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**Application for Approval of Emissions of Air
Pollutants from Minor Sources**

**United World Energy Corporation
Hayes U-1 Well #1 Facility**

Jefferson Davis Parish - Lake Arthur, LA

August 2009

Prepared for:

United World Energy Corporation
2006 Ambassador Caffery Pkwy
Lafayette, LA 70506
(337) 278-0488

ORIGINAL

Prepared by:

COMM Engineering, Inc.
1319 W. Pinhook Road, Suite 401
Lafayette, LA 70503
(337) 237-4373





original to IOA

copy to Permit 3/Davies

MAIN FILE

AI 166486

1260 - 00558-00

1319 W. Pinhook, Suite 401

Lafayette, Louisiana 70503

Phone (337) 237-4373

Fax (337) 234-1805

www.commengineering.com

REL 20090001

August 20, 2009

Mr. James Davies
Louisiana Department of Environmental Quality
Office of Environmental Services
602 North 5th Street
Baton Rouge, Louisiana 70802

RE: Minor Source Air Permit Application
United World Energy Corporation
Hayes U-1 Well #1 Facility

2009 AUG 25 AM 10:12
LDEQ - DES

Dear Mr. Davies,

Enclosed are the original and two copies of a Minor Source Air Permit Application for United World Energy Corporation's Hayes U-1 Well #1 Facility.

United World Energy Corporation is applying for an air permit in accordance with LAC 33:III.501.A. in order to proceed with facility operations as outlined in the Proposed Action/Process Description Section of the application.

Enclosed is a check in the amount of \$449.00 to cover the fee for a Minor Source Air Permit Application.

We would appreciate your prompt attention and approval of this application. Please contact me at (337) 237-4373 Ext. 115 (or rsuir@commengineering.com) if you have any questions regarding this submittal.

Sincerely,

Rachelle G. Suir
Environmental Supervisor

Enclosures

cc: Wayne Landry, United World Energy Corporation
Kenzie Bozeman, LDEQ Enforcement
LDEQ Southwest Regional Office

Tuesday, August 25, 2009
2:51:46 PM

RECEIPT OF CHECK

Master AI #: 166486
Name on Check: United World Energy Corp
Master File Name: Hayes U-1 Well #1 Facility
Check Received Date: 8/25/2009
Check Date: 8/18/2009
Check Number: 12003
Check Amount (\$): \$449.00
Staff Entry: BARBARAW
Date data entered: 8/25/2009
Media: AIR
Comments: initial minor source permit for United World
Energy Corp., Hayes U-1 Well #1 Facility---permit
1360-00558-00

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Application for Approval of Emissions of Air Pollutants from Minor Sources

United World Energy Corporation Hayes U-1 Well #1 Facility

APPLICATION

Section 1	Facility Information
Section 2	Physical Location and Process Description
Section 3	Confidentiality
Section 4	Type of Application
Section 5	Fee Information
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Section 8	Certification of Compliance with Applicable Requirements
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Section 11	History of Permitted Emissions
Section 12a	Enforcement Actions
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Section 14	Initial Notifications and Performance Tests
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Section 16	General XVII Activities
Section 17	Insignificant Activities
Section 18	Regulatory Applicability for Commonly Applicable Regulations
Section 19	Applicable Regulations, Air Pollution Control Measures, Monitoring and Recordkeeping
Section 20	Emissions Inventory Questionnaire (EIQ) Forms

APPENDIX

Section 1	Proposed Action and Process Description
Section 2	Facility Map and Driving Directions
Section 3	Facility Layout and Process Flow Diagram
Section 4	Emission Point List
Section 5	Annual Emission Rate Table
Section 6	Emission Calculations
Section 7	Gas Analysis
Section 8	General Good Housekeeping Plan (LAC 33:III.2113)
Section 9	Certificate of Good Standing
Section 10	State Operating Permit Application Completeness Checklist

Department of Environmental Quality
Office of Environmental Services
Air Permits Division
P.O. Box 4313
Baton Rouge, LA 70821-4313
(225) 219-3181

LOUISIANA

Application for Approval of Emissions of Air Pollutants from Minor Sources



PLEASE TYPE OR PRINT

1. Facility Information [LAC 33:III.517.D.1]

Facility Name (if any)

Hayes U-1 Well #1 Facility

Agency Interest Number (A.I. Number)

Currently Effective Permit Number(s)

Company - Name of Owner

United World Energy Corporation

Company - Name of Operator (if different from Owner)

Parent Company (if Company - Name of Owner given above is a division)

Ownership: (check the appropriate box)

corporation, partnership, or sole proprietorship regulated utility municipal government
 state government federal government other, specify _____

2. Physical Location and Process Description [LAC 33:III.517.D.18, unless otherwise stated]

What does this facility produce? Add more rows as necessary.

Sweet Natural Gas and Condensate/Crude Oil Production.

What modifications/changes are proposed in this application? Add more rows as necessary.

See attached proposed action and process description.

Nearest town (in the same parish as the facility):

Lake Arthur

Parish(es) where facility is located:

Jefferson Davis

Distance to (mi)	<u>48</u> Texas	<u>203</u> Arkansas	<u>200</u> Mississippi	<u>270</u> Alabama
Latitude of Facility Front Gate:	<u>30</u> Deg	<u>4</u> Min	<u>51.842</u> Sec	<u>0</u> Hundredths
Longitude of Facility Front Gate:	<u>92</u> Deg	<u>54</u> Min	<u>47.974</u> Sec	<u>0</u> Hundredths

Add physical address and description of location of the facility below. If the facility has no address, provide driving directions. Add more rows as necessary.

Approximately 14.5 miles west of Lake Arthur, LA

See Driving Directions attached to Map for more details.

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Map attached (required per LAC 33:III.517.D.1) |
| <input checked="" type="checkbox"/> | Description of processes and products attached (required per LAC 33:III.517.D.2) |
| <input checked="" type="checkbox"/> | Introduction/Description of the proposed project attached (required per LAC 33:III.517.D.5) |

3. Confidentiality [LAC 33:I.Chapter 5]

Are you requesting confidentiality for any information except air pollutant emission rates?

Yes No

If "yes", list the sections for which confidentiality is requested below. Add rows as necessary. Confidentiality requests require a submittal that is separate from this application. Information for which confidentiality is requested should not be submitted with this application. Consult instructions.

4. Type of Application [LAC 33:III.517.D]

Check all that apply.

<input checked="" type="checkbox"/> Minor Source	<input type="checkbox"/> Synthetic Minor Sources	<input type="checkbox"/> Standard Oil and Gas (SOGA)	<input type="checkbox"/> Small Source
<input type="checkbox"/> Renewal			
Select one, if applicable:			
<input checked="" type="checkbox"/> Entirely new facility			
<input type="checkbox"/> Modification or expansion of existing facility (may also include reconciliations)			
<input type="checkbox"/> Reconciliations only			

Does this submittal update or replace an application currently under review?

Yes No

If yes, provide date that the prior application was submitted: _____

Select one if this application is for an existing facility that does not have an air quality permit:

- Previously Grandfathered (LAC 33:III.501.B.6)
- Previously Exempted (e.g., Small Source Exemption; Act 918)
- Previously Unpermitted

5. Fee Information [LAC 33:III.517.D.17]

Fee Parameter: If the fee code is based on an operational parameter (such as number of employees or capital cost), enter that parameter here.

Industrial Category: Enter the Standard Industrial Classification (SIC) Codes that apply to the facility.

Primary SICC: 1311

Secondary SICC(s): _____

Project Fee Calculation: Enter fee code, permit type, production capacity/throughput, and fee amount pursuant to LAC 33: III.Chapter 2. Add rows to this table as needed. Include with the application the amount in the Grand Total blank as the permit application fee.

FEE CODE	TYPE	EXISTING CAPACITY	INCREMENTAL CAPACITY INCREASE	SURCHARGES				TOTAL
				MULTIPLY	NSPS	AIR TOXICS		AMOUNT
0040	Application	0 tpy	< 16 tpy					\$449.00
GRAND TOTAL								\$449.00

****Optional** Fee Explanation:** Use the space provided to give an explanation of the fee determination above.

Electronic Fund Transfer (EFT): If paying the permit application fee using an Electronic Fund Transfer (EFT), please include the EFT Transaction Number, the Date that the EFT was made, and the total dollar amount submitted in the EFT. If not paying the permit application fee using EFT, leave blank.

EFT Transaction Number

Date of Submittal

Total Dollar Amount

6. Key Dates

Estimated date construction will commence: Existing *Estimated date operation will commence:* Operating

7. LAC 33:I.1701 Requirements - Answer all below for new sources and permit renewals - **Yes** **No**

Does the company or owner have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying in Louisiana or other states? (This requirement applies to all individuals,, partnerships, corporations, or other entities who own a controlling interest of 50% or more in your company, or who participate in the environmental management of the facility for an entity applying for the permit or an ownership interest in the permit.)

Yes **No**

If yes, list States:

Do you owe any outstanding fees or final penalties to the Department? **Yes** **No**
If yes, explain below. Add rows as necessary.

Is your company a corporate or limited liability company? **Yes** **No**

If yes, attach a copy of your company's Certificate of Registration and/or Certificate of Good Standing from the Secretary of State. The appropriate certificate(s) should be attached to the end of this application as an appendix.

8. Certificate of Compliance With Applicable Requirements

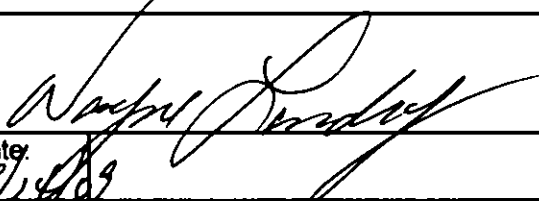
Statement for Applicable Requirements for Which the Company and Facility Referenced In This Application Is In Compliance

Based on information and belief, formed after reasonable inquiry, the company and facility referenced in this application is in compliance with and will continue to comply with all applicable requirements pertaining to the sources covered by the permit application, as outlined in Tables 1 and 2 in the permit application.

For requirements promulgated as of the date of this certification with compliance dates effective during the permit term, I further certify that the company and facility referenced in this application will comply with such requirements on a timely basis and will continue to comply with such requirements.

CERTIFICATION: I certify, under provisions in Louisiana and United States law which provide criminal penalties for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Application for Approval of Emissions of Air Pollutants from Minor Sources, including all attachments thereto and the compliance statement above, are true, accurate, and complete.

a. Responsible Official		
Name Wayne Landry		
Title President		
Company United World Energy Corporation		
Suite, mail drop, or division		
Street or P.O. Box 2006 Ambassador Caffery Pkwy		
City Lafayette	State LA	Zip 70506
Business phone (337) 278-0488		
Email Address wlandryuwe@aol.com		

Signature of responsible official (See LAC 33:III.502):	
	
Date: 8/14/09	

9. Personnel [LAC 33:III.517.D.1]

a. Manager of Facility who is located at plant site			
Name			Primary Contact
Jerry Aguiard			
Title			
Field Supervisor			
Company			
United World Energy Corporation			
Suite, mail drop, or division			
Street or P.O. Box			
2006 Ambassador Caffery			
City	State	Zip	
Lafayette	LA	70506	
Business phone			
(337) 278-0488			
Email Address			
jerryaguillard@aol.com			

b. On-site contact regarding air pollution control			
Name			Primary Contact
Eddie Authement			
Title			
Gauger			
Company			
United World Energy Corporation			
Suite, mail drop, or division			
Street or P.O. Box			
P.O. Box 344			
City	State	Zip	
Hayes	LA	70646	
Business phone			
(337) 496-2766			
Email Address			
eauthement@centurytel.net			

c. Person to contact with written correspondence			
Name	X	Primary Contact	
Jerry Aguiard			
Title			
Field Supervisor			
Company			
United World Energy Corporation			
Suite, mail drop, or division			
Street or P.O. Box			
2006 Ambassador Caffery			
City	State	Zip	
Lafayette	LA	70506	
Business phone			
(337) 278-0488			
Email Address			
jerryaguillard@aol.com			

d. Person who prepared this report			
Name			Primary Contact
Keith Stutes			
Title			
Environmental Specialist			
Company			
COMM Engineering			
Suite, mail drop, or division			
Suite 401			
Street or P.O. Box			
1319 W. Pinhook Road			
City	State	Zip	
Lafayette	LA	70503	
Business phone			
(337) 237-4373 ext. 117			
Email Address			
kstutes@commengineering.com			

e. Person to contact about Annual Maintenance Fees				a	b	c	d	X	other (specify below)
Name			Primary Contact	Suite, mail drop, or division					
Donna Richard				Street or P.O.Box					
Title				2006 Ambassador Caffery Pkwy					
Company				City	State	Zip			
United World Energy Corporation				Lafayette	LA	70506			
Business phone				Email Address					
(337) 981-1657				dlake1@bellsouth.net					

10. Proposed Project Emissions [LAC 33:III.517.D.3]

List the total emissions following the proposed project for this facility or process unit (for process unit-specific permits). Speciate all criteria pollutants, TAP, and HAP for the proposed project.

Pollutant	Proposed Emission Rate (tons/yr)
NOx	0.0793
CO	0.0666
PM ₁₀	0.0061
SO ₂	0.0009
VOC (including HAPs)	15.8668
H ₂ S	0.0000
Acetaldehyde	0.0000
Formaldehyde	0.0000
Methane	51.1033
Ethane	7.6470
Propane	5.4136
iso-Butane	2.7990
n-Butane	1.8322
iso-Pentane	1.0074
n-Pentane	0.5651
Other Hexanes	0.6594
n-Hexane	0.3442
Benzene	0.0540
Toluene	0.0411
Ethylbenzene	0.0099
Xylene	0.0231
Trimethylpentane	0.0000
Heptane	2.5217
Octane	0.1380
Nonane	0.0497
Decane	0.1072

11. History of Permitted Emissions [LAC 33:III.517.D.18]

List each of the following in chronological order:

- The Permit Number and Date Action Issued for each air quality permit that has been issued to this facility or process unit (for process unit-specific permits) within the last (10) years.
- All small source exemptions, authorizations to construct, administrative amendments, case-by-case insignificant activities, and changes of tank service that have been approved since the currently effective Minor Source Operating Permit or State Operating Permit was issued to this facility or process unit (for process unit-specific permits). It is not necessary to list any such activities issued prior to the issuance of the currently effective Minor Source Operating Permit or State Operating Permit, if one exists.

Permit Number	Date Action Issued

12.a. Enforcement Actions [LAC 33:III.517.D.18] - Yes No

If yes, list all federal and state air quality enforcement actions, settlement agreements, and consent decrees received for this facility since the issuance of the currently effective Title V Operating Permit or State Operating Permit. For each action, list the type of action (or its tracking number), the regulatory authority or authorities that issued the action, and the date that the action was issued. Summarize the conditions imposed by the enforcement action, settlement agreement, and consent decree in Section 19, Table 2. It is not necessary to submit a copy of the referenced action. Add rows to table as necessary.

Type of Action or Tracking Number	Issuing Authority	Date Action Issued	Summary of Conditions Included?
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No

12.b. Schedule for Compliance [LAC 33:III.517.D.16] - Yes No

If the facility for which application is being made is not in full compliance with all applicable regulations, give a description of how compliance will be achieved, including a schedule for compliance below. Add rows as necessary. See instructions.

13. Letters of Approval for Alternate Methods of Compliance - Yes No

If yes, list all correspondence with LDEQ, EPA, or other regulatory bodies that provides for or supports a request for alternate methods of compliance with any applicable regulations for this facility. List the date of issuance of the letter and the regulation referenced by the letter. **Attach as an appendix a copy of all documents referenced in this table.** Letters that are not included may not be incorporated into a final permit. Add rows to table as necessary.

Date Letter Issued	Issuing Authority	Referenced Regulation(s)	Copy of Letter Attached?
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No

14. Initial Notifications and Performance Tests [LAC 33:III.517.E.1] - Yes No

If yes, list any initial notifications that have been submitted or one-time performance tests that have been performed for this facility since the issuance of the currently effective Title V Operating Permit or State Operating Permit in order to satisfy regulatory requirements. Any initial notification or one-time performance test requirements that have not been satisfied should be listed in Section 19, Table 2 of this application. Any notifications or performance tests that recur periodically should also be properly noted in Section 19, Table 2 of this application. Add rows to table as necessary.

Initial Notification or One-time Performance Test?	Regulatory Citation Satisfied	Date Completed/Approved

15. Air Quality Dispersion Modeling [LAC 33:III.517.D.15]

Was Air Quality Dispersion Modeling as required by LAC 33:III performed in support of this permit application? (Air Quality Dispersion Modeling is required when requested by LDEQ.) Yes No

Has Air Quality Dispersion Modeling completed in accordance with LAC 33:III ever been performed for this facility in support of an air permit application previously submitted for this facility or as required by other regulations AND approved by LDEQ?
 Yes No

If yes, enter the date the most recent Air Quality Dispersion Modeling results as required by LAC 33:III were submitted:

If the answer to either question above is "yes," enter a summary of the most recent results in the following table. If the answer to both questions is "no," enter "none" in the table. Add rows to table as necessary.

Pollutant	Time Period	Calculated Maximum Ground Level Concentration	Louisiana Toxic Air Pollutant Ambient Air Standard or (National Ambient Air Quality Standard (NAAQS))

16. General Condition XVII Activities -

Yes No

Enter all activities that qualify as Louisiana Air Emissions Permit General Condition XVII Activities.

- Expand this table as necessary to include all such activities.
- See instructions to determine what qualifies as a General Condition XVII Activity.
- Do not include emissions from General Condition XVII Activities in the proposed emissions totals for the permit application.

Work Activity	Schedule	Emission Rates – TPY				
		PM ₁₀	SO ₂	NO _x	CO	VOC
Collection of Samples	8 per month					0.025
Combustion Engine Shutdown & Maintenance	24 per year					0.075
Pump Preparation	4 per year					0.0125
Pipeline Preparation	100 sections per year					0.05
Vessel Preparation	1 per year					0.075
Tank Cleaning for Inspection/Service	1 per year					0.075
Filter Replacement	8 per month					0.0125
Instrument Mechanical Work	52 per year					0.0125
Shop Work	1 per year					0.05
TOTAL						0.3875

**18. Regulatory Applicability for Commonly Applicable Regulations – Answer all below
[LAC 33:III.517.D.10]**

Does this facility contain asbestos or asbestos containing materials? Yes No

If "yes," the facility or any portion thereof may be subject to 40 CFR 61, Subpart M, LAC 33:III.Chapter 27, and/or LAC 33:III.5151 and this application must address compliance as stated in Section 19 of this application.

Is the facility represented in this permit subject to 40 CFR 68? Yes No

If "yes," the entire facility is subject to 40 CFR 68 and LAC 33:III.Chapter 59 and this application must address compliance as stated in Section 18 of this application.

Is the facility listed in LAC 33:III.5611

Table 5 Yes No

Table 6 Yes No

Table 7 Yes No

Does the applicant own or operate commercial refrigeration equipment normally containing more than 50 pounds of refrigerant at this facility? Yes No

If "yes," the entire facility is subject to 40 CFR 82, Subpart F and this application must address compliance as stated in Section 19 of this application.

19. Applicable Regulations, Air Pollution Control Measures, Monitoring, and Recordkeeping

Important points for Table 1 [LAC 33:III.517.D.10]:

- List in Table 1, by Emission Point ID Number and Descriptive Name of the Equipment, state and federal pollution abatement programs and note the applicability or non-applicability of the regulations to each source.
- Adjust the headings for the columns in Table 1 as necessary to reflect all applicable regulations, in addition to any regulations that do not apply but need an applicability determination to verify this fact.
- For each piece of equipment, enter "1" for each regulation that applies. Enter "2" for each regulation that applies to this type of source, but from which this source of emissions is exempt. Enter "3" for equipment that is subject to a regulation, but does not have any applicable requirements. Also, enter "3" for each regulation that have applicable requirements that apply to the particular emission source but the regulations currently do not apply due to meeting a specific criterion, such as it has not been constructed, modified or reconstructed since the regulations have been in place.
- Leave the spaces blank when the regulations clearly would not apply under any circumstances to the source. For example, LAC 33:III.2103 – Storage of Volatile Organic Compounds would never apply to a steam generating boiler, no matter the circumstances.
- Consult instructions.

Important points for Table 2 [LAC 33:III.517.D.10]:

- For each piece of equipment listed in Table 2, include all applicable limitation, recordkeeping, reporting, monitoring, and testing requirements. Also include any one-time notification or one-time tests performance test requirements that have not been fulfilled.
- Each of these regulatory aspects (limitation, recordkeeping, reporting, etc.) should be addressed for each regulation that is applicable to each emissions source or emissions point.
- For each regulation that provides a choice regarding the method of compliance, indicate the method of compliance that will be employed. It is not sufficient to state that all compliance options will be employed, though multiple compliance options may be approved as alternative operating scenarios.
- Consult instructions.

Important points for Table 3 [LAC 33:III.517.D.16]:

- Each time a 2 or a 3 is used to describe applicability of a source in Table 1, an entry should be made in Table 3 that explains the exemption or non-applicability status of the regulation to that source.
- Fill in all requested information in the table.
- The exact regulatory citation that provides for the specific exemption or non-applicability determination should be entered into the Citation Providing for Exemption or Non-applicability column.
- Consult Instructions.

Important points for Table 4 [LAC 33:III.517.D.18]

- List any single emission source that routes its emissions to another point where these emissions are commingled with the emissions of other sources before being released to the atmosphere. Do not list any single emission source in this table that does not route its emissions in this manner.
- List any and all emission sources that are routed as described above. This includes emission sources that do not otherwise appear in this permit application.
- Consult instructions.

Table 1: Applicable Louisiana and Federal Air Quality Requirements

Emission Point ID No.	Source Descriptive Name	LAC 33:III.										LAC 33:III, Chapter											
		2103	2104	2107	2111	2113	2116	2116	2121	2123	2	6	9	11	13	15	21	22	29	61	53	56	59
	Entire Facility	3	3	3		1	2	3															
CL-01	Methanol Injection Pump						2																
FE-01	Fugitive Emissions							3															
GR-01	Glycol Reboiler																						
GV-01	Glycol Still Column Vent													1									
LF-01	Tank Truck Loading Losses																						
T-01	Oil Storage Tank	3	3																				
T-02	Water Storage Tank		3																				

KEY TO MATRIX

- 1 (Applicable) The regulations have applicable requirements that apply to this particular emissions source. This includes any monitoring, recordkeeping, or reporting requirements.
- 2 (Exempt) The regulations apply to this general type of emission source (i.e. vents, furnaces, towers, and fugitives) but do not apply to this particular emission source.
- 3 (Does Not Apply) The regulations do not apply to this emissions source. The regulations may have applicable requirements that could apply to this emissions source but the requirements do not currently apply to the source due to meeting a specific criterion, such as it has not been constructed, modified or reconstructed since the regulations have been in place.

Blank - The regulations clearly do not apply to this type of emissions source.

Table 2: State and Federal Air Quality Requirements

Emission Point ID No.	Source Descriptive Name	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
	Entire Facility	[LAC 33:III.207] Application Fees	Fee is submitted with the permit application.	[LAC 33:III.207.A]	Upon submittal of a new or modified application.	
	Entire Facility	[LAC 33:III.209] Annual Fees	Applicant will pay annual fees within 30 days of being invoiced.	[LAC 33:III.209.A]	Annually	
	Entire Facility	[LAC 33:III.Chapter 5] Permit Procedures	Applying for State Operating Permit.			
	Entire Facility	[LAC 33:III.503] Minor Source Permit	Applying for State Minor Source Operating Permit.			
	Entire Facility	[LAC 33:III.915] Emission Monitoring Requirements	Applicant will comply with all applicable emission monitoring requirements within 18 months of effective date.			
	Entire Facility	[LAC 33:III.916] Recordkeeping & Annual Reporting	Applicant will comply with all applicable recordkeeping and reporting requirements.			
	Entire Facility	[LAC 33:III.927] Notification Required (Unauthorized Discharges)	Applicant will comply with requirement to report unauthorized discharges of any air pollutant according to LAC 33:1.Chapter 39.			
	Entire Facility	[LAC 33:III.Chapter 11] Control of Emissions of Smoke	Requirement applies to all combustion sources.			
	Entire Facility	[LAC 33:III.Chapter 13, Subchapter C] Emission Standards for Particulate Matter for Fuel Burning Equipment	Requirement applies to all combustion sources.			
	Entire Facility	[LAC 33:III.2113] Housekeeping	A copy of the implemented Housekeeping plan is enclosed.			
	Entire Facility	[LAC 33:III.Chapter 56] Prevention of Air Pollution Emergency Episodes	Facility will reduce or shut down emission sources when requested by LDEC.			
	Entire Facility	General Condition regarding Noncomplying Emissions	Requirement - Submit information required by General Condition within 5 days.			X

Table 2: State and Federal Air Quality Requirements

Emission Point ID No.	Source Descriptive Name	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
	Entire Facility	General Condition regarding Inspections by LDEQ	Requirement - Allow officers and employees of the LDEQ to inspect the facility.			X
	Entire Facility	General Condition regarding Change of Ownership	Requirement - Notification to the LDEQ will be submitted within 45 days of the ownership change.			X
GR-01	Glycol Reboiler	[LAC 33:III. Chapter 11] Control of Emissions of Smoke	Requirement - Smoke emissions must be maintained at less than 20% opacity.	[LAC 33:III.1105]	Daily	
GR-01	Glycol Reboiler	[LAC 33:III.1101] Control of Emissions of Smoke	Monitoring requirement - Daily visually monitor the smoke opacity.	[LAC 33:III.1105]	Daily	
GR-01	Glycol Reboiler	[LAC 33:III.1101] Control of Emissions of Smoke	Reporting requirement - Document when smoke opacity is greater than 20%.	[LAC 33:III.1105]	Daily	
GR-01	Glycol Reboiler	[LAC 33:III. Chapter 13, Subchapter C] Emission Standards for Particulate Matter for Fuel Burning Equipment	Requirement - Particulate Matter emissions will not exceed 0.6 pounds per million BTU of heat input.			
T-01	Oil Storage Tank	[LAC 33:III.2104.G.5] Crude Oil and Condensate	Monitoring Requirement - No controls are in use. Record all operating conditions used to calculate flash emissions.		Daily	

Table 3: Explanation for Exemption Status or Non-Applicability of a Source

The following table provides an explanation for either the exemption status or non-applicability of a source cited by 2 or 3 in the matrix presented in Table 1 of this section.

Emission Point ID No.	Source Descriptive Name	Requirement	Exempt or Does Not Apply	Explanation	Citation Providing for Exemption or Non-applicability
	Entire Facility	[LAC 33:III.919] Emission Inventory	Does Not Apply	Facility is below reporting threshold and is located in an attainment parish.	[LAC 33:III.919.A]
	Entire Facility	[LAC 33:III.Chapter 15] Emission Standards for Sulfur Dioxide	Does Not Apply	Facility burns only sweet natural gas containing <5 ppm H ₂ S.	[LAC 33:III.1503]
	Entire Facility	[LAC 33:III.2103] Storage of Volatile Organic Compounds	Does Not Apply	Facility handles condensate/crude oil prior to lease custody transfer.	[LAC 33:III.2103.G]
	Entire Facility	[LAC 33:III.2104] Crude Oil and Condensate	Does Not Apply	Facility is in an attainment parish and emissions are <100 tons per year.	[LAC 33:III.2104.A, D]
	Entire Facility	[LAC 33:III.2107] VOC - Loading	Does Not Apply	Facility loads crude and/or condensate prior to lease custody transfer.	[LAC 33:III.2107.F]
	Entire Facility	[LAC 33:III.2109] Oil/Water - Separation	Does Not Apply	Facility separator used in conjunction with production of crude oil and/or condensate.	[LAC 33:III.2109.B]
	Entire Facility	[LAC 33:III.2115.H] Waste Gas Disposal Exemption	Exempt	Facility is in an attainment parish and VOC emissions are <100 tons per year.	[LAC 33:III.2115.H.1.a]
	Entire Facility	[LAC 33:III.2116.C.2] Glycol Dehydrators Exemption	Exempt	Glycol Still Column Vent VOC emissions are less than 9 tons/year.	[LAC 33:III.2116.C.2]
	Entire Facility	[LAC 33:III.2121] Fugitive Emission Control	Does Not Apply	Facility is not a gas plant. No fugitive VOC monitoring required.	[LAC 33:III.2121.A]
	Entire Facility	[LAC 33:III.2122] Fugitive Emission Control for Ozone Nonattainment Areas	Does Not Apply	Facility is not a gas plant and facility is in an attainment area.	[LAC 33:III.2122.A]
	Entire Facility	[LAC 33:III.Chapter 51] Comprehensive Toxic Air Pollutant Emission Control Program	Does Not Apply	Facility is a minor source of air toxics. Oil and gas E & P facilities are exempt.	[LAC 33:III.5101.A]
	Entire Facility	[LAC 33:III.Chapter 59] Chemical Accident Prevention	Exempt	Facility is a new source and criteria pollutant emission levels are less than 250 tons per year.	[LAC 33:III.5907]
	Entire Facility	[40 CFR 52] Prevention of Significant Deterioration (PSD)	Does Not Apply	Facility is located in an attainment parish.	[40 CFR 52.992]
	Entire Facility	Nonattainment New Source Review	Does Not Apply		
	Entire Facility	[40 CFR 60, Subpart KKK] Standards for Equipment Leaks of VOCs from Onshore Gas Plants	Does Not Apply	Facility is not a gas plant. No VOC leak monitoring required for non-gas plant E & P facilities.	[40 CFR 60.630]

Table 3: Explanation for Exemption Status or Non-Applicability of a Source

The following table provides an explanation for either the exemption status or non-applicability of a source cited by 2 or 3 in the matrix presented in Table 1 of this section.

Emission Point ID No.	Source Descriptive Name	Requirement	Exempt or Does Not Apply	Explanation	Citation Providing for Exemption or Non-applicability
	Entire Facility	[40 CFR 60, Subpart LLL] Standards for Onshore Gas Processing: SO ₂ Emissions	Does Not Apply	Facility does not have a gas sweetening unit.	[40 CFR 60.640]
	Entire Facility	[40 CFR 63, Subpart HH] Emission Standards for HAPs from Oil and Natural Gas Production Facilities	Exempt	Facility is a minor source of air toxics. Facility is not required to submit an application for a Part 70 (Title V) Air Permit.	[40 CFR 63.760.e]
	Entire Facility	[40 CFR 70] Operating Permits	Does Not Apply	Facility is in an attainment area and emits <100 tons VOC/year.	[40 CFR 70.3]
CI-01	Methanol Injection Pump	[LAC 33:III.2115.H.1] Waste Gas Disposal	Exempt	Facility is not a gas plant. No fugitive VOC monitoring required.	[LAC 33:III.2115.H.1.a]
FE-01	Fugitive Emissions	[LAC 33:III.2121] Fugitive Emission Control	Does Not Apply	Facility is not a gas plant. No fugitive VOC monitoring required.	[LAC 33:III.2121.A]
	Fugitive Emissions	[40 CFR 60, Subpart KKK] Standards for Equipment Leaks of VOCs from Onshore Gas Plants	Does Not Apply	Facility is not a gas plant.	[40 CFR 60.630]
	Fugitive Emissions	[40 CFR 63, Subpart HH] Emission Standards for HAPs from Oil and Natural Gas Production Facilities	Exempt	Facility is a minor source of air toxics. Still column vent emissions less than 9.0 tons per year.	[40 CFR 63.760.e]
GV-01	Glycol Still Column Vent	[LAC 33:III.2116.C] Glycol Dehydrators Exemption	Exempt	Volumetric throughput is less than 3 MMSCFD and benzene emissions are less than 1 ton/year.	[LAC 33:III.2116.C.2]
	Glycol Still Column Vent	[40 CFR 63, Subpart HH] Emission Standards for HAPs from Oil and Natural Gas Production Facilities	Exempt	Facility is a produced condensate/crude oil loading facility.	[40 CFR 63.764.e]
LF-01	Tank Truck Loading Losses	[LAC 33:III.2107] VOC - Loading	Does Not Apply	Facility is located in an attainment area and storage capacity is less than 420,000 gallons (10,000 barrels).	[LAC 33:III.2107.F]
T-01	Oil Storage Tank	[LAC 33:III.2103] Storage of Volatile Organic Compounds	Does Not Apply	Facility is located in an attainment area and total flash gas VOCs are <100 tons/year.	[LAC 33:III.2103.G]
T-01	Oil Storage Tank	[LAC 33:III.2104] Crude Oil and Condensate	Does Not Apply	Facility handles crude prior to lease custody transfer.	[LAC 33:III.2104.A, D]
T-01	Oil Storage Tank	[40 CFR 60, Subpart K, Ka, Kb] Standards for Storage Vessels for Petroleum Liquids	Does Not Apply	Facility is located in an attainment area and total flash gas VOCs are <100 tons/year.	[40 CFR 60.110.b]
T-02	Water Storage Tank	[LAC 33:III.2104] Crude Oil and Condensate	Does Not Apply	Facility is located in an attainment area and total flash gas VOCs are <100 tons/year.	[LAC 33:III.2104.A, D]

20. Emissions Inventory Questionnaire (EIQ) Forms [LAC 33:III.517.D.3]

Complete one (1) EIQ for:

- Each emission source. If two emission sources have a common stack, the applicant may submit one EIQ sheet for the common emissions point. Note any emissions sources that route to this common point in Table 4 of the application.
- Each emissions CAP that is proposed. In general, this applies to each source that is part of the CAP.
- Each alternate operating scenario that a source may operate under. some common scenarios are:
 1. Sources that combust multiple fuels
 2. Sources that have Startup/Shutdown max lb/hr emission rates higher than the max lb/hr for normal operating conditions would need an EIQ for the Startup/Shutdown emission rates for those sources
- Fugitive emissions releases. One (1) EIQ should be completed for each of the following types of fugitive emissions sources or emissions points:
 1. Equipment leaks.
 2. Non-equipment leaks (i.e. road dust, settling ponds, etc.).

For each EIQ:

- Fill in all requested information.
- Speciate all Toxic Air Pollutants and Hazardous Air Pollutants emitted by the source.
- Use appropriate significant figures.
- Consult instructions.

The EIQ is in Microsoft Word Excel. Click on this link to get to the EIQ form.

http://www.deq.louisiana.gov/portal/LinkClick.aspx?link=permits%2fair%2f6-6-07_EIQ.xls&tabid=2758

State of Louisiana Emission Inventory Questionnaire (EIQ) for Air Pollutants

Emission Point ID No. (Alternate ID) BC-01	Date of submittal 5/26/2009
Approximate Location of Stack or Vent (see instructions)	
Method 28,"GPS-Unspecified"	Datum NAD27
UTM Zone 15	Horizontal 508359 mE
Latitude 30°	Vertical 3327602 mN
Longitude 92°	0 hundredths 0 hundredths

Descriptive Name of the Emissions Source (Alt. Name) Blowcase	
Stack Gas Flow at Conditions, not at Standard (ft³/min) 0 ACFM	Stack Gas Exit Temperature (°F) 70° F
Stack Gas Exit Velocity (ft/sec) 0.01 ft/s	Normal Operating Time (hours per year) 8760.00 hr/yr
Height of Stack above grade (ft) 1 ft	Date of Construction or Modification 5/1/2009
Diameter (ft) of Stack 0.04 ft	Percent of Annual Throughput Through This Emission Point
Discharge Area (ft²)	Jan-Mar: 25, Apr-Jun: 25, Jul-Sep: 25, Oct-Dec: 25

Type of Fuel Used and Heat Input (see instructions)		Operating Characteristics (include units)	
Type of Fuel	Heat Input (MMBTU/hr)	Parameter	Description
a		Normal Operating Rate/Throughput	0.054 SCFD
b		Maximum Operating Rate/Throughput	0.054 SCFD
c		Design Capacity/Volume	
Notes		Shell Height (ft)	
		Tank Diameter (ft)	
		<input type="checkbox"/> Floating Roof	<input type="checkbox"/> External <input type="checkbox"/> Internal

Air Pollutant Specific Information						
Emission Point ID No. (Alternate ID)	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rate		Permitted Emission Rate (Current)
				Average (lbs/hr)	Maximum (lbs/hr)	
Pollutant				Annual (tons/yr)	Annual (tons/yr)	Annual (tons/yr)
VOC (including HAPs)	000	0		0.0000	0.0000	0.0000
H ₂ S	000	0	7783-06-4	0.0000	0.0000	0.0000
n-Hexane	000	0	110-54-3	0.0000	0.0000	0.0000
Benzene	000	0	71-43-2	0.0000	0.0000	0.0000
Toluene	000	0	108-88-3	0.0000	0.0000	0.0000
Ethylbenzene	000	0	100-41-4	0.0000	0.0000	0.0000
Xylene	000	0	1330-20-7	0.0000	0.0000	0.0000
Trimethylpentane	000	0	540-84-1	0.0000	0.0000	0.0000
Methane	000	0	74-82-8	0.0030	0.0010	0.0000
Ethane	000	0	74-84-0	0.0000	0.0000	0.0000

State of Louisiana Emission Inventory Questionnaire (EIQ) for Air Pollutants

Emission Point ID No. (Alternate ID) FE-01	Date of submittal 5/20/2009
Approximate Location of Stack or Vent (see instructions)	
Method 28, "GPS-Unspecified"	Datum NAD27
UTM Zone 15	Horizontal 508369 mE
Latitude 30°	Vertical 3327565 mN
Longitude 92°	0 hundredths
0 hundredths	

Descriptive Name of the Emissions Source (Alt. Name) Fugitive Emissions	
Stack Gas Flow at Conditions, not at Standard (ft ³ /min)	Stack Gas Exit Temperature (°F)
8760.00 hr/yr	5/1/2009
Normal Operating Time (hours per year)	Date of Construction or Modification
8760.00 hr/yr	5/1/2009
Percent of Annual Throughput Through This Emission Point	Jan-Mar 25
	Apr-Jun 25
	Jul-Sep 25
	Oct-Dec 25

Type of Fuel Used and Heat Input (see instructions)		Operating Characteristics (include units)	
Type of Fuel	Heat Input (MMBTU/hr)	Parameter	Description
a		Normal Operating Rate/Throughput	
b		Maximum Operating Rate/Throughput	
c		Design Capacity/Volume	
Notes		Shell Height (ft)	
		Tank Diameter (ft)	
		<input type="checkbox"/> Fixed Roof	<input type="checkbox"/> External <input type="checkbox"/> Internal

Air Pollutant Specific Information									
Emission Point ID No. (Alternate ID)	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rate		Permitted Emission Rate (Current)	Add, Change, Delete or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Pollutant				Average (lbs/hr)	Maximum (lbs/hr)	Annual (tons/yr)			
VOC (including HAPs)	000	0		0.5304	0.5304	2.3232	A		
n-Hexane	000	0	110-54-3	0.0332	0.0332	0.1454	A		
Benzene	000	0	71-43-2	0.0022	0.0022	0.0096	A		
Toluene	000	0	108-88-3	0.0016	0.0016	0.0070	A		
Ethylbenzene	000	0	100-41-4	0.0002	0.0002	0.0008	A		
Xylene	000	0	1330-20-7	0.0005	0.0005	0.0022	A		
Methane	000	0	74-82-8	1.5157	1.5157	6.6388	A		
Ethane	000	0	74-84-0	0.2389	0.2389	1.0464	A		

State of Louisiana Emission Inventory Questionnaire (EIQ) for Air Pollutants

Date of submittal

5/20/2009

Emission Point ID No. (Alternate ID) FLASH-01	Descriptive Name of the Emissions Source (Alt. Name) LP Separator Flash Gas		Approximate Location of Stack or Vent (see instructions)	
Tempo Subject Item ID No.	Method 28,"GPS-Unspecified"		Datum NAD27	
Stack and Discharge Physical Characteristics Change? (yes or no) No	Diameter (ft) of Stack 0.17 ft	Stack Gas Exit Velocity (ft/sec) 0.043 ft/sec	Stack Gas Flow at Conditions, not at Standard (ft ³ /min) 0.518 ACFM	Stack Gas Exit Temperature (°F) 70° F
	Height of Stack above grade (ft) 22 ft		Normal Operating Time (hours per year) 8760.00 hr/yr	Date of Construction or Modification 5/1/2009
			Percent of Annual Throughput Through This Emission Point	
			Jan-Mar 25	Apr-Jun 25
			Jul-Sep 25	Oct-Dec 25
			UTM Zone 15	Horizontal 4'
			Latitude 30°	Vertical 508374 mE
			Longitude 92°	Vertical 3327649 mN
				0 hundredths
				0 hundredths

Fuel		Operating Characteristics (include units)	
Type of Fuel	Heat Input (MMBTU/hr)	Parameter	Description
a		Normal Operating Rate/Throughput	730.00 BOPY
b		Maximum Operating Rate/Throughput	730.00 BOPY
c		Design Capacity/Volume	
Notes		Shell Height (ft)	
		Tank Diameter (ft)	
		<input type="checkbox"/> Floating Roof	<input type="checkbox"/> External
		<input type="checkbox"/> Fixed Roof	<input type="checkbox"/> Internal

