☐		SV 007 (M)	CE 007	Cooling Drum	TBD	TBD	2869	60		Ton	Hr	
138	EU 069	Active	PER 004		☐		SV 007 (M)	CE 007	Cooling Drum	TBD	TBD	2869	60		Ton	Hr	
139	EU 070	Active	PER 002		☐		SV 005 (M)	CE 005	Fuel Loadout	TBD	TBD	2869	3600		Gal	Min	
140	EU 070	Active	PER 004		☐		SV 005 (M)	CE 005	Fuel Loadout	TBD	TBD	2869	3600		Gal	Min	
141	EU 071	Active	PER 002		☐		SV 005 (M)	CE 005	Fuel Loadout Flare	TBD	TBD	2869	1500		Ft3	Min	12.4
142	EU 071	Active	PER 004		☐		SV 005 (M)	CE 005	Fuel Loadout Flare	TBD	TBD	2869	1500		Ft3	Min	12.4
143	EU 072	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Transfer Incline Conveyor	TBD	TBD	2869	45		Ton	Hr	
144	EU 072	Active	PER 004		☐		SV 009 (M)	CE 009	DDGS Transfer Incline Conveyor	TBD	TBD	2869	45		Ton	Hr	
145	EU 073	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Transfer Storage Conveyor	TBD	TBD	2869	45		Ton	Hr	
146	EU 073	Active	PER 004		☐		SV 009 (M)	CE 009	DDGS Transfer Storage Conveyor	TBD	TBD	2869	45		Ton	Hr	
147	EU 074	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Pile Storage Conveyor	TBD	TBD	2869	45		Ton	Hr	
148	EU 074	Active	PER 004		☐		SV 009 (M)	CE 009	DDGS Pile Storage Conveyor	TBD	TBD	2869	45		Ton	Hr	
149	EU 075	Active	PER 002		☐		SV 008 (M)	CE 008	Cooling Tower	TBD	TBD	2869	3000000		Gal	Hr	
150	EU 075	Active	PER 004		☐		SV 008 (M)	CE 008	Cooling Tower	TBD	TBD	2869	3000000		Gal	Hr	
151	EU 076	Active	PER 001		☐				300 hp IC Engine	TBD	TBD	2869	300	Energy	Hp		
152	EU 076	Active	PER 004		☐		SV 010 (M)		300 hp IC Engine	TBD	TBD	2869	300	Energy	Hp		

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
130	EU 065	Active	PER 004	01/01/2007	11/01/2009					
131	EU 066	Active	PER 002							
132	EU 066	Active	PER 004	01/01/2007	11/01/2009					
133	EU 067	Active	PER 002							
134	EU 067	Active	PER 004	01/01/2007	11/01/2009					
135	EU 068	Active	PER 002							
136	EU 068	Active	PER 004	01/01/2007	11/01/2009					
137	EU 069	Active	PER 001							
138	EU 069	Active	PER 004	01/01/2007	11/01/2009					
139	EU 070	Active	PER 002							
140	EU 070	Active	PER 004	01/01/2007	11/01/2009					
141	EU 071	Active	PER 002							
142	EU 071	Active	PER 004	01/01/2007	11/01/2009					
143	EU 072	Active	PER 002							
144	EU 072	Active	PER 004	01/01/2007	11/01/2009					
145	EU 073	Active	PER 002							
146	EU 073	Active	PER 004	01/01/2007	11/01/2009					
147	EU 074	Active	PER 002							
148	EU 074	Active	PER 004	01/01/2007	11/01/2009					
149	EU 075	Active	PER 002							
150	EU 075	Active	PER 004	01/01/2007	11/01/2009					
151	EU 076	Active	PER 001							
152	EU 076	Active	PER 004	01/01/2007	11/01/2009					

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
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ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
153	EU 077	Active	PER 002		☐		SV 001 (M)	CE 010 CE 011	Centrate Tank #1			2869	1690		Gal		
154	EU 077	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Centrate Tank #1			2869	1690		Gal		
155	EU 078	Active	PER 002		☐		SV 001 (M)	CE 010 CE 011	Centrate Tank #2			2869	1690		Gal		
156	EU 078	Active	PER 004		☐		SV 001 (M)	CE 010 CE 011	Centrate Tank #2			2869	1690		Gal		
157	EU 079	Active	PER 002		☐		SV 002 (M)	CE 002	Upper Receiving Conveyor #1			2869	20000		Bushel	Hr	
158	EU 079	Active	PER 004		☐		SV 002 (M)	CE 002	Upper Receiving Conveyor #1			2869	20000		Bushel	Hr	
159	EU 080	Active	PER 002		☐		SV 002 (M)	CE 002	Upper Receiving Conveyor #2			2869	20000		Bushel	Hr	
160	EU 080	Active	PER 004		☐		SV 002 (M)	CE 002	Upper Receiving Conveyor #2			2869	20000		Bushel	Hr	
161	EU 081	Active	PER 002		☐		SV 002 (M)	CE 002	Silo Reclaim Conveyor #1			2869	6000		Bushel	Hr	
162	EU 081	Active	PER 004		☐		SV 002 (M)	CE 002	Silo Reclaim Conveyor #1			2869	6000		Bushel	Hr	
163	EU 082	Active	PER 002		☐		SV 002 (M)	CE 002	Silo Reclaim Conveyor #2			2869	6000		Bushel	Hr	
164	EU 082	Active	PER 004		☐		SV 002 (M)	CE 002	Silo Reclaim Conveyor #2			2869	6000		Bushel	Hr	
165	EU 083	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Reclaim Conveyor			2869	316		Ton	Hr	
166	EU 083	Active	PER 004		☐		SV 009 (M)	CE 009	DDGS Reclaim Conveyor			2869	316		Ton	Hr	
167	EU 084	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Silo Bucker Elevator			2869	316		Ton	Hr	
168	EU 084	Active	PER 004		☐		SV 009 (M)	CE 009	DDGS Silo Bucker Elevator			2869	316		Ton	Hr	
169	EU 085	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Recycle Conveyor			2869	316		Ton	Hr	
170	EU 085	Active	PER 004		☐		SV 009 (M)	CE 009	DDGS Recycle Conveyor			2869	316		Ton	Hr	
171	EU 086	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Silo Storage Conveyor			2869	316		Ton	Hr	
172	EU 086	Active	PER 004		☐		SV 009 (M)	CE 009	DDGS Silo Storage Conveyor			2869	316		Ton	Hr	
173	EU 087	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Silo Bin #1			2869	191848		Ft3		
174	EU 087	Active	PER 004		☐		SV 009 (M)	CE 009	DDGS Silo Bin #1			2869	191848		Ft3		
175	EU 088	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Silo Bin #2			2869	191848		Ft3		
176	EU 088	Active	PER 004		☐		SV 009 (M)	CE 009	DDGS Silo Bin #2			2869	191848		Ft3		
177	EU 089	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Loadout Conveyor #1			2869	316		Ton	Hr	

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
153	EU 077	Active	PER 002							
154	EU 077	Active	PER 004	01/01/2007	11/01/2009					
155	EU 078	Active	PER 002							
156	EU 078	Active	PER 004	01/01/2007	11/01/2009					
157	EU 079	Active	PER 002							
158	EU 079	Active	PER 004	01/01/2007	11/01/2009					
159	EU 080	Active	PER 002							
160	EU 080	Active	PER 004	01/01/2007	11/01/2009					
161	EU 081	Active	PER 002							
162	EU 081	Active	PER 004	01/01/2007	11/01/2009					
163	EU 082	Active	PER 002							
164	EU 082	Active	PER 004	01/01/2007	11/01/2009					
165	EU 083	Active	PER 002							
166	EU 083	Active	PER 004	01/01/2007	11/01/2009					
167	EU 084	Active	PER 002							
168	EU 084	Active	PER 004	01/01/2007	11/01/2009					
169	EU 085	Active	PER 002							
170	EU 085	Active	PER 004	01/01/2007	11/01/2009					
171	EU 086	Active	PER 002							
172	EU 086	Active	PER 004	01/01/2007	11/01/2009					
173	EU 087	Active	PER 002							
174	EU 087	Active	PER 004	01/01/2007	11/01/2009					
175	EU 088	Active	PER 002							
176	EU 088	Active	PER 004	01/01/2007	11/01/2009					
177	EU 089	Active	PER 002							