Emission Point ID No. (Alternate ID) FLASH-01	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rate		Permitted Emission Rate (Current)	Add, Change, Delete or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lbs/hr)	Annual (tons/yr)				
Pollutant				Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
VOC (including HAPs)	000	0		2.2189	9.1880	0.0000	A		
H ₂ S	000	0	7783-06-4	0.0000	0.0000	0.0000	A		
n-Hexane	000	0	110-54-3	0.0268	0.1174	0.0000	A		
Benzene	000	0	71-43-2	0.0046	0.0201	0.0000	A		
Toluene	000	0	108-88-3	0.0040	0.0175	0.0000	A		
Ethylbenzene	000	0	100-41-4	0.0011	0.0048	0.0000	A		
Xylene	000	0	1330-20-7	0.0029	0.0127	0.0000	A		
Trimethylpentane	000	0	540-84-1	0.0000	0.0000	0.0000	A		
Methane	000	0	74-82-8	2.5039	10.9671	0.0000	A		
Ethane	000	0	74-84-0	0.9344	4.0927	0.0000	A		

State of Louisiana Emission Inventory Questionnaire (EIQ) for Air Pollutants

Date of submittal **5/20/2009**

Emission Point ID No. (Alternate ID) GR-01	Descriptive Name of the Emissions Source (Alt. Name) Glycol Reboiler Burner		Approximate Location of Stack or Vent (see instructions)		Date of submittal 5/20/2009								
Tempo Subject Item ID No.			Method 28,"GPS-Unspecified"	Datum NAD27									
Stack and Discharge Physical Characteristics Change? (yes or no) No	Diameter (ft) of Stack 0.67 ft	Stack Gas Exit Velocity (ft/sec) 8.25 ft/s	Stack Gas Flow at Conditions, not at Standard (ft ³ /min) 172.78 ACFM	Stack Gas Exit Temperature (°F) 350° F	Normal Operating Time (hours per year) 8760.00 hr/yr								
	Height of Stack above grade (ft) 10 ft	Stack Gas Exit (ft/sec)	Stack Gas Flow at Conditions, not at Standard (ft ³ /min)	Stack Gas Exit Temperature (°F)	Date of Construction or Modification 5/1/2009								
	Discharge Area (ft ²)				Percent of Annual Throughput Through This Emission Point								
					<table border="1"> <tr> <td>Jan-Mar</td> <td>Apr-Jun</td> <td>Jul-Sep</td> <td>Oct-Dec</td> </tr> <tr> <td>25</td> <td>25</td> <td>25</td> <td>25</td> </tr> </table>	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	25	25	25	25
Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec										
25	25	25	25										

UTM Zone 15		Horizontal 4'		Vertical 53.077"	
Latitude 30°		Longitude 92°		UTM Zone 508360 mE	
Longitude 48.309"		UTM Zone 3327603 mN		Vertical 0 hundredths	

Type of Fuel Used and Heat Input (see instructions)		Operating Characteristics (include units)			
Type of Fuel	Heat Input (MMBTU/hr)	Parameter	Description		
a	Natural Gas	0.2	Normal Operating Rate/Throughput	0.20 MMBTU/hr	
b			Maximum Operating Rate/Throughput	0.20 MMBTU/hr	
c			Design Capacity/Volume		
Notes		Shell Height (ft)			
		Tank Diameter (ft)			
		<input type="checkbox"/> Fixed Roof	Floating Roof		<input type="checkbox"/> External <input type="checkbox"/> Internal

Air Pollutant Specific Information		Operating Characteristics (include units)				Permitted Emission Rate (Current)		Add, Change, Delete or Unchanged		Continuous Compliance Method		Concentration in Gases Exiting at Stack	
Emission Point ID No. (Alternate ID)	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Average (lbs/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)	Annual (tons/yr)	Annual (tons/yr)	Annual (tons/yr)	Annual (tons/yr)	Annual (tons/yr)	Annual (tons/yr)
GR-01	000	0		0.0181	0.0181	0.0793	0.0000	0.0000	A				
	000	0		0.0152	0.0152	0.0666	0.0000	0.0000	A				
	000	0		0.0002	0.0002	0.0009	0.0000	0.0000	A				
	000	0		0.0014	0.0014	0.0061	0.0000	0.0000	A				
	000	0		0.0010	0.0010	0.0044	0.0000	0.0000	A				
	000	0	75-07-0	0.0000	0.0000	0.0000	0.0000	0.0000	A				
	000	0	50-00-0	0.0000	0.0000	0.0000	0.0000	0.0000	A				
	000	0	110-54-3	0.0003	0.0003	0.0013	0.0000	0.0000	A				
	000	0	71-43-2	0.0000	0.0000	0.0000	0.0000	0.0000	A				
	000	0	108-88-3	0.0000	0.0000	0.0000	0.0000	0.0000	A				
	000	0	100-41-4	0.0000	0.0000	0.0000	0.0000	0.0000	A				

Xylene	000	0	1330-20-7	0.0000	0.0000	0.0000	0.0000	0.0000	A
Methane	000	0	74-82-8	0.0004	0.0004	0.0018	0.0000	0.0000	A
Ethane	000	0	74-84-0	0.0006	0.0006	0.0026	0.0000	0.0000	A

State of Louisiana Emission Inventory Questionnaire (EIQ) for Air Pollutants

Emission Point ID No. (Alternate ID) **GV-01** Date of submittal **5/20/2009**

Approximate Location of Stack or Vent (see instructions)
 Method **28,"GPS-Unspecified"** Datum **NAD27**

UTM Zone **15** Horizontal **508361 mE** Vertical **3327603 mN**
 Latitude **30°** **4'** **53.077"** **0 hundredths**
 Longitude **92°** **54'** **48.272"** **0 hundredths**

Descriptive Name of the Emissions Source (Alt. Name)
Glycol Still Column Vent

Stack and Discharge Physical Characteristics
 Change? (yes or no) **No**

Diameter (ft) of Stack **0.167 ft**
 Discharge Area (ft²) **0.0217**

Height of Stack above grade (ft) **6 ft**
 Stack Gas Exit Velocity (ft/sec) **0.07 ft/sec**

Stack Gas Flow at Conditions, not at Standard (ft³/min) **0.09 ACFM**
 Stack Gas Exit Temperature (°F) **212° F**

Normal Operating Time (hours per year) **8760.00 hr/yr**
 Date of Construction or Modification **5/1/2009**

Percent of Annual Throughput Through This Emission Point
 Jan-Mar **25** Apr-Jun **25** Jul-Sep **25** Oct-Dec **25**

Fuel
 Type of Fuel _____ Heat Input (MMBTU/hr) _____
 a _____
 b _____
 c _____

Operating Characteristics (include units)
 Normal Operating Rate/Throughput **73.00 MMSCFY**
 Maximum Operating Rate/Throughput **73.00 MMSCFY**
 Design Capacity/Volume _____
 Shell Height (ft) _____
 Tank Diameter (ft) _____

Fixed Roof Floating Roof External Internal

Notes

Air Pollutant Specific Information

Emission Point ID No. (Alternate ID)	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rate		Permitted Emission Rate (Current)	Add, Change, Delete or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lbs/hr)	Annual (tons/yr)				
Pollutant									
VOC (including HAPs)	000	0		0.0538	0.2358	0.0000	A		
H ₂ S	000	0	7783-06-4	0.0000	0.0000	0.0000	A		
n-Hexane	000	0	110-54-3	0.0000	0.0000	0.0000	A		
Benzene	000	0	71-43-2	0.0000	0.0000	0.0000	A		
Toluene	000	0	108-88-3	0.0000	0.0000	0.0000	A		
Ethylbenzene	000	0	100-41-4	0.0000	0.0000	0.0000	A		
Xylene	000	0	1330-20-7	0.0000	0.0000	0.0000	A		
Trimethylpentane	000	0	540-84-1	0.0000	0.0000	0.0000	A		
Methane	000	0	74-82-8	0.0000	0.0000	0.0000	A		
Ethane	000	0	74-84-0	0.0000	0.0000	0.0000	A		

State of Louisiana Emission Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal 5/20/2009	
Emission Point ID No. (Alternate ID) LC-01		Descriptive Name of the Emissions Source (Alt. Name) Norriseal 1001 Level Controllers								Approximate Location of Stack or Vent (see instructions)	
Tempo Subject Item ID No.		Method 28."GPS-Unspecified"		Datum NAD27		UTM Zone 15		Vertical 508369 mE		3327565 mN	
		Latitude 30°		Horizontal 4'		Vertical 51.842"		0 hundredreths		0 hundredreths	
		Longitude 92°		Horizontal 54'		Vertical 47.974"		0 hundredreths		0 hundredreths	
Stack and Discharge Physical Characteristics Change? (yes or no) No	Diameter (ft) of Stack	Stack Gas Flow at Conditions, not at Standard (ft ³ /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point					
	Discharge Area (ft ²)	Stack Gas Exit Velocity (ft/sec)	Stack Gas Exit Temperature (°F)	8760.00 hr/yr	5/1/2009	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec		
		Height of Stack above grade (ft)				25	25	25	25		
Operating Characteristics (include units)											
Fuel	Type of Fuel	Heat Input (MMBTU/hr)		Parameter		Description					
	a			Normal Operating Rate/Throughput		0.2 SCFH					
	b			Maximum Operating Rate/Throughput		0.2 SCFH					
	c			Design Capacity/Volume							
			Shell Height (ft)		Tank Diameter (ft)		<input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal				
Notes											
Air Pollutant Specific Information											
Emission Point ID No. (Alternate ID) LC-01	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rate		Permitted Emission Rate (Current)	Add, Change, Delete or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack		
Pollutant				Average (lbs/hr)	Maximum (lbs/hr)	Annual (tons/yr)					
VOC (including HAPs)	000	0		0.0043	0.0043	0.0192	A				
H ₂ S	000	0	7783-06-4	0.0000	0.0000	0.0000	A				
n-Hexane	000	0	110-54-3	0.0001	0.0001	0.0005	A				
Benzene	000	0	71-43-2	0.0000	0.0000	0.0001	A				
Toluene	000	0	108-88-3	0.0000	0.0000	0.0001	A				
Ethylbenzene	000	0	100-41-4	0.0000	0.0000	0.0000	A				
Xylene	000	0	1330-20-7	0.0000	0.0000	0.0000	A				
Trimethylpentane	000	0	540-84-1	0.0000	0.0000	0.0000	A				
Methane	000	0	74-82-8	0.0472	0.0472	0.2066	A				
Ethane	000	0	74-84-0	0.0033	0.0033	0.0145	A				

State of Louisiana Emission Inventory Questionnaire (EIQ) for Air Pollutants

Emission Point ID No. (Alternate ID) **LF-01** Date of submittal **5/20/2009**

Tempo Subject Item ID No. **LF-01** Descriptive Name of the Emissions Source (Alt. Name) **Tank Truck Loading Losses** Approximate Location of Stack or Vent (see instructions) **28."GPS-Unspecified"** Datum **NAD27**

Method **UTM Zone** **15** Horizontal **508369 mE** Vertical **3327565 mN**
 Latitude **30°** **4'** **51.842"** **0 hundredths**
 Longitude **92°** **54'** **47.974"** **0 hundredths**

Stack and Discharge Physical Characteristics Change? (yes or no) **No**
 Diameter (ft) of Stack **0.17 ft**
 Discharge Area (ft²) **0.17 ft**
 Height of Stack above grade (ft) **10 ft**
 Stack Gas Exit Velocity (ft/sec) **0 ft/s**
 Stack Gas Flow at Conditions, not at Standard (ft³/min) **0 ACFM**
 Stack Gas Exit Temperature (°F) **70° F**
 Normal Operating Time (hours per year) **4.87 hr/yr**
 Date of Construction or Modification **5/1/2009**
 Percent of Annual Throughput Through This Emission Point
 Jan-Mar **25** Apr-Jun **25** Jul-Sep **25** Oct-Dec **25**

Fuel
 Type of Fuel _____ Heat Input (MMBTU/hr) _____
 a _____
 b _____
 c _____

Operating Characteristics (include units)
 Parameter Description
 Normal Operating Rate/Throughput **1825.00 BOPY**
 Maximum Operating Rate/Throughput **1825.00 BOPY**
 Design Capacity/Volume _____
 Shell Height (ft) _____
 Tank Diameter (ft) _____
 Fixed Roof Floating Roof External Internal

Notes

Air Pollutant Specific Information

Emission Point ID No. (Alternate ID)	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rate		Permitted Emission Rate (Current)	Add, Change, Delete or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lbs/hr)	Annual (tons/yr)				
LF-01				10.7100	0.0652	0.0000	A		
VOC (including HAPs)	000	0	74-82-8	1.7640	0.0107	0.0000	A		
Methane	000	0	74-84-0	0.1260	0.0008	0.0000	A		
Ethane	000	0							

State of Louisiana Emission Inventory Questionnaire (EIQ) for Air Pollutants

Emission Point ID No. (Alternate ID) T-01		Date of submittal 5/20/2009	
Tempo Subject Item ID No.		Approximate Location of Stack or Vent (see instructions)	
Descriptive Name of the Emissions Source (Alt. Name) Oil Storage Tank		Method 28,"GPS-Unspecified"	Datum NAD27
Diameter (ft) of Stack Discharge Area (ft²)	Stack Gas Exit Velocity (ft/sec)	UTM Zone 15	Horizontal 4'
Height of Stack above grade (ft)	Stack Gas Flow at Conditions, not at Standard (ft³/min)	Vertical 508374 mE	Vertical 3327649 mN
Stack and Discharge Physical Characteristics Change? (yes or no)	Stack Gas Exit Temperature (°F)	Latitude 30°	4'
No	Normal Operating Time (hours per year)	Longitude 92°	54'
	Percent of Annual Throughput Through This Emission Point	0 hundredths	
	Jan-Mar	Apr-Jun	Jul-Sep
	25	25	25
	Oct-Dec	25	

Operating Characteristics (include units)

Parameter	Description
Normal Operating Rate/Throughput	1825.00 BOPY
Maximum Operating Rate/Throughput	1825.00 BOPY
Design Capacity/Volume	400 bbls
Shell Height (ft)	20 ft
Tank Diameter (ft)	12 ft
<input checked="" type="checkbox"/> Fixed Roof	<input type="checkbox"/> External
<input type="checkbox"/> Floating Roof	<input type="checkbox"/> Internal

Type of Fuel Used and Heat Input (see instructions)

Type of Fuel	Heat Input (MMBTU/hr)
a	
b	
c	

Notes

Type of Fuel Used and Heat Input (see instructions)		Operating Characteristics (include units)	
Emission Point ID No. (Alternate ID)	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number
T-01	000	0	7783-06-4
VOC (including HAPs)	000	0	110-54-3
H ₂ S	000	0	71-43-2
n-Hexane	000	0	108-88-3
Benzene	000	0	100-41-4
Toluene	000	0	1330-20-7
Ethylbenzene	000	0	540-84-1
Xylylene	000	0	74-82-8
Trimethylpentane	000	0	74-84-0
Methane	000	0	
Ethane	000	0	

Air Pollutant Specific Information

Pollutant	Proposed Emission Rate	Permitted Emission Rate (Current)	Add, Change, Delete or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
VOC (including HAPs)	0.0983	0.0983	0.4307	A	
H ₂ S	0.0000	0.0000	0.0000	A	
n-Hexane	0.0012	0.0012	0.0053	A	
Benzene	0.0002	0.0002	0.0009	A	
Toluene	0.0002	0.0002	0.0009	A	
Ethylbenzene	0.0001	0.0001	0.0004	A	
Xylylene	0.0001	0.0001	0.0004	A	
Trimethylpentane	0.0000	0.0000	0.0000	A	
Methane	0.1108	0.1108	0.4853	A	
Ethane	0.0413	0.0413	0.1809	A	

State of Louisiana Emission Inventory Questionnaire (EIQ) for Air Pollutants

Emission Point ID No. (Alternate ID) T-02	Date of submittal 5/20/2009
Tempo Subject Item ID No.	Approximate Location of Stack or Vent (see instructions)
Water Storage Tank	
Descriptive Name of the Emissions Source (Alt. Name)	Method 28,"GPS-Unspecified" Datum NAD27
Stack Gas Flow at Conditions, not at Standard (ft ³ /min)	UTM Zone 15 Horizontal 508359 mE Vertical 3327644 mN
Stack Gas Exit Velocity (ft/sec)	Latitude 30° 4' 54.409" 0 hundredths
Height of Stack above grade (ft)	Longitude 92° 54' 48.345" 0 hundredths
Diameter (ft) of Stack Discharge Area (ft ²)	Date of Construction or Modification
0.17 ft	5/1/2009
Stack and Discharge Physical Characteristics Change? (yes or no)	Normal Operating Time (hours per year)
No	8760.00 hr/yr
	Percent of Annual Throughput Through This Emission Point
	Jan-Mar 25 Apr-Jun 25 Jul-Sep 25 Oct-Dec 25

Operating Characteristics (include units)

Type of Fuel Used and Heat Input (see instructions)		Operating Characteristics (include units)	
Type of Fuel	Heat Input (MMBTU/hr)	Parameter	Description
a		Normal Operating Rate/Throughput	18.25 BOPY
b		Maximum Operating Rate/Throughput	18.25 BOPY
c		Design Capacity/Volume	400 bbls
Notes		Shell Height (ft)	20 ft
		Tank Diameter (ft)	12 ft
		<input checked="" type="checkbox"/> Fixed Roof	Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal

Air Pollutant Specific Information

Emission Point ID No. (Alternate ID)	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rate		Permitted Emission Rate (Current)	Add, Change, Delete or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lbs/hr)	Maximum (lbs/hr)				
T-02						Annual (tons/yr)			
VOC (including HAPs)	000	0		0.0021	0.0021	0.0000	A		
H ₂ S	000	0	7783-06-4	0.0000	0.0000	0.0000	A		
n-Hexane	000	0	110-54-3	0.0001	0.0001	0.0000	A		
Benzene	000	0	71-43-2	0.0000	0.0000	0.0000	A		
Toluene	000	0	108-88-3	0.0000	0.0000	0.0000	A		
Ethylbenzene	000	0	100-41-4	0.0000	0.0000	0.0000	A		
Xylene	000	0	1330-20-7	0.0000	0.0000	0.0000	A		
Trimethylpentane	000	0	540-84-1	0.0000	0.0000	0.0000	A		
Methane	000	0	74-82-8	0.0230	0.0230	0.0000	A		
Ethane	000	0	74-84-0	0.0016	0.0016	0.0000	A		

United World Energy Corporation Hayes U-1 Well #1 Facility

PROPOSED ACTION

United World Energy Corporation is submitting an application for a Minor Source Operating Permit for its Hayes U-1 Well #1 Facility. This is an existing facility which handles sweet natural gas and condensate/crude oil. The facility is located in Jefferson Davis Parish, approximately 15 miles south of Lake Arthur, Louisiana. The facility is not contiguous with any other United World Energy Corporation facility.

PROCESS DESCRIPTION

The Hayes U-1 Well #1 Facility contains equipment used for the production, separation, and drying of natural gas and the storage of condensate/crude oil and produced water. The facility annually handles approximately:

1,825 barrels of condensate/crude oil,
73 million standard cubic feet of natural gas, and
365 barrels of produced water.

A description of the facility's process is as follows:

Separation

Production from the nearby well flows to a high pressure separator. Natural gas from the high pressure separator is piped directly to the gas dehydration unit. The liquids (condensate/crude oil and produced water) flow to the low pressure, three phase separator. Natural gas from the low pressure separator is vented to the atmosphere. Condensate/crude oil is separated from the produced water. The condensate/crude oil is then sent to Oil Storage Tank (Source T-01). The produced water is piped to the Water Storage Tank (Source T-02).

Dehydration

A triethylene glycol (TEG) gas dehydration unit is used to dry natural gas prior to sales or use as fuel. TEG strips water from the wet gas in a contactor resulting in a water-rich TEG stream and a dry sales gas stream. The Glycol Reboiler (Source GR-01) removes water and additional hydrocarbons from the TEG in the regenerator. The hydrocarbon vapors exiting the Regenerator's Still Column Vent (Source GV-01) are vented to the atmosphere. Any condensed liquids are sent to a blowcase (Source BC-01).

Emissions from the glycol still column vent are calculated using a typical gas analysis and the GRI-GLY Calc v. 4.0 Program. Emissions from the glycol reboiler are calculated using AP-42 factors for Natural Gas Combustion.

Condensate/Crude Oil Storage and Load Out

Condensate/crude oil is stored in a 400 barrel Oil Storage Tank (Source T-01). Flash, standing, and working losses are vented to the atmosphere. The stored condensate/crude oil is then shipped via tank truck to sales. Volatile Organic Compounds (VOCs) emissions resulting from the Tank Truck Loading Facility (Source LF-01) are vented to the atmosphere. Emissions from flash, standing, and working losses are estimated utilizing Vasquez-Beggs Correlation Equation methods. The facility handles condensate/crude oil prior to lease custody transfer.

Produced Water Storage and Disposal

Produced water is sent to a 400 barrel Water Storage Tank (Source T-02) prior to being hauled off for disposal. Any condensate/crude oil recovered from the produced water tanks is sent to the oil storage tanks. The produced water is transported via tank truck to a disposal well. Flash, standing, and working losses are vented to the atmosphere. Emissions from flash, standing, and working losses are estimated utilizing Vasquez-Beggs Correlation Equation methods.

Miscellaneous Sources

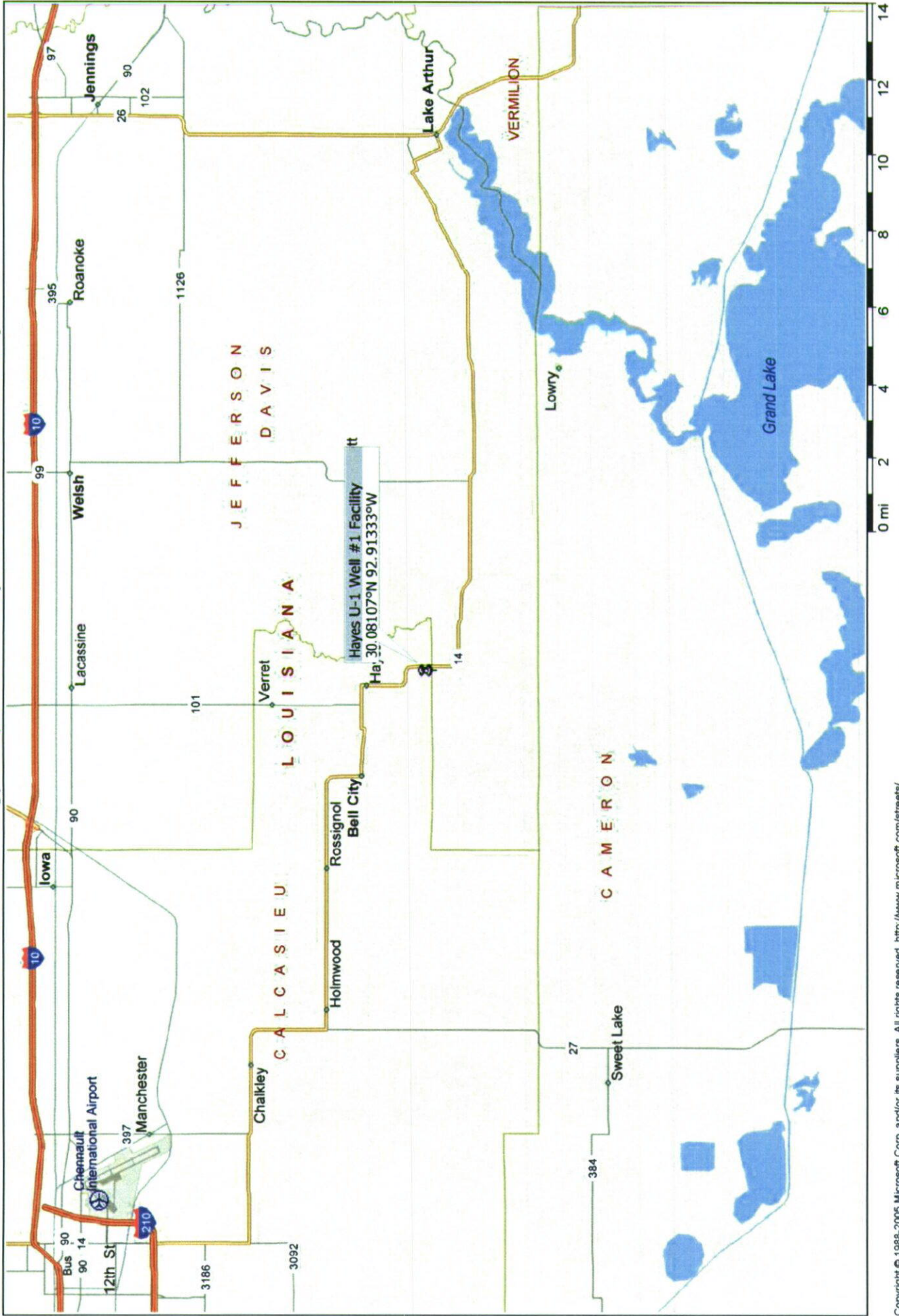
Fugitive natural gas and light liquid emissions (Source FE-01) occur from potential leaks from flanges, valves, and piping connections. Fugitive emissions are calculated using factors in American Petroleum Institute (API) Documents 4615, 4638, and 4589.

A Blowcase (Source BC-01) is utilized to transfer non-condensed liquids from the glycol still column vent to the Oil Storage Tank (Source T-01). The blowcase vents to the atmosphere.

Gas operated Level Controllers (Sources LC-01) are utilized throughout the facility to regulate the production equipment. The emissions from these sources are estimated using manufacturer operating data and material mass balance.

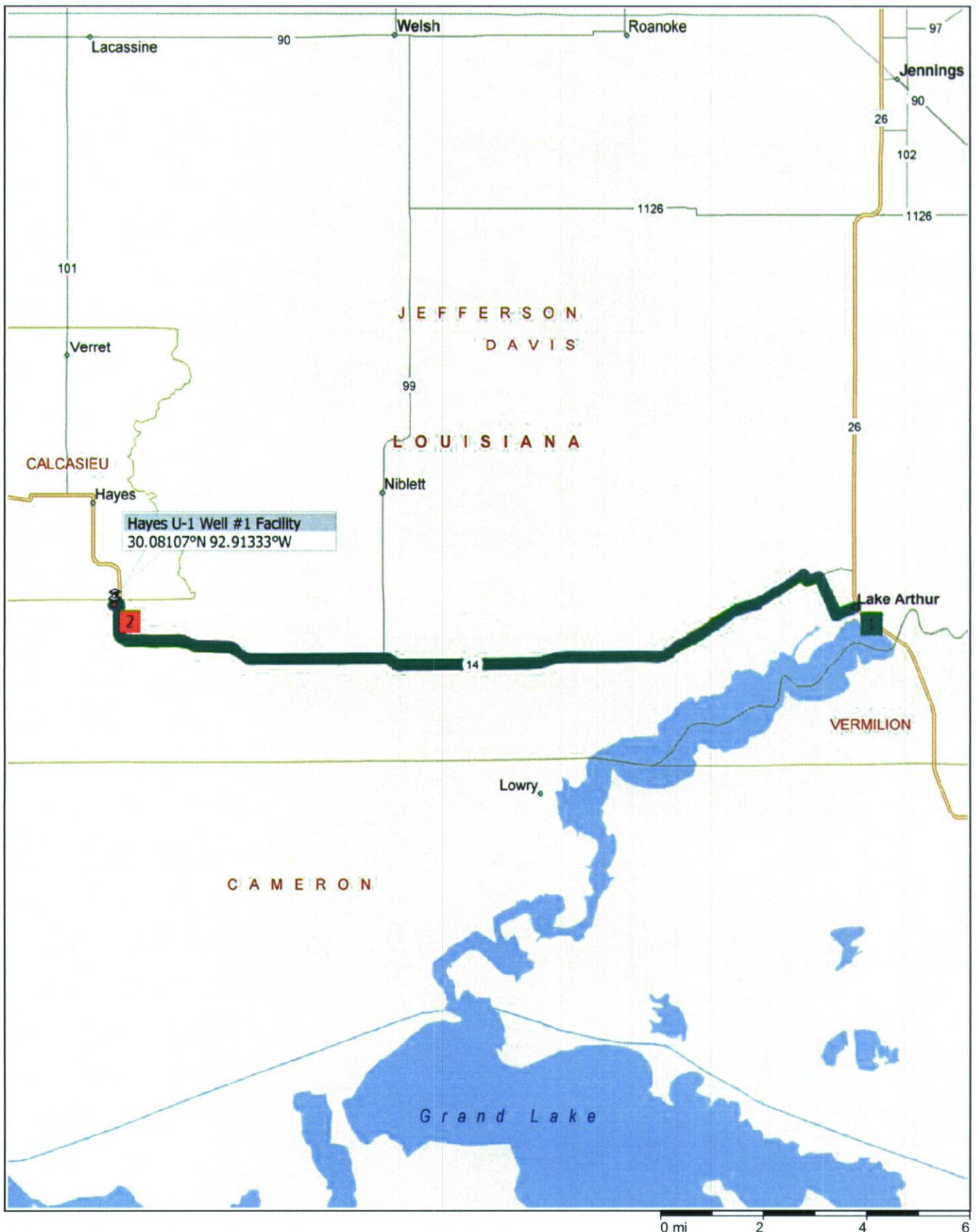
A gas operated Methanol Injection Pump (Source CI-01) is utilized to pump liquids throughout the facility. The emissions from these sources are estimated using manufacturer operating data and material mass balance.

United World Energy Corporation - Hayes U-1 Well #1 Facility

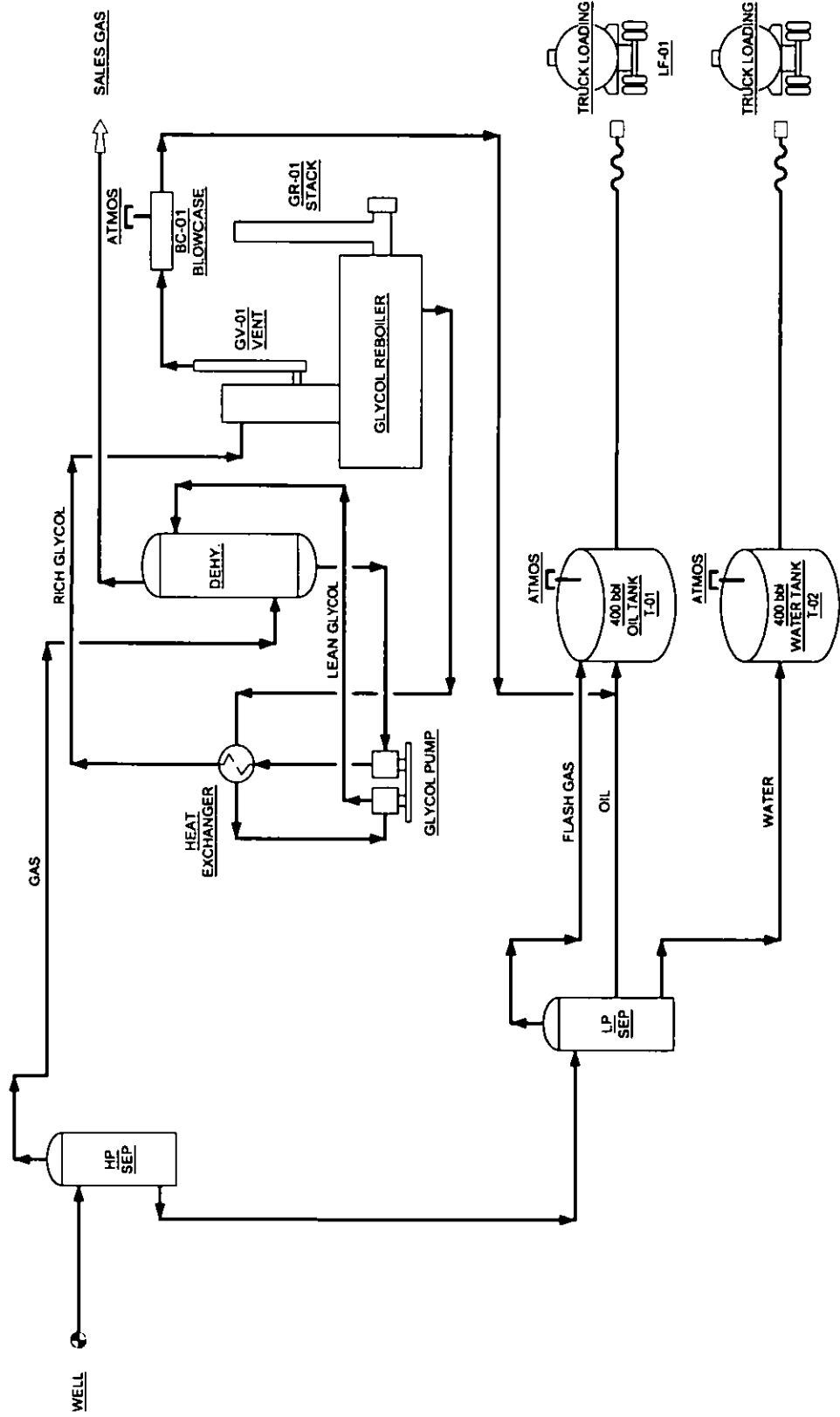


United World Energy Corporation - Hayes U-1 Well #1 Facility Directions

16.3 miles; 26 minutes



9:00 AM 0.0 mi **1** Depart Lake Arthur on SR-14 [3rd St] (West) for 0.4 mi
9:00 AM 0.4 mi Turn RIGHT (North) onto SR-14 [Arthur Ave] for 0.9 mi
9:02 AM 1.3 mi Turn LEFT (West) onto SR-14 [SR-380] for 0.4 mi
9:02 AM 1.7 mi Turn LEFT (West) onto SR-14 for 14.5 mi
9:25 AM 16.2 mi Turn LEFT (West) onto Local road(s) for 0.1 mi
9:26 AM 16.3 mi **2** Arrive Hayes U-1 Well #1 Facility



REVISIONS

NO.	DATE	BY	CHK'D BY	DESCRIPTION
1	1/11/78	SSP	SS	ISSUED FOR REVIEW

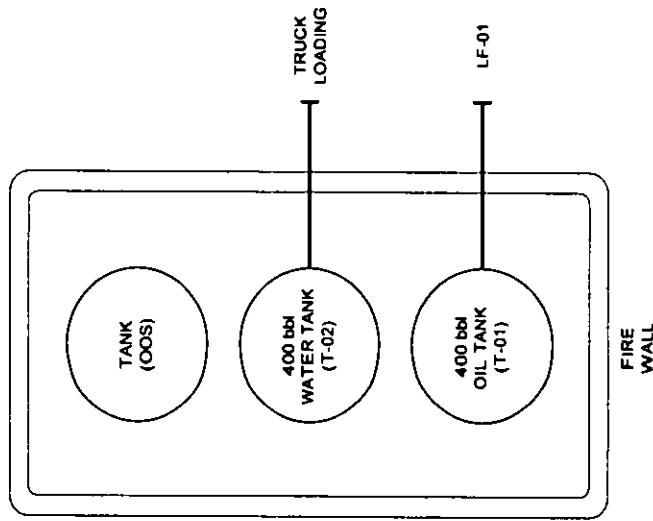
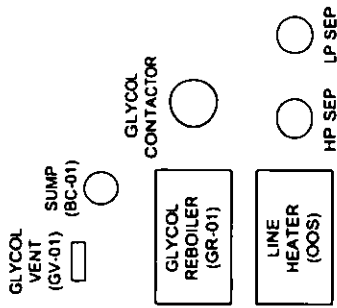
REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

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UNITED WORLD ENERGY CORP
 PROCESS FLOW DIAGRAM
 WELLS U-1 WELL #1 FACILITY

DWG. NO.	REV. NO.	DATE	BY	CHK'D BY	DESCRIPTION
08008-01	01	01/11/78	SSP	SS	ISSUED FOR REVIEW



JUN 08 2008 2:56pm 08135-001 REV A.dwg

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NO	DATE	DESCRIPTION	DATE
1	3/7/08	ISSUED FOR REVIEW	

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Emission Point List

Hayes U-1 Well #1 Facility - United World Energy Corporation

Hayes - Jefferson Davis, LA

Emission Point No.	Description	Operating Rate (Max) or Tank	H/D	D/W	W/Y
BC-01	Glycol Still Column Blowcase	0.054 SCFD	24	7	52
CI-01	Methanol Injection Pump	189.80 SCFH	24	7	52
FE-01	Fugitive Emissions		24	7	52
FLASH-01	LP Separator Flash Gas	1825.00 BOPY	24	7	52
GR-01	Glycol Reboiler Burner	0.20 MMBTU/hr	24	7	52
GV-01	Glycol Still Column Vent	73.00 MMSCFY	24	7	52
LC-01	Norriseal 1001 Level Controllers	0.2 SCFH	24	7	52
LF-01	Tank Truck Loading Losses	1825.00 BOPY	1	1	5
T-01	Oil Storage Tank	1825.00 BOPY	24	7	52
T-02	Water Storage Tank	18.25 BOPY	24	7	52

Annual Emission Rate Table

Company Name: United World Energy Corporation
Plant Location and Name: Hayes - Jefferson Davis, LA, Hayes U-1 Well #1 Facility
Date of Submittal: 6/8/2009

Source ID	Equipment Description	PM ₁₀ Tons/Yr	SO ₂ Tons/Yr	NOx Tons/Yr	VOC Tons/Yr	CO Tons/Yr	H ₂ S Tons/Yr
BC-01	Glycol Still Column Blowcase	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CI-01	Methanol Injection Pump	0.0000	0.0000	0.0000	3.0604	0.0000	0.0000
FE-01	Fugitive Emissions	0.0000	0.0000	0.0000	2.3232	0.0000	0.0000
FLASH-01	LP Separator Flash Gas	0.0000	0.0000	0.0000	9.7188	0.0000	0.0000
GR-01	Glycol Reboiler Burner	0.0061	0.0009	0.0793	0.0044	0.0666	0.0000
GV-01	Glycol Still Column Vent	0.0000	0.0000	0.0000	0.2358	0.0000	0.0000
LC-01	Nomiseal 1001 Level Controllers	0.0000	0.0000	0.0000	0.0192	0.0000	0.0000
LF-01	Tank Truck Loading Losses	0.0000	0.0000	0.0000	0.0652	0.0000	0.0000
T-01	Oil Storage Tank	0.0000	0.0000	0.0000	0.4307	0.0000	0.0000
T-02	Water Storage Tank	0.0000	0.0000	0.0000	0.0091	0.0000	0.0000
TOTAL		0.0061	0.0009	0.0793	15.8668	0.0666	0.0000

***VOC TAP Speciation:**

	TPY	Non-Toxic VOC's:	TPY
Acetaldehyde	0.0000	Propane	5.4136
Formaldehyde	0.0000	iso-Butane	2.7990
n-Hexane	0.3442	n-Butane	1.8322
Benzene	0.0540	iso-Pentane	1.0074
Toluene	0.0411	n-Pentane	0.5651
Ethylbenzene	0.0099	Other Hexanes	0.6594
Xylene	0.0231	Heptane	2.5217
Trimethylpentane	0.0000	Octane	0.1380
Total Air Toxics	0.4723	Nonane	0.0497
		Decane	0.1072
		Total Non-Toxic VOC's	15.0933

Other Emissions:

	TPY
Methane	51.1033
Ethane	7.6470

United World Energy Corporation

Blow Case Sump VOC Emissions

Facility: Hayes U-1 Well #1 Facility
Source: BC-01, Glycol Still Column Blowcase

Input Data:

Blow case size volume =

0.032

 Cu. Ft. Gas specific gravity =

0.6137

 Driving gas pressure =

25

 psig Runs per year =

365

Calculations:

Gas vented/run = Gas volume at driving pressure X ratio of driving pressure to atmospheric pressure

Gas vented/run =	0.054	scf
Emissions / run =	0.003	lb/hr, lb/run of hydrocarbons
	1.095	lb/year of hydrocarbons
	0.001	ton/year of hydrocarbons

Emission Speciation:

Component	Mole Fraction	Mole Weight	Mole fract X Mole Wt	Wt. fraction	avg lbs/hr	tons/yr
Nitrogen	0.908%	28.0130	0.2544	0.0144	0.0000	0.0000
Carbon Dioxide	0.283%	44.0100	0.1245	0.0070	0.0000	0.0000
Methane	92.898%	16.0430	14.9036	0.8420	0.0030	0.0010
Ethane	3.491%	30.0700	1.0497	0.0593	0.0000	0.0000
Propane	1.187%	44.0970	0.5234	0.0296	0.0000	0.0000
iso-Butane	0.348%	58.1230	0.2023	0.0114	0.0000	0.0000
n-Butane	0.318%	58.1230	0.1848	0.0104	0.0000	0.0000
iso-Pentanes	0.158%	72.1500	0.1140	0.0064	0.0000	0.0000
n-Pentanes	0.100%	72.1500	0.0722	0.0041	0.0000	0.0000
Other Hexanes	0.118%	86.1770	0.1017	0.0057	0.0000	0.0000
*n-Hexane	0.039%	86.1770	0.0336	0.0019	0.0000	0.0000
*Benzene	0.014%	78.1140	0.0109	0.0006	0.0000	0.0000
*Toluene	0.007%	92.1410	0.0064	0.0004	0.0000	0.0000
*Ethylbenzene	0.001%	106.1670	0.0011	0.0001	0.0000	0.0000
*Xylenes	0.004%	106.1670	0.0042	0.0002	0.0000	0.0000
*Trimethylpentane	0.000%	114.2310	0.0000	0.0000	0.0000	0.0000
Heptanes	0.070%	100.2720	0.0702	0.0040	0.0000	0.0000
Octanes	0.025%	114.2310	0.0286	0.0016	0.0000	0.0000
Nonanes	0.008%	128.2580	0.0103	0.0006	0.0000	0.0000
Decanes	0.023%	142.2800	0.0327	0.0018	0.0000	0.0000
	100.000%	Gas MW =	17.7000			

Total Non-Toxic VOC's	0.0000	0.0000
*Total toxics	0.0000	0.0000
Tot VOCs (includes toxics)	0.0000	0.0000

Blow case sump gas emissions.

Component lbs/hr = (lbs HC/hr)(component weight fraction)
 Component tons/yr = (tons HC/yr)(component weight fraction)

Company Name: United World Energy Corporation
Facility Name: Hayes U-1 Well #1 Facility
EPN: CI-01
Source Description: Methanol Injection Pump

Annual Operation:	8760	hr/yr
Total Gas Vented:	189.8000	SCFH
Emissions:	8.8783	lb/hr gas (total gas stream)
	77773.9080	lb/year gas
	38.8870	ton/year gas

Emission Speciation:

Component	Mole Percent	Component Molecular Weight	Mole Fraction X Mole Wt	Weight Fraction	Lbs/hr	Tons/yr
Nitrogen	0.9080%	28.013	0.2544	0.0143	0.1270	0.5561
Carbon Dioxide	0.2830%	44.010	0.1245	0.0070	0.0621	0.2722
Methane	92.8980%	16.043	14.9036	0.8407	7.4640	32.6923
Ethane	3.4910%	30.070	1.0497	0.0592	0.5256	2.3021
Propane	1.1870%	44.097	0.5234	0.0295	0.2619	1.1472
iso-Butane	0.3480%	58.123	0.2023	0.0114	0.1012	0.4433
n-Butane	0.3180%	58.123	0.1848	0.0104	0.0923	0.4044
iso-Pentane	0.1580%	72.150	0.1140	0.0064	0.0568	0.2489
n-Pentane	0.1000%	72.150	0.0722	0.0041	0.0364	0.1594
Other Hexanes	0.1180%	86.178	0.1017	0.0057	0.0506	0.2217
*n-Hexane	0.0390%	86.178	0.0336	0.0019	0.0169	0.0739
*Benzene	0.0140%	78.114	0.0109	0.0006	0.0053	0.0233
*Toluene	0.0070%	92.141	0.0064	0.0004	0.0036	0.0156
*Ethylbenzene	0.0010%	106.167	0.0011	0.0001	0.0009	0.0039
*Xylenes	0.0040%	106.167	0.0042	0.0002	0.0018	0.0078
*Trimethylpentane	0.0000%	114.231	0.0000	0.0000	0.0000	0.0000
Heptanes	0.0700%	100.272	0.0702	0.0040	0.0355	0.1555
Octanes	0.0250%	114.231	0.0286	0.0016	0.0142	0.0622
Nonanes	0.0080%	128.258	0.0103	0.0006	0.0053	0.0233
Decanes +	0.0230%	142.280	0.0327	0.0018	0.0160	0.0700
Total	100.0000%	Molecular Wt =	17.7286			

Total Non-HAP VOCs	0.6702	2.9359
*Total HAPs	0.0285	0.1245
Total VOCs (including HAPs)	0.6987	3.0604

Notes:

Component lbs/hr = (lbs HC/hr)/(component weight fraction)

Component tons/yr = (tons HC/yr)/(component weight fraction)

Company Name: United World Energy Corporation
Facility Name: Hayes U-1 Well #1 Facility
EPN: FE-01
Source Description: Fugitive Emissions

Summary Total For Fugitives	lbs/hr	tons/year
VOC (Including HAP)	0.5304	2.3232
n-Hexane	0.0332	0.1454
Benzene	0.0022	0.0096
Toluene	0.0016	0.0070
Ethylbenzene	0.0002	0.0008
Xylenes	0.0005	0.0022
Total Toxic Air Pollutants	0.0377	0.1651
Non-Toxic VOC (Heptanes+)	0.4927	2.1580
Methane	1.5157	6.6388
Ethane	0.2389	1.0464

Emission Calculations:

Component Type - Light Oil Streams	Number	Emission Factor ² (lbs/day-component)	Total Hydrocarbon lbs/day	Total Hydrocarbon lbs/hr
Connectors ¹	513	0.0110	5.6430	0.2351
Flanges ³	121	0.0058	0.7018	0.0292
Open-ends ¹	15	0.0740	1.1100	0.0463
Other- pressure relief, meters, compressors ¹	6	0.4000	2.4000	0.1000
Pump Seals	0	0.6900	0.0000	0.0000
Valves ⁴	121	0.1300	15.7300	0.6554
Total HC - Light Oil Streams				1.0660

Speciation of Hydrocarbon Vapors - Light Oil Streams	Weight Percent ²	lbs/hr	tons/year
Methane	61.2000	0.6524	2.8575
Ethane	6.6250	0.0706	0.3093
VOC (Including HAP)	29.6000	0.3155	1.3820
*n-Hexane	2.3000	0.0245	0.1074
*Benzene	0.1210	0.0013	0.0056
*Toluene	0.1050	0.0011	0.0049
*Ethylbenzene	0.0160	0.0002	0.0007
*Xylenes	0.0330	0.0004	0.0015
Air Toxics Total:		1.0660	4.6691

Component Type - Water/Oil Streams	Number	Emission Factor ² (lbs/day-component)	Total Hydrocarbon lbs/day	Total Hydrocarbon lbs/hr
Connectors ¹	0	0.0058	0.0000	0.0000
Flanges ³	0	0.0002	0.0000	0.0000
Open-ends ¹	0	0.0130	0.0000	0.0000
Other- pressure relief, meters, compressors ¹	0	0.7400	0.0000	0.0000
Pump Seals	0	0.0013	0.0000	0.0000
Valves ⁴	0	0.0052	0.0000	0.0000
Total HC - Water/Oil Streams				0.0000

Company Name: United World Energy Corporation
Facility Name: Hayes U-1 Well #1 Facility
EPN: FE-01
Source Description: Fugitive Emissions

Speciation of Hydrocarbon Vapors - Water/Oil Stream	Weight Percent ²	lbs/hr	tons/year
Methane	61.2000	0.0000	0.0000
Ethane	6.6250	0.0000	0.0000
VOC (Including HAP)	29.6000	0.0000	0.0000
*n-Hexane	2.3000	0.0000	0.0000
*Benzene	0.1210	0.0000	0.0000
*Toluene	0.1050	0.0000	0.0000
*Ethylbenzene	0.0160	0.0000	0.0000
*Xylenes	0.0330	0.0000	0.0000
Air Toxics Total:		0.0000	0.0000

Component Type - Gas Stream	Number	Emission Factor ² (lbs/day-component)	Total Hydrocarbon lbs/day	Total Hydrocarbon lbs/hr
Valves ⁴	88	0.2400	21.1200	0.8800
Flanges ³	88	0.0210	1.8480	0.0770
Open Ends ¹	11	0.1100	1.2100	0.0504
Connectors ¹	373	0.0110	4.1030	0.1710
Other- pressure relief, meters, compressors ¹	4	0.4700	1.8800	0.0783
Total HC - Gas Service				1.2567

Speciation of Hydrocarbon Vapors - Gas Stream	Weight Percent ²	lbs/hr	tons/year
Methane	68.7000	0.8634	3.7815
Ethane	13.3880	0.1682	0.7369
VOC (Including HAP)	17.1000	0.2149	0.9412
*n-Hexane	0.6930	0.0087	0.0381
*Benzene	0.0690	0.0009	0.0038
*Toluene	0.0380	0.0005	0.0021
*Ethylbenzene	0.0030	0.0000	0.0002
*Xylenes	0.0090	0.0001	0.0005
Air Toxics Total:		1.2567	5.5043

References:

(1) The count for connectors, open-ends, and "others" may be estimated using API Publication No. 4589.

A factor is derived from Table 4, page W-4, and is multiplied by the valve count.

The set of factors used is based on the type of site, not to be confused with type of stream.

	Gas Production	Gas Plants	Light Liquid Production
Open-ends	0.17	0.13	0.12
Connectors	5.40	4.03	4.24
Others	0.10	0.11	0.05

(2) Table 1 and Table 2 of Method 1 in API Publication No. 4638 contains the EPA Emission Factors and Typical Speciation Fractions for calculating fugitive emissions in Gas and Light Liquid service.

(3) The Flange count is estimated at one flange per valve. API Publication No. 4638, page 14.

(4) The Valve count is the estimated number of valves based on the facility equipment.

Company Name: United World Energy Corporation
 Facility Name: Hayes U-1 Well #1 Facility
 EPN: FE-01
 Source Description: Fugitive Emissions

Valve Count Estimation for Gas Stream

Equipment	Facility Content (Gas Service)	Process Valve Factor	Instrument & Gauge Valve Factor	Valve Count
Gas Wellhead	1	9	3	12
HP Separator	1	5	8	13
Pig Launcher in Gas Service	0	5	5	0
LP Separator	1	5	9	14
Test Separator	0	13	10	0
Line Heater	0	5	2	0
Heater Treater	0	11	5	0
Glycol Contact Tower	1	14	7	21
Glycol Charcoal Filter	0	0	0	0
Glycol Flash Separator	1	3	4	7
Glycol Pumps	1	0	0	0
Glycol Sock Filter	1	0	0	0
Glycol Regenerator	1	0	0	0
Glycol Reboiler	1	5	3	8
Fuel Gas Scrubber	0	11	2	0
Fuel Gas Filter	0	10	12	0
Gas Sales Meter	1	8	4	12
Oil LACT Meter	0	0	0	0
Vent Scrubber	0	4	3	0
Flare Scrubber	0	4	3	0
Oil Tank	1	1	0	1
Oil Transfer Pump - Electric	0	0	0	0
Oil Pump w/ Gas Engine	0	8	2	0
Generator	0	6	4	0
Gas Compressor	0	20	10	0
Gas Compressor Knockout - Number of Stages	0	1	2	0
Compressor Seals	0	4	0	0
Gas Engine Lube Oil	0	0	0	0
Amine Contact Tower	0	14	7	0
Amine Separator	0	6	2	0
Amine Coalescer	0	5	2	0
Amine Filter	0	0	0	0
Amine Regenerator	0	5	0	0
Amine Reboiler Burners	0	5	2	0
Amine Exchanger	0	0	0	0
Amine Pump	0	0	0	0
Pump Seals	0	0	0	0
			Total Gas Valve Count	88

Company Name:
 Facility Name:
 EPN:
 Source Description:

United World Energy Corporation
 Hayes U-1 Well #1 Facility
 FE-01
 Fugitive Emissions

Valve Count Estimation for Liquid Streams

Equipment	Facility Content (Liquid Stream)	Process Valve Factor	Instrument & Gauge Valve Factor	Valve Count
Liquid Wellhead	0	9	3	0
HP Separator	1	30	8	38
Pig Launcher in Liquid Service	0	5	3	0
LP Separator	1	22	9	31
Test Separator	0	22	10	0
Line Heater	0	5	2	0
Heater Treater	0	14	16	0
Glycol Contact Tower	1	6	7	13
Glycol Charcoal Filter	0	8	3	0
Glycol Flash Separator	1	3	5	8
Glycol Pumps	1	7	2	9
Glycol Sock Filter	1	8	2	10
Glycol Regenerator	1	4	3	7
Glycol Reboiler	1	0	0	0
Fuel Gas Scrubber	0	3	0	0
Fuel Gas Filter	0	4	4	0
Gas Sales Meter	1	0	0	0
Oil LACT Meter	0	19	10	0
Vent Scrubber	0	1	6	0
Flare Scrubber	0	1	6	0
Oil Tank	1	5	0	5
Oil Transfer Pump - Electric	0	10	3	0
Oil Pump w/ Gas Engine	0	13	2	0
Generator	0	0	0	0
Gas Compressor	0	0	0	0
Gas Compressor Knockout - Number of Stages	0	4	0	0
Compressor Seats	0	0	0	0
Gas Engine Lube Oil	0	12	2	0
Amine Contact Tower	0	3	7	0
Amine Separator	0	6	8	0
Amine Cooledscr	0	14	6	0
Amine Filter	0	8	2	0
Amine Regenerator	0	5	2	0
Amine Reboiler Burners	0	0	0	0
Amine Exchanger	0	5	4	0
Amine Pump	0	7	2	0
Pump Seats	0	2	0	0
Total Liquid Valve Count				121
Liquid Streams	Percent of valves	Valve Count		
Light Oil Stream(>20 API Gravity)	100.0000	121		
Water/Oil Stream		0		
Water		0		
Total	100.0000	121		

Company Name: United World Energy Corporation
 Facility Name: Hayes U-1 Well #1 Facility
 EPN: FLASH-01
 Source Description: LP Separator Flash Gas

Oil API Gravity
 Separator Pressure (PSIG)
 Separator Temperature (F)
 Site Elevation (Feet above Mean Sea Level)
 Measured/Calculated Gas Specific Gravity
 Calculated Atmospheric Pressure @ Site Elevation:

62	
790	66
68	30
0	
0.8575	
14.700	

Calculated Cubic Feet Tank Vapor per Barrel Oil Produced per the Vasquez & Beggs Correlation:
 Calculated GOR via Vasquez & Beggs:

453.1111	35.4858
417.6263	

Oil Production Rate (BOPD):
 Hours Operated per Year:

5
8760

Flash Losses

Total Flash cubic ft/hour hydrocarbons
 Total Flash lbs/hr hydrocarbons
 Total Flash tons/yr hydrocarbons
 Flow Rate (ACFM):

87.005	ACFM
5.7011	
24.9708	
1.295	

Speciation Of Estimated VOCs from Flash Losses

Component	Mole Percent	Component Molecular Wt	Mole Fraction X Mole Wt	Weight Fraction	lbs/hr	Tons/yr
Hydrogen Sulfide	0.0000	34.080	0.0000	0.0000	0.0000	0.0000
Nitrogen	0.0630	28.013	0.0176	0.0007	0.0040	0.0175
Carbon Dioxide	0.4040	44.010	0.1778	0.0072	0.0410	0.1798
Methane	68.0690	16.043	10.9203	0.4382	2.5039	10.9871
Ethane	13.5560	30.070	4.0763	0.1639	0.9344	4.0927
Propane	9.2050	44.097	4.0581	0.1632	0.9304	4.0752
iso-Butane	3.8600	56.123	2.2435	0.0902	0.5142	2.2522
n-Butane	2.3350	56.123	1.3372	0.0546	0.3113	1.3835
iso-Pentane	1.0010	72.150	0.7222	0.0290	0.1853	0.7240
n-Pentane	0.5330	72.150	0.3846	0.0155	0.0884	0.3872
Other Hexanes	0.4810	86.178	0.4145	0.0167	0.0952	0.4170
*n-Hexane	0.1350	86.178	0.1163	0.0047	0.0268	0.1174
*Benzene	0.0240	78.114	0.0187	0.0008	0.0048	0.0201
*Toluene	0.0190	92.141	0.0175	0.0007	0.0040	0.0176
*Ethylbenzene	0.0040	106.167	0.0042	0.0002	0.0011	0.0048
*Xylenes	0.0110	106.167	0.0117	0.0005	0.0029	0.0127
*Trimethylpentane	0.0000	114.231	0.0000	0.0000	0.0000	0.0000
Heptanes	0.1930	100.272	0.1935	0.0078	0.0445	0.1949
Octanes	0.0640	114.231	0.0731	0.0029	0.0165	0.0723
Nonanes	0.0190	126.258	0.0244	0.0010	0.0057	0.0250
Decanes +	0.0240	142.280	0.0341	0.0014	0.0080	0.0350
Total	100.0000	Molecular Wt =	24.887			

Total Non-HAP VOCs	2.1796	9.5463
*Total HAPs	0.0394	0.1726
Total VOCs (including HAPs)	2.2189	9.7188

Calculation formula

Component lbs/hr = (HC lbs/hr)(Weight fraction of component)
 Component tons/yr = (component lbs/hr)(hr/yr)(1 ton/2000 lbs)

Vasquez & Beggs Equation:

Solution GOR =

$$C1 * (\text{Gas Sp. Gravity})^{C2} * (\text{Separator Pressure, PSIA})^{C2} * \exp[C3 * \text{API Gravity} / \text{Fluid Temperature (R)}]$$

Value of Constants	API Gravity < 30	API Gravity > 30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	25.724	23.931

Company Name: United World Energy Corporation
Facility: Hayes U-1 Well #1 Facility
EPN: GR-01
Source Description: Glycol Reboiler Burner

Emission Calculations:

Heat Rating of Unit:	0.2000	MMBtu/hr
Btu Value of Fuel Gas:	1105.6000	Btu/scf
Fuel Use of Unit:	180.8973	scf/hr-avg
	1.5847	MMscf/yr
Hours Operated for Year:	8760.0000	hrs
Percent Operation for Year:	100.00	%

	Pollutant	Factor lb/MMscf fuel	Avg. lbs/hr	Total tons/yr	Source of Factor
CRITERIA	NOx	100.0000	0.0181	0.0793	AP-42, Table 1.4-1 (7/98)
	CO	84.0000	0.0152	0.0666	AP-42, Table 1.4-1 (7/98)
	PM ₁₀	7.6000	0.0014	0.0061	AP-42, Table 1.4-2 (7/98)
	PM _{2.5}		0.0013	0.0056	PM Calculator
	SO ₂	0.9380	0.0002	0.0009	AP-42, Table 1.4-2 (7/98)-Adjusted (Note 1)
	VOC	5.5000	0.0010	0.0044	AP-42, Table 1.4-2 (7/98)
HAPs	n-Hexane	1.8000	0.0003	0.0013	AP-42, Table 1.4-3 (7/98)
	Acetaldehyde	0.0000	0.0000	0.0000	No emission factor
	Formaldehyde	0.0750	0.0000	0.0000	AP-42, Table 1.4-3 (7/98)
	Benzene	0.0020	0.0000	0.0000	AP-42, Table 1.4-3 (7/98)
	Toluene	0.0034	0.0000	0.0000	AP-42, Table 1.4-3 (7/98)
	Ethylbenzene	0.0000	0.0000	0.0000	No emission factor
	Xylenes	0.0000	0.0000	0.0000	No emission factor
	Total HAP		0.0003	0.0013	
OTHER	Methane	2.3000	0.0004	0.0018	AP-42, Table 1.4-2 (7/98)
	Ethane	3.1000	0.0006	0.0026	AP-42, Table 1.4-3 (7/98)
	CO ₂	120000.0000	21.7077	95.0797	AP-42, Table 1.4-2 (7/98)
	N ₂ O	2.2000	0.0004	0.0018	AP-42, Table 1.4-2 (7/98)
	Non-toxic VOC (Heptane+)		0.0007	0.0031	VOC - Total HAP

Additional Notes:

1. The AP-42 factor for SO₂ is based on a fuel content of 2000 gr H₂S/10⁶ scf (3.2 ppmv). This calculation adjusts the factor for maximum of 5 ppm(v) H₂S.

Component lb/hr = (Fuel Use of Unit, SCF/hr)(Component lb/MMSCF)(1 MMSCF/1000000 SCF)

Component tons/yr = (Component lb/hr)(Hours operated for Year, hr/yr)/(2000 lb/ton)

GRI-GLYCalc VERSION 4.0 - SUMMARY OF INPUT VALUES

Case Name: United World Energy Corporation
 File Name: W:\Customers\United World Energy Corp\Air\Facilities\Hayes U-1 Well
 #1\09135 - Air Permit Application\Hayes U-1 Well #1.ddf
 Date: May 20, 2009

DESCRIPTION:

 Description: Hayes U-1 Well #1 Facility
 GV-01

Annual Hours of Operation: 8760.0 hours/yr

WET GAS:

 Temperature: 65.00 deg. F
 Pressure: 790.00 psig
 Wet Gas Water Content: Saturated

Component	Conc. (vol %)
-----	-----
Carbon Dioxide	0.2830
Nitrogen	0.9080
Methane	92.8980
Ethane	3.4910
Propane	1.1870
Isobutane	0.3480
n-Butane	0.3180
Isopentane	0.1580
n-Pentane	0.1000
n-Hexane	0.0390
Other Hexanes	0.1180
Heptanes	0.0700
Benzene	0.0140
Toluene	0.0070
Ethylbenzene	0.0010
Xylenes	0.0040
C8+ Heavies	0.0560

DRY GAS:

 Flow Rate: 0.2 MMSCF/day
 Water Content: 7.0 lbs. H2O/MMSCF

LEAN GLYCOL:

 Glycol Type: TEG
 Water Content: 1.5 wt% H2O
 Recirculation Ratio: 3.0 gal/lb H2O

PUMP:

Glycol Pump Type: Electric/Pneumatic

GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: United World Energy Corporation
 File Name: W:\Customers\United World Energy Corp\Air\Facilities\Hayes U-1 Well
 #1\09135 - Air Permit Application\Hayes U-1 Well #1.ddf
 Date: May 20, 2009

DESCRIPTION:

Description: Hayes U-1 Well #1 Facility
 GV-01

Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

UNCONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.0099	0.237	0.0432
Ethane	0.0024	0.057	0.0104
Propane	0.0021	0.052	0.0094
Isobutane	0.0012	0.029	0.0054
n-Butane	0.0015	0.037	0.0067
Isopentane	0.0010	0.024	0.0043
n-Pentane	0.0008	0.020	0.0036
n-Hexane	0.0007	0.016	0.0030
Other Hexanes	0.0015	0.036	0.0066
Heptanes	0.0027	0.066	0.0120
Benzene	0.0108	0.258	0.0471
Toluene	0.0100	0.239	0.0436
Ethylbenzene	0.0023	0.054	0.0099
Xylenes	0.0132	0.316	0.0576
C8+ Heavies	0.0060	0.145	0.0264
Total Emissions	0.0660	1.585	0.2893
Total Hydrocarbon Emissions	0.0660	1.585	0.2893
Total VOC Emissions	0.0538	1.291	0.2357
Total HAP Emissions	0.0368	0.883	0.1612
Total BTEX Emissions	0.0361	0.867	0.1583

EQUIPMENT REPORTS:

ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25

and has calculated a revised Dry Gas Dew Point.

Calculated Absorber Stages: 1.25
 Calculated Dry Gas Dew Point: 1.92 lbs. H₂O/MMSCF

Temperature: 65.0 deg. F
 Pressure: 790.0 psig
 Dry Gas Flow Rate: 0.2000 MMSCF/day
 Glycol Losses with Dry Gas: 0.0004 lb/hr
 Wet Gas Water Content: Saturated
 Calculated Wet Gas Water Content: 23.40 lbs. H₂O/MMSCF
 Specified Lean Glycol Recirc. Ratio: 3.00 gal/lb H₂O

Component	Remaining in Dry Gas	Absorbed in Glycol
Water	8.22%	91.78%
Carbon Dioxide	99.95%	0.05%
Nitrogen	100.00%	0.00%
Methane	100.00%	0.00%
Ethane	99.99%	0.01%
Propane	99.98%	0.02%
Isobutane	99.97%	0.03%
n-Butane	99.96%	0.04%
Isopentane	99.96%	0.04%
n-Pentane	99.95%	0.05%
n-Hexane	99.91%	0.09%
Other Hexanes	99.93%	0.07%
Heptanes	99.82%	0.18%
Benzene	95.52%	4.48%
Toluene	92.96%	7.04%
Ethylbenzene	90.31%	9.69%
Xylenes	85.89%	14.11%
C8+ Heavies	99.71%	0.29%

REGENERATOR

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled Overhead
Water	24.38%	75.62%
Carbon Dioxide	0.00%	100.00%
Nitrogen	0.00%	100.00%
Methane	0.00%	100.00%
Ethane	0.00%	100.00%
Propane	0.00%	100.00%
Isobutane	0.00%	100.00%
n-Butane	0.00%	100.00%
Isopentane	0.50%	99.50%
n-Pentane	0.50%	99.50%
n-Hexane	0.50%	99.50%
Other Hexanes	1.00%	99.00%
Heptanes	0.50%	99.50%
Benzene	5.00%	95.00%

Toluene	7.91%	92.09%
Ethylbenzene	10.43%	89.57%
Xylenes	12.96%	87.04%
C8+ Heavies	12.06%	87.94%

STREAM REPORTS:

WET GAS STREAM

Temperature: 65.00 deg. F
 Pressure: 804.70 psia
 Flow Rate: 8.34e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	4.93e-002	1.95e-001
Carbon Dioxide	2.83e-001	2.74e+000
Nitrogen	9.08e-001	5.59e+000
Methane	9.29e+001	3.27e+002
Ethane	3.49e+000	2.31e+001
Propane	1.19e+000	1.15e+001
Isobutane	3.48e-001	4.44e+000
n-Butane	3.18e-001	4.06e+000
Isopentane	1.58e-001	2.50e+000
n-Pentane	1.00e-001	1.58e+000
n-Hexane	3.90e-002	7.38e-001
Other Hexanes	1.18e-001	2.23e+000
Heptanes	7.00e-002	1.54e+000
Benzene	1.40e-002	2.40e-001
Toluene	7.00e-003	1.42e-001
Ethylbenzene	1.00e-003	2.33e-002
Xylenes	4.00e-003	9.33e-002
C8+ Heavies	5.60e-002	2.10e+000
Total Components	100.00	3.90e+002

DRY GAS STREAM

Temperature: 65.00 deg. F
 Pressure: 804.70 psia
 Flow Rate: 8.33e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	4.06e-003	1.60e-002
Carbon Dioxide	2.83e-001	2.73e+000
Nitrogen	9.08e-001	5.59e+000
Methane	9.29e+001	3.27e+002
Ethane	3.49e+000	2.31e+001

Propane	1.19e+000	1.15e+001
Isobutane	3.48e-001	4.44e+000
n-Butane	3.18e-001	4.06e+000
Isopentane	1.58e-001	2.50e+000
n-Pentane	9.99e-002	1.58e+000

n-Hexane	3.90e-002	7.38e-001
Other Hexanes	1.18e-001	2.23e+000
Heptanes	6.99e-002	1.54e+000
Benzene	1.34e-002	2.29e-001
Toluene	6.51e-003	1.32e-001

Ethylbenzene	9.03e-004	2.11e-002
Xylenes	3.44e-003	8.01e-002
C8+ Heavies	5.58e-002	2.09e+000

Total Components	100.00	3.90e+002
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LEAN GLYCOL STREAM

Temperature: 65.00 deg. F
Flow Rate: 6.83e-003 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.84e+001	3.78e+000
Water	1.50e+000	5.77e-002
Carbon Dioxide	3.74e-012	1.44e-013
Nitrogen	4.87e-013	1.87e-014
Methane	8.61e-018	3.31e-019
Ethane	2.91e-008	1.12e-009
Propane	2.27e-009	8.74e-011
Isobutane	9.57e-010	3.68e-011
n-Butane	9.86e-010	3.79e-011
Isopentane	1.28e-004	4.93e-006
n-Pentane	1.08e-004	4.15e-006
n-Hexane	8.84e-005	3.40e-006
Other Hexanes	3.99e-004	1.53e-005
Heptanes	3.58e-004	1.38e-005
Benzene	1.47e-002	5.66e-004
Toluene	2.23e-002	8.56e-004
Ethylbenzene	6.84e-003	2.63e-004
Xylenes	5.10e-002	1.96e-003
C8+ Heavies	2.15e-002	8.27e-004
Total Components	100.00	3.85e+000

RICH GLYCOL STREAM

Temperature: 65.00 deg. F
Pressure: 804.70 psia
Flow Rate: 7.33e-003 gpm
NOTE: Stream has more than one phase.

Component	Conc. (wt%)	Loading (lb/hr)
-----------	----------------	--------------------

TEG	9.24e+001	3.78e+000
Water	5.79e+000	2.37e-001
Carbon Dioxide	3.51e-002	1.44e-003
Nitrogen	4.56e-003	1.86e-004
Methane	2.41e-001	9.86e-003
Ethane	5.80e-002	2.37e-003
Propane	5.25e-002	2.15e-003
Isobutane	3.00e-002	1.23e-003
n-Butane	3.73e-002	1.53e-003
Isopentane	2.41e-002	9.85e-004
n-Pentane	2.03e-002	8.30e-004
n-Hexane	1.66e-002	6.80e-004
Other Hexanes	3.75e-002	1.53e-003
Heptanes	6.72e-002	2.75e-003
Benzene	2.77e-001	1.13e-002
Toluene	2.64e-001	1.08e-002
Ethylbenzene	6.16e-002	2.52e-003
Xylenes	3.69e-001	1.51e-002
C8+ Heavies	1.68e-001	6.86e-003
Total Components	100.00	4.09e+000

REGENERATOR OVERHEADS STREAM

Temperature: 212.00 deg. F
 Pressure: 14.70 psia
 Flow Rate: 4.28e+000 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	8.82e+001	1.79e-001
Carbon Dioxide	2.90e-001	1.44e-003
Nitrogen	5.90e-002	1.86e-004
Methane	5.45e+000	9.86e-003
Ethane	7.00e-001	2.37e-003
Propane	4.32e-001	2.15e-003
Isobutane	1.87e-001	1.23e-003
n-Butane	2.33e-001	1.53e-003
Isopentane	1.20e-001	9.80e-004
n-Pentane	1.02e-001	8.26e-004
n-Hexane	6.96e-002	6.77e-004
Other Hexanes	1.56e-001	1.52e-003
Heptanes	2.42e-001	2.74e-003
Benzene	1.22e+000	1.08e-002
Toluene	9.59e-001	9.97e-003
Ethylbenzene	1.89e-001	2.26e-003
Xylenes	1.10e+000	1.32e-002
C8+ Heavies	3.14e-001	6.03e-003
Total Components	100.00	2.47e-001

Company Name: United World Energy Corporation
Facility Name: Hayes U-1 Well #1 Facility
EPN: LC-01
Source Description: Normaliseal 1001 Level Controllers

Quantity of controllers	6	
Gas Vent Rate	0.2000	SCF/hr
Annual Operation	8760	hrs/yr
Total Gas Vented	1.2000	SCF/hr - all controllers
Emissions:	0.0561	lb/hr total gas
	491.4360	lb/year total gas
	0.2457	ton/year total gas

Emission Speciation:

Component	Mole Percent	Component Molecular Weight	Mole Fraction X Mole Wt	Weight Fraction	Lbs/hr	Tons/yr
Nitrogen	0.9080%	28.013	0.2544	0.0143	0.0008	0.0035
Carbon Dioxide	0.2830%	44.010	0.1245	0.0070	0.0004	0.0017
Methane	92.8980%	16.043	14.9036	0.8407	0.0472	0.2066
Ethane	3.4910%	30.070	1.0497	0.0592	0.0033	0.0145
Propane	1.1870%	44.097	0.5234	0.0295	0.0017	0.0072
iso-Butane	0.3480%	58.123	0.2023	0.0114	0.0006	0.0028
n-Butane	0.3180%	58.123	0.1848	0.0104	0.0006	0.0026
iso-Pentane	0.1580%	72.150	0.1140	0.0064	0.0004	0.0016
n-Pentane	0.1000%	72.150	0.0722	0.0041	0.0002	0.0010
Other Hexanes	0.1180%	86.178	0.1017	0.0057	0.0003	0.0014
*n-Hexane	0.0390%	86.178	0.0336	0.0019	0.0001	0.0005
*Benzene	0.0140%	78.114	0.0109	0.0006	0.0000	0.0001
*Toluene	0.0070%	92.141	0.0064	0.0004	0.0000	0.0001
*Ethylbenzene	0.0010%	106.167	0.0011	0.0001	0.0000	0.0000
*Xylenes	0.0040%	106.167	0.0042	0.0002	0.0000	0.0000
*Trimethylpentane	0.0000%	114.231	0.0000	0.0000	0.0000	0.0000
Heptanes	0.0700%	100.272	0.0702	0.0040	0.0002	0.0010
Octanes	0.0250%	114.231	0.0286	0.0016	0.0001	0.0004
Nonanes	0.0080%	128.258	0.0103	0.0006	0.0000	0.0001
Decanes +	0.0230%	142.280	0.0327	0.0018	0.0001	0.0004
Total	100.0000%	Molecular Wt =	17.7286			

Total Non-HAP VOCs	0.0042	0.0185
*Total HAPs	0.0001	0.0007
Total VOCs (including HAPs)	0.0043	0.0192

Notes:

Component lbs/hr = (lbs HC/hr)(component weight fraction)
 Component tons/yr = (tons HC/yr)(component weight fraction)

Company Name: United World Energy Corporation
Facility Name: Hayes U-1 Well #1 Facility
EPN: LF-01
Source Description: Tank Truck Loading Losses

Average Daily Production	5.0000	BOPD
Total Oil Loading	1825.0000	BBL/yr
Oil Loading Rate	150.0000	BBL/hr
Hydrocarbon Emission Factor	2.0000	lbs hydrocarbons per 1000 gal oil transferred
VOC factor	1.7000	lbs VOC per 1000 gal oil transferred
Annual Operating Time ¹	12.1687	hrs/yr
Total Hydrocarbons	12.6000	lbs/hr hydrocarbons
Total Hydrocarbons	0.0766	tons/yr hydrocarbons

	lb/hr	tons/yr
Methane	1.7640	0.0107
Ethane	0.1260	0.0008
VOC	10.7100	0.0652

¹Operating hours based on total barrels loaded per year and loading rate (BBL/hr).

Tanktruck loading losses calculation formula

$$\text{lbs/hr} = (\text{factor lbs HC/1000 gal}) \times 150 \text{ BBL/hr} \times 42 \text{ gal/BBL}$$

$$\text{tons/yr} = (\text{factor lbs HC/1000 gal}) \times \text{BBL/yr} \times 42 \text{ gal/BBL} \times (1 \text{ ton}/2000 \text{ lbs})$$

Reference: Loading Losses, AP-42, Chapter 5.2, 5th Edition, January 1995.

AP-42, Table 5.2-5: Associated Reference Note "a" estimates that VOC emissions are 85% of total organic factors for evaporative emissions from oil loading losses.

Methane factor = 14%; Ethane factor = 1 %

Company Name: United World Energy Corporation
Facility Name: Hayes U-1 Well #1 Facility
EPN: T-01
Source Description: Oil Storage Tank

Oil API Gravity	62.0000
Measured/Calculated Gas Specific Gravity	0.8576
Separator Pressure (PSIG)	30.0000
Separator Temperature (F)	66.0000
Site Elevation (Feet above Mean Sea Level)	0.0000
Calculated Atmospheric Pressure @ Site Elevation:	14.7000

Calculated Cubic Feet Tank Vapor per Barrel Oil Produced per the Vasquez & Beggs Correlation (GOR): 14.7919

Oil Production Rate (BOPD): 6.0000
 Hours Operated per Year: 6760.0000

Flash Losses

Total Flash cubic ft/hour hydrocarbons:	3.0816
Total Flash lbs/hr hydrocarbons:	0.2019
Total Flash tons/yr hydrocarbons:	0.8843
Total Hydrocarbon Emissions - Flash, Breathing and Working Losses	
Total cubic ft/hour hydrocarbons:	3.8469
Total lbs/hr hydrocarbons:	0.2522
Total tons/yr hydrocarbons:	1.1046

Speciation Of Estimated VOCs from Flash, Standing & Working Losses

Component	Mole Percent	Component Molecular Weight	Mole Fraction X Mole Wt	Weight Fraction	Lbs/hr	Tons/yr
Nitrogen	0.0630%	28.013	0.0176	0.0007	0.0002	0.0009
Carbon Dioxide	0.4040%	44.010	0.1778	0.0072	0.0018	0.0079
Methane	68.0690%	16.043	10.9203	0.4392	0.1108	0.4853
Ethane	13.5500%	30.070	4.0763	0.1639	0.0413	0.1809
Propane	9.2050%	44.097	4.0691	0.1632	0.0412	0.1805
iso-Butane	3.8600%	58.123	2.2435	0.0902	0.0227	0.0994
n-Butane	2.3350%	58.123	1.3572	0.0546	0.0138	0.0604
iso-Pentane	1.0010%	72.150	0.7222	0.0290	0.0073	0.0320
n-Pentane	0.5330%	72.150	0.3846	0.0155	0.0039	0.0171
Other Hexanes	0.4810%	86.178	0.4145	0.0167	0.0042	0.0184
*n-Hexane	0.1350%	86.178	0.1163	0.0047	0.0012	0.0053
*Benzene	0.0240%	78.114	0.0187	0.0008	0.0002	0.0009
*Toluene	0.0190%	92.141	0.0175	0.0007	0.0002	0.0009
*Ethylbenzene	0.0040%	106.167	0.0042	0.0002	0.0001	0.0004
*Xylenes	0.0110%	106.167	0.0117	0.0005	0.0001	0.0004
*Trimethylpentane	0.0000%	114.231	0.0000	0.0000	0.0000	0.0000
Heptanes	0.1930%	100.272	0.1935	0.0078	0.0020	0.0088
Octanes	0.0640%	114.231	0.0731	0.0029	0.0007	0.0031
Nonanes	0.0190%	128.258	0.0244	0.0010	0.0003	0.0013
Decanes +	0.0240%	142.280	0.0341	0.0014	0.0004	0.0018
Total	100.0000%	Molecular Wt =	24.8666			

Total Non-HAP VOCs	0.0965	0.4228
*Total HAPs	0.0018	0.0079
Total VOCs (Including HAPs)	0.0983	0.4307

Calculation formula

Component lbs/hr = (HC lbs/hr)(Weight fraction of component)

Component tons/yr = (component lbs/hr)(hrs/yr)(1 ton/2000 lbs)

Company Name: United World Energy Corporation
 Facility Name: Hayes U-1 Well #1 Facility
 EPN: T-01
 Source Description: Oil Storage Tank

Tank Standing and Working Loss Calculations - Based on AP-42, 6th Edition, Chapter 7, January 1995.
Calculation for Fixed Roof Storage Tanks

Tank Type = 0 = cone, 1 = dome (fixed roof storage tanks)
 Tank Color = 1 = Al/Specular; 2 = Al/Diffuse; 3 = Gray/Light; 4 = Gray/Medium; 5 = Red/Primer; 6 = White/NA
 Paint Condition = 0 = Good, 1 = Poor
 Insulation Factor, I = Btu/ft²-day
 (NOLA=1437; BRLA=1379; L.Charles=1365; Houston=1351; Dallas=1458;
 see Table 12.3-6 in AP-42 Chapter 12.)
 Paint Factor, a = dimensionless
 Press. Setting, PBp = ounces (default = 0.03 for welded tanks; use 0 for bolted or riveted tanks)
 Vacuum setting, PBv = ounces (default = -0.03 for welded tanks; use 0 for bolted or riveted tanks)
 Throughput, Q = BOPD EA.