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
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ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Stack/ Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
178	EU 089	Active	PER 004		☐		SV 009 (M) SV 013 (O)	CE 009	DDGS Loadout Conveyor #1			2869	316		Ton	Hr	
179	EU 090	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Loadout Bucket Elevator			2869	316		Ton	Hr	
180	EU 090	Active	PER 004		☐		SV 009 (M)	CE 009	DDGS Loadout Bucket Elevator			2869	316		Ton	Hr	
181	EU 091	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Loadout Conveyor #2			2869	316		Ton	Hr	
182	EU 091	Active	PER 004		☐		SV 009 (M) SV 013 (O)	CE 009	DDGS Loadout Conveyor #2			2869	316		Ton	Hr	
183	EU 092	Active	PER 002		☐		SV 009 (M)	CE 009	DDGS Loadout Conveyor #3			2869	316		Ton	Hr	
184	EU 092	Active	PER 004		☐		SV 009 (M) SV 013 (O)	CE 009	DDGS Loadout Conveyor #3			2869	316		Ton	Hr	
185	EU 093	Active	PER 003		☐		SV 003 (M)	CE 003	Grain Silo #3	NA	NA	2869	1016000		Bushel		
186	EU 093	Active	PER 004		☐		SV 011 (O)		Grain Silo #3	NA	NA	2869	1016000		Bushel		
187	EU 094	Active	PER 004		☐		SV 014 (O)		DDGS Storage			2869					

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Comm-ence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
178	EU 089	Active	PER 004	01/01/2007	11/01/2009					
179	EU 090	Active	PER 002							
180	EU 090	Active	PER 004	01/01/2007	11/01/2009					
181	EU 091	Active	PER 002							
182	EU 091	Active	PER 004	01/01/2007	11/01/2009					
183	EU 092	Active	PER 002							
184	EU 092	Active	PER 004	01/01/2007	11/01/2009					
185	EU 093	Active	PER 003							
186	EU 093	Active	PER 004	05/01/2011	09/01/2011					
187	EU 094	Active	PER 004	01/01/2007	11/01/2009					

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: CONTROL EQUIPMENT (CE)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Control Equip. Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Control Equip. Type	Control Equipment Description	Manufacturer	Model	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collection Efficiency (%)	Afterburner Combustion Parameters
1	CE 001	Retired	PER 002			099	Replaced by CE010 and CE011	TBD	TBD				
2	CE 002	Active	PER 002			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	TBD	TBD	PM2.5 PM10 PM	95 95 95	92.0 98.6 99.5	
3	CE 003	Active	PER 002			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	TBD	TBD	PM2.5 PM10 PM	100 100 100	92.0 93 99	
4	CE 004	Active	PER 002			050	Packed-Gas Adsorption Column	ICM	NA	HAPs VOC	100 100	98 99	
5	CE 005	Active	PER 001			023	Flaring	ICM	NA	HAPs VOC	100 100	98 98	
6	CE 006	Active	PER 001			023	Flaring	ICM	NA	HAPs VOC	100 100	98 98	
7	CE 007	Active	PER 002			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	TBD	NA	PM2.5 PM10 PM	100 100 100	92.0 93 99	
8	CE 008	Active	PER 002			015	Mist Eliminator - Low Velocity, i.e., V<250 Ft/Min	ICM	NA	PM10 PM	100 100	75 75	
9	CE 009	Active	PER 002			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	TBD	TBD	PM2.5 PM10 PM	95 95 95	90.3 98.3 99.2	
10	CE 010	Active	PER 001			022	Direct Flame Afterburner w/Heat Exchanger	TBD	TBD	CO PM10 PM VOC	100 100 100 100	95 95 95 99	
11	CE 011	Active	PER 001			022	Direct Flame Afterburner w/Heat Exchanger	TBD	TBD	CO PM10 PM VOC	100 100 100 100	95 95 95 99	
12	CE 012	Active	PER 002			099	LDAR	NA	NA	VOC	100	83	
13	CE 012	Retired	PER 004			099	LDAR (not CE)	NA	NA	VOC	100	83	
14	CE 013	Active	PER 002			099	Road Cleaning	TBD	TBD	PM10 PM	100 100	50 50	
15	CE 013	Retired	PER 004			099	Road Cleaning (not CE)	TBD	TBD	PM10 PM	100 100	50 50	

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: FUGITIVE SOURCES (FS)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Fugitive Source Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Pollutant(s) Emitted	Control Equip. ID No(s).	Fugitive Source Description	Year Installed	Year Removed
1	FS 001	Active	PER 001		☐		PM10 PM		Uncaptured Receiving/Handling/Storage		
2	FS 001	Removed	PER 004		☐		PM10 PM		Uncaptured Grain Receiving/Handling/Storage (not FS)		
3	FS 002	Active	PER 001		☐		PM PM10		Uncaptured DDGS		
4	FS 002	Removed	PER 004		☐		PM PM10		Uncaptured DDGS loadout (not FS)		
5	FS 003	Active	PER 001		☐		PM10 PM		Uncaptured Grain Scalping		
6	FS 003	Removed	PER 004		☐		PM10 PM		Uncaptured Grain Scalping		
7	FS 004	Active	PER 001		☐		VOC HAPs		Fugitive Equipment Leaks (LDAR)		
8	FS 004	Active	PER 004		☐		VOC HAPs		Equipment Leaks (LDAR)		
9	FS 006	Active	PER 001		☐		VOC HAPs		Other Insignificant Sources (wet cake, misc. vents)		
10	FS 006	Active	PER 004		☐		VOC HAPs		Wetcake storage		
11	FS 007	Active	PER 001		☐		HAPs VOC		Truck Loading Losses		
12	FS 007	Removed	PER 004		☐		HAPs VOC		Truck Loading Losses		
13	FS 008	Active	PER 001		☐		VOC HAPs		Rail Loading Losses		
14	FS 008	Removed	PER 004		☐		VOC HAPs		Rail Loading Losses		
15	FS 009	Active	PER 001		☐		PM PM10		Truck Traffic on Paved Roads		

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: CONTINUOUS MONITORS (MR)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Monitor Status	Added By (Action)	Retired By (Action)	Monitored Item (ID No(s).)	Operator ID for Item	Monitor Description	Manufacturer	Model Number	Serial Number	Parameters Monitored
1	MR 001	Active	PER 001		EU 005 EU 006		NOx				NOx

FACILITY DESCRIPTION: CONTINUOUS MONITORS (MR)

	ID No.	Monitor Status	Added By (Action)	Span Value	System Full-Scale Value	Bypass Capa-bility?	Optical Path Length Ratio	Installation Date	Removal Date
1	MR 001	Active	PER 001	100	200				

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: BUILDINGS (BG)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Added By (Action)	Retired By (Action)	Operator ID for Item	Length (feet)	Width (feet)	Roof Height from Ground (feet)	Description/Comment	Building Status
1	BG 001	PER 001			77.0	45.0	38.0	Energy Center	Active
2	BG 002	PER 001			75.0	50.0	42.0	Process Building	Active
3	BG 003	PER 001			55.0	24.0	23.0	Fermentation Building	Active
4	BG 004	PER 001			46.0	15.0	19.0	Pumphouse/Water Treatment Building	Active
5	BG 005	PER 001			7.0	3.0	15.0	Scalehouse	Active
6	BG 006	PER 001			24.0	15.0	15.0	Administration Building	Active
7	BG 007	PER 001			31.0	28.0	40.0	Grain Receiving Building	Active
8	BG 008	PER 001			55.0	27.0	150.0	Grain Silos	Active
9	BG 009	PER 001			53	38	43	DDGS Building	Active
10	BG 010	PER 001			39.0	19.0	100.0	DDGS Storage Silos	Active
11	BG 011	PER 001			37.0	9.0	43.0	Ethanol Rail Loadout Shelter	Active

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

FACILITY DESCRIPTION: STORAGE TANKS (TK)

Show: Active and Pending Records
Action: PER 004
AQD Facility ID: 16100035
Facility Name: Guardian Energy LLC