Input Variables		Calculated Variables	
Tank Diameter, D =	<input type="text" value="12"/> ft	Vapor Space Volume, Vv =	<input type="text" value="1145.1132"/> ft ³
Shell Height, Hs =	<input type="text" value="20"/> ft	Tank Volume =	<input type="text" value="402.8067"/> bbls
Max. Liq. Height, Hlx =	<input type="text" value="20"/> ft	Roof Height, Hr =	<input type="text" value="0.3760"/> ft
Avg. Liquid Height, Hl =	<input type="text" value="10"/> ft		
Cone Roof Slope, Sr =	<input type="text" value="0.0025"/> ft/ft	Roof Outage, Hro =	<input type="text" value="0.1250"/> ft
default SR = 0.0025		Vapor Space Outage, Hvo =	<input type="text" value="10.1250"/> ft
Shell radius, Ra =	<input type="text" value="6"/> ft		
Vapor Mole Wt, Mv =	<input type="text" value="24.867"/> lb/lb mole	Vapor Density, Wv =	<input type="text" value="0.0151"/> lb/std ft ³
Vapor Press at Avg Liq.			
Liquid Temp, Pva =	<input type="text" value="3.5"/> psia	Avg. Liq. Temp, Tla =	<input type="text" value="637.3328"/> °R
		(equation 1-13)	
Delta Amb. Air Temp, Ta =	<input type="text" value="20"/> °R	Delta Vapor Psa Range =	<input type="text" value="1.2084"/> psia
Daily Amb. Air Temp, Taa =	<input type="text" value="70"/> °F	(Ch. 12, Eq. 1-19; RVP=6)	
Tank Product Temp, Tb =	<input type="text" value="70"/> °F	Vapor Space Expansion	
		Factor, Ke =	<input type="text" value="0.1405"/> dimensionless
Flow Rate =	<input type="text" value="0.0653"/> ACFM		
Stack Diameter =	<input type="text" value="2"/> inches	Vented Vapor Sat. Factor, Ks =	<input type="text" value="0.3474"/> dimensionless
Velocity =	<input type="text" value="0.0409"/> ft/sec.	Number of Turnovers, N =	<input type="text" value="4.5295"/> dimensionless
		Turnover Factor, Kn =	<input type="text" value="1.0000"/> dimensionless

Calculation of Standing Losses

$L_s = 365 V_v W_v K_e K_s$
 L_s = standing storage loss, lbs hydrocarbons/yr
 V_v = vapor space volume, ft³
 W_v = vapor density, lb/std ft³
 K_e = vapor space expansion factor, dimensionless
 K_s = vented vapor saturation factor, dimensionless
 365 = constants, days/year
 HC = hydrocarbons (Includes C1, C2 and higher molecular wt HC)

$L_s =$ lbs HC/year
 lbs HC/hr
 tons HC/year

Company Name: United World Energy Corporation
Facility Name: Hayes U-1 Well #1 Facility
EPN: T-01
Source Description: Oil Storage Tank

Calculation of Working Losses

$$Lw = 0.0010 \cdot Mv \cdot Pva \cdot Q \cdot Kn \cdot Kp$$

Lw = working losses, lbs hydrocarbons/yr

Mv = vapor density, lbs/std ft3

Pva = vapor pressure at daily avg. liq. surface temp., psia

Q = annual net throughput, bbl/yr

Kn = turnover factor, dimensionless. For turnovers > 30, Kn = (180 ÷ NYGN);

For turnovers ≤ 30, Kn = 1

Kp = working loss product factor, dimensionless, 0.75 for crude oils; 1 for all other organic liquids

HC = hydrocarbons (includes C1, C2 and higher molecular wt HC)

Lw =	119.1266	lbs HC/year
	0.0136	lbs HC/hr
	0.0606	tons HC/year

Total Tank Standing and Working Losses of VOC's

(Assumes all Hydrocarbons are VOC's)

	440.3341	lbs/year
	0.0503	lbs/hr
	0.2203	tons/year

Vasquez & Beggs Equation:

Solution GOR =

$$C1 \cdot (\text{Gas Sp. Gravity})^{\frac{1}{2}} \cdot \left(\frac{\text{Separator Pressure, PSIA}}{C2} \right)^{\frac{1}{2}}$$

$$\exp\left[\frac{C3 \cdot \text{API Gravity}}{\text{Fluid Temperature (R)}} \right]$$

Value of Constants	API Gravity < 30	API Gravity > 30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	25.724	23.931

Company Name: United World Energy Corporation
Facility Name: Hayes U-1 Well #1 Facility
EPN: T-02
Source Description: Water Storage Tank

Oil API Gravity	52.0000
Measured/Calculated Gas Specific Gravity	0.6113
Separator Pressure (PSIG)	30.0000
Separator Temperature (F)	66.0000
Site Elevation (Feet above Mean Sea Level)	0.0000
Calculated Atmospheric Pressure @ Site Elevation:	14.7000

Calculated Cubic Feet Tank Vapor per Barrel Oil Produced per the Vasquez & Beggs Correlation (GOR): 10.5449

Oil Production Rate (BOPD): 0.0500
 Hours Operated per Year: 6760.0000

Flash Losses

Total Flash cubic ft/hour hydrocarbons:	0.0220
Total Flash lbs/hr hydrocarbons:	0.0010
Total Flash tons/yr hydrocarbons:	0.0044
Total Hydrocarbon Emissions - Flash, Breathing and Working Losses	
Total cubic ft/hour hydrocarbons:	0.6841
Total lbs/hr hydrocarbons:	0.0273
Total tons/yr hydrocarbons:	0.1196

Speciation Of Estimated VOCs from Flash, Standing & Working Losses

Component	Mole Percent	Component Molecular Weight	Mole Fraction X Mole Wt	Weight Fraction	Lbs/hr	Tons/yr
Nitrogen	0.9080%	28.013	0.2544	0.0143	0.0004	0.0018
Carbon Dioxide	0.2830%	44.010	0.1245	0.0070	0.0002	0.0009
Methane	92.6980%	16.043	14.9036	0.8407	0.0230	0.1007
Ethane	3.4910%	30.070	1.0497	0.0592	0.0016	0.0070
Propane	1.1670%	44.097	0.5234	0.0295	0.0008	0.0035
iso-Butane	0.3480%	58.123	0.2023	0.0114	0.0003	0.0013
n-Butane	0.3180%	58.123	0.1848	0.0104	0.0003	0.0013
iso-Pentane	0.1580%	72.150	0.1140	0.0064	0.0002	0.0009
n-Pentane	0.1000%	72.150	0.0722	0.0041	0.0001	0.0004
Other Hexanes	0.1180%	86.178	0.1017	0.0057	0.0002	0.0009
*n-Hexane	0.0390%	86.178	0.0336	0.0019	0.0001	0.0004
*Benzene	0.0140%	78.114	0.0109	0.0006	0.0000	0.0000
*Toluene	0.0070%	92.141	0.0064	0.0004	0.0000	0.0000
*Ethylbenzene	0.0010%	106.167	0.0011	0.0001	0.0000	0.0000
*Xylenes	0.0040%	106.167	0.0042	0.0002	0.0000	0.0000
*Trimethylpentane	0.0000%	114.231	0.0000	0.0000	0.0000	0.0000
Heptanes	0.0700%	100.272	0.0702	0.0040	0.0001	0.0004
Octanes	0.0250%	114.231	0.0286	0.0016	0.0000	0.0000
Nonanes	0.0080%	128.258	0.0103	0.0006	0.0000	0.0000
Decanes +	0.0230%	142.280	0.0327	0.0018	0.0000	0.0000
Total	100.0000%	Molecular Wt =	17.7286			

Total Non-HAP VOCs	0.0020	0.0087
*Total HAPs	0.0001	0.0004
Total VOCs (Including HAPs)	0.0021	0.0091

Calculation formula

Component lbs/hr = (HC lbs/hr)(Weight fraction of component)

Component tons/yr = (component lbs/hr)(hrs/yr)(1 ton/2000 lbs)

Company Name: United World Energy Corporation
Facility Name: Hayes U-1 Well #1 Facility
EPN: T-02
Source Description: Water Storage Tank

Tank Standing and Working Loss Calculations - Based on AP-42, 6th Edition, Chapter 7, January 1995.
Calculation for Fixed Roof Storage Tanks

Tank Type = 0 = cone, 1 = dome (fixed roof storage tanks)
 Tank Color = 1 = Al/Specular; 2 = Al/Diffuse; 3 = Gray/Light; 4 = Gray/Medium; 5 = Red/Primer; 6 = White/NA
 Paint Condition = 0 = Good, 1 = Poor
 Insulation Factor, I = Btu/ft²-day
 (NOLA=1437; BRLA=1370; L.Charies=1365; Houston=1361; Dallas=1468;
 see Table 12.3-6 In AP-42 Chapter 12.)
 Press. Setting, PBp = ounces (default = 0.03 for welded tanks; use 0 for bolted or riveted tanks)
 Vacuum setting, PBv = ounces (default = -0.03 for welded tanks; use 0 for bolted or riveted tanks)
 Throughput, Q = BOPD EA.

Paint Factor, a = dimensionless

Input Variables		Calculated Variables	
Tank Diameter, D =	<input type="text" value="12"/> ft	Vapor Space Volume, Vv =	<input type="text" value="1145.1132"/> ft ³
Shell Height, Hs =	<input type="text" value="20"/> ft	Tank Volume =	<input type="text" value="402.8967"/> bbls
Max. Liq. Height, Hlx =	<input type="text" value="20"/> ft	Roof Height, Hr =	<input type="text" value="0.3760"/> ft
Avg. Liquid Height, Hl =	<input type="text" value="10"/> ft		
Cone Roof Slope, Sr =	<input type="text" value="0.0625"/> ft/ft	Roof Outage, Hro =	<input type="text" value="0.1250"/> ft
default SR = 0.0625		Vapor Space Outage, Hvo =	<input type="text" value="10.1250"/> ft
Shell radius, Rs =	<input type="text" value="6"/> ft		
Vapor Mole Wt, Mv =	<input type="text" value="17.729"/> lb/lb mole	Vapor Density, Wv =	<input type="text" value="0.0108"/> lb/std ft ³
Vapor Press at Avg Liq.			
Liquid Temp, Pva =	<input type="text" value="3.6"/> psia	Avg. Liq. Temp, Tla =	<input type="text" value="637.3328"/> °R
		(equation 1-13)	
Delta Amb. Air Temp, Ta =	<input type="text" value="20"/> °R	Delta Vapor Psia Range =	<input type="text" value="1.2984"/> psia
Daily Amb. Air Temp, Taa =	<input type="text" value="70"/> °F	(Ch. 12, Eq. 1-19; RVP=6)	
Tank Product Temp, Tb =	<input type="text" value="70"/> °F	Vapor Space Expansion	
		Factor, Ke =	<input type="text" value="0.1485"/> dimensionless
Flow Rate =	<input type="text" value="0.0099"/> ACFM		
Stack Diameter =	<input type="text" value="2"/> inches	Vented Vapor Sat. Factor, Ks =	<input type="text" value="0.3474"/> dimensionless
Velocity =	<input type="text" value="0.0078"/> ft/sec.	Number of Turnovers, N =	<input type="text" value="0.0463"/> dimensionless
		Turnover Factor, Kn =	<input type="text" value="1.0000"/> dimensionless

Calculation of Standing Losses

$L_s = 365 V_v W_v K_e K_s$
 L_s = standing storage loss, lbs hydrocarbons/yr
 V_v = vapor space volume, ft³
 W_v = vapor density, lbs/std ft³
 K_e = vapor space expansion factor, dimensionless
 K_s = vented vapor saturation factor, dimensionless
 365 = constants, days/year
 HC = hydrocarbons (includes C1, C2 and higher molecular wt HC)

$L_s =$ lbs HC/year
 lbs HC/hr
 tons HC/year

Company Name: United World Energy Corporation
Facility Name: Hayes U-1 Well #1 Facility
EPN: T-02
Source Description: Water Storage Tank

Calculation of Working Losses

$Lw = 0.0010 \cdot Mv \cdot Pva \cdot Q \cdot Kn \cdot Kp$

Lw = working losses, lbs hydrocarbons/yr

Mv = vapor density, lbs/std ft3

Pva = vapor pressure at daily avg. liq. surface temp., psia

Q = annual net throughput, bbls/yr

Kn = turnover factor, dimensionless. For turnovers > 36, $Kn = (180 \cdot N) / 8N$;

For turnovers <= 36, $Kn = 1$

Kp = working loss product factor, dimensionless, 0.76 for crude oils; 1 for all other organic liquids

HC = hydrocarbons (includes C1, C2 and higher molecular wt HC)

Lw =	0.8493	lbs HC/year
	0.0001	lbs HC/hr
	0.0004	tons HC/year

Total Tank Standing and Working Losses of VOC's

(Assumes all Hydrocarbons are VOC's)

	230.6871	lbs/year
	0.0283	lbs/hr
	0.1152	tons/year

Vesquez & Beggs Equation:

Solution GOR =

$C1 \cdot (\text{Gas Sp. Gravity} \cdot ([\text{Separator Pressure, PSIA}]^{C2}) \cdot$

$\exp[C3 \cdot \text{API Gravity} / \text{Fluid Temperature (R)}])$

Value of Constants	API Gravity < 30	API Gravity > 30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	26.724	23.931

Compositional Analysis of Separator Gas

Date sampled: May 1, 2009
Sampling Conditions: 730 psig at 91 °F
Opening Conditions: 720 psig at 120 °F
PENCOR ID No. 34998-01

Hayes No. 1 - Cylinder No. 2261

Component	Mole %	GPM at 15.025 psia	Weight %	Molecular Weight
N ₂ Nitrogen	0.908	0.000	1.433	28.013
CO ₂ Carbon Dioxide	0.283	0.000	0.701	44.010
H ₂ S Hydrogen Sulfide	0.000	0.000	0.000	34.082
C1 Methane	92.898	0.000	84.028	16.043
C2 Ethane	3.491	0.951	5.918	30.070
C3 Propane	1.187	0.334	2.951	44.097
iC4 i-Butane	0.348	0.116	1.140	58.123
nC4 n-Butane	0.318	0.102	1.044	58.123
iC5 i-Pentane	0.158	0.059	0.644	72.150
nC5 n-Pentane	0.100	0.037	0.407	72.150
iC6 i-Hexanes	0.084	0.036	0.410	86.177
nC6 n-Hexane	0.039	0.016	0.188	86.177
C6 Methylcyclopentane	0.019	0.007	0.090	84.161
C6 Benzene	0.014	0.004	0.063	78.114
C6 Cyclohexane	0.015	0.005	0.072	84.161
C7 Heptanes	0.049	0.023	0.275	100.204
C7 Methylcyclohexane	0.021	0.009	0.118	98.188
C7 Toluene	0.007	0.002	0.038	92.141
iC8 Iso-Octane	0.003	0.001	0.018	114.231
C8 Octanes	0.022	0.012	0.144	114.231
C8 Ethyl Benzene	0.001	0.000	0.004	106.167
C8 m&p-Xylene	0.003	0.001	0.020	106.167
C8 o-Xylene	0.001	0.000	0.004	106.167
C9 Nonanes	0.008	0.005	0.059	128.258
C10+ Decanes plus	0.023	0.018	0.231	178.867
Total	100.000	1.738	100.000	

Calculated Properties of Gas

	Data at 15.025 psia	
Gas Specific Gravity (Air = 1.00)	=	0.6137
Net Heat of Combustion (Btu/Cu.Ft. at 60 °F)	Dry =	998.2 Real
Gross Heat of Combustion (Btu/Cu.Ft. at 60 °F)	Dry =	1,105.6 Real
Gross Heat of Combustion (Btu/Cu.Ft. at 60 °F)	Wet =	1,086.3 Water Sat.
Gas Compressibility (1 Atm. at 60 °F)	Z =	0.9975

- Heat of combustion is the quantity of heat produced when gas is burned completely to carbon dioxide and water.
- Wet and dry refer to the condition of the gas prior to combustion.
- Wet refers to a gas that is saturated with water vapor, and dry refers to a gas that contains no water vapor prior to combustion.
- Net and gross refer to the condition of the water resulting from combustion.
- Gross heat is the heat produced in complete combustion under constant pressure with the combustion products cooled to standard conditions, and the water of the combustion products condensed to the liquid state.
- Net heat is the heat produced in complete combustion under constant pressure with the combustion products cooled to standard conditions and the water of combustion products remains in the vapor phase.

Compositional Analysis of Separator Gas

Date sampled: May 1, 2009
Sampling Conditions: 65 psig at 88 °F
Opening Conditions: 55 psig at 120 °F
PENCOR ID No. 34998-05

LP Flash Separator - Cylinder No. 2196

Component	Mole %	GPM at 15.025 psia	Weight %	Molecular Weight
N ₂ Nitrogen	0.063	0.000	0.070	28.013
CO ₂ Carbon Dioxide	0.404	0.000	0.715	44.010
H ₂ S Hydrogen Sulfide	0.000	0.000	0.000	34.082
C1 Methane	68.069	0.000	43.922	16.043
C2 Ethane	13.556	3.691	16.393	30.070
C3 Propane	9.205	2.587	16.324	44.097
iC4 i-Butane	3.860	1.288	9.022	58.123
nC4 n-Butane	2.335	0.751	5.458	58.123
iC5 i-Pentane	1.001	0.374	2.904	72.150
nC5 n-Pentane	0.533	0.197	1.548	72.150
iC6 i-Hexanes	0.347	0.147	1.203	86.177
nC6 n-Hexane	0.135	0.057	0.468	86.177
C6 Methycyclopentane	0.066	0.024	0.223	84.161
C6 Benzene	0.024	0.007	0.075	78.114
C6 Cyclohexane	0.068	0.024	0.230	84.161
C7 Heptanes	0.132	0.062	0.531	100.204
C7 Methycyclohexane	0.061	0.025	0.241	98.188
C7 Toluene	0.019	0.007	0.072	92.141
iC8 Iso-Octane	0.011	0.006	0.051	114.231
C8 Octanes	0.053	0.028	0.244	114.231
C8 Ethyl Benzene	0.004	0.001	0.015	106.167
C8 m&p-Xylene	0.008	0.003	0.033	106.167
C8 o-Xylene	0.003	0.001	0.012	106.167
C9 Nonanes	0.019	0.011	0.096	128.258
C10+ Decanes plus	0.024	0.017	0.150	156.148
Total	100.000	9.308	100.000	

Calculated Properties of Gas

	Data at 15.025 psia	
Gas Specific Gravity (Air = 1.00)	=	0.8623
Net Heat of Combustion (Btu/Cu.Ft. at 60 °F)	Dry =	1,376.9 Real
Gross Heat of Combustion (Btu/Cu.Ft. at 60 °F)	Dry =	1,511.7 Real
Gross Heat of Combustion (Btu/Cu.Ft. at 60 °F)	Wet =	1,485.2 Water Sat.
Gas Compressibility (1 Atm. at 60 °F)	Z =	0.9952

- Heat of combustion is the quantity of heat produced when gas is burned completely to carbon dioxide and water.
- Wet and dry refer to the condition of the gas prior to combustion.
- Wet refers to a gas that is saturated with water vapor, and dry refers to a gas that contains no water vapor prior to combustion.
- Net and gross refer to the condition of the water resulting from combustion.
- Gross heat is the heat produced in complete combustion under constant pressure with the combustion products cooled to standard conditions, and the water of the combustion products condensed to the liquid state.
- Net heat is the heat produced in complete combustion under constant pressure with the combustion products cooled to standard conditions and the water of combustion products remains in the vapor phase.

**LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
HOUSEKEEPING PLAN
(LAC 33:III.2113)**

**United World Energy Corporation
Hayes U-1 Well #1 Facility**

The Louisiana Department of Environment Quality's regulation in LAC 33:III.2113 requires a written plan to prevent or reduce volatile organic compound (VOC) emissions from a regulated facility. This plan is to be submitted to the Air Quality Division as part of a permit application for a new or modified facility or at any other time as requested. A copy of this plan shall be kept on file with the facility's air permit.

General "good housekeeping" rules:

1. Containers of VOCs should be securely sealed when not in use.
2. Every effort should be made to prevent spills. Should one occur, clean up should begin as soon as possible to eliminate or minimize evaporation from spills.
3. Regularly pump out open sumps which contain hydrocarbons.
4. Maintain pressure relief valves in normal operational condition. Correct upsets in a process causing a release as soon as possible. Return relief valves to their normal operating condition and take steps to prevent reoccurrence.
5. Visually monitor operating equipment for leaking components and schedule them for repair as soon as possible. Clean up areas underneath leaking components.
6. Store materials used in the clean up of any oil or chemical spill in a closed container until
7. Close sampling lines properly after use to prevent the venting of VOCs to the
8. Maintain tanks containing VOCs with their hatches in the closed position except during gauging, inspection or maintenance.

United States of America
State of Louisiana



As Secretary of State, Jay Dardenne, I do hereby Certify that

UNITED WORLD ENERGY CORPORATION

A corporation domiciled in LAFAYETTE, LOUISIANA,

Filed charter and qualified to do business in this State on
May 27, 1993,

I further certify that the records of this Office indicate
the corporation has paid all fees due the Secretary of
State, and so far as the Office of the Secretary of State is
concerned is in good standing and is authorized to do
business in this State.

I further certify that this Certificate is not intended to
reflect the financial condition of this corporation since
this information is not available from the records of this
Office.

In testimony whereof, I have hereunto set
My hand and caused the Seal of my Office
To be affixed at the City of Baton Rouge on,

May 21, 2009

Secretary of State
34436178D



Certificate ID: 20090521005329

To validate this certificate, visit the following web site.
go to **Commercial Division, Validate Certificate**, then
follow the instructions displayed.

www.sos.louisiana.gov

State Operating Permit Application Completeness Checklist
United World Energy Corporation - Hayes U-1 Well #1 Facility

LAC 33: III.	Completeness Questions Relative to Minor Sources Application	Yes	No	N/A	Location Within the Permit Application
517.B.1.2 Certification	Does the Application include a Certification by a Responsible Official?	X			Section 8
517.D.1 Identifying Information	Does the Application include:				
	1. Company Name, Physical and Mailing Address of Facility?	X			Section 2
	2. Map showing Location of the Facility?	X			
	3. Owner and Operator Names and Agent?	X			Section 1
517.D.2 SIC Codes, Source Categories	4. Name and Telephone Number of Plant Manager or Contact?	X			Section 9
	Does the Application Include a Description of the Source's Processes and Products?	X			
	Does the Application Include the Source's SIC Codes?	X			Section 5
517.D.3.6 EIQ Sheets	Does the Application Include the EPA Source Category of HAPs, if applicable?			X	
	Has an EIQ Sheet been Completed for each Emission Point whether an Area or Point Source?	X			Section 20
517.D.4 Monitoring Devices	Does the Application Include Identification and Description of Compliance Monitoring Devices or Activities?	X			
517.D.5 Revisions and Modifications Only	For Revisions or Modifications, Does the Application Include a Description of the Proposed Change and any Resulting change in Emissions?	X			
517.D.7 General Information	Does the Application Include Information Regarding Fuels, Fuel Use, Raw Materials, Production Rates, and Operating Schedules as necessary to substantiate emission rates?	X			
517.D.8 Operating Limitations	Has Information Regarding any Limitations on Source Operation or any Applicable Work Practices Standards been Identified?	X			
517.D.9 Calculations	Are Emission Calculations Provided?	X			
517.D.10 Regulatory	Does the Application Include a citation and Description of Applicable Louisiana and Federal Air Quality Requirements and Standards?	X			Section 19
517.D.11 Test Methods	Has a Description of or a Reference to Applicable Test Methods Used to Determine Compliance with Standards been Provided?	X			Section 19
517.D.12 Major Sources of TAPs	Does the Application include Information Regarding the Compliance History of Sources Owned or Operated by the Applicant (per LAC 33:III.5111)?			X	
517.D.13 Major Sources of TAPs	Does the Application include a Demonstration to show that the Source Meets all Applicable MACT and Ambient Air Standard Requirements?			X	
517.D.16, 18	Has any Additional Information been Provided?		X		
517.D.17 Fees	Has the Fee Code been Identified?	X			Section 5
	Is the Applicable Fee Included with the Application?	X			
517.F Confidentiality	Does the Application Include a Request for Non-Disclosure (Confidentiality)?			X	
525.B Minor Permit Modification	Does the Application Include a Listing of New Requirements Resulting for the Change?	X			Section 19
	Does the Application Include Certification by the Responsible Official that the Proposed Action fits the Definition of a Minor Modification as per LAC 33:III.525.A?	X			Section 8
	Does the Certification also Request that Minor Modification Procedures be Used?	X			

Instructions: Complete this checklist and submit with the completed air permit application.

BOBBY JINDAL
GOVERNOR



HAROLD LEGGETT, PH.D.
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

MAIN FILE

Agency Interest No. 166486
Permit No. 1360-00558-00
Activity No. PER20090001

AUG 26 2009

Mr. Wayne Landry
United World Energy Corporation
2006 Ambassador Caffery Parkway
Lafayette, LA 70506

RE: **Hayes U-1 Well #1 Facility**
Administrative Completeness Determination

Dear Mr. Landry:

The Office of Environmental Services received your application for a minor source air permit on August 25, 2009. As of the date of this letter, the application, along with any additional information submitted to date, has been determined to be administratively complete and has been assigned to the Petrochemical Section, Group 3. Please note that the Department may require additional information if technical deficiencies are found at a later date.

If you have any questions, please call me at (225) 219-3286. Thank you for your attention to this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Jerri L. Muller".

Jerri Muller
Environmental Project Specialist
Permit Application Administrative Review Group

c: IO-A



AIR PERMIT ROUTING/APPROVAL SLIP-Permits

MAR 16 2010



AI No.	166486	Company	United World Energy Corporation	Date Received	08/25/2009
Activity No.	PER20090001	Facility	Hayes U-1 Well #1 Facility	Permit Type	Minor Initial
CDS No.	1360-00558	Permit No.	1360-00558-00	Expedited Permit	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no

1. Technical Review		Approved	Date rec'd	Date FW	Comments
Permit Writer	MFC	<i>MFC</i>	9/22/09	3/05/10	Subject to NESHAP Sub HH
Air Quality / Modeling		<i>CSG</i>	3/5/10	3/5/10	OK
Toxics					
PSD/NNSR					
Technical Advisor		<i>[Signature]</i>		03/09/10	✓
Supervisor					
Other					
2. Management Review (if PN req'd)		Approved	Date rec'd	Date FW	Comments
Supervisor					
Manager					
Assistant Secretary (PN)					
3. Response to Comments (if PN req'd)		Approved	Date rec'd	Date FW	Comments
Supervisor					
Manager					
Administrator					
Legal (BFD)					
4. Final Approval		Approved	Date rec'd	Date FW	Comments
Supervisor		<i>[Signature]</i>		3/11/10	OK
Manager					
Assistant Secretary		<i>[Signature]</i>		3/12/10	

1. Technical Review					
PN of App needed	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	Date of PN of App		Newspaper	
Fee paid	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no				
NSPS applies	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	PSD/NNSR applies	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	NESHAP applies	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no

2. Post-Technical Review					
Company technical review	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> n/a	E-mail date		Remarks received	<input type="checkbox"/> yes <input type="checkbox"/> no
Surveillance technical review	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> n/a	E-mail date		Remarks received	<input type="checkbox"/> yes <input type="checkbox"/> no

3. Public Notice					
Public Notice Required	<input type="checkbox"/> yes <input type="checkbox"/> no				
Library					
PN newspaper 1/City	The Advocate/Baton Rouge	PN Date			
PN newspaper 2/City		PN Date			
Company notification letter sent	Date mailed				
EPA PN notification e-mail sent	Date e-mailed				
OES PN mailout	Date				

4. Final Review					
Public comments received	<input type="checkbox"/> yes <input type="checkbox"/> no	EPA comments rec'd	<input type="checkbox"/> yes <input type="checkbox"/> no	Date EPA Resp to Comments-mailed	
Company comments received	<input type="checkbox"/> yes <input type="checkbox"/> no	PN info entered into Permit Sec VI	<input type="checkbox"/> yes <input type="checkbox"/> no	Date EPA approved permit	

Comments: Facility is not located in Coastal Zone.

BOBBY JINDAL
GOVERNOR



PEGGY M. HATCH
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Certified Mail No. 7009 2820 0001 8250 1463

Agency Interest No. 166486
Activity No.: PER20090001

Mr. Jerry Aguillard
Field Supervisor
United World Energy Corporation
2006 Ambassador Caffery Pkwy
Lafayette, LA 70506

RE: Permit, Hayes U-1 Well #1 Facility, United World Energy Corporation, Lake Arthur, Jefferson Davis Parish, Louisiana

Dear Mr. Aguillard:

This is to inform you that the permit request for the above referenced facility has been approved under LAC 33:III.501. The submittal was approved on the basis of the emissions reported and the approval in no way guarantees the design scheme presented will be capable of controlling the emissions as to the types and quantities stated. A new application must be submitted if the reported emissions are exceeded after operations begin. The synopsis, data sheets, and conditions are attached herewith.

It will be considered a violation of the permit if all proposed control measures and/or equipment are not installed and properly operated and maintained as specified in the application.

Also enclosed is a document entitled "General Information." Please be advised that this document contains a summary of facility-level information contained in LDEQ's TEMPO database and is not considered a part of the permit. Please review the information contained in this document for accuracy and completeness. If any changes are required or if you have questions regarding this document, you may email your changes to facupdate@la.gov.

Please be advised that pursuant to provisions of the Environmental Quality Act and the Administrative Procedure Act, the Department may initiate review of a permit during its term. However, before it takes any action to modify, suspend or revoke a permit, the Department shall, in accordance with applicable statutes and regulations, notify the permittee by mail of the facts or operational conduct that warrant the intended action and provide the permittee with the opportunity to demonstrate compliance with all lawful requirements for the retention of the effective permit.

The permit number cited below and agency interest number cited above should be referenced in future correspondence regarding this facility.

Done this 12 day of March, 2010.

Permit No.: 1360-00558-00

Sincerely,

A handwritten signature in black ink, appearing to read "Cheryl".

Cheryl Sonnier Nolan
Assistant Secretary

CSN:MFC

AIR PERMIT BRIEFING SHEET
AIR PERMITS DIVISION
LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Hayes U-1 Well #1 Facility
Agency Interest No.: 166486
United World Energy Corporation
Lake Arthur, Jefferson Davis Parish, Louisiana

I. BACKGROUND

United World Energy Corporation operates the Hayes U-1 Well #1 Facility, an oil and gas facility. This is the initial permit for this site.

II. ORIGIN

A permit application and Emission Inventory Questionnaire (EIQ) dated August 14, 2009 were received requesting a permit for the Hayes U-1 Well #1 Facility.

III. DESCRIPTION

The Hayes U-1 Well #1 Facility handles sweet natural gas and condensate/crude oil. Production from the nearby well flows to a high pressure separator from where the natural gas is piped directly to the gas dehydration unit. The liquids (condensate/crude oil and produced water) flow to the low pressure three phase separator. Natural gas from the low pressure separator is vented to the atmosphere. Condensate/crude oil and produced water are segregated and then sent to the oil storage tank and water storage tank respectively.

The glycol gas dehydration unit is used to dry the natural gas prior to sales or use as fuel. The gas dehydration unit strips water from the wet gas in a contactor resulting in a water-rich glycol stream and a dry sales gas stream. The glycol reboiler removes water and additional hydrocarbons from the glycol dehydration unit in the regenerator. The hydrocarbon vapors exiting the regenerator's still column vent are vented to the atmosphere. Any condensed liquids are sent to a blowcase.

Flash, standing, and working losses from the storage tanks are vented to the atmosphere. The stored condensate/crude oil is then shipped via tank truck for sales and the produced water is transported via tank truck to a disposal well. Any condensate/crude oil recovered from the produced water is sent to the oil storage tank.

A blowcase is utilized to transfer non-condensed liquids from the glycol still column vent to the oil storage tank. The blowcase vents to the atmosphere. Natural gas operated level controllers are used throughout the facility to regulate the production equipment. A gas operated methanol injection pump is utilized to pump liquids throughout the facility.

AIR PERMIT BRIEFING SHEET
AIR PERMITS DIVISION
LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Hayes U-1 Well #1 Facility
Agency Interest No.: 166486
United World Energy Corporation
Lake Arthur, Jefferson Davis Parish, Louisiana

Estimated emissions from the facility in tons per year are as follows:

<u>Pollutant</u>	<u>Emission Rates</u>
PM ₁₀	0.006
SO ₂	0.001
NO _x	0.08
CO	0.07
VOC	15.87

VOC speciation in tons per year:

VOC TAPs (LAC 33:III.Chapter 51):

Benzene	0.10
Ethylbenzene	0.02
n-Hexane	0.347
Toluene	0.085
Xylene	0.081
Other Non-TAP VOCs	<u>15.237</u>
Total VOC	15.87

IV. TYPE OF REVIEW

This permit was reviewed for compliance with Louisiana Air Quality Regulations and National Emission Standards for Hazardous Air Pollutants (NESHAP). New Source Performance Standards (NSPS) and Prevention of Significant Deterioration (PSD) do not apply.

This facility is a minor source of LAC 33:III.Chapter 51 Toxic Air Pollutants (TAPs) and an area source of 40 CFR 63 Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities.

V. PUBLIC NOTICE

Public notice is not required to permit a minor source.

**AIR PERMIT BRIEFING SHEET
AIR PERMITS DIVISION
LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY**

**Hayes U-1 Well #1 Facility
Agency Interest No.: 166486
United World Energy Corporation
Lake Arthur, Jefferson Davis Parish, Louisiana**

VI. EFFECTS ON AMBIENT AIR

Emissions associated with the proposed modification were reviewed by the Air Quality Assessment Division to ensure compliance with the NAAQS and AAS. LDEQ did not require the applicant to model emissions.

Dispersion Model(s) Used: None

VII. GENERAL CONDITION XVII ACTIVITIES

Work Activity	Schedule	VOC (tpy)
Collection of samples	8 per month	0.025
Pump preparation	4 per year	0.0125
Pipeline preparation	100 section per year	0.05
Vessel preparation	1 per year	0.075
Tank cleaning for inspection/service	1 per year	0.075
Filter replacement	8 per month	0.0125
Instrumentation mechanical work	52 per year	0.0125
Shop work	1 per year	0.05

VIII. INSIGNIFICANT ACTIVITIES

ID No.:	Description	Citation
None		

General Information

AI ID: 166486 Hayes U-1 Well #1 Facility
Activity Number: PER20090001
Permit Number: 1360-00558-00
Air - Minor Source/Small Source Initial

Also Known As:	ID	Name	User Group	Start Date
	1360-00558	CDS Number	CDS Number	08-25-2009
		United World Energy Corp	Multimedia	08-25-2009

Physical Location: 14.5 Mi W of Lake Arthur, LA 70000 **Main Phone:** 3372780488

Mailing Address: 2006 Ambassador Caffery Pkwy Lafayette, LA 70506

Location of Front Gate: 30.081067 latitude, -92.913326 longitude, Coordinate Method: Lat\Long, - DMS, Coordinate Datum: NAD83

Related People:	Name	Mailing Address	Phone (Type)	Relationship
	Wayne Landry	2006 Ambassador Caffery Pkwy Lafayette, LA 70506	3379811657 (WP)	Air Permit Contact For
	Wayne Landry	2006 Ambassador Caffery Pkwy Lafayette, LA 70506	3379811657 (WP)	Responsible Official for

Related Organizations:	Name	Address	Phone (Type)	Relationship
	United World Energy Corp	2006 Ambassador Caffery Pkwy Lafayette, LA 70506	3379811657 (WP)	Operates
	United World Energy Corp	2006 Ambassador Caffery Pkwy Lafayette, LA 70506	3379811657 (WP)	Air Billing Party for
	United World Energy Corp	2006 Ambassador Caffery Pkwy Lafayette, LA 70506	3379811657 (WP)	Owns

Note: This report entitled "General Information" contains a summary of facility-level information contained in LDEQ's TEMPO database for this facility and is not considered a part of the permit. Please review the information contained in this document for accuracy and completeness. If any changes are required or if you have questions regarding this document, you may contact Ms. Tommie Milam, Permit Support Services Division, at (225) 219-3259 or email your changes to facupdate@la.gov.

INVENTORIES

AI ID: 166486 - Hayes U-1 Well #1 Facility
 Activity Number: PER20090001
 Permit Number: 1360-00558-00
 Air - Minor Source/Small Source Initial

Subject Item Inventory:

ID	Description	Tank Volume	Max. Operating Rate	Normal Operating Rate	Contents	Operating Time
Hayes U-1 Well #1 Facility						
EQT 0001	BC-01 - Glycol Still Column Blowcase		.0023 scf/hr			8760 hr/yr
EQT 0002	CI-01 - Methanol Injection Pump		189.8 scf/hr			8760 hr/yr
EQT 0003	FLASH-01 - LP Separator Flash Gas		1825 bbl/yr			8760 hr/yr
EQT 0004	GR-01 - Glycol Reboiler Burner		.2 MM BTU/hr			8760 hr/yr
EQT 0005	GV-01 - Glycol Still Column Vent		.2 MM ft ³ /day			8760 hr/yr
EQT 0006	LC-01 - Norriseal 1001 Level Controllers		.2 scf/hr			8760 hr/yr
EQT 0007	LF-01 - Tank Truck Loading Losses		1825 bbl/yr			12.17 hr/yr
EQT 0008	T-01 - Oil Storage Tank	16800 gallons	1825 bbl/yr		Oil throughput	8760 hr/yr
EQT 0009	T-02 - Water Storage Tank	16800 gallons	18.25 bbl/yr		Oil throughput	8760 hr/yr
FUG 0001	FE-01 - Fugitive Emissions					8760 hr/yr

Stack Information:

ID	Description	Velocity (ft/sec)	Flow Rate (cubic ft/min-actual)	Diameter (feet)	Discharge Area (square feet)	Height (feet)	Temperature (oF)
Hayes U-1 Well #1 Facility							
EQT 0001	BC-01 - Glycol Still Column Blowcase	.01		.04		1	70
EQT 0002	CI-01 - Methanol Injection Pump	157.64	3.22	.02		1	70
EQT 0003	FLASH-01 - LP Separator Flash Gas	.04	.52	.17		22	70
EQT 0004	GR-01 - Glycol Reboiler Burner	8.25	172.78	.67		10	350
EQT 0005	GV-01 - Glycol Still Column Vent	.07	.09	.17		6	212
EQT 0007	LF-01 - Tank Truck Loading Losses			.17		10	70
EQT 0008	T-01 - Oil Storage Tank	.05	.07	.17		22	70
EQT 0009	T-02 - Water Storage Tank	.01	.01	.17		22	70

Relationships:

Subject Item Groups:

ID	Group Type	Group Description
UNF 0001	Unit or Facility Wide	- Hayes U-1 Well #1 Facility

Group Membership:

NOTE: The UNF group relationship is not printed in this table. Every subject item is a member of the UNF group

Annual Maintenance Fee:

INVENTORIES

AI ID: 166486 - Hayes U-1 Well #1 Facility
 Activity Number: PER20090001
 Permit Number: 1360-00558-00
 Air - Minor Source/Small Source Initial

Fee Number	Air Contaminant Source	Multiplier	Units Of Measure
0040	0040 Crude Oil and Natural Gas Production (Less than 100 T/Yr Source)		

SIC Codes:

1311	Crude petroleum and natural gas	AI 166486
1311	Crude petroleum and natural gas	UNF 001

EMISSION RATES FOR CRITERIA POLLUTANTS

AI ID: 166486 - Hayes U-1 Well #1 Facility

Activity Number: PER20090001

Permit Number: 1360-00558-00

Air - Minor Source/Small Source Initial

Subject Item	CO			NOx			PM10			SO2			VOC		
	Avg lb/hr	Max lb/hr	Tons/Year	Avg lb/hr	Max lb/hr	Tons/Year	Avg lb/hr	Max lb/hr	Tons/Year	Avg lb/hr	Max lb/hr	Tons/Year	Avg lb/hr	Max lb/hr	Tons/Year
Hayes U-1 Well #1 Facility															
EQT 0002 CI-01													0.70	0.70	3.06
EQT 0003 FLASH-01													2.22	2.22	9.72
EQT 0004 GR-01	0.015	0.015	0.07	0.018	0.018	0.08	0.0014	0.0014	0.006	<0.001	<0.001	0.001	0.001	0.001	0.004
EQT 0005 GV-01													0.054	0.054	0.24
EQT 0006 LC-01													0.0043	0.0043	0.02
EQT 0007 LF-01													10.71	10.71	0.065
EQT 0008 T-01													0.098	0.098	0.431
EQT 0009 T-02													0.002	0.002	0.01
FUG 0001 FE-01													0.53	0.53	2.32

Note: Emission rates in bold are from alternate scenarios and are not included in permitted totals unless otherwise noted in a footnote.

EMISSION RATES FOR TAP/HAP & OTHER POLLUTANTS

AI ID: 166486 - Hayes U-1 Well #1 Facility

Activity Number: PER20090001

Permit Number: 1360-00558-00

Air - Minor Source/Small Source Initial

Emission Pt.	Pollutant	Avg lb/hr	Max lb/hr	Tons/Year
EQT 0002 CI-01	Benzene	0.0053	0.0053	0.023
	Ethyl benzene	0.001	0.001	0.004
	Toluene	0.0036	0.0036	0.016
	Xylene (mixed isomers)	0.002	0.002	0.008
	n-Hexane	0.017	0.017	0.074
EQT 0003 FLASH-01	Benzene	0.0046	0.0046	0.02
	Ethyl benzene	0.0011	0.0011	0.005
	Toluene	0.004	0.004	0.017
	Xylene (mixed isomers)	0.003	0.003	0.013
	n-Hexane	0.027	0.027	0.12
EQT 0004 GR-01	n-Hexane	<0.001	<0.001	0.001
EQT 0005 GV-01	Benzene	0.011	0.011	0.047
	Ethyl benzene	0.002	0.002	0.01
	Toluene	0.01	0.01	0.044
	Xylene (mixed isomers)	0.01	0.01	0.058
	n-Hexane	0.001	0.001	0.003
EQT 0008 T-01	Benzene	<0.001	<0.001	0.001
	Toluene	<0.001	<0.001	0.001
	n-Hexane	0.0012	0.0012	0.005
FUG 0001 FE-01	Benzene	0.0022	0.0022	0.01
	Ethyl benzene	<0.001	<0.001	0.001
	Toluene	0.0016	0.0016	0.007
	Xylene (mixed isomers)	<0.001	<0.001	0.002
	n-Hexane	0.033	0.033	0.145
UNF 0001	Benzene			0.10
	Ethyl benzene			0.02
	Toluene			0.085
	Xylene (mixed isomers)			0.081
	n-Hexane			0.348

Note: Emission rates in bold are from alternate scenarios and are not included in permitted totals unless otherwise noted in a footnote. Emission rates attributed to the UNF reflect the sum of the TAP/HAP limits of the individual emission points (or caps) under this permit, but do not constitute an emission cap.