	ID No.	Tank Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Control Equip. ID No(s).	Product Stored	Interior Height (ft.)	Interior Diameter (ft.)	Capacity (1000 gal)	Construction Type
1	TK 001	Active	PER 001		☐			190 Proof Ethanol	33	33	200	Internal Floating Roof
2	TK 002	Active	PER 001		☐			200 Proof Ethanol	33	33	200	Internal Floating Roof
3	TK 003	Active	PER 001		☐			Corrosion Inhibitor	8	8	3	Other
4	TK 004	Active	PER 001		☐			Denatured Ethanol 1	42	80	1500	Internal Floating Roof
5	TK 005	Active	PER 001		☐			Denatured Ethanol 2	42	80	1500	Internal Floating Roof
6	TK 006	Active	PER 001		☐			Natural Gasoline	33	33	200	Internal Floating Roof

FACILITY DESCRIPTION: STORAGE TANKS (TK)

	ID No.	Tank Status	Added By (Action)	Support Type (floating roof only)	Column Count	Column Diameter (ft.)	Deck Type (floating roof only)	Seal Type (floating roof only)	Year Installed	Year Removed
1	TK 001	Active	PER 001	Column Supported Roof, Construction Type I	1	1	Bolted, Cont. Sheet Const. 5 Ft Wide	Resilient seal (nonmetallic), with weather shie		
2	TK 002	Active	PER 001	Column Supported Roof, Construction Type I	1	1	Bolted, Cont. Sheet Const. 5 Ft Wide	Resilient seal (nonmetallic), with weather shie		
3	TK 003	Active	PER 001							
4	TK 004	Active	PER 001	Column Supported Roof, Construction Type I	1	1	Bolted, Cont. Sheet Const. 5 Ft Wide	Resilient seal (nonmetallic), with weather shie		
5	TK 005	Active	PER 001	Column Supported Roof, Construction Type I	1	1	Bolted, Cont. Sheet Const. 5 Ft Wide	Resilient seal (nonmetallic), with weather shie		
6	TK 006	Active	PER 001	Column Supported Roof, Construction Type I	1	1	Bolted, Cont. Sheet Const. 5 Ft Wide	Resilient seal (nonmetallic), with weather shie		

Attachment 4 – Air Dispersion Modeling Policy Memo

SF-00006-05(4/86)

DEPARTMENT : POLLUTION CONTROL AGENCY STATE OF MINNESOTA

Office Memorandum

DATE : 05/26/2011

TO : Affected Permitted Facilities

FROM : Jeff Smith
Director
Industrial Division
PHONE : 651/757-2735

SUBJECT : Modeling Guidance for Compliance with one-hour NO_2, one-hour SO_2 and 2006 24-hour $PM_{2.5}$ NAAQS

PURPOSE:

In 2010, the U.S. Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for nitrogen dioxide (NO_2) and sulfur dioxide (SO_2) averaged over one hour. In 2006, EPA promulgated a revised fine particulate matter ($PM_{2.5}$) NAAQS with an averaging time of 24 hours. The Minnesota Pollution Control Agency's (MPCA's) ongoing goal is the protection of human health and the environment through appropriate implementation of NAAQS. Evolving federal implementation guidance, data limitations, and the short-term form of these standards create challenges for efficient implementation of these newer NAAQS.

This guidance document, which applies for the time prior to the attainment dates for each of these standards, clarifies when the MPCA will require facility-based air dispersion modeling for the 2010 one-hour NO_2, 2010 one-hour SO_2 and the 2006 24-hour $PM_{2.5}$ NAAQS.

This guidance document also provides clarity regarding how facility-based air dispersion modeling conducted by an owner or operator for the three NAAQS identified above, if conducted prior to facility-specific enforceable requirements, impacts a facility's Annual Compliance Certification as required under Minn. R. 7007.0800, Subp. 6(C).

MODELING GUIDANCE

Except for the reasons described below, the MPCA generally will not immediately require facility-based air dispersion modeling to demonstrate compliance with the 2010 one-hour NO_2, 2010 one-hour SO_2 and the 2006 24-hour $PM_{2.5}$ NAAQS. Consistent with EPA requirements and the practices of EPA Region 5 states and other neighboring states, the MPCA may require facility-based air dispersion modeling under the circumstances described below.