SPECIFIC REQUIREMENTS

AI ID: 166486 - Hayes U-1 Well #1 Facility
Activity Number: PER20090001
Permit Number: 1360-00558-00
Air - Minor Source/Small Source Initial

EQT 0004 GR-01 - Glycol Reboiler Burner

- 1 [LAC 33:III.1101.B] Opacity \leq 20 percent, except during the cleaning of a fire box or building of a new fire, soot blowing or lancing, charging of an incinerator, equipment changes, ash removal or rapping of precipitators, which may have an opacity in excess of 20 percent for not more than one six-minute period in any 60 consecutive minutes (Complies by using sweet natural gas as fuel).
Which Months: All Year Statistical Basis: None specified
- 2 [LAC 33:III.1313.C] Total suspended particulate \leq 0.6 lb/MMBTU of heat input (Complies by using sweet natural gas as fuel).
Which Months: All Year Statistical Basis: None specified

EQT 0005 GV-01 - Glycol Still Column Vent

- 3 [40 CFR 63.774(d)] Equipment/operational data recordkeeping by electronic or hard copy at the approved frequency. Keep records of the information specified in 40 CFR 63.774(d)(1)(i) or (d)(1)(ii), as applicable. Subpart HH. [40 CFR 63.774(d)]
- 4 [LAC 33:III.2116.C.2] LAC 33:III.2116: EXEMPT - Total uncontrolled VOC emissions from the glycol dehydrator are less than 9.0 tons per year.
- 5 [LAC 33:III.2116.F.4.b] Throughput recordkeeping by electronic or hard copy daily. Keep records of the actual throughput per day and the glycol circulation rate.

UNF 0001 - Hayes U-1 Well #1 Facility

- 6 [40 CFR 63.] All affected facilities shall comply with all applicable provisions in 40 CFR 63 Subpart A as delineated in Table 2 of 40 CFR 63 Subpart HH.
- 7 [LAC 33:III.1103] Emissions of smoke which pass onto or across a public road and create a traffic hazard by impairment of visibility as defined in LAC 33:III.111 or intensify an existing traffic hazard condition are prohibited.
- 8 [LAC 33:III.1109.B] Outdoor burning of waste material or other combustible material is prohibited.
- 9 [LAC 33:III.1303.B] Emissions of particulate matter which pass onto or across a public road and create a traffic hazard by impairment of visibility or intensify an existing traffic hazard condition are prohibited.
- 10 [LAC 33:III.2113.A] Maintain best practical housekeeping and maintenance practices at the highest possible standards to reduce the quantity of organic compounds emissions. Good housekeeping shall include, but not be limited to, the practices listed in LAC 33:III.2113.A.1-5.
- 11 [LAC 33:III.219] Failure to pay the prescribed application fee or annual fee as provided herein, within 90 days after the due date, will constitute a violation of these regulations and shall subject the person to applicable enforcement actions under the Louisiana Environmental Quality Act including, but not limited to, revocation or suspension of the applicable permit, license, registration, or variance.
- 12 [LAC 33:III.537] Comply with the Louisiana General Conditions as set forth in LAC 33:III.537.
- 13 [LAC 33:III.5611.A] Submit standby plan for the reduction or elimination of emissions during an Air Pollution Alert, Air Pollution Warning, or Air Pollution Emergency: Due within 30 days after requested by the administrative authority.
- 14 [LAC 33:III.5611.B] During an Air Pollution Alert, Air Pollution Warning or Air Pollution Emergency, make the standby plan available on the premises to any person authorized by the department to enforce these regulations.

AIR QUALITY ASSESSMENT DIVISION – ENGINEERING SUPPORT SECTION

NAAQS/AAS MODELING SUMMARY

Engineer	Gerri Garwood	Facility AI #	166486
Date Completed	03/05/2010	TEMPO Activity #	PER20090001
Synopsis			
<p>The emissions in the draft permit action were reviewed for compliance with the National Ambient Air Quality Standards (NAAQS) for criteria pollutants and the Louisiana Ambient Air Standards (AAS) for toxic air pollutants. Based upon best engineering judgment, the emissions associated with the permitting action should not cause an exceedance of any NAAQS or AAS.</p>			

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1. Article Addressed to:

Mr. Jerry Aguiard
 United World Energy Corporation
 2006 Ambassador Caffery Parkway
 Lafayette LA 70506

AI# 166486 (MFC)
 PER20090001

2. Article Number

(Transfer from service label)

700912820 0001 8250 1463 11

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A. Signature

x *Debra Leman* Agent
 Addressee

B. Received by (Printed Name)

C. Date of Delivery

3-17-10

- D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

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 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee)

 Yes

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DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL SERVICES
PERMITS - PETROCHEMICAL
POST OFFICE BOX 4313
BATON ROUGE LA 70821-4313

OES/PERMITS/PETRO



NOV 23 AM 10:27
DEQ - OES



State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL COMPLIANCE

November 22, 2011

CERTIFIED MAIL (7004 1160 0000 3795 8216)
RETURN RECEIPT REQUESTED

UNITED WORLD ENERGY CORPORATION

c/o Wayne Landry
Agent of Service
404 SO. Wakefield Dr.
Lafayette, Louisiana. 70503

RE: NOTICE OF POTENTIAL PENALTY
ENFORCEMENT TRACKING NO. AE-PP-09-0689
AGENCY INTEREST NO. 166442, 166486, 166487, & 166514

Dear Sir:

On or about February 13, 2009, an inspection of **LACASSANE CENTRAL FACILITY** (the facility), Agency Interest No. 166442, an oil and gas production facility owned and/or operated by **UNITED WORLD ENERGY CORPORATION (RESPONDENT)**, was performed to determine the degree of compliance with the Louisiana Environmental Quality Act (the Act) and the Air Quality Regulations. On or about September 9, 2011, a file review of the Respondent's facility was conducted to determine the degree of compliance with the Act and the Air Quality Regulations. The facility is located approximately 8.5 miles east of Sweet Lake in Cameron Parish, Louisiana. The facility currently operates under Minor Source Air Permit No. 0560-00284-00, issued on February 23, 2010.

While the investigation by the Louisiana Department of Environmental Quality (the Department) is not yet complete, the following violations were noted during the course of the inspection and file review:

- A. During the course of the inspection, the inspector noted that the facility was operating without an appropriate air permit. On or about August 21, 2009, the Department received the Respondent's Air Permit Application dated August 20, 2009. According to an email from the Respondent dated December 29, 2009, facility construction commenced on September 15, 2007. The Respondent's failure to submit a timely and complete permit application to the Department prior to construction, reconstruction or modification is a violation of LAC 33:III.501.C.1, and La. R.S. 30:2057(A)(2).

- B. During the course of the inspection, the inspector noted that the facility was operating without an appropriate air permit. According to an email from the Respondent dated December 29, 2009, facility operations commenced on February 5, 2008. On February 23, 2010, the Department issued the facility's Minor Source Air Permit No. 0560-00284-00. The Respondent's failure to obtain approval from the permitting authority prior to operating the facility from February 2008 to February 2010 is a violation of LAC 33:III.501.C.2, La. R.S. 30:2057(A)(1) and 30:2057(A)(2).
- C. During the course of the inspection, the inspector noted that an oil tank (Tank #515) had a vapor leak around the closed hatch. The Respondent's failure to maintain the best practical housekeeping and maintenance practices at the highest possible standards to reduce the quantity of organic compounds emissions is a violation of LAC 33:III.2113, LAC 33:III.905, LAC 33:III.501.C.4, La. R.S. 30:2057(A)(1) and 30:2057(A)(2).

On or about June 25, 2010, and September 9, 2011, file reviews of **HAYES U-1 WELL #1 FACILITY** (the facility), Agency Interest No. 166486, an oil and gas production facility owned and/or operated by **UNITED WORLD ENERGY CORPORATION (RESPONDENT)**, were performed to determine the degree of compliance with the Act and the Air Quality Regulations. The facility is located 14.5 miles west of Lake Arthur, Jefferson Davis Parish, Louisiana. The facility currently operates under Minor Source Air Permit No. 1360-00558-00, issued on March 12, 2010.

While the investigation by the Department is not yet complete, the following violations were noted during the course of the file reviews:

- D. On or about August 25, 2009, the Department received the Respondent's Minor Source Air Permit Application dated August 20, 2009. According to an email from the Respondent dated October 13, 2010, the Respondent acquired and commenced operation of the facility in June 1997. The Respondent's failure to submit a timely and complete permit application to the Department prior to construction, reconstruction, or modification is a violation of LAC 33:III.501.C.1 and La. R.S. 30:2057(A)(2).
- E. According to an email from the Respondent dated October 13, 2010, operation of the facility commenced in June 1997. On or about March 12, 2010, the Department issued Minor Source Air Permit No. 1360-00558-00. The Respondent's failure to obtain approval from the permitting authority prior to operating the facility from June 1997 to March 2010 is a violation of LAC 33:III.501.C.2 and La. R.S. 30:2057(A)(1) and 30:2057(A)(2).

On or about February 25, 2010, and September 9, 2011, file reviews of **SCHOOL BOARD FACILITY** (the facility), Agency Interest No. 166487, an oil and gas production facility owned and/or operated by **UNITED WORLD ENERGY CORPORATION (RESPONDENT)**, were performed to determine the degree of compliance with the Act and the Air Quality Regulations. The facility is located seven (7) miles southwest of Lowry in Cameron Parish, Louisiana. The facility previously operated under Minor Source Air Permit No. 0560-00285-00, issued on October 13, 2009. Minor Source Air Permit No. 0560-00285-00 was rescinded on August 24, 2011.

While the investigation by the Department is not yet complete, the following violations were noted during the course of the file reviews:

- F. On or about August 25, 2009, the Department received the Respondent's Minor Source Air Permit Application dated August 20, 2009. According to an email from the Respondent dated December 3, 2009, construction of the facility commenced on February 10, 2003. The Respondent's failure to submit a timely and complete permit application to the Department prior to construction, reconstruction, or modification of is a violation of LAC 33:III.501.C.1 and La. R.S. 30:2057(A)(2).
- G. According to an email from the Respondent dated December 3, 2009, operation of the facility commenced on February 23, 2003. On or about October 13, 2009, the Department issued Minor Source Air Permit No. 0560-00285-00. The Respondent's failure to obtain approval from the permitting authority prior to operating the facility from February 2003 to October 2009 is a violation of LAC 33:III.501.C.2, La. R.S. 30:2057(A)(1) and 30:2057(A)(2).

On or about June 25, 2010, and September 9, 2011, file reviews of **JOHN N. JOHN III ET AL NO. 1 FACILITY** (the facility), Agency Interest No. 166514, an oil and gas production facility owned and/or operated by **UNITED WORLD ENERGY CORPORATION (RESPONDENT)**, were performed to determine the degree of compliance with the Act and the Air Quality Regulations. The facility is located 15 miles west of Lake Arthur in Jefferson Davis Parish, Louisiana. The facility currently operates under Minor Source Air Permit No. 1360-00559-00, issued on April 6, 2010.

While the investigation by the Department is not yet complete, the following violations were noted during the course of the file reviews:

- H. On or about August 25, 2009, the Department received the Respondent's Minor Source Air Permit Application dated August 20, 2009. According to an email from the Respondent dated October 13, 2010, the Respondent acquired and commenced operation of the facility in September 2006. The Respondent's failure to submit a timely and complete permit application to the Department prior to construction, reconstruction, or modification is a violation of LAC 33:III.501.C.1 and La. R.S. 30:2057(A)(2).
- I. According to an email from the Respondent dated October 13, 2010, operation of the facility commenced in September 2006. On or about April 6, 2010, the Department issued Minor Source Air Permit No. 1360-0559-00. The Respondent's failure to obtain approval from the permitting authority prior to operating the facility from September 2006 to April 2010 is a violation of LAC 33:III.501.C.2, La. R.S. 30:2057(A)(1) and 30:2057(A)(2).

Pursuant to La. R.S. 30:2050.3(B), you are hereby notified that the issuance of a penalty assessment is being considered for the violations described herein. Written comments may be filed regarding the violations and the contemplated penalty. If you elect to submit comments, it is requested that they be submitted within ten (10) days of receipt of this notice.

Prior to the issuance of any additional appropriate enforcement action, you may request a meeting with the Department to present any mitigating circumstances concerning the violations. If you would like to have such a meeting, please contact Kenzie Bozeman, Environmental Scientist, at (225) 219-3748 within ten (10) days of receipt of this **NOTICE OF POTENTIAL PENALTY**.

The Department is required by La. R.S. 30:2025(E)(3)(a) to consider the gross revenues of the Respondent and the monetary benefits of noncompliance in order to determine whether a penalty will be assessed and the amount of such penalty. Please forward the Respondent's most current annual gross revenue statement along with a statement of the monetary benefits of noncompliance for the cited violations to the above named contact person within ten (10) days of receipt of this **NOTICE OF POTENTIAL PENALTY**. Include with your statement of monetary benefits the method(s) you utilized to arrive at the sum. If you assert that no monetary benefits have been gained, you are to fully justify this statement.

For each violation described herein, the Department reserves the right to seek civil penalties and the right to seek compliance with its rules and regulations in any manner allowed by law, and nothing herein shall be construed to preclude the right to seek such penalties and compliance.

Notice of Potential Penalty
United World Energy Corporation
Page 5

To reduce document handling, please refer to the **Enforcement Tracking Number** and **Agency Interest Number** on the front of this document on all correspondence in response to this action.

Sincerely,

A handwritten signature in black ink, appearing to read 'CSN', with a long horizontal flourish extending to the right.

Cheryl Sonnier Nolan
Assistant Secretary

CSN/KEB/keb
Alt ID No. 0560-00284, 1360-00558, 0560-00285, and 1360-00559

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Office of Environmental Compliance
Attention: Enforcement
P.O. Box 4312
Baton Rouge, LA 70821-4312

Environmental Compliance

Office of

DEC 22 2011

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1. Article Addressed to:

UNITED WORLD ENERGY CORPORATION

c/o Wayne Landry

Agent of Service

404 SO. Wakefield Dr.

Lafayette, Louisiana 70503

AE-PP-09-0639

SWRO

AI # 166442, 166486,

NEB

166487 & 166514

2. Article Number

7004 1160 0000 3795 8216

*(Transfer from service label)***COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

Debra Lemoine Agent Addressee

B. Received by (Printed Name)

C. Date of Delivery

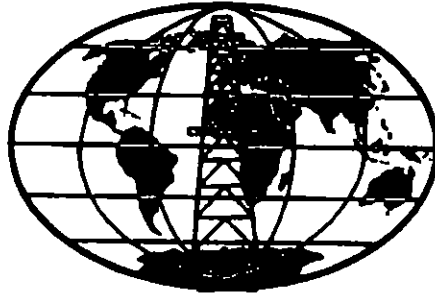
D. Is delivery address different from item 1? YesIf YES, enter delivery address below: No*12/11/02*

3. Service Type

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4. Restricted Delivery? (Extra Fee)

 Yes



United World Energy Corporation

January 26, 2012

RE: NOPP Enforcement Tracking No. AE-PP-09-0689
Agency Interest No. 166442, 166486, 166487, & 166514
Lacassane Chalkley Field Tank Battery
Cameron Parish, La.

Dept of Environmental Quality
P.O. Box 4312
Baton Rouge, LA 70821-4312
Attn: Kenzie Bozeman

Dear Ms. Bozeman:

I am writing in response to our previous discussions, to explain why UWE had never applied for a air quality permit. I never knew that it was a requirement and had never received notice from any agency stating that one was required. The well that were purchased by United World Energy in 1993 did not have air permits prior to the purchase and those operators apparently did not know they were needed either. The recapture equipment installed and added onto the normal production is prototype equipment to capture and not release emission, but rather recycle normal emissions. I explained this to the DEQ inspector during his inspection of the field along with another water discharge agent. The water discharge agent agreed with the entire field capturing system design and implementation. This system totally captures rain water, all liquids from the platform, and cellars around each wellhead, the produced water. The glycol steam is converted to water and is never released onto the ground, surrounding waters nor into the air. These wells are located within a US Federal Wildlife and Fisheries Refuge with very stringent guidelines. Therefore we went over and above all requirements allowed by standard operation to exhibit good faith with all of the refuges concerns. I have received from the US Dept of Interior, two (2) letters of accommodation and an award for being a good steward to the environment for the extra efforts and designing systems that are above and beyond the normal standards and requirements, in efforts to preserve wetlands and the environment.

In regards to the air emissions, we DO NOT exhaust from the glycol pump gas from each facility. The system is designed so that the gas from the glycol pump and the gas glycol separator is relieved into our oil line and as a secondary backup, if needed, to relieve into a 7+ mile very low pressure environmental recovery pipeline in the event the oil line safety valve shuts in the pipeline. Using this system, we capture, compress and sell or reuse these gases into the system again. That gas is not flared at the wells nor at the central tank battery.

As for high and low pressure emergency relief valves, we have designed a third system to work independently of the main pneumatic and main redundant electronic safety system. This third system will bypass both redundant primary systems and shut in the well even if the two primary systems fail, thus a relief valve will only exhaust a onetime pop off and then shut the well in 10 seconds. We have telemetry monitoring and automatic and remote shutdown capabilities also installed.

When the inspector visited the field, he was surprised at all the efforts to capture any escaping gases and could only find two things as I recall, (1) I had no permit, but did not believe I needed one especially with the system and extra pipeline I installed just to handle environmental issues. We call it the environmental pipeline. (2) a leaking hatch on one of the tanks at the

central tank battery that a truck driver probably did not shut properly. We have electronic tank level monitoring and gauging in these tanks at the tank battery so the lids are opened at a minimum and gas cap remain on the inside of the tanks. We have a flare stack for any gas that tries to escape but it is rarely lit because of the compressor gas recovery system we have at the tank battery.

During the field inspection, the agent suggested that even though I wasn't emitting excess gas that I go ahead and get an air quality permit. I then contacted Comm Engineering and proceeded to do so. We went with the standard permit based on what the equipment could emit IF I had not installed the extra pipeline and environmentally friendly collection system. I did not know that it would come back years later to be a baseline for a compliance fine, especially with all the expense and efforts that were designed and built and remains in place today as continued efforts to be a good steward to the environment. If the citation and fine for not having a permit is based on the maximum possible emission possible, then I request a hearing and field trip, if necessary, to revisit the real emissions (if any) and use that as a TRUE basis for citation findings and penalty.

In closing, it seems unfair for an operator to go over and above and actually not emit the accepted industry standards for air and water emissions, noise reduction for wildlife purposes and then to be penalized for going the extra 7 miles (pipeline) and hundred thousands of dollars spent to design, manufacture, implement, and maintain a gas and water closed loop systems to save the environment, and then be fined anyway.

I have attached some picture of the facilities, awards, and I can supply references with US Fish and Wildlife as to the extra mile we go everyday to protect the environment. We have voluntarily paid for and assisted in totally funding for Universities to study our operations and the impact on wildlife associated with our operation. We have built and donated concrete bridges with concrete pilings vs. treated lumber pilings in efforts to be friendly to the aquatic wildlife as well as all the other wildlife in the area. We feel we do our part in giving back to the community, universities, state and federal agencies for the benefit of all concerned.

Please reconsider your position of this citation.

Should you have any additional question, please feel free to contact me at (337) 319-3779 or wlandryuwe@aol.com

Thanks again and have a great Day

Sincerely,
Wayne Landry,
President and CEO
United World Energy Corp.
337-319-3779

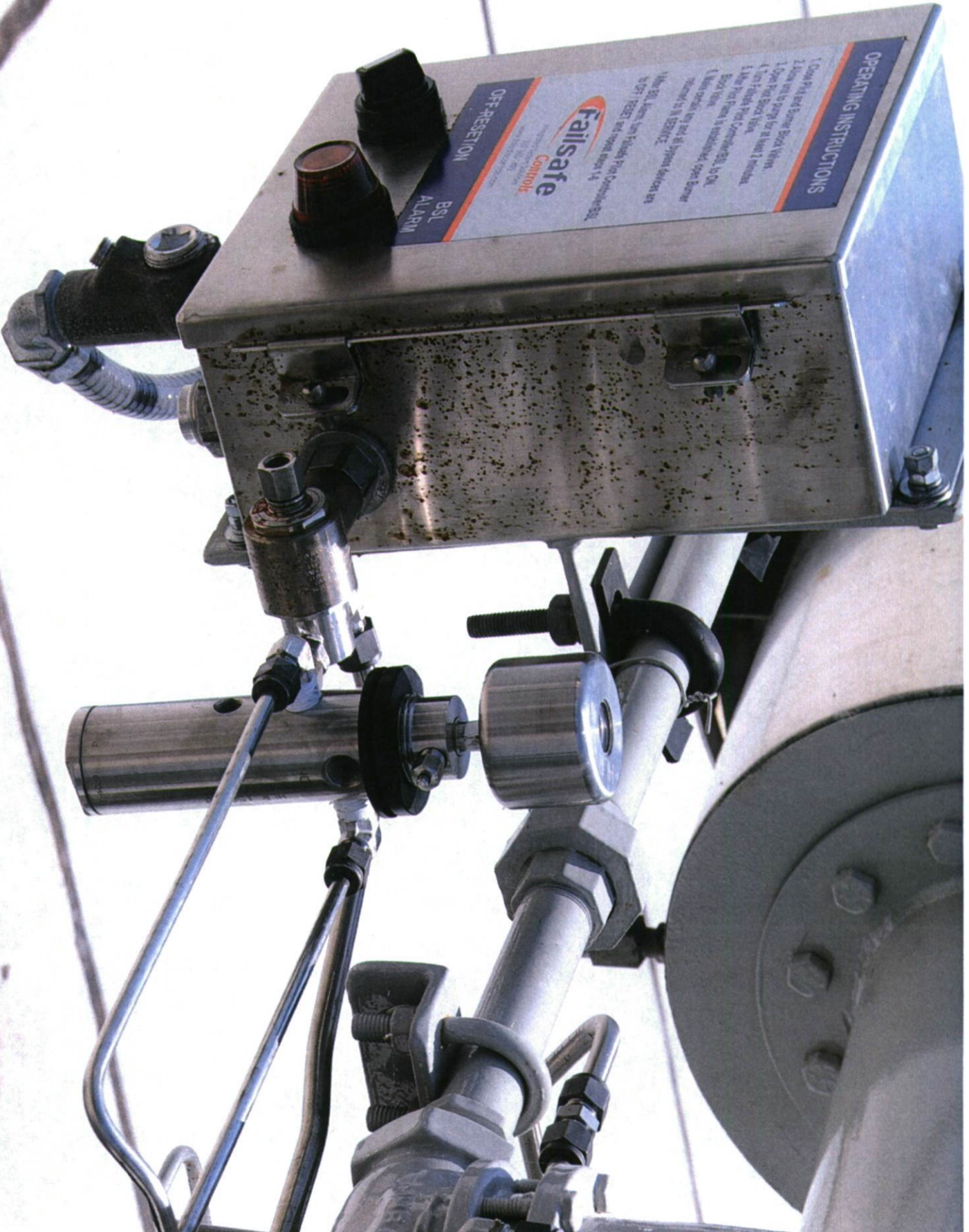












OPERATING INSTRUCTIONS

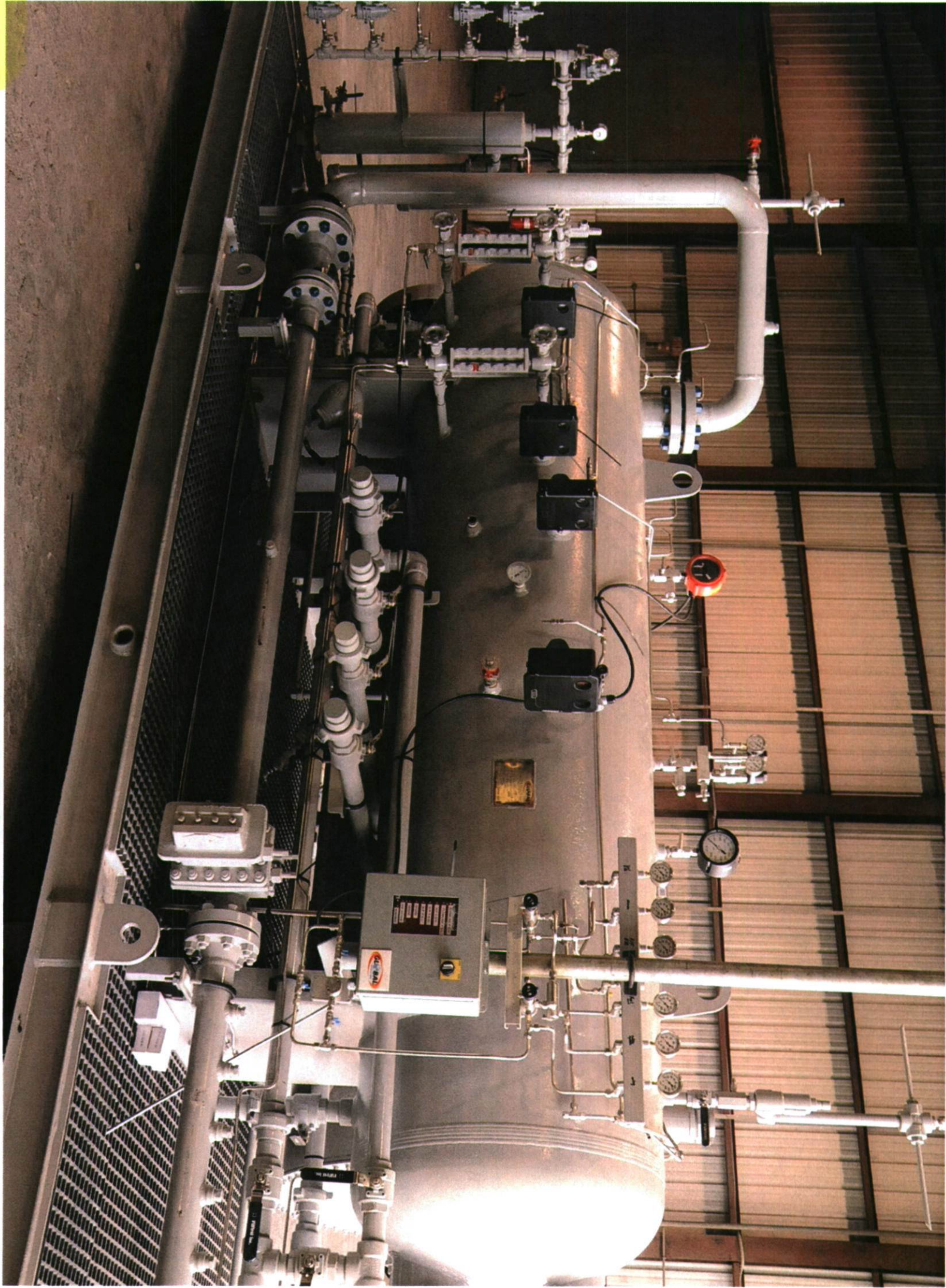
- 1. Close Pilot and Service BSL Valve.
- 2. Allow valve to operate for at least 2 minutes.
- 3. Open Pilot Valve for at least 2 minutes.
- 4. Turn Pilot Valve.
- 5. Allow Pilot Valve to operate for at least 2 minutes.
- 6. Close Pilot Valve.
- 7. When operation is completed, open Service Valve to allow all system devices to return to a SERVICE state.

OFF-RESET

**BSL
ALARM**

**FailSafe
Control**

Value BSL Alarm, Non-Failed Pilot Control-BSL
to OFF-RESET and repeat steps 1-4











United States Department of the Interior
Fish and Wildlife Service
LACASSINE NATIONAL WILDLIFE REFUGE
209 Nature Road
Lake Arthur, LA 70549
337/774-5923 (FAX 337/774-9913)
Email: fw4 rw lacassine@fws.gov



January 8, 2004

United World Energy Corporation
Attn: Mr. Wayne Landry
2006 Ambassador Caffery
Lafayette, LA 70506
wlandryuwe@aol.com
337-981-1657
337-319-3779 cell
337-267-5384 pager
337-981-1653 fax

Dear Mr. Landry:

Over the past 16 months it has been my pleasure to negotiate and work closely with you regarding the Cameron Parish School Board Gas Well #1, located on leased property managed as part of the Lacassine National Wildlife Refuge. Despite the additional cost and commitment required on your part to meet our conservation and land stewardship standards and "wildlife first" focus, you willingly and enthusiastically embarked on a mission to satisfy.

The Cameron Parish School Board Well #1 was accessed and drilled from an alternative location than originally proposed. The impacts to the environment were further reduced when you opted to construct the location at the minimum acceptable size (smaller than is generally permitted). Furthermore, given the narrow window of opportunity to conduct the drilling operation so that a migratory waterfowl sanctuary period could remain recognized (October 1-April 1), you forged ahead with completing the site within an acceptable time-frame, despite a temporary shut down from Hurricane Lily.

Upon completion of the well, we negotiated use of materials relatively untested as a stand-alone pipeline material (Fiberspar). Fiberglass pipe had been used as a liner inside a steel pipeline for oil and gas production on Anahuac National Wildlife Refuge, but no precedent had been set for its use otherwise. You researched the product thoroughly, and despite the higher cost, maintained strong support for its use. A key factor that helped us decide on allowing the use of Fiberspar was that long-term maintenance and perpetual use of chemicals to treat the pipe would not be required, like with Schedule 40, thereby reducing the risk to the environment,

Installation of the pipeline resulted in vegetation disturbance and impacts in excess of what was permitted, so to compensate the refuge for this, you fabricated and installed replacement water

control structures for five culverts, and contracted herbicide treatment for over 100 acres of Chinese tallow trees on the refuge unit adjacent to the well location. These compensation more than offset the disturbance to plants associated with the pipeline installation, and will greatly enhance the refuge's capability to manage the area for migratory waterfowl, as was evident by goose usage the past few weeks.

In summary, my assessment is that you have taken extraordinary effort to properly compensate the refuge to offset surface disturbances associated with the gas well and pipeline. Your well location in the Cameron Parish school section is one of the neatest and cleanest I've seen and is otherwise very tidy. You painted the location sky gray which blends in well with the surroundings and looks very uniform. Your efforts to work closely with the refuge on all reasonable requests were well received demonstrating that it is indeed possible to work together and balance the needs of our land-management objectives and those of the oil and gas industry. The standard you've set and met with the condition/hygiene of the location on the refuge is a credit to yourself, your environmental concern/consideration, and the quality of the folks you employ. I wish all oil and gas industry folks were as conscious about the environment as you. Thank you for your cooperation throughout the process.

Sincerely,

Bryan R Winton
(Acting)

Bryan R. Winton
Refuge Manager



No Bank Fishing
Past This Sign

WRONG
WAY

EX !!

3 1 40.

3 1 40. 3 1 40. 3 1 40. 3 1 40. 3 1 40.





The United States Department of the Interior
Fish and Wildlife Service
Acknowledges with great appreciation
the significant contribution of

Wayne Landry

to the conservation and management of
our natural resources through volunteer service at

The Southwest Louisiana National Wildlife Refuge Complex
Cameron Prairie, Lacassine, Sabine and Shell Keys
2006-2007


Regional Director


Project Leader



U.S. Fish & Wildlife Service

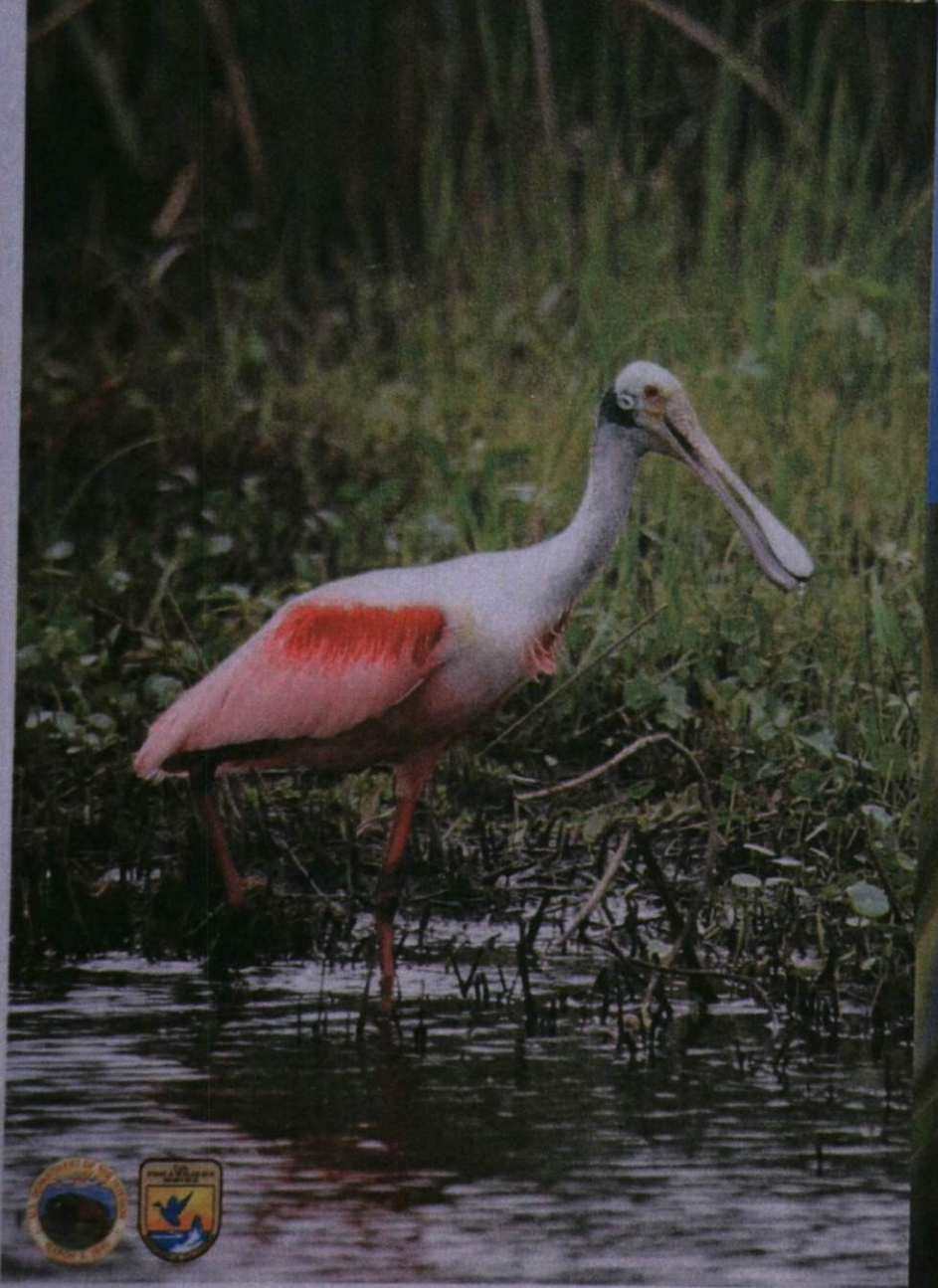


In Recognition of

**Wayne Landry
United World Energy**

for Outstanding
Environmental Stewardship
of the Southwest Louisiana
National Wildlife Refuge Complex

October 15, 2009







BEST COPY

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cbc

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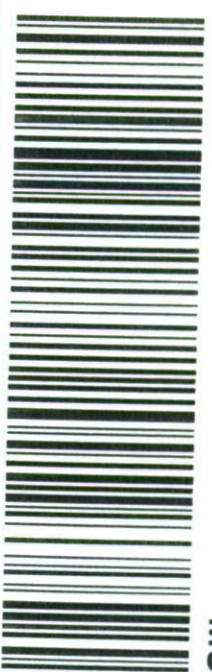
8638 RT

73

AM UPLA

LA-US
MSY

Emp# 77477 30JAN12 LFTA 50FTL/9F59/15F4



24

28 **FedEx** US Airbill

Express 8724 2369 7540

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1 From This portion can be removed for Recipient's records:

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Sender's Name ABC Phone 1234567890

Company ABC

Address 123 Main St

City ANYTOWN State CA ZIP 90210

2 Your Internal Billing Reference

3 To Recipient's Name ABC Phone 1234567890

Company ABC

Address 123 Main St

City ANYTOWN State CA ZIP 90210

Address Use this line for the HOLD location address or for continuation of your shipping address.

City ANYTOWN State CA ZIP 90210

HOLD Weekday
FedEx location address
FedEx first Overnight
FedEx first Overnight
FedEx 2Day to select locations.

HOLD Saturday
FedEx location address
FedEx first Overnight
FedEx 2Day to select locations.



Form ID No. 0215

4a Express Package Service

FedEx Priority Overnight
Next business morning. *FedEx Signature Delivery NOT available unless SAT/USDA/ Delivery is selected.

FedEx 2Day
Second business day. *This Saturday shipments will be delivered on Monday unless SAT/USDA/ Delivery is selected.

FedEx Express Saver
Third business day.

4b Express Freight Service

FedEx 1Day Freight
Next business day. ** Federal shipments will be delivered on Monday unless SAT/USDA/ Delivery is selected.

FedEx 2Day Freight
Second business day. ** Thursday shipments will be delivered on Monday unless SAT/USDA/ Delivery is selected.

FedEx 3Day Freight
Third business day. ** Saturday Delivery NOT available.

5 Packaging *Declared value limit \$500

FedEx Envelope*

FedEx Pak*

FedEx Box

FedEx Tube

Other

6 Special Handling and Delivery Signature Options

SATURDAY Delivery

Signature Required

No Signature Required

Signature at Recipient's Address

Signature at Shipper's Address

Signature at Third Party

Signature at Recipient's Address

Signature at Shipper's Address

Signature at Third Party

Signature at Recipient's Address

Signature at Shipper's Address

Packages up to 150 lbs.

Packages over 150 lbs.

Direct Signature

Indirect Signature

Signature at Recipient's Address

Signature at Shipper's Address

Signature at Third Party

Signature at Recipient's Address

Signature at Shipper's Address

Signature at Third Party

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Signature at Recipient's Address

Signature at Shipper's Address

Signature at Third Party

Signature at Recipient's Address

Signature at Shipper's Address

Signature at Third Party

Signature at Recipient's Address



8724 2369 7540



OFFICE OF ENVIRONMENTAL COMPLIANCE
MEETING RECORD

DATE 5 17 2012



AGENCY INTEREST NUMBER
AND NAME:

United World Energy Corporation (AI Nos. 1000448, 1000480,
1000487 & 1000514)

PURPOSE OF MEETING:

NOPP, AE-PP-09-0089

NAME	ORGANIZATION	TITLE	PHONE #	EMAIL ADDRESS
<u>Kenzie Borman</u>	<u>UDEP-AM/ENF</u>	<u>ES III</u>	<u>(925) 219-3748</u>	<u>kenzie.borman@la.gov</u>
<u>Guna Gunasekaran</u>	<u>DEQ/ENF/AIR</u>	<u>ESS</u>	<u>225-219-3721</u>	<u>guna@la.gov</u>
<u>Leigh Gauthreaux</u>	<u>LDEQ ENF</u>	<u>ES Manager</u>	<u>225-219-3714</u>	<u>leigh.gauthreaux@la.gov</u>
<u>Wade Lydell</u>	<u>United World Energy</u>	<u>Pres</u>	<u>(337) 319 3777</u>	<u>WALDE@UWE.PA02.LA</u>
<u>Leah Koger</u>	<u>Enviro Sense</u>	<u>Pres.</u>	<u>337-898-2823</u>	<u>leahrogers@bellsouth.net</u>
<u>Jennifer Malazzo</u>	<u>Enviro-Sense</u>	<u>Env. Reg. Specialist</u>	<u>225-622-3370</u>	<u>jmalazzo@entel.net</u>

Time In: _____ am/pm
Time Out: _____ am/pm

ENFORCEMENT MEETING RECORD

Respondent: United World Energy Corporation (UWEC)
Facilities: Multiple Sites (AI Nos. 166442, 166486, 166487, and 166514)

OFFICIALS PRESENT

UWEC

Wayne Landry
UWEC, President

Leah Roger
Enviro-Sense, President

Jennifer Milazzo
Enviro-Sense, Env. Reg. Specialist

LDEQ

Leigh Gauthreaux
Environmental Scientist Manager

Guna Gunasekaran
Environmental Scientist Supervisor

Kenzie Bozeman
Environmental Scientist

ISSUES REVIEWED

On May 17, 2012, a meeting was held between UWEC (Respondent) and the Louisiana Department of Environmental Quality (the Department) to discuss Notice of Potential Penalty (NOPP), Enforcement Tracking No. AE-PP-09-0689 issued to the Respondent on November 22, 2011.