Prior to the respective attainment dates for 2010 one-hour NO_2, 2010 one-hour SO_2 and the 2006 24-hour $PM_{2.5}$ NAAQS, the MPCA encourages facility owners and operators to conduct internal air dispersion modeling and engineering analyses to review and refine emission factors, stack information, and other air dispersion modeling inputs to facilitate future attainment and compliance. The respective attainment dates are: February 2017 for the 2010 one-hour NO_2 NAAQS, July 2017 for the 2010 one-hour SO_2 NAAQS and December 2014 for the 2006 $PM_{2.5}$ NAAQS.

When the internal analyses include air dispersion modeling, the modeling results for the 2010 one-hour NO_2, 2010 one-hour SO_2 and the 2006 24-hour $PM_{2.5}$ NAAQS are not required to be reported on the Annual Compliance Certification for an operating air quality permit prior to the effective date of facility-specific requirements. When a formal request for air dispersion modeling is made by the MPCA, the information must be submitted to the MPCA for permit or SIP evaluation. This guidance does not change existing Title V Annual Compliance Certification obligations to consider internal modeling results as potential credible evidence of noncompliance for any standards not specifically addressed by this policy.

The MPCA encourages any owner or operator conducting such internal modeling to follow the air dispersion modeling guidance provided on the MPCA or EPA web sites.[1] The use of consistent protocols will help facilities plan based on reliable data.

The MPCA believes the allowance for internal modeling for the 2010 one-hour NO_2, 2010 one-hour SO_2 and the 2006 24-hour $PM_{2.5}$ NAAQS provided above will help owners and operators prepare for the eventual compliance demonstration for the identified NAAQS. This preparation will provide owners and operators with information to plan for any necessary facility changes, including permit modifications, to demonstrate that their facility emissions do not cause or contribute to a NAAQS violation.

If owners or operators want to increase their regulatory certainty for future planning purposes, the MPCA is willing to enter into schedules of compliance that would lay out air dispersion modeling and other future work from the owners or operators to demonstrate compliance and potentially provide for related facility changes. An owner or operator wanting to enter into a schedule of compliance under this guidance should contact the supervisor of the Air Quality Compliance and Enforcement Unit at the MPCA.

WHEN AIR DISPERSION MODELING MAY BE REQUIRED

Prevention of Significant Deterioration Permitting

Federal regulations define the air dispersion modeling requirements for all final NAAQS for Prevention of Significant Deterioration (PSD) permitting. The MPCA has no discretion to defer PSD modeling when air dispersion modeling is required under the PSD program, due to proposed emissions of a facility or facility changes. Therefore, PSD modeling is not impacted by this guidance.

State Implementation Plans

The Clean Air Act (CAA) requires EPA and states to implement NAAQS through the development and approval of State Implementation Plans (SIPs). Air dispersion modeling may be required during the development of a nonattainment or maintenance SIP. The CAA requires a state to implement any facility emission reductions or changes necessary to demonstrate attainment with the relevant standard. Section 110(a)(2)(A) of the Clean Air Act requires that these reductions are enforceable at the state level when the state submits the SIP for EPA approval.

[1] http://www.pca.state.mn.us/nwqh421 or http://www.epa.gov/scram001/

Compliance with the reduction requirements must occur on a timeframe that ensures the NAAQS attainment date is met. The state must demonstrate, usually through air dispersion modeling, that the emission reductions will result in attainment. The MPCA uses permits, consent decrees and administrative orders to ensure SIP requirements are enforceable.

Under the 2010 SO_2 NAAQS, EPA will require air dispersion modeling for implementation of the one-hour SO_2 NAAQS. EPA will also require a robust CAA §110(a) SIP that uses air dispersion modeling to evaluate whether facilities above a federally defined emission threshold cause or contribute to violations of the 2010 one-hour SO_2 NAAQS. For any sources where air dispersion modeling shows a potential to cause or contribute to a NAAQS violation, the MPCA must include enforceable conditions in the SIP and show that compliance will occur by July 2017. To complete the SIP for the one-hour SO_2 NAAQS by the federally required date of June 2013, the MPCA will conduct the first round of air dispersion modeling. If the first round of air dispersion modeling indicates NAAQS receptor exceedances, the MPCA will work with potentially culpable sources to conduct refined modeling and plan for an enforceable compliance demonstration. The MPCA will send letters to facilities requesting validation of air dispersion modeling input information in May 2011.

As of May 2011, the EPA has not required that the MPCA submit air dispersion modeling results as part of the maintenance SIPs for the 2010 one-hour NO_2 and 2006 24 hour $PM_{2.5}$ standards.

Minor Source New Source Review Permitting

The CAA requires the MPCA to have the ability to ensure that minor sources do not cause or contribute to NAAQS violations or cause the exceedance of any applicable PSD increments. The CAA also requires Minnesota's SIPs to demonstrate that the MPCA has the authority to ensure that major and minor sources do not cause or contribute to a violation of any NAAQS or cause the exceedance of any applicable PSD increments. These requirements establish the MPCA's obligation to formally require air dispersion modeling for minor sources to meet federal requirements for a state Minor Source New Source Review (NSR) program. Without the ability to ensure that minor sources do not cause or contribute to a violation of NAAQS, the MPCA's ability to receive full approval of SIPs to implement NAAQS in Minnesota is jeopardized.

The MPCA does not require all minor sources to model for NAAQS or applicable PSD increment compliance. The current practice is to assess compliance with applicable PSD increments during the review of PSD modeling for proposed modifications at a major source. The MPCA uses the following criteria for when NAAQS modeling may be required from minor sources under the MPCA's Minor Source NSR authority:

a) Triggering PSD, nonattainment area New Source Review, or environmental review;
b) The installation of a non-emergency internal combustion engine;
c) The facility is located in a nonattainment or maintenance area for a related pollutant;

d) Existing modeling that indicates a potential threat to the NAAQS;
e) An increase in emissions of a related pollutant; or
f) Public interest.

Though these criteria are broad, owners or operators may better predict when modeling may be required through proactive work in advance of potential investment in new facilities or modifications. Owners or operators may review existing modeling results for their own and nearby facilities. Predictions approaching NAAQS, PSD increments, or visibility thresholds are more likely to lead to modeling requests. Owners or operators may also work cooperatively with their local communities to improve residents' understanding of their current operations and future plans. Ideally, this type of cooperation would allow local resolution of concerns.

Multiple Pollutant or Regulatory Implications

Some sources may be subject to multiple federal and state regulations that will require emission reductions of multiple pollutants or facility modifications (e.g. Regional Haze, Boiler MACT, Mercury TMDL, Transport Rule). The compliance dates for these regulations may be different and the MPCA wants to ensure efficient implementation of regulatory requirements and provide regulatory certainty for affected parties.

The MPCA wants to apply multi-pollutant approaches to efficiently address regulations and avoid single pollutant solutions that may exacerbate or complicate emission reductions for other pollutants. We encourage facilities to discuss such multi-pollutant strategies proactively with MPCA to increase efficiency and ensure future compliance. In some cases, MPCA may request modeling data or demonstrations for the new standards in order to satisfy the requirements and goals of multiple programs and achieve compliance with NAAQS.

ONGOING DISCUSSIONS

The MPCA will continue to meet with interested parties and stakeholders to ensure the MPCA's use of air dispersion modeling meets state and federal requirements without discouraging facilities from engaging in internal air dispersion modeling for planning purposes. The MPCA will continue to work with EPA and other states to improve air dispersion modeling guidance and tools. The MPCA will also continue to monitor the use of air dispersion modeling in other states to efficiently implement an air quality program that protects human health and the environment.

For further questions regarding this guidance policy, contact the Air Quality Permits Section Manager or the Air Assessment and Environmental Data Management Section Manager.