During the course of the meeting, the Respondent explained the processes and emissions associated with each of the facilities. The Respondent also stated that each facility is currently under review in order to evaluate historical emissions associated with each of the facilities. The Respondent stated that some of the facilities may have been inaccurately permitted.

The Respondent was granted by the Department until July 31, 2012, to submit the findings of the permit review for each of the facilities. At that time, a subsequent meeting will be scheduled to discuss the findings. A path forward to resolve NOPP, Enforcement Tracking No. AE-PP-09-0689 will also be discussed at that time.

Date: May 17, 2012
Meeting Location: Conference Room 719

Time: 1:45 p.m. – 3:00 p.m.
Prepared by: Kenzie Bozeman

RECEIVED

AUG 07 2012

Office of
Environmental Compliance



ENVIRO-SENSE, INC.

A Common Sense Approach to Environmental Compliance

Leah B. Roger, P.E.
609 South State Street
Abbeville, LA 70519
July 30, 2012

Phone: 337-898-2823
Cell: 337-652-2832
leahroger@bellsouth.net

**VIA CERTIFIED MAIL 7009 2250 0003 4491 3889
RETURN RECEIPT REQUESTED**

Kenzie Bozeman
Louisiana Department of Environmental Quality
Office of Environmental Compliance, Enforcement Division
P.O. Box 4312
Baton Rouge, LA 70821-4312

Re: United World Energy Corporation
Enforcement Tracking No. AE-PP-09-0689
Agency Interest Number 166442, 166486, 166487 & 166514

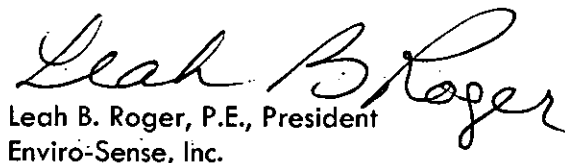
Dear Ms. Bozeman,

On behalf of our client, United World Energy Corporation, we are submitting this response to the enforcement meeting held on 5/17/12.

Attached please find documentation of emissions from the subject AI numbers for the previous several operating years. As per our email correspondence with Leigh Gauthreaux of July 30, 2012, we will be submitting an application to amend the Lacassane facility air permit by August 31, 2012.

If you have any questions or require additional information, please feel free to call me at (337) 898-2823, or Loni Gaudet at (985) 966-3832.

Sincerely,


Leah B. Roger, P.E., President
Enviro-Sense, Inc.

United World Energy Corporation
Emission Calculations for the
Hayes, School Board, Lacassine and John N. John Stationary Sources

Emission calculations for the Lacassine, School Board, Hayes and John N. John facilities were prepared using the gas analyses used to generate the original permit applications for consistency and due to a lack of more current data.

Based on these calculations, we have determined that emissions from the John N. John and Hayes facilities did not exceed the 5 ton per year minor source permit threshold.

Emission calculation methodology and any assumptions made are outlined below for each of the four stationary sources, and on the attached spreadsheets.

John N. John Stationary Source

The John N. John stationary source was shut down in August, 2010. For this facility, the throughputs of gas, oil and water were gathered. The emission calculations were performed based on the highest throughputs to generate a "composite highest year" emission calculation. The John N. John stationary source did not exceed the 5 tpy minor source permitting threshold during its operation.

In the case of the oil storage tanks, the maximum throughput was conservatively used to calculate emissions from each storage tank.

Other assumptions for the calculations are detailed on the attached spreadsheets.

Table 1 – John N. John Throughputs

Throughputs → Year	Natural Gas		Oil bbl/yr	Water bbl/yr
	Mscf/yr	Mscf/d		
2005	0	0.0	0	0
2006	23507	64.4	16.7	709
2007	27550	75.5	105	239
2008	5267	14.4	17	30
2009	2942	8.1	20	8
2010	17	0.0	0	97
2011	0	0.0	0	0

For the John N. John source, emissions were calculated using the water throughput from 2006 and the oil and natural gas throughput from 2007.

Table 2 – John N. John Emissions (tpy)

Year	NOx	CO	SO2	PM10	VOC
Composite	1.076	0.569	0.011	0.086	2.012

Hayes Stationary Source

For the Hayes stationary source, emissions were calculated for the year with the highest produced water production (2011), and the year with the highest oil and natural gas production (2009). The Hayes stationary source has not exceeded the 5 tpy minor source permitting threshold.

Other assumptions for the calculations are detailed on the attached spreadsheets.

Table 3 – Hayes Throughputs

Throughputs →	Natural Gas		Oil bbl/yr	Water bbl/yr
	Mscf/yr	Mscf/d		
2005	90772	248.7	0	0
2006	91324	250.2	291	0
2007	96079	263.2	185	0
2008	97811	268.0	380	0
2009	103106	282.5	457	0
2010	96978	265.7	306	952
2011	77672	212.8	137	3200

Table 4 – Hayes Emissions (tpy)

Year	NOx	CO	SO2	PM10	VOC
2009	0.301	0.252	0.003	0.023	4.684
2011	0.301	0.252	0.003	0.023	2.170

NOTE: Emissions of NOx, CO, SO2 and PM10 are not dependent on throughput of natural gas, oil or produced water at the Hayes stationary source, and therefore are the same for these two years.

School Board Stationary Source

The School Board stationary source was shut down in March, 2011. For this facility, the throughputs of gas, oil and water were gathered. The emission calculations were performed based on the highest throughputs to generate a "composite highest year" emission calculation.

In the case of the oil storage tanks, the maximum throughput was conservatively used to calculate emissions from each storage tank.

Other assumptions for the calculations are detailed on the attached spreadsheets.

Table 5 – School Board Throughputs

Throughputs →	Natural Gas		Oil bbl/yr	Water bbl/yr
	Mscf/yr	Mscf/d		
Year				
2005	40265	110.3	0	0
2006	171352	469.5	0	0
2007	39399	107.9	0	0
2008	91043	249.4	0	0
2009	66742	182.9	0	0
2010	57987	158.9	0	21
2011	8214	22.5	0	89

For the School Board source, emissions were calculated using the water throughput from 2011 and the oil and natural gas throughput from 2006. The facility exceeded the minor source permitting threshold due to the use of a 95 hp compressor. Emissions for the compressor by year are attached.

Table 6 – School Board Emissions (tpy)

Year	NOx	CO	SO2	PM10	VOC
Composite	7.01	11.76	0.003	0.03	1.46

Lacassine Stationary Source

The Lacassine stationary source began operation in 2008. Emissions were calculated for each year of operation from 2008 through 2011.

Emissions from the oil storage tanks were calculated using the total throughput for each storage tank as they operate mainly in series.

Other assumptions for the calculations are detailed on the attached spreadsheets.

Table 7 – Lacassine Throughputs

Throughputs →	Natural Gas		Oil bbl/yr	Water bbl/yr
	Mscf/yr	Mscf/d		
2008	2,038,868	5,586	84,547	1,136
2009	2,686,106	7,359	122,019	3,529
2010	5,677,891	15,556	149,984	8,762
2011	4,818,892	13,202	115,667	313,482

Table 8 – Lacassine Emissions (tpy)

Year	NOx	CO	SO2	PM10	VOC
2008	8.27	12.56	0.04	0.14	50.86
2009	8.27	12.56	0.04	0.14	68.76
2010	8.27	12.56	0.04	0.14	82.41
2011	8.27	12.56	0.04	0.14	86.83

NOTE: Emissions of NOx, CO, SO2 and PM10 are not dependent on throughput of natural gas, oil or produced water at the Lacassine stationary source, and therefore are the same for these years.

United World Energy Corporation
School Board Facility (P&A'd 3/2011)
AI: 166487

Emission Unit Description: Natural Gas Compressor
 Emission Unit ID: CE-01

Emission Unit Type: 4-Stroke Rich Burn Engine

Rated Engine Capacity: 95 Horsepower
 Btu Value of Gas¹ 1033 Btu/scf
 Engine Heat Input 7567 Btu/hp-hr (manuf)
 Calculated Heat Rate² 0.7 MMBtu/hr
 Annual Hours of Operation 8594 hours/year

Emissions (tpy)

Pollutant	2009	2010	2011
NO _x	6.827	6.921	1.476
CO	11.491	11.650	2.485
TSP=PM ₁₀ =PM _{2.5}	0.029	0.030	0.006
SO ₂ ⁶	0.003	0.003	0.001
VOC	0.091	0.093	0.020

ENVIRO-SENSE, INC.
609 S. STATE ST.
ABBEVILLE, LA 70510
337-898-2823

RETURN RECEIPT
REQUESTED



7009 2250 0003 4491 3889



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70821

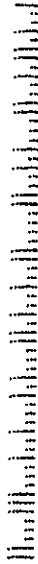
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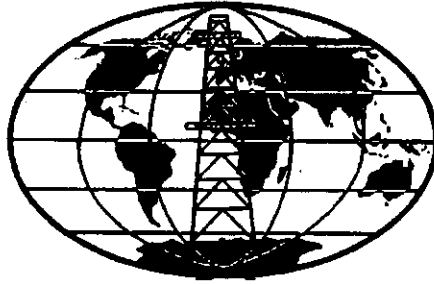
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Louisiana Department of Environmental Quality
Office of Environmental Compliance, Enforcement
Division
Attn: Kenzie Bozeman
P.O. Box 4312
Baton Rouge, LA 70821-4312

7082184312 2002



MAIN FILE



United World Energy Corporation

January 8, 2013

**VIA FED EX MAIL
RETURN RECEIPT REQUESTED**

Department of Environmental Quality
Office of Environmental Services
Air Permits Division
P.O. Box 4313
Baton Rouge, LA 70821-4313

Re: United World Energy Corporation, Lacassine
Air Permit Variance Application
Permit Number 1360-00558-00
AI No: 166486

original to TOA

BT copy to Petro/63/Divres
JARR

PER2013 0001

Dear Air Permits Division,

Enclosed please find a permit variance application and fee for our Hayes U-1 Well #1 facility, which is a minor source of air pollutants.

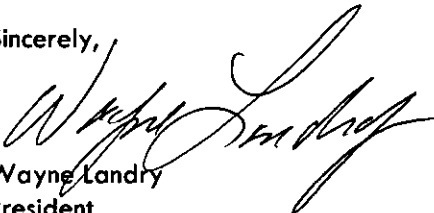
We have lost pressure in the field, and need to install a compressor in order to get the natural gas into the sales pipeline. In addition, we are under a deadline to have the well running or else the lease will be lost.

The compressor to be installed is a 2009 model year, Tier 3 engine which is subject to NSPS JJJJ.

We have requested this variance to last for three months, during which time we will submit an expedited permit modification application for the stationary source.

Should you have any questions or require any additional information, please call Loni Gaudet at Enviro-Sense, Inc., at 985-966-3832.

Sincerely,


Wayne Landry
President

2013 JAN 10 AM 10:29
DEQ - OES

United World Energy Corporation
 Hayes U-1 Well #1 Facility
 AI: 166486

Emission Unit Description: Natural Gas Compressor

Emission Unit ID: CE-01


Emission Unit Type: 4-Stroke Rich Burn Engine

Rated Engine Capacity: 95 Horsepower
 Btu Value of Gas¹ 1164 Btu/scf
 Engine Heat Input 7567 Btu/hp-hr (manuf)
 Calculated Heat Rate² 0.719 MMBtu/hr
 Annual Hours of Operation 8760 hours/year

	Pollutant	Factor lb/MMBTU	Avg. lbs/hr ^{3,4}	Total tons/yr ⁵	Source of Factor
CRITERIA POLLUTANTS	NO _x	2.21E+00	1.589	6.958	AP-42, Table 3.2-3, 7/00
	CO	3.72E+00	2.674	11.713	AP-42, Table 3.2-3, 7/00
	TSP=PM ₁₀ =PM _{2.5}	9.50E-03	0.007	0.030	AP-42, Table 3.2-3, 7/00
	SO ₂ ⁶	9.19E-04	0.001	0.003	AP-42, Table 3.2-3, 7/006
	VOC	2.96E-02	0.021	0.093	AP-42, Table 3.2-3, 7/00
HAZARDOUS AIR POLLUTANTS	N-Hexanes	-	0.000	0.000	No emission factor
	Formaldehyde	2.05E-02	0.015	0.065	AP-42, Table 3.2-3, 7/00
	Acetaldehyde	2.79E-03	0.002	0.009	AP-42, Table 3.2-3, 7/00
	Benzene	1.58E-03	0.001	0.005	AP-42, Table 3.2-3, 7/00
	Toluene	5.58E-04	0.000	0.002	AP-42, Table 3.2-3, 7/00
	Ethylbenzene	2.48E-05	0.000	0.000	AP-42, Table 3.2-3, 7/00
	Xylenes	1.95E-04	0.000	0.001	AP-42, Table 3.2-3, 7/00
	<i>Total HAP</i>		0.018	0.081	
OTHER	Methane	2.30E-01	0.165	0.724	AP-42, Table 3.2-3, 7/00
	Ethane	7.04E-02	0.051	0.222	AP-42, Table 3.2-3, 7/00
	TOC	3.58E-01	0.257	1.127	AP-42, Table 3.2-3, 7/00
	CO ₂	1.10E+02	79.075	346.349	AP-42, Table 3.2-3, 7/00
	VOC-u ⁷		0.003	0.012	= VOC - Total HAPs

Notes:

- AP-42 factors are based upon an average fuel Btu value of 1020 Btu/scf. Emission factors are adjusted accordingly to account for a different value in the fuel rating.
- Calculation of Heat Rate = (Horsepower, HP) * (Fuel Heat Value Btu/hp-hr) / (1000000 Btu/MMBtu)
- Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lbs/hp-hr) * (Horsepower, HP)
- For pollutants with a Source of Factor of "Manufacturer's Data" or "Engine Test Results", the Hourly Emission Rate (Lbs/Hr) = (g/hp-hr) * (Horsepower, HP) / (453.593 g /Lb)
- Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
- AP-42 factor for SO₂ is based upon a fuel content of 2000 gr H₂S/MMscf or 3.2 ppmv. The factor is adjusted to 5 ppmv H₂S/MMscf to account for the maximum allowed sulfur in sweet natural gas.
- VOC-u stands for unspesiated volatile organic compounds

Department of Environmental Quality Office of Environmental Services Air Permits Division P.O. Box 4313 Baton Rouge, LA 70821-4313 (225) 219-3181	<h1>LOUISIANA</h1> <h2>Application for Approval of Miscellaneous Permitting Actions</h2>	
--	--	---

PLEASE TYPE OR PRINT

1. Facility Information

Facility Name or Unit Name (if any) Hayes U-1 Well #1 Facility		<input type="checkbox"/> All Process Units <input checked="" type="checkbox"/> Process Unit-Specific Action
Agency Interest Number (A.I. Number) 166486	Currently Effective Permit Number(s) 1360-00558-00	
Company - Name of Owner United World Energy Corporation		
Company - Name of Operator (if different from Owner) Same		
Parent Company (if Company - Name of Owner given above is a division) Same		
Parish(es) where facility is located: Jefferson Davis		

2. Type of Request

Check only one box to indicate the type of request being made

- | | |
|---|---|
| <input type="checkbox"/> Exemption* [†] | <input type="checkbox"/> Permit Rescission Date of closure: ____/____/____ |
| <input type="checkbox"/> Exemption To Test* [†] | <input type="checkbox"/> Application Withdrawal |
| <input checked="" type="checkbox"/> Variance* [†] | <input type="checkbox"/> Change of Tank Service* |
| <input type="checkbox"/> Letter of Response/Letter of No Objection [†] | <input type="checkbox"/> Relocation of a Portable Facility* |
| <input type="checkbox"/> Administrative Amendment* [†] | <input type="checkbox"/> Authorization to Construct and Operate (ATC)* [†] |

* Fee required

[†] Justification required

Estimated date that requested activity will commence 1/11/2013

3. Application Fee

Complete this section if a fee is required for the request being made. Consult instructions.

Is this facility considered a Small Business? Yes No

If "yes," is a certificate of eligibility authorized by LDEQ's Small Business/Small Community Assistance Program attached? (In order to qualify for Fee Code 2015, certificate must be attached.) Yes No

Fee Code: 2010 Amount Enclosed: \$ 300.00

Electronic Fund Transfer (EFT): If paying the application fee using an Electronic Fund Transfer (EFT), please include the EFT Transaction Number, the Date that the EFT was made, and the total dollar amount submitted in the EFT. If not paying the application fee using EFT, leave blank.

EFT Transaction Number

Date of Submittal

Total Dollar Amount

_____ \$ _____

4. Description of Exceptional Circumstances to Justify a Variance Request

Requested Duration of Variance: 3 Months _____ Days

Explain the need for the variance.

Identify the affected source(s), as well as the applicable regulation(s) from which the source(s) need a variance. Include relevant details as necessary (e.g., a description of the how the process normally functions and how it is operating now) and describe any measures undertaken or that will be undertaken to remedy the situation prompting the variance request.

The oil and gas production well has lost pressure and requires the installation of a compressor in order to operate. If the well is not operating, the lease will be lost. A permit modification application will be prepared concurrent with this variance request.

Identify the exceptional circumstances.

Identify the exceptional circumstances that preclude strict conformity with the regulation(s) identified above. Explain how strict conformity with such regulations would cause would 1.) cause undue hardship; 2.) be unreasonable; 3.) be impractical; or 4.) not be feasible under the circumstances; or would otherwise result in the practical closing and elimination of any lawful business, occupation, or activity without sufficient corresponding benefit or advantage to the people of the state.

The lease will be lost if the well is not operating, therefore we request this variance while we are preparing and submitting an application for a permit modification.

Note: It is important that the reason for the variance request be made plain. The explanation of extenuating circumstances will form the primary basis upon which LDEQ will either grant or deny the variance request.

5. Required Information

Submittal of this Information Is Not Optional

For all requests:

Detailed description of the proposed activity is included.

Justification for the request is included. (Justification may include supporting calculations, reasoning to support a determination of why strict conformity with the regulations is not feasible, etc)

For Relocation of a Portable Facility requests only:

Documentation is attached that shows compliance with all applicable zoning criteria for the proposed location (for Relocation of a Portable Facility requests only). [Required per LAC 33:III.513.C.1.a]

A map showing the proposed location of the Portable Facility is included (for Relocation of a Portable Facility requests only) [Required per LAC 33:III.513.C.2]

Enter the current location of the facility (for Relocation of a Portable Facility requests only):

<u>Street</u>	<u>City</u>	<u>Parish</u>
_____	_____	_____
<u>Latitude</u>	<u>Longitude</u>	
_____	_____	

Enter the proposed location of the facility (for Relocation of a Portable Facility requests only):

<u>Street</u>	<u>City</u>	<u>Parish</u>
_____	_____	_____
<u>Latitude</u>	<u>Longitude</u>	
_____	_____	

Enter the Make, Model, and Serial Number of each portable combustion emissions source to be permitted. Otherwise, leave blank. Do *NOT* list any motor vehicles. Add rows as necessary (for Relocation of Portable Facility requests only).

<u>Make</u>	<u>Model</u>	<u>Serial Number</u>
_____	_____	_____

6. Emissions Summary Table

For each pollutant, enter the pre-project emission rate in the "Before" column and enter the post-project emission rate in the "After" column. Enter the difference between the "Before" and "After" values in the "Change" column. Add rows as necessary to show any Toxic Air Pollutant (TAP) or Hazardous Air Pollutant (HAP) emissions. All values in this table should be represented in tons per year or per variance period (if applying for a variance).

Pollutant	Before (tons per year/variance period)	After (tons per year/variance period)	Change (tons per year/variance period)
PM _{2.5}	0.006	0.036/0.013	0.03/0.007
PM ₁₀	0.006	0.036/0.013	0.03/0.007
SO ₂	0.001	0.004/0.002	0.003/0.001
NO _x	0.08	7.04/1.82	6.96/1.74
CO	0.07	11.78/3.00	11.71/2.93
VOC	15.87	15.96/15.89	0.093/0.02
CO _{2e}	unk	Will present with permit modification application	

7. Contact Information

a. Person to contact with written correspondence						b. Person who prepared this report					
Name		Wayne Landry				Name		Loni M. Gaudet			
Title		President				Title		Project Manager			
Company		United World Energy Corp.				Company		Enviro-Sense, Inc.			
Suite, mail drop, or division						Suite, mail drop, or division					
Street or P.O. Box		2006 Ambassador Caffery Pkwy				Street or P.O. Box		609 S. State St.			
City	Lafayette	State	LA	Zip	70506	City	Abbeville	State	LA	Zip	70513
Business phone		337-278-0488				Business phone		985-966-3832			
Email address		wlandryuwe@aol.com				Email address		loni@enviro-senseinc.com			

8. Certification of Compliance With Applicable Requirements

For corporations only: By signing this form, I certify that, in accordance with the definition of Responsible Official found in LAC 33:III.502, (1) I am a president, secretary, treasurer, or vice-president in charge of a principal business function, or other person who performs similar policy or decision-making functions; or (2) I am a duly authorized representative of such person; am responsible for the overall operation of one or more manufacturing, production, or operating facilities addressed in this permit application; and either the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or the delegation of authority has been approved by LDEQ prior to this certification.*

I certify, under provisions in Louisiana and United States law which provide criminal penalties for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Application for Approval of Miscellaneous Permitting Actions, including all attachments thereto, are true, accurate, and complete. Further, I have been informed that any written approval from LDEQ does not relieve the proposed activity from the requirement to comply with any other city, parish, state, and/or federal requirements.

Responsible Official:

Wayne Landry

Name (please print or type)

President

Title

Signature

Date:

*Approval of a delegation of authority can be requested by completing a Duly Authorized Representative Designation Form (Form 7218) available on LDEQ's website at <http://www.deq.louisiana.gov/portal/tabid/2758/Default.aspx>.

Thursday, January 10, 2013
10:58:46 AM

RECEIPT OF CHECK

Master AI #: 166486
Name on Check: United World Energy Corp
Master File Name: Hayes U-1 Well #1 Facility
Check Received Date: 1/10/2013
Check Date: 1/9/2013
Check Number: 15779
Check Amount (\$): \$300.00
Staff Entry: DFERRAND
Date data entered: 1/10/2013
Media: AIR
Reason: variance

Comments:



JAN 11 2013

AIR PERMIT ROUTING/APPROVAL SLIP-Misc.



AI No.	166486	Company	United World Energy Corp	Date Received	1/9/2013
Activity No.	PER20130001	Facility	Hayes U-1 Well #1 Facility		
CDS No.	1360-00558	Permit No.	Variance	Expedited Permit	<input type="checkbox"/> yes <input type="checkbox"/> no

Regulatory Permit	Variance	Exemption	Authorization to Construct	Change of Tank Service	Case by Case Insignificant Activity	Letter
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Additional Information Request	Company Notification Letter	Other:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. Technical Review	Approved	Date received	Date forwarded	Comments
Permit Writer KB		1/9/13	1/10/13	
Air Quality / Modeling				
Toxics				
PSD/NNSR				
Technical Advisor				
Supervisor				
Other				

2. Final Approval	Approved	Date received	Date forwarded	Comments
Supervisor	<i>[Signature]</i>		1/10/13	OK
ES Manager	<i>[Signature]</i>	1/10/13	1/10/13	as noted
Administrator				
Assistant Secretary	<i>[Signature]</i>		1/10/13	

Answer the following:	Comments
Fee Assessment Created <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	

BOBBY JINDAL
GOVERNOR



PEGGY M. HATCH
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

TEMPORARY VARIANCE

Activity No.: PER20130001
Agency Interest No.: 166486

AGENCY INTEREST NAME: Hayes U-1 Well #1 Facility

COMPANY NAME: United World Energy Corporation

PHYSICAL LOCATION: 14.5 Mi W of
Lake Arthur, Jefferson Davis, Louisiana 70549

CONTACT: 2006 Ambassador Caffery Pkwy
Lafayette, LA 70506
Attn: Wayne Landry

DESCRIPTION: United World Energy Corporation requests a variance to install a small compressor at Hayes U-1 Well #1 Facility in Jefferson Davis Parish, Louisiana. Due to the loss of well-head pressure, the compressor will need to be installed as soon as possible in order to get the natural gas into the sales pipeline.

ID NO.:	DESCRIPTION	MAX OPER. RATE or TANK CAPACITY	OPERATING TIME
CE-01	Natural Gas Compressor	95 hp	3 months

EMISSION RATES - PER VARIANCE PERIOD

Pollutant	Tons
PM _{2.5}	0.01
PM ₁₀	0.01
SO ₂	<0.01
NO _x	1.74
CO	2.93
VOC	0.02
Toxic Air Pollutants (TAPs)	
Acetaldehyde	<0.01
Formaldehyde	0.02
Benzene	<0.01
Toluene	<0.01

TEMPORARY VARIANCE

Page 2

Hayes U-1 Well #1 Facility
Agency Interest No.: 166486
United World Energy Corp
Lake Arthur, Jefferson Davis Parish, Louisiana

Ethylbenzene	--
n-Hexane	--
Xylenes	<0.01

United World Energy Corp's variance request for the above referenced facility, dated January 8, 2013, is hereby approved under LAC 33:III.917, subject to the following condition:

This variance expires April 15, 2013. If trial is successful, an application to modify facility's air permit will be submitted to include a compressor.

A variance does not authorize the maintenance of a nuisance or a danger to public health and safety.

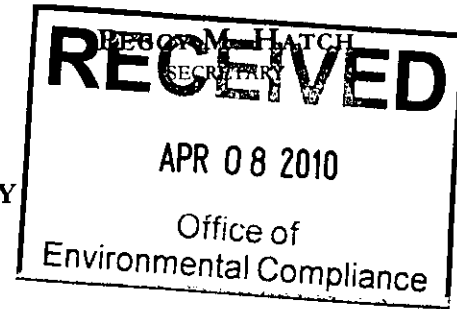


Sam L. Phillips
Assistant Secretary

SLP: kb

January 10, 2013
Date

BOBBY JINDAL
GOVERNOR



State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES
OFFICE OF ENVIRONMENTAL SERVICES
REFERRAL FORM

TO: Celina Cage, Environmental Manager, Enforcement Division

FROM: Victor Chu *VC*, Environmental Manager, Air Permits Division

SUBJECT: Referral to Enforcement Division

Media: Check all that apply

Air (inc. Air Toxics) X Asbestos/Lead _____ Water _____ Haz. Waste _____

Solid Waste (inc. tires) _____ UST _____ Radiation _____ Stage 1 & 2 _____ Risk MPs _____

Agency Interest Number: 166486 Alternate ID Number: _____

Facility Name: Hayes U-1 Well #1 Facility

Company Name: United World Energy Corporation
(Owner and/or operator name)

Physical Address: 14.5 miles west of Lake Arthur
(Street Address)

Lake Arthur Jefferson Davis
(City) (Parish) (State and Zip)

Mailing Address: 2006 Ambassador Caffery Pkwy
(PO Box or Street Address)

Lafayette LA 70506
(City) (State and Zip)

Responsible Official: Wayne Landry President
(Name) (Title)

Facility Contact: Rachelle Suir (COMM Engineering) (337) 237-4373 Ext. 115 rsuir@commengineering.com
(Name) (Phone Number) (email)

Nature and reason for referral: Permit No. 1360-00558-00
Operating without a permit
EDMS ID No. 42860285

Contact for referral (Section/Division) : Maria-Fatima Cuadra Ext# 3133 Date: 3/12/2010

ES Supervisor (Section/Division) : James Davies Ext# 3046 Date: 3/12/10

Date Referred to Enforcement : DDJ, 4/8/10

BOBBY JINDAL
GOVERNOR



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DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES
OFFICE OF ENVIRONMENTAL SERVICES
REFERRAL FORM



TO: Celina Cage, Environmental Manager, Enforcement Division

FROM: Victor Chu *VC*, Environmental Manager, Air Permits Division

SUBJECT: Referral to Enforcement Division

Media: Check all that apply

Air (inc. Air Toxics) X Asbestos/Lead _____ Water _____ Haz. Waste _____
Solid Waste (inc. tires) _____ UST _____ Radiation _____ Stage 1 & 2 _____ Risk MPs _____

Agency Interest Number: 166514 Alternate ID Number: _____

Facility Name: John N. John III et al No. 1 Facility

Company Name: United World Energy Corporation
(Owner and/or operator name)

Physical Address: 15 miles west of Lake Arthur
(Street Address)

Lake Arthur Jefferson Davis
(City) (Parish) (State and Zip)

Mailing Address: 2006 Ambassador Caffery Pkwy
(PO Box or Street Address)

Lafayette LA 70506
(City) (State and Zip)

Responsible Official: Wayne Landry President
(Name) (Title)

Facility Contact: Rachelle Suir (COMM Engineering) (337) 237-4373 Ext. 115 rsuir@commengineering.com
(Name) (Phone Number) (email)

Nature and reason for referral: Permit No. 1360-00559-00
Operating without a permit
EDMS ID No. 42920944

Contact for referral (Section/Division) : Maria-Fatima Cuadra Ext# 3133 Date: 3/12/2010

ES Supervisor (Section/Division) : James Davies Ext# 3046 *JCD* Date: 3/12/2010

Date Referred to Enforcement : DOJ, 4/8/10



Enviro-Sense, Inc.

Leah B. Roger, P.E.
609 South State Street
Abbeville, LA 70510

P (337) 898-2823
C (337) 652-2823
E leah@enviro-senseinc.com

January 28, 2016

**VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

David Seymour
Louisiana Department of Environmental Quality
Office of Environmental Compliance, Enforcement Division
P.O. Box 4312
Baton Rouge, LA 70821-4312

RECEIVED
FEB 03 2016
LDEQ/OEC
ENFORCEMENT DIVISION

RE: United World Energy Corporation
Enforcement Tracking No. AE-PP-09-0689
Agency Interest Number 166442, 166486, 166487 & 166514

Dear Mr. Seymour,

On behalf of our client, United World Energy Corporation, we are resubmitting the information requested during an enforcement meeting held on 5/17/12.

Attached please find documentation of emissions from the subject AI numbers from 2005 (2008 for Lacassine) through 2011 as requested. As per our email correspondence with Leigh Gauthreaux of July 30, 2012, we will submitted an application to amend the Lacassane facility air permit by August 31, 2012. The permit was issued on 9/20/2013.

We have included in this submittal updated financial information for United World Energy.

If you have any questions or require additional information, please feel free to call me at (337) 898-2823, or Loni Gaudet at (985) 966-3832

Sincerely,


Leah B. Roger, P.E., President
Enviro-Sense, Inc.

**United World Energy Corporation
Emission Calculations for the
Hayes, School Board, Lacassine and John N. John Stationary Sources**

Emission calculations for the Lacassine, School Board, Hayes and John N. John facilities were prepared using the gas analyses used to generate the original permit applications for consistency and due to a lack of more current data.

Based on these calculations, we have determined that emissions from the John N. John and Hayes facilities did not exceed the 5 ton per year minor source permit threshold.

Emission calculation methodology and any assumptions made are outlined below for each of the four stationary sources, and on the attached spreadsheets.



John N. John Stationary Source

The John N. John stationary source was shut down in August, 2010. For this facility, the throughputs of gas, oil and water were gathered. The emission calculations were performed based on the highest throughputs to generate a “composite highest year” emission calculation. The John N. John stationary source did not exceed the 5 tpy minor source permitting threshold during its operation.

In the case of the oil storage tanks, the maximum throughput was conservatively used to calculate emissions from each storage tank.

Other assumptions for the calculations are detailed on the attached spreadsheets.

Table 1 – John N. John Throughputs

Throughputs →	Natural Gas		Oil bbl/yr	Water bbl/yr
	Mscf/yr	Mscf/d		
Year				
2005	0	0.0	0	0
2006	23507	64.4	16.7	709
2007	27550	75.5	105	239
2008	5267	14.4	17	30
2009	2942	8.1	20	8
2010	17	0.0	0	97
2011	0	0.0	0	0

For the John N. John source, emissions were calculated using the water throughput from 2006 and the oil and natural gas throughput from 2007.

Table 2 – John N. John Emissions (tpy)

Year	NOx	CO	SO2	PM10	VOC
Composite	1.076	0.569	0.011	0.086	3.171

Hayes Stationary Source

For the Hayes stationary source, emissions were calculated for the year with the highest produced water production (2011), and the year with the highest oil and natural gas production (2009). The Hayes stationary source has not exceeded the 5 tpy minor source permitting threshold.

Other assumptions for the calculations are detailed on the attached spreadsheets.

Table 3 – Hayes Throughputs

Throughputs →	Natural Gas		Oil bbl/yr	Water bbl/yr
	Mscf/yr	Mscf/d		
2005	90772	248.7	0	0
2006	91324	250.2	291	0
2007	96079	263.2	185	0
2008	97811	268.0	380	0
2009	103106	282.5	457	0
2010	96978	265.7	306	952
2011	77672	212.8	137	3200

Table 4 – Hayes Emissions (tpy)

Year	NOx	CO	SO2	PM10	VOC
2009	0.301	0.252	0.003	0.023	4.684
2011	0.301	0.252	0.003	0.023	2.170

NOTE: Emissions of NOx, CO, SO2 and PM10 are not dependent on throughput of natural gas, oil or produced water at the Hayes stationary source, and therefore are the same for these two years.

School Board Stationary Source

The School Board stationary source was shut down in March, 2011. For this facility, the throughputs of gas, oil and water were gathered. The emission calculations were performed based on the highest throughputs to generate a “composite highest year” emission calculation.

In the case of the oil storage tanks, the maximum throughput was conservatively used to calculate emissions from each storage tank.

Other assumptions for the calculations are detailed on the attached spreadsheets.

Table 5 – School Board Throughputs

Throughputs → Year	Natural Gas		Oil bbl/yr	Water bbl/yr
	Mscf/yr	Mscf/d		
2005	40265	110.3	0	0
2006	171352	469.5	0	0
2007	39399	107.9	0	0
2008	91043	249.4	0	0
2009	66742	182.9	0	0
2010	57987	158.9	0	21
2011	8214	22.5	0	89

For the School Board source, emissions were calculated using the water throughput from 2011 and the oil and natural gas throughput from 2006. The facility exceeded the minor source permitting threshold due to the use of a 95 hp compressor. Emissions for the compressor by year are attached.

Table 6 – School Board Emissions (tpy)

Year	NOx	CO	SO2	PM10	VOC
Composite	7.01	11.76	0.003	0.03	1.46

Lacassine Stationary Source

The Lacassine stationary source began operation in 2008. Emissions were calculated for each year of operation from 2008 through 2011.

Emissions from the oil storage tanks were calculated using the total throughput for each storage tank as they operate mainly in series.

Other assumptions for the calculations are detailed on the attached spreadsheets.

Table 7 – Lacassine Throughputs

Throughputs → Year	Natural Gas		Oil bbl/yr	Water bbl/yr
	Mscf/yr	Mscf/d		
2008	2,038,868	5,586	84,547	1,136
2009	2,686,106	7,359	122,019	3,529
2010	5,677,891	15,556	149,984	8,762
2011	4,818,892	13,202	115,667	313,482

Table 8 – Lacassine Emissions (tpy)

Year	NOx	CO	SO2	PM10	VOC
2008	9.59	13.92	0.03	0.23	50.94
2009	9.59	13.92	0.03	0.23	68.84
2010	9.59	13.92	0.03	0.23	82.50
2011	9.59	13.92	0.03	0.23	86.92

NOTE: Emissions of NOx, CO, SO2 and PM10 are not dependent on throughput of natural gas, oil or produced water at the Lacassine stationary source, and therefore are the same for these years.

Attachment 1

UWE 2014 Financial Information

U.S. Income Tax Return for an S Corporation

OMB No. 1545-0123

Department of the Treasury
Internal Revenue Service

Do not file this form unless the corporation has filed or is attaching Form 2553 to elect to be an S corporation.
Information about Form 1120S and its separate instructions is at www.irs.gov/form1120s.

2014

For calendar year 2014 or tax year beginning 2014, ending

A S election effective date 1/01/1994	TYPE OR PRINT	UNITED WORLD ENERGY CORPORATION 2006 AMBASSADOR CAFFERY PARKWAY LAFAYETTE, LA 70506	D Employer identification number [REDACTED]
B Business activity code number (see instrs) 211110			E Date incorporated 5/26/1993
C Check if Schedule M-3 attached <input type="checkbox"/>			F Total assets (see instructions) \$ 7,151,047.

G Is the corporation electing to be an S corporation beginning with this tax year? Yes No If "Yes," attach Form 2553 if not already filed

H Check if: (1) Final return (2) Name change (3) Address change
(4) Amended return (5) S election termination or revocation

I Enter the number of shareholders who were shareholders during any part of the tax year **1**

Caution. Include only trade or business income and expenses on lines 1a through 21. See the instructions for more information.

INCOME	1 a Gross receipts or sales.....	1 a	3,256,983.		
	b Returns and allowances.....	1 b			
	c Balance. Subtract line 1b from line 1a.....	1 c	3,256,983.		
	2 Cost of goods sold (attach Form 1125-A).....	2			
	3 Gross profit. Subtract line 2 from line 1c.....	3	3,256,983.		
	4 Net gain (loss) from Form 4797, line 17 (attach Form 4797).....	4			
5 Other income (loss) (see instrs - att statement).....	5	SEE STATEMENT. 1	1,029.		
6 Total income (loss). Add lines 3 through 5.....	6		3,258,012.		
DEDUCTIONS	7 Compensation of officers (see instructions - attach Form 1125-E).....	7			
	8 Salaries and wages (less employment credits).....	8			
	9 Repairs and maintenance.....	9		1,543.	
	10 Bad debts.....	10			
	11 Rents.....	11		170,766.	
	12 Taxes and licenses.....	12	SEE STATEMENT. 2	12,184.	
	13 Interest.....	13			
	14 Depreciation not claimed on Form 1125-A or elsewhere on return (attach Form 4562).....	14		19,779.	
	15 Depletion (Do not deduct oil and gas depletion.).....	15			
	16 Advertising.....	16			
	17 Pension, profit-sharing, etc, plans.....	17			
	18 Employee benefit programs.....	18			
	19 Other deductions (attach statement).....	19	SEE STATEMENT. 3	4,031,073.	
	20 Total deductions. Add lines 7 through 19.....	20		4,235,345.	
	21 Ordinary business income (loss). Subtract line 20 from line 6.....	21		-977,333.	
TAX AND PAYMENTS	22 a Excess net passive income or LIFO recapture tax (see instructions).....	22 a			
	b Tax from Schedule D (Form 1120S).....	22 b			
	c Add lines 22a and 22b (see instructions for additional taxes).....	22 c			
	23 a 2014 estimated tax payments and 2013 overpayment credited to 2014.....	23 a			
	b Tax deposited with Form 7004.....	23 b			
	c Credit for federal tax paid on fuels (attach Form 4136).....	23 c			
	d Add lines 23a through 23c.....	23 d			
	24 Estimated tax penalty (see instructions). Check if Form 2220 is attached.....	24			
	25 Amount owed. If line 23d is smaller than the total of lines 22c and 24, enter amount owed.....	25		0.	
	26 Overpayment. If line 23d is larger than the total of lines 22c and 24, enter amount overpaid.....	26			
27 Enter amount from line 26 Credited to 2015 estimated tax <input type="checkbox"/> Refunded <input type="checkbox"/>	27				

Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. Declaration of preparer (other than taxpayer) is based on all information of which preparer has any knowledge.

Sign Here
 Signature of officer: *Allen J. Labry* Date: 3/14/15 Title: PRESIDENT
 May the IRS discuss this return with the preparer shown below (see instructions)? Yes No

Paid Preparer Use Only
 Print/Type preparer's name: ALLEN J. LABRY, CPA Preparer's signature: ALLEN J. LABRY, CPA Date: [REDACTED]
 Firm's name: KOLDER, CHAMPAGNE, SLAVEN & CO Firm's EIN: [REDACTED]
 Firm's address: PO BOX 1055 ABBEVILLE, LA 70511-1055 Phone no. (337) 893-7944

Attachment 2

Hayes Emission Calculations

Criteria Pollutants

EU ID	Description	NOx		CO		PM10		SO2		VOC	
		lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
BC-01	Glycol Still Column Blowcase	--	--	--	--	--	--	--	--	0.000	0.000
CI-01	Methanol Injection Pump	--	--	--	--	--	--	--	--	0.276	0.397
Flash-01	Low Pressure Separator Flash Gas	--	--	--	--	--	--	--	--	0.573	2.512
FE-01	Fugitive Emissions	--	--	--	--	--	--	--	--	0.189	0.828
GR-01	Glycol Reboiler Burner	0.020	0.086	0.016	0.072	0.001	0.007	0.000	0.001	0.001	0.005
GV-01	Glycol Still Column	--	--	--	--	--	--	--	--	0.075	0.326
LC-01	Level Controllers	--	--	--	--	--	--	--	--	0.005	0.023
LF-01	Tank Truck Loading	--	--	--	--	--	--	--	--	10.710	0.016
LH-01	Line Heater	0.049	0.215	0.041	0.180	0.004	0.016	0.000	0.002	0.003	0.012
T-01	Oil Storage Tank	--	--	--	--	--	--	--	--	0.144	0.566
T-02 (2)	Produced Water Storage Tank	0.069	0.301	0.058	0.252	0.005	0.023	0.001	0.003	11.976	4.684

Toxic Air Pollutants

EU ID	Description	Benzene		Toluene		Ethylbenzene		Xylene		n-Hexane	
		lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
BC-01	Glycol Still Column Blowcase	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-01	Methanol Injection Pump	0.002	0.003	0.001	0.002	0.000	0.000	0.001	0.001	0.007	0.010
Flash-01	Low Pressure Separator Flash Gas	0.001	0.005	0.001	0.005	0.000	0.001	0.001	0.003	0.007	0.030
FE-01	Fugitive Emissions	0.001	0.003	0.001	0.002	0.000	0.000	0.000	0.001	0.011	0.049
GR-01	Glycol Reboiler Burner	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-01 1	Glycol Still Column	0.015	0.067	0.014	0.062	0.003	0.014	0.019	0.082	0.001	0.004
LC-01	Level Controllers	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
LF-01	Tank Truck Loading	--	--	--	--	--	--	--	--	--	--
LH-01	Line Heater	0.000	0.000	0.000	0.000	--	--	--	--	0.001	0.004
T-01	Oil Storage Tank	0.000	--	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T-02 (2)	Produced Water Storage Tank	0.000	--	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		0.019	0.078	0.017	0.071	0.004	0.016	0.020	0.087	0.027	0.097

Notes:

¹ Emissions from the glycol still column were estimated based on samples taken in 2009. Samples had not been taken prior, nor again until 2012.

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Glycol Still Column Blowcase
 Emission Unit ID: BC-01
 Emission Unit Type: Blowcase

Input Data:

Blow case volume: 1.340 cubic feet Gas specific gravity: 0.614
 Driving gas pressure: 10 psig Blowdowns per year: 52

Calculations:

Gas Vented/blowdown = Gas volume at driving pressure x driving pressure / atmospheric pressure
 Gas Vented/blowdown = 0.912 scf
 Emissions/blowdown = 0.043 lb/blowdown
 Emissions/yr = 2.211 lb/yr
 0.0003 lb/hr
 0.0011 tpy

Component		Mole Fraction	Molecular Weight	Partial Mole Weight ¹	Weight Fraction ²	Average lbs/hour ³	Annual tons/year ⁴
Non-Rufluated	Nitrogen	0.908%	28.013	0.254	0.014	0.000	0.000
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.000	0.000
	Methane	92.898%	16.043	14.904	0.841	0.000	0.001
	Ethane	3.491%	30.070	1.050	0.059	0.000	0.000
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	0.000	0.000
	Butanes	0.666%	58.124	0.387	0.022	0.000	0.000
	Pentanes	0.258%	72.151	0.186	0.010	0.000	0.000
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.000	0.000
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.000	0.000
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.000	0.000
	Nonanes	0.008%	128.260	0.010	0.001	0.000	0.000
	Decanes	0.023%	142.280	0.033	0.002	0.000	0.000
TOXIC AIR POLLUTANTS	N-Hexanes	0.039%	86.178	0.034	0.002	0.000	0.000
	Benzene	0.014%	78.114	0.011	0.001	0.000	0.000
	Toluene	0.007%	92.141	0.006	0.000	0.000	0.000
	Ethylbenzene	0.001%	106.168	0.001	0.000	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000	0.000
	Xylenes	0.004%	106.168	0.004	0.000	0.000	0.000
		100.000%					

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.000	0.000
Total Volatile Organic Compounds	0.000	0.000

Notes:

- ¹ Partial Mole Weight = Mole Fraction * Molecular Weight
- ² Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ³ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁴ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Methanol Injection Pump
 Emission Unit ID: CI-01
 Emission Unit Type: Pneumatic Pump

Input Data:

Annual Operation 4 mo/yr Gas specific gravity: 0.614
2880 hr/yr
 Gas Venting Rate ¹ 75.1 scf/hr

Calculations:

Gas Vented Hourly = 3.503 lb/hr
 = 5.044 tpy

	Component	Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵
Non-Regulated	Nitrogen	0.908%	28.013	0.254	0.014	0.050	0.072
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.025	0.035
	Methane	92.898%	16.043	14.904	0.841	2.945	4.240
	Ethane	3.491%	30.070	1.050	0.059	0.207	0.299
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	0.103	0.149
	Butanes	0.666%	58.124	0.387	0.022	0.076	0.110
	Pentanes	0.258%	72.151	0.186	0.010	0.037	0.053
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.020	0.029
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.014	0.020
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.006	0.008
	Nonanes	0.008%	128.260	0.010	0.001	0.002	0.003
	Decanes	0.023%	142.280	0.033	0.002	0.006	0.009
TOXIC AIR POLLUTANTS	N-Hexanes	0.039%	86.178	0.034	0.002	0.007	0.010
	Benzene	0.014%	78.114	0.011	0.001	0.002	0.003
	Toluene	0.007%	92.141	0.006	0.000	0.001	0.002
	Ethylbenzene	0.001%	106.168	0.001	0.000	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000	0.000
	Xylenes	0.004%	106.168	0.004	0.000	0.001	0.001

100.000%

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.011	0.016
Total Volatile Organic Compounds	0.276	0.397

Notes:

- ¹ Vendor data @ 55 strokes per min and 75 psi
- ² Partial Mole Weight = Mole Fraction * Molecular Weight
- ³ Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ⁴ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁵ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Low Pressure Separator Flash Gas
 Emission Unit ID: Flash-01
 Emission Unit Type: LP Separator

Input Data:

Oil API Gravity	52	
Separator Pressure (PSIG)	800	40
Separator Temperature (F)	68	30
Site Elevation (Feet above Mean Sea Level)	0	
Measured/Calculated Gas Specific Gravity	0.8575	
Calculated Atmospheric Pressure @ Site Elevation:	14.700	
Cubic Feet Vapor per Barrel Oil per Vasquez & Beggs Correlation:	459.80	22.37
Calculated GOR via Vasquez & Beggs:	437.44	
Actual Oil Production Rate (BOPD):	1,252	
Hours Operated per Year:	8760	

Calculations:

Total HC = GOR (scf/bbl) * Production (bbl/day) * Gas MW (lb/lb-mol) * 1/385 scf/lb-mole * 365 d/yr * 1 ton/2000 lbs
 = 6.46 tpy
 = 1.47 lb/hr
 35.38 lb/day

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ¹	Weight Fraction ²	Average lbs/hour ³	Annual tons/year ⁴		
Non-Regulated	Nitrogen	0.063%	28.013	0.018	0.001	0.005		
	Carbon Dioxide	0.404%	44.010	0.178	0.007	0.046		
	Methane	68.069%	16.043	10.920	0.439	2.835		
	Ethane	13.556%	30.070	4.076	0.164	0.242	1.058	
VOLATILE ORGANIC COMPOUNDS	Propane	9.205%	44.097	4.059	0.163	0.241	1.054	
	Butanes	6.195%	58.124	3.601	0.145	0.213	0.935	
	Pentanes	1.534%	72.151	1.107	0.045	0.066	0.287	
	Hexanes (non-toxic)	0.481%	86.178	0.415	0.017	0.025	0.108	
	Heptanes (non-toxic)	0.193%	100.204	0.193	0.008	0.011	0.050	
	Octanes (non-toxic) +	0.064%	114.231	0.073	0.003	0.004	0.019	
	Nonanes	0.019%	128.260	0.024	0.001	0.001	0.006	
	Decanes	0.024%	142.280	0.034	0.001	0.002	0.009	
	TOXIC AIR POLLUTANTS	N-Hexanes	0.135%	86.178	0.116	0.005	0.007	0.030
		Benzene	0.024%	78.114	0.019	0.001	0.001	0.005
Toluene		0.019%	92.141	0.018	0.001	0.001	0.005	
Ethylbenzene		0.004%	106.168	0.004	0.000	0.000	0.001	
2, 2, 4 - Trimethylpentane		0.000%	114.231	0.000	0.000	0.000	0.000	
Xylenes		0.011%	106.168	0.012	0.000	0.001	0.003	

100.000%

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.010	0.044
Total Volatile Organic Compounds	0.573	2.512

Notes:

- Partial Mole Weight = Mole Fraction * Molecular Weight
- Weight Fraction = Partial Mole Weight / Total Molecular Weight
- Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

Vasquez-Beggs Constants	API Gravity < 30	API Gravity > 30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	25.724	23.931

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Fugitive Emissions
 Emission Unit ID: FE-01

Emission Unit Type: Fugitive Emissions - Oil & Gas Production

Emission Summary

Compound	Emission Rate	
	Hourly ¹ (Lbs/Hr)	Annual ² (Tons/Year)
NONREGULATED POLLUTANTS	Methane	0.577
	Ethane	0.108
CRITERIA POLLUTANTS	VOC (total)	0.189
	VOC (non-TAP)	0.176
HAZARDOUS AIR POLLUTANTS	n-Hexane	0.011
	Benzene	0.001
	Toluene	0.001
	Ethylbenzene	0.000
	1, 2, 4 - Trimethylbenzene	
Xylenes	0.000	

Component Type	Gas Service			Liquid Service ³		
	Number	Emission Factor ⁴ (lb/day-component)	VOC Emissions (lb/day)	Number	Emission Factor ⁴ (lb/day-component)	VOC Emissions (lb/day)
Valves	11	0.24	2.64	24	0.13	3.12
Flanges	5	0.02	0.11	0	0.0058	0.00
Connectors	70	0.01	0.77	43	0.011	0.47
Open-ends	0	0.11	0.00	0	0.074	0.00
Other	21	0.47	9.87	10	0.4	4.00

TOTALS: Gas Service 13.39 Pounds per day Liquid Service 7.59 Pounds per day

Gas Service		Estimated Hydrocarbon Speciation ⁵	Hourly Emissions ¹ (Lbs/Hour)	Annual Emissions ² (Tons/Year)
NONREGULATED POLLUTANTS	Methane	68.7%	0.383	1.678
	Ethane	14.2%	0.079	0.347
CRITERIA POLLUTANTS	VOC (total)	17.1%	0.095	0.418
	VOC (non-toxic)	-	0.091	0.398
HAZARDOUS AIR POLLUTANTS	n-Hexane	0.693%	0.004	0.017
	Benzene	0.069%	0.000	0.002
	Toluene	0.038%	0.000	0.001
	Ethylbenzene	0.003%	0.000	0.000
	Xylenes	0.009%	0.000	0.000

Liquid Service		Estimated Hydrocarbon Speciation ⁵	Hourly Emissions ¹ (Lbs/Hour)	Annual Emissions ² (Tons/Year)
NONREGULATED POLLUTANTS	Methane	61.2%	0.194	0.848
	Ethane	9.2%	0.029	0.127
CRITERIA POLLUTANTS	VOC (total)	29.6%	0.094	0.410
	VOC (non-toxic)	-	0.086	0.374
HAZARDOUS AIR POLLUTANTS	n-Hexane	2.300%	0.007	0.032
	Benzene	0.121%	0.000	0.002
	Toluene	0.105%	0.000	0.001
	Ethylbenzene	0.016%	0.000	0.000
	Xylenes	0.033%	0.000	0.000

Notes:

¹ Hourly Emission Rate (Lbs/Hr) = (Estimated Speciation) * (Total Daily Emissions, MMscf/day) / (24 Hrs/day)

² Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (8760 Hr/Yr) / (2,000 Lbs/Ton)

³ All non-gas service will be considered light oil service. Additional factors are available for water/oil and water service. However, the factors for light oil service provide more conservative estimation and therefore will be used.

⁴ Table 1 and Table 2 of Method 1 in API Publication No. 4638 contains the EPA Emission Factors and Typical Speciation Fractions for calculating fugitive emissions in Gas and Light Liquid service.

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Level Controllers
 Emission Unit ID: LC-01
 Emission Unit Type: Gas operated pressure/level controllers
 Manufacturer Vent Rate¹ 0.2 standard cubic feet per hour
 Annual Hours of Operation 8760 hours/year
 Number of controllers 7 controllers

Component		Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵
Non-Regulated	Nitrogen	0.908%	28.013	0.254	0.014	0.001	0.004
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.000	0.002
	Methane	92.898%	16.043	14.904	0.841	0.055	0.241
	Ethane	3.491%	30.070	1.050	0.059	0.004	0.017
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	0.002	0.008
	Butanes	0.666%	58.124	0.387	0.022	0.001	0.006
	Pentanes	0.258%	72.151	0.186	0.010	0.001	0.003
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.000	0.002
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.000	0.001
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.000	0.000
	Nonanes	0.008%	128.260	0.010	0.001	0.000	0.000
	Decanes	0.023%	142.280	0.033	0.002	0.000	0.001
HAZARDOUS AIR POLLUTANTS	N-Hexanes	0.039%	86.178	0.034	0.002	0.000	0.001
	Benzene	0.014%	78.114	0.011	0.001	0.000	0.000
	Toluene	0.007%	92.141	0.006	0.000	0.000	0.000
	Ethylbenzene	0.001%	106.168	0.001	0.000	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000	0.000
	Xylenes	0.004%	106.168	0.004	0.000	0.000	0.000

	lbs/hour	tons/year
Total Hazardous Air Pollutants	0.000	0.001
Total Volatile Organic Compounds	0.005	0.023

Notes:

- ¹ Manufacturer's vent rate is based upon information obtained directly from the manufacturer or as documented on the EPA Natural GasSTAR website.
- ² Partial Mole Weight = Mole Fraction * Molecular Weight
- ³ Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ⁴ Average Lbs/Hour = Manufacturer's Vent Rate (ft³/Hour) * Number of controllers * Component Partial Mole Fraction / (379 ft³ / mole)
- ⁵ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)

United World Energy Corporation
Hayes Facility
AI: 166486

Emission Unit Description:	Tank Truck Loading
Emission Unit ID:	LF-01
Emission Unit Type:	Tank Truck Loading
Production Rate ¹	1.252 BOPD
Loading Rate ²	150 barrels per hour
Calculated Annual Hours of Operation ³	3 hours/year
Crude Oil Emission Factor ⁴	1.7 lbs VOC/1000 gal trans.
Hourly Emissions ⁵	10.71 lbs/hour
Annual Emission Rate ⁶	0.016 tons/year

Notes:

¹ Production Rate is the estimated facility production rate on a daily basis.

² The standard loading rate of a tanker truck is 150 barrels per hour

³ The annual oil production rate limits the loading potential at the site. Therefore, emissions cannot be calculated on an annual time of 8760 hours per year. Annual Hours of Operation = (Production Rate, Bbl/day) * (365 days/year) / (Loading rate, Bbl/Hr)

⁴ Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lb/1000 gallons transferred) * (Loading Rate, Bbl/Hr.) * (42 gallons per barrel)

⁵ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)

⁶ According to AP-42, Table 5.2-5, the uncontrolled organic emission factor for Tank Trucks is 2 lb/1000 gallons transferred. According to note (a) of this table, 15% of the total organic factor can be removed to account for methane/ethane emissions.

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Line Heater
 Emission Unit ID: LH-01
 Emission Unit Type: Natural Gas Fired Heater
 Rated Burner Rating: 0.50 MMBtu/hr
 Btu Value of Gas¹: 1105.6 Btu/scf
 Annual Hours of Operation: 8760 hours/year

	Pollutant	Factor lb/MMscf	Avg. lbs/hr ²	Total tons/yr ³	Source of Factor
CRITERIA	NO _x	100.00	0.049	0.215	AP-42, Table 1.4-1, 7/98
	CO	84.00	0.041	0.180	AP-42, Table 1.4-1, 7/98
	TSP=PM ₁₀ =PM _{2.5}	7.60	0.004	0.016	AP-42, Table 1.4-2, 7/98
	SO ₂ ⁴	0.94	0.000	0.002	AP-42, Table 1.4-2, 7/98 ⁴
	VOC	5.50	0.003	0.012	AP-42, Table 1.4-2, 7/98
HAZARDOUS AIR POLLUTANTS	N-Hexanes ⁵	1.800	0.001	0.004	AP-42, Table 1.4-3, 7/98 ⁵
	Formaldehyde	0.075	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Acetaldehyde	--	--	--	No Emission Factor
	Benzene	0.002	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Toluene	0.003	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Ethylbenzene	--	--	--	No Emission Factor
	Xylenes	--	--	--	No Emission Factor
	<i>Total HAP</i>	-	0.001	0.004	

Notes:

- ¹ AP-42 factors are based upon an average fuel Btu value of 1020 Btu/scf. Emission factors are adjusted accordingly to account for a different value in the fuel rating.
- ² Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lbs/MMscf) * (Burner Rating, MMBtu/hr) * (Btu Value of Gas / 1020) / (Btu Value of Gas, Btu/scf)
- ³ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
- ⁴ AP-42 factor for SO₂ is based upon a fuel content of 2000 gr H₂S/MMscf or 3.2 ppmv. The factor is adjusted to 5 ppmv H₂S/MMscf to account for the maximum allowed sulfur in sweet natural gas.
- ⁵ Emission factor is listed as Hexane in AP-42. Assume all emissions reported are N-hexane as conservative estimate
- ⁶ N₂O emission factor is for uncontrolled emissions.
- ⁷ VOC-u stands for unspeciated volatile organic compounds

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Glycol Reboiler Burner
 Emission Unit ID: GR-01
 Emission Unit Type: Natural Gas Fired Heater

Rated Burner Rating: 0.20 MMBtu/hr
 Btu Value of Gas¹: 1105.6 Btu/scf
 Annual Hours of Operation: 8760 hours/year

	Pollutant	Factor lb/MMscf	Avg. lbs/hr ²	Total tons/yr ³	Source of Factor
CRITERIA	NO _x	100.00	0.020	0.086	AP-42, Table 1.4-1, 7/98
	CO	84.00	0.016	0.072	AP-42, Table 1.4-1, 7/98
	TSP=PM ₁₀ =PM _{2.5}	7.60	0.001	0.007	AP-42, Table 1.4-2, 7/98
	SO ₂ ⁴	0.94	0.000	0.001	AP-42, Table 1.4-2, 7/98 ⁴
	VOC	5.50	0.001	0.005	AP-42, Table 1.4-2, 7/98
HAZARDOUS AIR POLLUTANTS	N-Hexanes ⁵	1.800	0.000	0.002	AP-42, Table 1.4-3, 7/98 ⁵
	Formaldehyde	0.075	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Acetaldehyde	-	-	-	No Emission Factor
	Benzene	0.002	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Toluene	0.003	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Ethylbenzene	-	-	-	No Emission Factor
	Xylenes	-	-	-	No Emission Factor
	<i>Total HAP</i>	-	0.000	0.002	

Notes:

- ¹ AP-42 factors are based upon an average fuel Btu value of 1020 Btu/scf. Emission factors are adjusted accordingly to account for a different value in the fuel rating.
- ² Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lbs/MMscf) * (Burner Rating, MMBtu/hr) * (Btu Value of Gas / 1020) / (Btu Value of Gas, Btu/scf)
- ³ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
- ⁴ AP-42 factor for SO₂ is based upon a fuel content of 2000 gr H₂S/MMscf or 3.2 ppmv. The factor is adjusted to 5 ppmv H₂S/MMscf to account for the maximum allowed sulfur in sweet natural gas.
- ⁵ Emission factor is listed as Hexane in AP-42. Assume all emissions reported are N-hexane as conservative estimate
- ⁶ N₂O emission factor is for uncontrolled emissions.
- ⁷ VOC-u stands for unspesiated volatile organic compounds

United World Energy Corporation
Hayes Facility
AI: 166486

Emission Unit Description: Oil Storage Tank
Emission Unit ID: T-01
Emission Unit Type: Storage Tank

Input Data:

Oil API Gravity	52
Separator Pressure (PSIG)	30
Separator Temperature (F)	66
Site Elevation (Feet above Mean Sea Level)	0
Measured/Calculated Gas Specific Gravity	0.8575
Calculated Atmospheric Pressure @ Site Elevation:	14.7
Calculated GOR via Vasquez & Beggs:	14.792
Actual Oil Production Rate (BOPD):	1.252
Actual Oil Production Rate (gpy):	19194
Hours Operated per Year:	8760

Calculations:

Flash Losses

Total Flash cubic ft/hour:	0.7717	= GOR * BOPD / 24 (hr/day)
Total Flash lbs/hr:	0.0503	
Total Flash tons/yr:	0.2203	

Working and Standing Losses from EPA's TANKS 4.09d Program ¹

Component	Emissions (lb/yr)	Average lbs/hour	Annual tons/year
Total VOC	1057.69	0.1207	0.5288
N-Hexanes	12.92	0.001	0.006
Benzene	12.17	0.001	0.006
Toluene	6.07	0.001	0.003
Ethylbenzene	0.85	0.000	0.000
Xylenes	2.49	0.000	0.001

Speciation Of VOCs from Flashing Losses

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵
Non-Regulated	Nitrogen	0.063%	28.013	0.018	0.001	0.000
	Carbon Dioxide	0.404%	44.010	0.178	0.007	0.000
	Methane	68.069%	16.043	10.920	0.439	0.022
	Ethane	13.556%	30.070	4.076	0.164	0.008
VOLATILE ORGANIC COMPOUNDS	Propane	9.205%	44.097	4.059	0.163	0.008
	Butanes	6.195%	58.124	3.601	0.145	0.007
	Pentanes	1.534%	72.151	1.107	0.045	0.002
	Hexanes (non-toxic)	0.481%	86.178	0.415	0.017	0.001
	Heptanes (non-toxic)	0.193%	100.204	0.193	0.008	0.000
	Octanes (non-toxic) +	0.064%	114.231	0.073	0.003	0.000
	Nonanes	0.019%	128.260	0.024	0.001	0.000
	Decanes	0.024%	142.280	0.034	0.001	0.000
TOXIC AIR POLLUTANTS	N-Hexanes	0.135%	86.178	0.116	0.005	0.000
	Benzene	0.024%	78.114	0.019	0.001	0.000
	Toluene	0.019%	92.141	0.018	0.001	0.000
	Ethylbenzene	0.004%	106.168	0.004	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000
	Xylenes	0.011%	106.168	0.012	0.000	0.000

100.000%

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.004	0.018
Total Volatile Organic Compounds	0.144	0.566

Notes:

- ¹ The speciation profile used is the standard profile in the TANKS 4.09d program without the non-TAP components.
- ² Partial Mole Weight = Mole Fraction * Molecular Weight
- ³ Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ⁴ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁵ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

Value of Constants for Vasquez-Beggs Equation	API Gravity < 30	API Gravity >= 30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	25.724	23.931

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Produced Water Storage Tank
 Emission Unit ID: T-02 (2) (2)
 Emission Unit Type: Storage Tank

Input Data:

Produced Water Production Rate (BPD):	0.016
Produced Water Production Rate (gpy):	252
Hours Operated per Year:	8760

Calculations:

Working and Standing Losses from EPA's TANKS 4.09d Program ^{1,2}

Component	Emissions (lb/yr)	Average lbs/hour	Annual tons/year
Total VOC	986.13	0.1126	0.4931
N-Hexanes	12.05	0.001	0.006
Benzene	11.35	0.001	0.006
Toluene	5.66	0.001	0.003
Ethylbenzene	0.79	0.000	0.000
Xylenes	2.32	0.000	0.001

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.004	0.016
Total Volatile Organic Compounds	0.113	0.493

Notes:

- ¹ Emissions from the produced water are conservatively estimated using the liquid properties of crude oil.
- ² The speciation profile used is the standard profile in the TANKS 4.09d program without the non-TAP components.

GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: UWE Hayes Dehy Unit

File Name: C:\Users\Loni M Gaudet\Dropbox\Shared\Clients\United World Energy\Hayes\#AY2S

GLYCALC FILE 2009.DDF

Date: July 23, 2012

DESCRIPTION:

Description:

Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

UNCONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.0139	0.334	0.0609
Ethane	0.0033	0.080	0.0147
Propane	0.0030	0.073	0.0133
Isobutane	0.0017	0.041	0.0074
n-Butane	0.0022	0.052	0.0095
Isopentane	0.0014	0.033	0.0061
n-Pentane	0.0012	0.028	0.0051
n-Hexane	0.0010	0.023	0.0042
Other Hexanes	0.0021	0.052	0.0094
Heptanes	0.0022	0.053	0.0097
Benzene	0.0152	0.365	0.0667
Toluene	0.0141	0.339	0.0618
Ethylbenzene	0.0032	0.077	0.0140
Xylenes	0.0186	0.447	0.0816
C8+ Heavies	0.0085	0.205	0.0374
Total Emissions	0.0917	2.201	0.4017
Total Hydrocarbon Emissions	0.0917	2.201	0.4017
Total VOC Emissions	0.0745	1.787	0.3261
Total HAP Emissions	0.0521	1.251	0.2282
Total BTEX Emissions	0.0512	1.228	0.2240

EQUIPMENT REPORTS:

ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

Calculated Absorber Stages: 1.25
 Calculated Dry Gas Dew Point: 1.93 lbs. H2O/MMSCF
 Temperature: 65.0 deg. F
 Pressure: 790.0 psig

Dry Gas Flow Rate: 0.2830 MMSCF/day
 Glycol Losses with Dry Gas: 0.0006 lb/hr
 Wet Gas Water Content: Saturated
 Calculated Wet Gas Water Content: 23.39 lbs. H2O/MMSCF
 Specified Lean Glycol Recirc. Ratio: 3.00 gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
Water	8.23%	91.77%
Carbon Dioxide	99.95%	0.05%
Nitrogen	100.00%	0.00%
Methane	100.00%	0.00%
Ethane	99.99%	0.01%
Propane	99.98%	0.02%
Isobutane	99.97%	0.03%
n-Butane	99.96%	0.04%
Isopentane	99.96%	0.04%
n-Pentane	99.95%	0.05%
n-Hexane	99.91%	0.09%
Other Hexanes	99.93%	0.07%
Heptanes	99.82%	0.18%
Benzene	95.52%	4.48%
Toluene	92.96%	7.04%
Ethylbenzene	90.31%	9.69%
Xylenes	85.88%	14.12%
C8+ Heavies	99.71%	0.29%

REGENERATOR

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled Overhead
Water	24.35%	75.65%
Carbon Dioxide	0.00%	100.00%
Nitrogen	0.00%	100.00%
Methane	0.00%	100.00%
Ethane	0.00%	100.00%
Propane	0.00%	100.00%
Isobutane	0.00%	100.00%
n-Butane	0.00%	100.00%
Isopentane	0.50%	99.50%
n-Pentane	0.50%	99.50%
n-Hexane	0.50%	99.50%
Other Hexanes	1.00%	99.00%
Heptanes	0.50%	99.50%
Benzene	5.00%	95.00%
Toluene	7.91%	92.09%
Ethylbenzene	10.43%	89.57%
Xylenes	12.96%	87.04%
C8+ Heavies	12.06%	87.94%

STREAM REPORTS:

WET GAS STREAM

 Temperature: 65.00 deg. F
 Pressure: 804.70 psia
 Flow Rate: 1.18e+004 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	4.93e-002	2.76e-001
Carbon Dioxide	2.83e-001	3.87e+000
Nitrogen	9.08e-001	7.91e+000
Methane	9.29e+001	4.63e+002
Ethane	3.49e+000	3.26e+001
Propane	1.19e+000	1.63e+001
Isobutane	3.40e-001	6.14e+000
n-Butane	3.18e-001	5.75e+000
Isopentane	1.58e-001	3.54e+000
n-Pentane	1.00e-001	2.24e+000
n-Hexane	3.90e-002	1.04e+000
Other Hexanes	1.18e-001	3.16e+000
Heptanes	4.00e-002	1.25e+000
Benzene	1.40e-002	3.40e-001
Toluene	7.00e-003	2.01e-001
Ethylbenzene	1.00e-003	3.30e-002
Xylenes	4.00e-003	1.32e-001
C8+ Heavies	5.60e-002	2.97e+000
Total Components	100.00	5.51e+002

DRY GAS STREAM

 Temperature: 65.00 deg. F
 Pressure: 804.70 psia
 Flow Rate: 1.18e+004 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	4.06e-003	2.27e-002
Carbon Dioxide	2.83e-001	3.87e+000
Nitrogen	9.08e-001	7.91e+000
Methane	9.29e+001	4.63e+002
Ethane	3.49e+000	3.26e+001
Propane	1.19e+000	1.63e+001
Isobutane	3.40e-001	6.14e+000
n-Butane	3.18e-001	5.74e+000
Isopentane	1.58e-001	3.54e+000
n-Pentane	1.00e-001	2.24e+000
n-Hexane	3.90e-002	1.04e+000
Other Hexanes	1.18e-001	3.16e+000
Heptanes	3.99e-002	1.24e+000
Benzene	1.34e-002	3.25e-001
Toluene	6.51e-003	1.86e-001
Ethylbenzene	9.03e-004	2.98e-002
Xylenes	3.44e-003	1.13e-001
C8+ Heavies	5.59e-002	2.96e+000
Total Components	100.00	5.51e+002

LEAN GLYCOL STREAM

 Temperature: 65.00 deg. F
 Flow Rate: 9.65e-003 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.84e+001	5.34e+000
Water	1.50e+000	8.15e-002
Carbon Dioxide	3.74e-012	2.03e-013
Nitrogen	4.86e-013	2.64e-014
Methane	8.60e-018	4.67e-019
Ethane	2.91e-008	1.58e-009
Propane	2.27e-009	1.23e-010
Isobutane	9.35e-010	5.08e-011
n-Butane	9.86e-010	5.36e-011
Isopentane	1.28e-004	6.96e-006
n-Pentane	1.08e-004	5.86e-006
n-Hexane	8.85e-005	4.81e-006
Other Hexanes	3.99e-004	2.17e-005
Heptanes	2.05e-004	1.11e-005
Benzene	1.48e-002	8.01e-004
Toluene	2.23e-002	1.21e-003
Ethylbenzene	6.85e-003	3.72e-004
Xylenes	5.11e-002	2.77e-003
C8+ Heavies	2.16e-002	1.17e-003
Total Components	100.00	5.43e+000

RICH GLYCOL STREAM

 Temperature: 65.00 deg. F
 Pressure: 804.70 psia
 Flow Rate: 1.04e-002 gpm
 NOTE: Stream has more than one phase.

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.25e+001	5.34e+000
Water	5.79e+000	3.35e-001
Carbon Dioxide	3.51e-002	2.03e-003
Nitrogen	4.55e-003	2.63e-004
Methane	2.41e-001	1.39e-002
Ethane	5.80e-002	3.35e-003
Propane	5.25e-002	3.03e-003
Isobutane	2.93e-002	1.69e-003
n-Butane	3.74e-002	2.16e-003
Isopentane	2.41e-002	1.39e-003
n-Pentane	2.03e-002	1.17e-003
n-Hexane	1.66e-002	9.62e-004
Other Hexanes	3.75e-002	2.17e-003
Heptanes	3.85e-002	2.22e-003
Benzene	2.77e-001	1.60e-002
Toluene	2.65e-001	1.53e-002
Ethylbenzene	6.18e-002	3.57e-003
Xylenes	3.70e-001	2.14e-002
C8+ Heavies	1.68e-001	9.72e-003
Total Components	100.00	5.78e+000

REGENERATOR OVERHEADS STREAM

 Temperature: 212.00 deg. F
 Pressure: 14.70 psia
 Flow Rate: 6.04e+000 scfh

Component	Conc. (vol%)	Loading (lb/hr)
-----	-----	-----
Water	8.83e+001	2.53e-001
Carbon Dioxide	2.90e-001	2.03e-003
Nitrogen	5.89e-002	2.63e-004
Methane	5.45e+000	1.39e-002
Ethane	6.99e-001	3.35e-003
Propane	4.32e-001	3.03e-003
Isobutane	1.83e-001	1.69e-003
n-Butane	2.33e-001	2.16e-003
Isopentane	1.21e-001	1.39e-003
n-Pentane	1.02e-001	1.17e-003
n-Hexane	6.97e-002	9.57e-004
Other Hexanes	1.56e-001	2.15e-003
Heptanes	1.39e-001	2.21e-003
Benzene	1.22e+000	1.52e-002
Toluene	9.61e-001	1.41e-002
Ethylbenzene	1.89e-001	3.20e-003
Xylenes	1.10e+000	1.86e-002
C8+ Heavies	3.15e-001	8.55e-003
-----	-----	-----
Total Components	100.00	3.47e-001

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: UWE Hayes T-01 2009 (max)
 City:
 State:
 Company:
 Type of Tank: Vertical Fixed Roof Tank
 Description: UWE Hayes T-01 2009 (max)

Tank Dimensions

Shell Height (ft): 20.00
 Diameter (ft): 12.00
 Liquid Height (ft) : 18.00
 Avg. Liquid Height (ft): 10.00
 Volume (gallons): 15,228.53
 Turnovers: 1.26
 Net Throughput(gal/yr): 19,194.00
 Is Tank Heated (y/n): N

Paint Characteristics

Shell Color/Shade: Gray/Medium
 Shell Condition: Good
 Roof Color/Shade: Gray/Medium
 Roof Condition: Good

Roof Characteristics

Type: Cone
 Height (ft) 0.00
 Slope (ft/ft) (Cone Roof) 0.06

Breather Vent Settings

Vacuum Settings (psig): -0.03
 Pressure Settings (psig) 0.03

Meteorological Data used in Emissions Calculations: Lake Charles, Louisiana (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

UWE Hayes T-01 2009 (max) - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg	Min.	Max		Avg	Min.	Max.					
Crude oil (RVP 5)	All	77.32	66.93	87.70	70.83	3.9995	3.2915	4.8239	50.0000			207.00	Option 4: RVP=5
Benzene						1.8527	1.4110	2.4025	78.1100	0.0060	0.0115	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1936	0.1376	0.2679	106.1700	0.0040	0.0008	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.9508	2.2850	3.7668	86.1700	0.0040	0.0122	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.5542	0.4082	0.7419	92.1300	0.0100	0.0057	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						4.2787	4.2501	4.2535	49.3088	0.9620	0.9674	217.18	
Xylene (-m)						0.1621	0.1149	0.2252	106.1700	0.0140	0.0023	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

UWE Hayes T-01 2009 (max) - Vertical Fixed Roof Tank

Components	Losses(lbs)		Total Emissions
	Working Loss	Breathing Loss	
Crude oil (RVP 5)	68.54	989.15	1,057.69
Hexane (-n)	0.84	12.09	12.92
Benzene	0.79	11.38	12.17
Toluene	0.39	5.67	6.07
Ethylbenzene	0.05	0.79	0.85
Xylene (-m)	0.16	2.32	2.49
Unidentified Components	66.31	956.89	1,023.20

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	UWE Hayes PWT-02 (2009)
City:	
State:	
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	UWE Hayes PWT-02

Tank Dimensions

Shell Height (ft):	20.00
Diameter (ft):	12.00
Liquid Height (ft) :	18.00
Avg. Liquid Height (ft):	10.00
Volume (gallons):	15,228.53
Turnovers:	0.02
Net Throughput(gal/yr):	252.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition:	Good
Roof Color/Shade:	Gray/Medium
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Lake Charles, Louisiana (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

UWE Hayes PW T-02 (2009) - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg	Min.	Max.		Avg	Min.	Max.					
Crude oil (RVP 5)	All	77.32	66.93	87.70	70.83	3.9995	3.2915	4.8239	50.0000			207.00	Option 4: RVP=5
Benzene						1.8527	1.4110	2.4025	78.1100	0.0060	0.0115	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1936	0.1376	0.2679	106.1700	0.0040	0.0008	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.9508	2.2850	3.7668	86.1700	0.0040	0.0122	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.5542	0.4082	0.7419	92.1300	0.0100	0.0057	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						4.2787	4.2501	4.2535	49.3088	0.9620	0.9674	217.18	
Xylene (-m)						0.1621	0.1149	0.2252	106.1700	0.0140	0.0023	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

UWE Hayes PW T-02 (2009) - Vertical Fixed Roof Tank

Components	Losses(lbs)		Total Emissions
	Working Loss	Breathing Loss	
Crude oil (RVP 5)	0.90	985.23	986.13
Hexane (-n)	0.01	12.04	12.05
Benzene	0.01	11.34	11.35
Toluene	0.01	5.65	5.66
Ethylbenzene	0.00	0.79	0.79
Xylene (-m)	0.00	2.31	2.32
Unidentified Components	0.87	953.10	953.97

Criteria Pollutants

EU ID	Description	NOx		CO		PM10		SO2		VOC	
		lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
BC-01	Glycol Still Column Blowcase	--	--	--	--	--	--	--	--	0.000	0.000
CI-01	Methanol Injection Pump	--	--	--	--	--	--	--	--	0.276	0.298
Flash-01	Low Pressure Separator Flash Gas	--	--	--	--	--	--	--	--	0.172	0.753
FE-01	Fugitive Emissions	--	--	--	--	--	--	--	--	0.189	0.828
GR-01	Glycol Reboiler Burner	0.020	0.086	0.016	0.072	0.001	0.007	0.000	0.001	0.001	0.005
GV-01	Glycol Still Column	--	--	--	--	--	--	--	--	0.053	0.231
LC-01	Level Controllers	--	--	--	--	--	--	--	--	0.005	0.023
LF-01	Tank Truck Loading	--	--	--	--	--	--	--	--	10.710	0.005
LH-01	Line Heater	0.049	0.215	0.041	0.180	0.004	0.016	0.000	0.002	0.003	0.012
T-01 (2)	Oil Storage Tank	--	--	--	--	--	--	--	--	0.004	0.017
T-02 (2)	Produced Water Storage Tank	--	--	--	--	--	--	--	--	0.000	0.000
		0.069	0.301	0.058	0.252	0.005	0.023	0.001	0.003	11.412	2.170

Toxic Air Pollutants

EU ID	Description	Benzene		Toluene		Ethylbenzene		Xylene		n-Hexane	
		lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
BC-01	Glycol Still Column Blowcase	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-01	Methanol Injection Pump	0.002	0.002	0.001	0.001	0.000	0.000	0.001	0.001	0.007	0.007
Flash-01	Low Pressure Separator Flash Gas	0.000	0.001	0.000	0.001	0.000	0.000	0.000	0.001	0.002	0.009
FE-01	Fugitive Emissions	0.001	0.003	0.001	0.002	0.000	0.000	0.000	0.001	0.011	0.049
GR-01	Glycol Reboiler Burner	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-01 1	Glycol Still Column	0.011	0.047	0.010	0.044	0.002	0.010	0.013	0.058	0.001	0.003
LC-01	Level Controllers	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
LF-01	Tank Truck Loading	--	--	--	--	--	--	--	--	--	--
LH-01	Line Heater	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.004
T-01 (2)	Oil Storage Tank	0.000	--	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T-02 (2)	Produced Water Storage Tank	0.000	--	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		0.014	0.055	0.012	0.049	0.003	0.011	0.014	0.060	0.022	0.072

Notes: Emissions from the glycol still column were estimated based on samples taken in 2009. Samples had not been taken prior, nor again until 2012.

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Glycol Still Column Blowcase
 Emission Unit ID: BC-01
 Emission Unit Type: Blowcase

Input Data:

Blow case volume: 1.340 cubic feet Gas specific gravity: 0.614
 Driving gas pressure: 10 psig Blowdowns per year: 52

Calculations:

Gas Vented/blowdown = Gas volume at driving pressure x driving pressure / atmospheric pressure
 Gas Vented/blowdown = 0.912 scf
 Emissions/blowdown = 0.043 lb/blowdown
 Emissions/yr = 2.211 lb/yr
 0.0003 lb/hr
 0.0011 tpy

Component		Mole Fraction	Molecular Weight	Partial Mole Weight ¹	Weight Fraction ²	Average lbs/hour ³	Annual tons/year ⁴
Non-Regulated	Nitrogen	0.908%	28.013	0.254	0.014	0.000	0.000
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.000	0.000
	Methane	92.898%	16.043	14.904	0.841	0.000	0.001
	Ethane	3.491%	30.070	1.050	0.059	0.000	0.000
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	0.000	0.000
	Butanes	0.666%	58.124	0.387	0.022	0.000	0.000
	Pentanes	0.258%	72.151	0.186	0.010	0.000	0.000
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.000	0.000
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.000	0.000
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.000	0.000
	Nonanes	0.008%	128.260	0.010	0.001	0.000	0.000
	Decanes	0.023%	142.280	0.033	0.002	0.000	0.000
TOXIC AIR POLLUTANTS	N-Hexanes	0.039%	86.178	0.034	0.002	0.000	0.000
	Benzene	0.014%	78.114	0.011	0.001	0.000	0.000
	Toluene	0.007%	92.141	0.006	0.000	0.000	0.000
	Ethylbenzene	0.001%	106.168	0.001	0.000	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000	0.000
	Xylenes	0.004%	106.168	0.004	0.000	0.000	0.000
		100.000%					

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.000	0.000
Total Volatile Organic Compounds	0.000	0.000

Notes:

- ¹ Partial Mole Weight = Mole Fraction * Molecular Weight
- ² Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ³ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁴ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Methanol Injection Pump
 Emission Unit ID: CI-01

Emission Unit Type: Pneumatic Pump

Input Data:

Annual Operation 3 mo/yr Gas specific gravity: 0.614
2160 hr/yr
 Gas Venting Rate 75.1 scf/hr

Calculations:

Gas Vented Hourly = 3.503 lb/hr
 = 3.783 tpy

	Component	Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵
Non-Regulated	Nitrogen	0.908%	28.013	0.254	0.014	0.050	0.054
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.025	0.027
	Methane	92.898%	16.043	14.904	0.841	2.945	3.180
	Ethane	3.491%	30.070	1.050	0.059	0.207	0.224
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	0.103	0.112
	Butanes	0.666%	58.124	0.387	0.022	0.076	0.083
	Pentanes	0.258%	72.151	0.186	0.010	0.037	0.040
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.020	0.022
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.014	0.015
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.006	0.006
	Nonanes	0.008%	128.260	0.010	0.001	0.002	0.002
	Decanes	0.023%	142.280	0.033	0.002	0.006	0.007
TOXIC AIR POLLUTANTS	N-Hexanes	0.039%	86.178	0.034	0.002	0.007	0.007
	Benzene	0.014%	78.114	0.011	0.001	0.002	0.002
	Toluene	0.007%	92.141	0.006	0.000	0.001	0.001
	Ethylbenzene	0.001%	106.168	0.001	0.000	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000	0.000
	Xylenes	0.004%	106.168	0.004	0.000	0.001	0.001
		100.000%					

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.011	0.012
Total Volatile Organic Compounds	0.276	0.298

Notes:

- ¹ Vendor data @ 55 strokes per min and 75 psi
- ² Partial Mole Weight = Mole Fraction * Molecular Weight
- ³ Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ⁴ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁵ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

United World Energy Corporation
Hayes Facility
AI: 166486

Emission Unit Description: Low Pressure Separator Flash Gas
Emission Unit ID: Flash-01
Emission Unit Type: LP Separator

Input Data:

Oil API Gravity	52	
Separator Pressure (PSIG)	800	40
Separator Temperature (F)	68	30
Site Elevation (Feet above Mean Sea Level)	0	
Measured/Calculated Gas Specific Gravity	0.8575	
Calculated Atmospheric Pressure @ Site Elevation:	14.700	
Cubic Feet Vapor per Barrel Oil per Vasquez & Beggs Correlation:	459.80	22.37
Calculated GOR via Vasquez & Beggs:	437.44	
Actual Oil Production Rate (BOPD):	0.375	
Hours Operated per Year:	8760	

Calculations:

Total HC = GOR (scf/bbl) * Production (bbl/day) * Gas MW (lb/lb-mol) * 1/385 scf/lb-mole * 365 d/yr * 1 ton/2000 lbs
 = 1.94 tpy
 = 0.44 lb/hr
 10.60 lb/day

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ¹	Weight Fraction ²	Average lbs/hour ³	Annual tons/year ⁴	
Non-Regulated	Nitrogen	28.013	0.018	0.001	0.000	0.001	
	Carbon Dioxide	44.010	0.178	0.007	0.003	0.014	
	Methane	16.043	10.920	0.439	0.194	0.850	
	Ethane	30.070	4.076	0.164	0.072	0.317	
VOLATILE ORGANIC COMPOUNDS	Propane	44.097	4.059	0.163	0.072	0.316	
	Butanes	58.124	3.601	0.145	0.064	0.280	
	Pentanes	72.151	1.107	0.045	0.020	0.086	
	Hexanes (non-toxic)	86.178	0.415	0.017	0.007	0.032	
	Heptanes (non-toxic)	100.204	0.193	0.008	0.003	0.015	
	Octanes (non-toxic) +	114.231	0.073	0.003	0.001	0.006	
	Nonanes	128.260	0.024	0.001	0.000	0.002	
	Decanes	142.280	0.034	0.001	0.001	0.003	
	TOXIC AIR POLLUTANTS	N-Hexanes	86.178	0.116	0.005	0.002	0.009
		Benzene	78.114	0.019	0.001	0.000	0.001
Toluene		92.141	0.018	0.001	0.000	0.001	
Ethylbenzene		106.168	0.004	0.000	0.000	0.000	
2, 2, 4 - Trimethylpentane		114.231	0.000	0.000	0.000	0.000	
Xylenes		106.168	0.012	0.000	0.000	0.001	

100.000%

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.003	0.013
Total Volatile Organic Compounds	0.172	0.753

Notes:

- ¹ Partial Mole Weight = Mole Fraction * Molecular Weight
- ² Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ³ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁴ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

Vasquez-Beggs Constants	API Gravity < 30	API Gravity > 30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	25.724	23.931

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Fugitive Emissions
 Emission Unit ID: FE-01

Emission Unit Type: Fugitive Emissions - Oil & Gas Production

Emission Summary

Compound	Emission Rate	
	Hourly ¹ (Lbs/Hr)	Annual ² (Tons/Year)
NONREGULATED POLLUTANTS	Methane	0.577
	Ethane	0.108
CRITERIA POLLUTANTS	VOC (total)	0.189
	VOC (non-TAP)	0.176
HAZARDOUS AIR POLLUTANTS	n-Hexane	0.011
	Benzene	0.001
	Toluene	0.001
	Ethylbenzene	0.000
	1, 2, 4 - Trimethylbenzene	
Xylenes	0.000	

Component Type	Gas Service			Liquid Service ³		
	Number	Emission Factor ⁴ (lb/day-component)	VOC Emissions (lb/day)	Number	Emission Factor ⁴ (lb/day-component)	VOC Emissions (lb/day)
Valves	11	0.24	2.64	24	0.13	3.12
Flanges	5	0.02	0.11	0	0.0058	0.00
Connectors	70	0.01	0.77	43	0.011	0.47
Open-ends	0	0.11	0.00	0	0.074	0.00
Other	21	0.47	9.87	10	0.4	4.00

TOTALS: Gas Service 13.39 Pounds per day Liquid Service 7.59 Pounds per day

Gas Service		Estimated Hydrocarbon Speciation ³	Hourly Emissions ¹ (Lbs/Hour)	Annual Emissions ² (Tons/Year)
NONREGULATED POLLUTANTS	Methane	68.7%	0.383	1.678
	Ethane	14.2%	0.079	0.347
CRITERIA POLLUTANTS	VOC (total)	17.1%	0.095	0.418
	VOC (non-toxic)	-	0.091	0.398
HAZARDOUS AIR POLLUTANTS	n-Hexane	0.693%	0.004	0.017
	Benzene	0.069%	0.000	0.002
	Toluene	0.038%	0.000	0.001
	Ethylbenzene	0.003%	0.000	0.000
	Xylenes	0.009%	0.000	0.000

Liquid Service		Estimated Hydrocarbon Speciation ³	Hourly Emissions ¹ (Lbs/Hour)	Annual Emissions ² (Tons/Year)
NONREGULATED POLLUTANTS	Methane	61.2%	0.194	0.848
	Ethane	9.2%	0.029	0.127
CRITERIA POLLUTANTS	VOC (total)	29.6%	0.094	0.410
	VOC (non-toxic)	-	0.086	0.374
HAZARDOUS AIR POLLUTANTS	n-Hexane	2.300%	0.007	0.032
	Benzene	0.121%	0.000	0.002
	Toluene	0.105%	0.000	0.001
	Ethylbenzene	0.016%	0.000	0.000
	Xylenes	0.033%	0.000	0.000

Notes:

¹ Hourly Emission Rate (Lbs/Hr) = (Estimated Speciation) * (Total Daily Emissions, MMscf/day) / (24 Hrs/day)

² Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (8760 Hr/Yr) / (2,000 Lbs/Ton)

³ All non-gas service will be considered light oil service. Additional factors are available for water/oil and water service. However, the factors for light oil service provide more conservative estimation and therefore will be used.

⁴ Table 1 and Table 2 of Method 1 in API Publication No. 4638 contains the EPA Emission Factors and Typical Speciation Fractions for calculating fugitive emissions in Gas and Light Liquid service.

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Level Controllers
 Emission Unit ID: LC-01
 Emission Unit Type: Gas operated pressure/level controllers
 Manufacturer Vent Rate¹ 0.2 standard cubic feet per hour
 Annual Hours of Operation 8760 hours/year
 Number of controllers 7 controllers

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵
Non-Fluorinated	Nitrogen	0.908%	28.013	0.254	0.014	0.004
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.002
	Methane	92.898%	16.043	14.904	0.841	0.241
	Ethane	3.491%	30.070	1.050	0.059	0.017
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	0.008
	Butanes	0.666%	58.124	0.387	0.022	0.006
	Pentanes	0.258%	72.151	0.186	0.010	0.003
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.002
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.001
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.000
	Nonanes	0.008%	128.260	0.010	0.001	0.000
	Decanes	0.023%	142.280	0.033	0.002	0.000
HAZARDOUS AIR POLLUTANTS	N-Hexanes	0.039%	86.178	0.034	0.002	0.001
	Benzene	0.014%	78.114	0.011	0.001	0.000
	Toluene	0.007%	92.141	0.006	0.000	0.000
	Ethylbenzene	0.001%	106.168	0.001	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000
	Xylenes	0.004%	106.168	0.004	0.000	0.000

	lbs/hour	tons/year
Total Hazardous Air Pollutants	0.000	0.001
Total Volatile Organic Compounds	0.005	0.023

Notes:

- ¹ Manufacturer's vent rate is based upon information obtained directly from the manufacturer or as documented on the EPA Natural GasSTAR website.
- ² Partial Mole Weight = Mole Fraction * Molecular Weight
- ³ Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ⁴ Average Lbs/Hour = Manufacturer's Vent Rate (ft³/Hour) * Number of controllers * Component Partial Mole Fraction / (379 ft³ / mole)
- ⁵ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description:	Tank Truck Loading
Emission Unit ID:	LF-01
Emission Unit Type:	Tank Truck Loading
Production Rate ¹	0.375 BOPD
Loading Rate ²	150 barrels per hour
Calculated Annual Hours of Operation ³	1 hours/year
Crude Oil Emission Factor ⁴	1.7 lbs VOC/1000 gal trans.
Hourly Emissions ⁵	10.71 lbs/hour
Annual Emission Rate ⁶	0.005 tons/year

Notes:

¹ Production Rate is the estimated facility production rate on a daily basis.

² The standard loading rate of a tanker truck is 150 barrels per hour

³ The annual oil production rate limits the loading potential at the site. Therefore, emissions cannot be calculated on an annual time of 8760 hours per year. Annual Hours of Operation = (Production Rate, Bbl/day) * (365 days/year) / (Loading rate, Bbl/Hr)

⁴ Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lb/1000 gallons transferred) * (Loading Rate, Bbl/Hr.) * (42 gallons per barrel)

⁵ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)

⁶ According to AP-42, Table 5.2-5, the uncontrolled organic emission factor for Tank Trucks is 2 lb/1000 gallons transferred. According to note (a) of this table, 15% of the total organic factor can be removed to account for methane/ethane emissions.

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Line Heater
 Emission Unit ID: LH-01
 Emission Unit Type: Natural Gas Fired Heater
 Rated Burner Rating: 0.50 MMBtu/hr
 Btu Value of Gas¹: 1105.6 Btu/scf
 Annual Hours of Operation: 8760 hours/year

	Pollutant	Factor lb/MMscf	Avg. lbs/hr ²	Total tons/yr ³	Source of Factor
CRITERIA	NO _x	100.00	0.049	0.215	AP-42, Table 1.4-1, 7/98
	CO	84.00	0.041	0.180	AP-42, Table 1.4-1, 7/98
	TSP=PM ₁₀ =PM _{2.5}	7.60	0.004	0.016	AP-42, Table 1.4-2, 7/98
	SO ₂ ⁴	0.94	0.000	0.002	AP-42, Table 1.4-2, 7/98 ⁴
	VOC	5.50	0.003	0.012	AP-42, Table 1.4-2, 7/98
HAZARDOUS AIR POLLUTANTS	N-Hexanes ⁵	1.800	0.001	0.004	AP-42, Table 1.4-3, 7/98 ⁵
	Formaldehyde	0.075	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Acetaldehyde	--	--	--	No Emission Factor
	Benzene	0.002	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Toluene	0.003	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Ethylbenzene	--	--	--	No Emission Factor
	Xylenes	--	--	--	No Emission Factor
	<i>Total HAP</i>	-	0.001	0.004	

Notes:

- ¹ AP-42 factors are based upon an average fuel Btu value of 1020 Btu/scf. Emission factors are adjusted accordingly to account for a different value in the fuel rating.
- ² Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lbs/MMscf) * (Burner Rating, MMBtu/hr) * (Btu Value of Gas / 1020) / (Btu Value of Gas, Btu/scf)
- ³ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
- ⁴ AP-42 factor for SO₂ is based upon a fuel content of 2000 gr H₂S/MMscf or 3.2 ppmv. The factor is adjusted to 5 ppmv H₂S/MMscf to account for the maximum allowed sulfur in sweet natural gas.
- ⁵ Emission factor is listed as Hexane in AP-42. Assume all emissions reported are N-hexane as conservative estimate
- ⁶ N₂O emission factor is for uncontrolled emissions.
- ⁷ VOC-u stands for unspciated volatile organic compounds

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Glycol Reboiler Burner
 Emission Unit ID: GR-01
 Emission Unit Type: Natural Gas Fired Heater

Rated Burner Rating: 0.20 MMBtu/hr
 Btu Value of Gas¹: 1105.6 Btu/scf
 Annual Hours of Operation: 8760 hours/year

	Pollutant	Factor lb/MMscf	Avg. lbs/hr ²	Total tons/yr ³	Source of Factor
CRITERIA	NO _x	100.00	0.020	0.086	AP-42, Table 1.4-1, 7/98
	CO	84.00	0.016	0.072	AP-42, Table 1.4-1, 7/98
	TSP=PM ₁₀ =PM _{2.5}	7.60	0.001	0.007	AP-42, Table 1.4-2, 7/98
	SO ₂ ⁴	0.94	0.000	0.001	AP-42, Table 1.4-2, 7/98 ⁴
	VOC	5.50	0.001	0.005	AP-42, Table 1.4-2, 7/98
HAZARDOUS AIR POLLUTANTS	N-Hexanes ⁵	1.800	0.000	0.002	AP-42, Table 1.4-3, 7/98 ⁵
	Formaldehyde	0.075	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Acetaldehyde	-	-	-	No Emission Factor
	Benzene	0.002	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Toluene	0.003	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Ethylbenzene	-	-	-	No Emission Factor
	Xylenes	-	-	-	No Emission Factor
	<i>Total HAP</i>	-	0.000	0.002	

Notes:

- ¹ AP-42 factors are based upon an average fuel Btu value of 1020 Btu/scf. Emission factors are adjusted accordingly to account for a different value in the fuel rating.
- ² Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lbs/MMscf) * (Burner Rating, MMBtu/hr) * (Btu Value of Gas / 1020) / (Btu Value of Gas, Btu/scf)
- ³ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
- ⁴ AP-42 factor for SO₂ is based upon a fuel content of 2000 gr H₂S/MMscf or 3.2 ppmv. The factor is adjusted to 5 ppmv H₂S/MMscf to account for the maximum allowed sulfur in sweet natural gas.
- ⁵ Emission factor is listed as Hexane in AP-42. Assume all emissions reported are N-hexane as conservative estimate
- ⁶ N₂O emission factor is for uncontrolled emissions.
- ⁷ VOC-u stands for unspesiated volatile organic compounds

United World Energy Corporation
Hayes Facility
AI: 166486

Emission Unit Description: Oil Storage Tank
Emission Unit ID: T-01 (2)
Emission Unit Type: Storage Tank

Input Data:

Oil API Gravity	52
Separator Pressure (PSIG)	30
Separator Temperature (F)	66
Site Elevation (Feet above Mean Sea Level)	0
Measured/Calculated Gas Specific Gravity	0.8575
Calculated Atmospheric Pressure @ Site Elevation:	14.7
Calculated GOR via Vasquez & Beggs:	14.792
Actual Oil Production Rate (BOPD):	0.375
Actual Oil Production Rate (gpy):	5754
Hours Operated per Year:	8760

Calculations:

Flash Losses

Total Flash cubic ft/hour:	0.2313	= GOR * BOPD / 24 (hr/day)
Total Flash lbs/hr:	0.0151	
Total Flash tons/yr:	0.0660	

Working and Standing Losses from EPA's TANKS 4.09d Program ¹

Component	Emissions (lb/yr)	Average lbs/hour	Annual tons/year
Total VOC	1009.70	0.1153	0.5049
N-Hexanes	12.34	0.001	0.006
Benzene	11.62	0.001	0.006
Toluene	5.79	0.001	0.003
Ethylbenzene	0.81	0.000	0.000
Xylenes	2.37	0.000	0.001

Speciation Of VOCs from Flashing Losses

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵	
Non-Regulated	Nitrogen	0.063%	28.013	0.018	0.001	0.000	
	Carbon Dioxide	0.404%	44.010	0.178	0.007	0.000	
	Methane	68.069%	16.043	10.920	0.439	0.007	0.007
	Ethane	13.556%	30.070	4.076	0.164	0.002	0.002
VOLATILE ORGANIC COMPOUNDS	Propane	9.205%	44.097	4.059	0.163	0.002	0.002
	Butanes	6.195%	58.124	3.601	0.145	0.002	0.002
	Pentanes	1.534%	72.151	1.107	0.045	0.001	0.001
	Hexanes (non-toxic)	0.481%	86.178	0.415	0.017	0.000	0.000
	Heptanes (non-toxic)	0.193%	100.204	0.193	0.008	0.000	0.000
	Octanes (non-toxic) +	0.064%	114.231	0.073	0.003	0.000	0.000
	Nonanes	0.019%	128.260	0.024	0.001	0.000	0.000
	Decanes	0.024%	142.280	0.034	0.001	0.000	0.000
TOXIC AIR POLLUTANTS	N-Hexanes	0.135%	86.178	0.116	0.005	0.000	0.000
	Benzene	0.024%	78.114	0.019	0.001	0.000	0.000
	Toluene	0.019%	92.141	0.018	0.001	0.000	0.000
	Ethylbenzene	0.004%	106.168	0.004	0.000	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000	0.000
Xylenes	0.011%	106.168	0.012	0.000	0.000	0.000	

100.000%

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.004	0.017
Total Volatile Organic Compounds	0.121	0.511

Notes:

- ¹ The speciation profile used is the standard profile in the TANKS 4.09d program without the non-TAP components.
- ² Partial Mole Weight = Mole Fraction * Molecular Weight
- ³ Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ⁴ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁵ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

Value of Constants for Vasquez-Beggs Equation	API Gravity < 30	API Gravity >=30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	25.724	23.931

United World Energy Corporation
 Hayes Facility
 AI: 166486

Emission Unit Description: Produced Water Storage Tank
 Emission Unit ID: T-02 (2)
 Emission Unit Type: Storage Tank

Input Data:

Produced Water Production Rate (BPD):	8.767
Produced Water Production Rate (gpy):	134400
Hours Operated per Year:	8760

Calculations:

Working and Standing Losses from EPA's TANKS 4.09d Program ^{1,2}

Component	Emissions (lb/yr)	Average lbs/hour	Annual tons/year
Total VOC	1465.17	0.1673	0.7326
N-Hexanes	17.90	0.002	0.009
Benzene	16.86	0.002	0.008
Toluene	8.41	0.001	0.004
Ethylbenzene	1.17	0.000	0.001
Xylenes	3.44	0.000	0.002

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.005	0.024
Total Volatile Organic Compounds	0.167	0.733

Notes:

- ¹ Emissions from the produced water are conservatively estimated using the liquid properties of crude oil.
- ² The speciation profile used is the standard profile in the TANKS 4.09d program.

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: UWE Hayes T-01 2011
 City:
 State:
 Company:
 Type of Tank: Vertical Fixed Roof Tank
 Description: UWE Hayes T-01 2011

Tank Dimensions

Shell Height (ft):	20.00
Diameter (ft):	12.00
Liquid Height (ft) :	18.00
Avg. Liquid Height (ft):	10.00
Volume (gallons):	15,228.53
Turnovers:	0.38
Net Throughput(gal/yr):	5,754.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition:	Good
Roof Color/Shade:	Gray/Medium
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.06

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Lake Charles, Louisiana (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

UWE Hayes T-01 2011 - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg	Min.	Max.		Avg.	Min.	Max.					
Crude oil (RVP 5)	All	77.32	66.93	87.70	70.83	3.9995	3.2915	4.8239	50.0000			207.00	Option 4: RVP=5
Benzene						1.8527	1.4110	2.4025	78.1100	0.0060	0.0115	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1936	0.1376	0.2679	106.1700	0.0040	0.0008	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.9508	2.2850	3.7668	86.1700	0.0040	0.0122	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.5542	0.4082	0.7419	92.1300	0.0100	0.0057	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						4.2787	4.2501	4.2535	49.3088	0.9620	0.9674	217.18	
Xylene (-m)						0.1621	0.1149	0.2252	106.1700	0.0140	0.0023	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

UWE Hayes T-01 2011 - Vertical Fixed Roof Tank

Components	Losses(lbs)		Total Emissions
	Working Loss	Breathing Loss	
Crude oil (RVP 5)	20.55	989.15	1,009.70
Hexane (-n)	0.25	12.09	12.34
Benzene	0.24	11.38	11.62
Toluene	0.12	5.67	5.79
Ethylbenzene	0.02	0.79	0.81
Xylene (-m)	0.05	2.32	2.37
Unidentified Components	19.88	956.89	976.77

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: UWE Hayes T-02 (max throughput 2011)
 City:
 State:
 Company:
 Type of Tank: Vertical Fixed Roof Tank
 Description: UWE Hayes PWT-02

Tank Dimensions

Shell Height (ft):	20.00
Diameter (ft):	12.00
Liquid Height (ft):	18.00
Avg. Liquid Height (ft):	10.00
Volume (gallons):	15,228.53
Turnovers:	8.83
Net Throughput(gal/yr):	134,400.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition:	Good
Roof Color/Shade:	Gray/Medium
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Lake Charles, Louisiana (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

UWE Hayes T-02 (max throughput 2011) - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg	Min.	Max.		Avg	Min.	Max.					
Crude oil (RVP 5)	All	77.32	66.93	87.70	70.83	3.9995	3.2915	4.8239	50.0000			207.00	Option 4: RVP=5
Benzene						1.8527	1.4110	2.4025	78.1100	0.0060	0.0115	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1936	0.1376	0.2679	106.1700	0.0040	0.0008	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.9508	2.2850	3.7668	86.1700	0.0040	0.0122	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.5542	0.4082	0.7419	92.1300	0.0100	0.0057	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						4.2787	4.2501	4.2535	49.3088	0.9620	0.9674	217.18	
Xylene (-m)						0.1621	0.1149	0.2252	106.1700	0.0140	0.0023	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

UWE Hayes T-02 (max throughput 2011) - Vertical Fixed Roof Tank

Components	Losses(lbs)		Total Emissions
	Working Loss	Breathing Loss	
Crude oil (RVP 5)	479.94	985.23	1,465.17
Hexane (-n)	5.86	12.04	17.90
Benzene	5.52	11.34	16.86
Toluene	2.75	5.65	8.41
Ethylbenzene	0.38	0.79	1.17
Xylene (-m)	1.13	2.31	3.44
Unidentified Components	464.29	953.10	1,417.39

Attachment 3

School Board Emission Calculations

Criteria Pollutants

EU ID	Description	NOx		CO		PM10		SO2		VOC	
		lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
BC-01	Rainwater Blowcase 1	--	--	--	--	--	--	--	--	0.000	0.000
BC-02	Glycol and Tank Ring Levee Blowcas	--	--	--	--	--	--	--	--	0.000	0.000
CI-01	Chemical Injection Pump	--	--	--	--	--	--	--	--	0.005	0.022
CE-01	Natural Gas Compressor	1.589	6.958	2.674	11.713	0.007	0.030	0.001	0.003	0.021	0.093
FE-01	Fugitive Emissions	--	--	--	--	--	--	--	--	0.189	0.829
Flash-01	LP Separator Flash Gas	--	--	--	--	--	--	--	--	0.000	0.000
GR-01	Glycol Reboiler Burner	0.012	0.054	0.010	0.045	0.001	0.004	0.000	0.001	0.001	0.003
LC-01	Norriseal 1001 Level Controllers	--	--	--	--	--	--	--	--	0.001	0.006
GV-01	Glycol Still Column	--	--	--	--	--	--	--	--	0.007	0.031
LF-01	Tank Truck Loading	--	--	--	--	--	--	--	--	0.000	0.000
T-01	Oil Storage Tank	--	--	--	--	--	--	--	--	0.000	0.000
T-02	Oil Storage Tank	--	--	--	--	--	--	--	--	0.000	0.000
T-03	Produced Water Storage Tank	--	--	--	--	--	--	--	--	0.114	0.501
		1.601	7.012	2.684	11.758	0.008	0.034	0.001	0.003	0.339	1.485

Toxic Air Pollutants

EU ID	Description	Benzene		Toluene		Ethylbenzene		Xylene		n-Hexane	
		lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
BC-01	Rainwater Blowcase 1	--	--	--	--	--	--	--	--	--	--
BC-02	Glycol and Tank Ring Levee Blowcas	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-01	Chemical Injection Pump	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
CE-01	Natural Gas Compressor	0.001	0.005	0.000	0.002	0.000	0.000	0.000	0.001	0.000	0.000
FE-01	Fugitive Emissions	0.001	0.003	0.001	0.002	0.000	0.000	0.000	0.001	0.012	0.051
Flash-01	LP Separator Flash Gas	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR-01	Glycol Reboiler Burner	0.000	0.000	0.000	0.000	-	-	-	-	0.000	0.001
LC-01	Norriseal 1001 Level Controllers	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-01	Glycol Still Column	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LF-01	Tank Truck Loading	--	--	--	--	--	--	--	--	--	--
T-01	Oil Storage Tank	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T-02	Oil Storage Tank	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T-03	Produced Water Storage Tank	0.001	0.006	0.001	0.003	0.000	0.000	0.000	0.001	0.001	0.006
		0.003	0.014	0.002	0.007	0.000	0.001	0.001	0.003	0.013	0.059

Notes:

No oil was produced during the year.

¹ There are no emissions associated with the rainwater blowcase.

United World Energy Corporation
 School Board Facility (P&A'd 3/2011)
 AI: 166487

Emission Unit Description: Glycol and Tank Ring Levee Blowcase
 Emission Unit ID: BC-02

Emission Unit Type: Blowcase

Input Data:

Blow case volume: 1.025 cubic feet Gas specific gravity: 0.614
 Driving gas pressure: 25 psig Blowdowns per year: 365

Calculations:

Gas Vented/blowdown = Gas volume at driving pressure x driving pressure / atmospheric pressure

Gas Vented/blowdown = 1.743 scf
 Emissions/blowdown = 0.081 lb/blowdown
 Emissions/yr = 29.676 lb/yr
 0.0034 lb/hr
 0.0148 tpy

Component		Mole Fraction	Molecular Weight	Partial Mole Weight ¹	Weight Fraction ²	Average lbs/hour ³	Annual tons/year ⁴
Non-Roughlated	Nitrogen	0.467%	28.013	0.131	0.008	0.000	0.000
	Carbon Dioxide	0.090%	44.010	0.040	0.002	0.000	0.000
	Methane	99.087%	16.043	15.897	0.982	0.003	0.015
	Ethane	0.320%	30.070	0.096	0.006	0.000	0.000
VOLATILE ORGANIC COMPOUNDS	Propane	0.020%	44.097	0.009	0.001	0.000	0.000
	Butanes	0.003%	58.124	0.002	0.000	0.000	0.000
	Pentanes	0.001%	72.151	0.001	0.000	0.000	0.000
	Hexanes (non-toxic)	0.001%	86.178	0.001	0.000	0.000	0.000
	Heptanes (non-toxic)	0.000%	100.204	0.000	0.000	0.000	0.000
	Octanes (non-toxic) +	0.000%	114.231	0.000	0.000	0.000	0.000
	Nonanes	0.001%	128.260	0.001	0.000	0.000	0.000
	Decanes	0.010%	142.280	0.014	0.001	0.000	0.000
			100.000%				
TOXIC AIR POLLUTANTS	N-Hexanes	0.000%	86.178	0.000	0.000	0.000	0.000
	Benzene	0.000%	78.114	0.000	0.000	0.000	0.000
	Toluene	0.000%	92.141	0.000	0.000	0.000	0.000
	Ethylbenzene	0.000%	106.168	0.000	0.000	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000	0.000
	Xylenes	0.000%	106.168	0.000	0.000	0.000	0.000

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.000	0.000
Total Volatile Organic Compounds	0.000	0.000

Notes:

This blowcase handles rainwater and blowdown from the glycol steam condenser. Emissions from this blowcase are conservatively estimated using the profile of the separator gas.

- ¹ Partial Mole Weight = Mole Fraction * Molecular Weight
- ² Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ³ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁴ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

United World Energy Corporation
School Board Facility (P&A'd 3/2011)
AI: 166487

Emission Unit Description: Natural Gas Compressor
Emission Unit ID: CE-01

Emission Unit Type: 4-Stroke Rich Burn Engine

Rated Engine Capacity: 95 Horsepower
Btu Value of Gas¹ 1033 Btu/scf
Engine Heat Input 7567 Btu/hp-hr (manuf)
Calculated Heat Rate² 0.7 MMBtu/hr
Annual Hours of Operation 8760 hours/year

	Pollutant	Factor lb/MMBTU	Avg. lbs/hr ^{3,4}	Total tons/yr ⁵	Source of Factor
CRITERIA POLLUTANTS	NO _x	2.21E+00	1.589	6.958	AP-42, Table 3.2-3, 7/00
	CO	3.72E+00	2.674	11.713	AP-42, Table 3.2-3, 7/00
	TSP=PM ₁₀ =PM _{2.5}	9.50E-03	0.007	0.030	AP-42, Table 3.2-3, 7/00
	SO ₂ ⁶	9.19E-04	0.001	0.003	AP-42, Table 3.2-3, 7/006
	VOC	2.96E-02	0.021	0.093	AP-42, Table 3.2-3, 7/00
HAZARDOUS AIR POLLUTANTS	N-Hexanes	--	0.000	0.000	No emission factor
	Formaldehyde	2.05E-02	0.015	0.065	AP-42, Table 3.2-3, 7/00
	Acetaldehyde	2.79E-03	0.002	0.009	AP-42, Table 3.2-3, 7/00
	Benzene	1.58E-03	0.001	0.005	AP-42, Table 3.2-3, 7/00
	Toluene	5.58E-04	0.000	0.002	AP-42, Table 3.2-3, 7/00
	Ethylbenzene	2.48E-05	0.000	0.000	AP-42, Table 3.2-3, 7/00
	Xylenes	1.95E-04	0.000	0.001	AP-42, Table 3.2-3, 7/00
	<i>Total HAP</i>		0.018	0.081	
OTHER	Methane	2.30E-01	0.165	0.724	AP-42, Table 3.2-3, 7/00
	Ethane	7.04E-02	0.051	0.222	AP-42, Table 3.2-3, 7/00
	TOC	3.58E-01	0.257	1.127	AP-42, Table 3.2-3, 7/00
	CO ₂	1.10E+02	79.075	346.349	AP-42, Table 3.2-3, 7/00
	VOC-u ⁷		0.003	0.012	= VOC - Total HAPs

Notes:

¹ AP-42 factors are based upon an average fuel Btu value of 1020 Btu/scf. Emission factors are adjusted accordingly to account for a different value in the fuel rating.

² Calculation of Heat Rate = (Horsepower, HP) * (Fuel Heat Value Btu/hp-hr) / (1000000 Btu/MMBtu)

³ Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lbs/hp-hr) * (Horsepower, HP)

⁴ For pollutants with a Source of Factor of "Manufacturer's Data" or "Engine Test Results", the Hourly Emission Rate (Lbs/Hr) = (g/hp-hr) * (Horsepower, HP) / (453.593 g /Lb)

⁵ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)

⁶ AP-42 factor for SO₂ is based upon a fuel content of 2000 gr H₂S/MMscf or 3.2 ppmv. The factor is adjusted to 5 ppmv H₂S/MMscf to account for the maximum allowed sulfur in sweet natural gas.

⁷ VOC-u stands for unspciated volatile organic compounds

United World Energy Corporation
 School Board Facility (P&A'd 3/2011)
 AI: 166487

Emission Unit Description: Chemical Injection Pump
 Emission Unit ID: CI-01
 Emission Unit Type: Pneumatic Pump

Input Data:

Annual Operation 8760 hr/yr Gas specific gravity: 0.614
 Venting Rate 1.35 scfh
 Total Gas Vented 11826.0 scf/yr

Calculations:

Gas Vented Hourly = 0.063 lb/hr
 = 0.276 tpy

Component		Mole Fraction	Molecular Weight	Partial Mole Weight ¹	Weight Fraction ²	Average lbs/hour ³	Annual tons/year ⁴
Non-Regulated	Nitrogen	0.908%	28.013	0.254	0.014	0.001	0.004
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.000	0.002
	Methane	92.898%	16.043	14.904	0.841	0.053	0.232
	Ethane	3.491%	30.070	1.050	0.059	0.004	0.016
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	0.002	0.008
	Butanes	0.666%	58.124	0.387	0.022	0.001	0.006
	Pentanes	0.258%	72.151	0.186	0.010	0.001	0.003
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.000	0.002
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.000	0.001
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.000	0.000
	Nonanes	0.008%	128.260	0.010	0.001	0.000	0.000
	Decanes	0.023%	142.280	0.033	0.002	0.000	0.001
TOXIC AIR POLLUTANTS	N-Hexanes	0.039%	86.178	0.034	0.002	0.000	0.001
	Benzene	0.014%	78.114	0.011	0.001	0.000	0.000
	Toluene	0.007%	92.141	0.006	0.000	0.000	0.000
	Ethylbenzene	0.001%	106.168	0.001	0.000	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000	0.000
	Xylenes	0.004%	106.168	0.004	0.000	0.000	0.000

100.000%

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.000	0.001
Total Volatile Organic Compounds	0.005	0.022

Notes:

- ¹ Partial Mole Weight = Mole Fraction * Molecular Weight
- ² Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ³ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁴ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

United World Energy Corporation
 School Board Facility (P&A'd 3/2011)
 AI: 166487

Emission Unit Description: Fugitive Emissions
 Emission Unit ID: FE-01

Emission Unit Type: Fugitive Emissions - Oil & Gas Production

Emission Summary

Compound	Emission Rate	
	Hourly (Lbs/Hr)	Annual ¹ (Tons/Year)
NONREGULATED POLLUTANTS	Methane	0.552
	Ethane	0.445
CRITERIA POLLUTANTS	VOC (total)	0.189
	VOC (non-TAP)	0.176
HAZARDOUS AIR POLLUTANTS	n-Hexane	0.012
	Benzene	0.001
	Toluene	0.001
	Ethylbenzene	0.000
	1, 2, 4 - Trimethylbenzene	--
Xylenes	0.000	

Component Type ⁴	Gas Service			Liquid Service ²		
	Number	Emission Factor ⁵ (lb/day-component)	VOC Emissions (lb/day)	Number	Emission Factor ⁴ (lb/day-component)	VOC Emissions (lb/day)
Valves	16	0.24	3.84	30	0.13	3.90
Flanges	7	0.02	0.15	1	0.0058	0.01
Connectors	92	0.01	1.01	68	0.011	0.75
Open-ends	0	0.11	0.00	0	0.074	0.00
Other	14	0.47	6.58	10	0.4	4.00

TOTALS: Gas Service 11.58 Pounds per day Liquid Service 8.65 Pounds per day

Gas Service		Estimated	Hourly	Annual
		Hydrocarbon Speciation ¹	Emissions ² (Lbs/Hour)	Emissions ³ (Tons/Year)
NONREGULATED POLLUTANTS	Methane	68.7%	0.331	1.452
	Ethane	14.2%	0.069	0.300
CRITERIA POLLUTANTS	VOC (total)	17.1%	0.083	0.361
	VOC (non-toxic)	-	0.079	0.344
HAZARDOUS AIR POLLUTANTS	n-Hexane	0.693%	0.003	0.015
	Benzene	0.069%	0.000	0.001
	Toluene	0.038%	0.000	0.001
	Ethylbenzene	0.003%	0.000	0.000
	Xylenes	0.009%	0.000	0.000

Liquid Service		Estimated	Hourly	Annual
		Hydrocarbon Speciation ¹	Emissions ² (Lbs/Hour)	Emissions ³ (Tons/Year)
NONREGULATED POLLUTANTS	Methane	61.2%	0.221	0.967
	Ethane	9.2%	0.033	0.145
CRITERIA POLLUTANTS	VOC (total)	29.6%	0.107	0.467
	VOC (non-toxic)	-	0.097	0.427
HAZARDOUS AIR POLLUTANTS	n-Hexane	2.300%	0.008	0.036
	Benzene	0.121%	0.000	0.002
	Toluene	0.105%	0.000	0.002
	Ethylbenzene	0.016%	0.000	0.000
	Xylenes	0.033%	0.000	0.001

Notes:

¹ Hourly Emission Rate (Lbs/Hr) = (Estimated Speciation) * (Total Daily Emissions, MMscf/day) / (24 Hrs/day)

² Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (8760 Hr/Yr) / (2,000 Lbs/Ton)

³ All non-gas service will be considered light oil service. Additional factors are available for water/oil and water service. However, the factors for light oil service provide more conservative estimation and therefore will be used.

⁴ Because the facility has been abandoned, there are no accurate counts of components. Counts from the John N John facility, which is of similar size, have been used

⁵ Table 1 and Table 2 of Method 1 in API Publication No. 4638 contains the EPA Emission Factors and Typical Speciation Fractions for calculating fugitive emissions in Gas and Light Liquid service.

United World Energy Corporation
 School Board Facility (P&A'd 3/2011)
 AI: 166487

Emission Unit Description: LP Separator Flash Gas
 Emission Unit ID: Flash-01

Emission Unit Type: Separator Flash Gas

Input Data:

Oil API Gravity	48	
Separator Pressure (PSIG)	780	30
Separator Temperature (F)	65	110
Site Elevation (Feet above Mean Sea Level)	0	
Measured/Calculated Gas Specific Gravity	0.8575	
Calculated Atmospheric Pressure @ Site Elevation:	14.700	

Cubic Feet Vapor per Barrel Oil per Vasquez & Beggs Correlation:	377.07	10.42
Calculated GOR via Vasquez & Beggs:	366.65	

Actual Oil Production Rate (BOPD): 0.000 (No oil was produced during the year.)
 Hours Operated per Year: 8760

Calculations:

Total HC = GOR (scf/bbl) * Production (bbl/day) * Gas MW (lb/lb-mol) * 1/385 scf/lb-mole * 365 d/yr * 1 ton/2000 lbs
 = 0.00 tpy
 = 0.00 lb/hr
 = 0.00 lb/day

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ¹	Weight Fraction ²	Average lbs/hour ³	Annual tons/year ⁴
Non-Regulated						
Nitrogen	0.063%	28.013	0.018	0.001	0.000	0.000
Carbon Dioxide	0.404%	44.010	0.178	0.007	0.000	0.000
Methane	68.069%	16.043	10.920	0.439 ¹	0.000	0.000
Ethane	13.556%	30.070	4.076	0.164	0.000	0.000
VOLATILE ORGANIC COMPOUNDS						
Propane	9.205%	44.097	4.059	0.163	0.000	0.000
Butanes	6.195%	58.124	3.601	0.145	0.000	0.000
Pentanes	1.534%	72.151	1.107	0.045	0.000	0.000
Hexanes (non-toxic)	0.481%	86.178	0.415	0.017	0.000	0.000
Heptanes (non-toxic)	0.193%	100.204	0.193	0.008	0.000	0.000
Octanes (non-toxic) +	0.064%	114.231	0.073	0.003	0.000	0.000
Nonanes	0.019%	128.260	0.024	0.001	0.000	0.000
Decanes	0.024%	142.280	0.034	0.001	0.000	0.000
TOXIC AIR POLLUTANTS						
N-Hexanes	0.135%	86.178	0.116	0.005	0.000	0.000
Benzene	0.024%	78.114	0.019	0.001	0.000	0.000
Toluene	0.019%	92.141	0.018	0.001	0.000	0.000
Ethylbenzene	0.004%	106.168	0.004	0.000	0.000	0.000
2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000	0.000
Xylenes	0.011%	106.168	0.012	0.000	0.000	0.000

100.000%

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.000	0.000
Total Volatile Organic Compounds	0.000	0.000

Notes:

- ¹ Partial Mole Weight = Mole Fraction * Molecular Weight
- ² Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ³ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁴ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

Vasquez-Beggs Constants	API Gravity < 30	API Gravity > 30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	25.724	23.931

United World Energy Corporation
 School Board Facility (P&A'd 3/2011)
 AI: 166487

Emission Unit Description: Glycol Reboiler Burner
 Emission Unit ID: GR-01

Emission Unit Type: Natural Gas Fired Heater

Rated Burner Rating: 0.