Attachment 5 – NESHAP Subpart VVVVVV for Chemical Manufacturing Area Applicability

GUARDIAN ENERGY

January 18, 2011

Director, Air and Radiation Division
EPA Region V
77 West Jackson Blvd
Chicago, IL 60604-3507

Subject: Supplemental Notification for NESHAP Subpart VVVVVV
Guardian Energy, LLC, Janesville, Minnesota

Dear Director:

Guardian Energy, LLC (Guardian) submits this notification under National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Chemical Manufacturing (40 CFR 63 Subpart VVVVVV). Guardian submitted an initial notification on March 1, 2010 (within 120 days of facility start-up) stating that we were subject to 40 CFR 63 Subpart VVVVVV based on a preliminary review of applicability. NESHAP VVVVVV (6V) is applicable to each chemical manufacturing process unit (CMPU) that meets the conditions specified in paragraphs (a)(1) through (3) of section 63.11494.

Those conditions are listed below:

(a)(1) The CMPU uses as feedstocks, generates as byproducts, or produces as products any of the hazardous air pollutants (HAP) listed in Table 1 of this subpart (Table 1 HAP).

(a)(2) The CMPU is located at an area source of HAP emissions.

(a)(3) Table 1 HAP are present in feedstocks, or Table 1 HAP are generated or produced in the CMPU and are present in process fluid, at concentrations greater than 0.1 percent for carcinogens, and greater than 1.0 percent for noncarcinogens.

Based on further review and facility testing, below is a summary each condition as it relates to Guardian:

(a)(1) The facility **does have** at least one CMPU that uses as feedstocks, generates as byproducts, or produces a Table 1 HAP;

(a)(2) The CMPU **is** located at an area source of HAP emissions;

(a)(3) Table 1 HAP **are not** present, generated, or produced in any process fluid, at concentrations greater than 0.1 percent for carcinogens, and greater than 1.0 percent for noncarcinogens.

Guardian does not meet the three requirements listed above for this rule to apply; therefore, **the facility is not subject to 40 CFR 63 Subpart VVVVVV**. Facility samples during normal operation and design firm consultations have been used to make this determination.

The EHS Manager at our Janesville facility is Mr. Mike Santo, who can be reached at (507) 234-5008.

GUARDIAN ENERGY

Please direct all correspondence to Mr. Mike Santo at the following mailing address:

4745 380th Avenue
P.O. Box 207
Janesville, MN 56048

Sincerely,

Guardian Energy, LLC

Tom Hanson
VP of OP
(507) 234-5012

Enclosures: As noted

cc: David Beil, MPCA
Billy VonSee, Merjent

Attachment 6 – Points Calculator

Points Calculator

1) AQ Facility ID No.:	13100065
2) Facility Name:	Guardian Energy LLC
3) Small business? y/n?	n
4) DQ Numbers (including all rolled) :	4098, 3556
5) Date of each Application Received:	8/30/2012
6) Final Permit No.	13100065-004
7) Permit Staff	Adriane Lenshek

Total Points	95

Application Type	**DQ No.**	**Qty.**	*Points*	**Total Points**	**Details**
Administrative Amendment			*1*	0	
Minor Amendment			*4*	0	
Applicability Request			*10*	0	
Moderate Amendment			*15*	0	
Major Amendment			*25*	0	
Individual State Permit (not reissuance)			*50*	0	
Individual Part 70 Permit (not reissuance)	4098	1	*75*	75	
Additional Points					
Modeling Review			*15*	0	
BACT Review			*15*	0	
LAER Review			*15*	0	
CAIR/Part 75 CEM analysis			*10*	0	
NSPS Review			*10*	0	
NESHAP Review			*10*	0	
Case-by-case MACT Review			*20*	0	
Netting			*10*	0	
Limits to remain below threshold	4098	2	*10*	20	PSD, NESHAP
Plantwide Applicability Limit (PAL)			*20*	0	
AERA review			*15*	0	
Variance request under 7000.7000			*35*	0	
Confidentiality request under 7000.1300			*2*	0	
EAW review					
Part 4410.4300, subparts 18, item A; and 29			*15*	0	
Part 4410.4300, subparts 8, items A & B; 10, items A to C; 16, items A & D; 17, items A to C & E to G; and 18, items B & C			*35*	0	
Part 4410.4300, subparts 4; 5 items A & B; 13; 15; 16, items B & C; and 17 item D			*70*	0	
		Add'l Points		**20**	

NOTES: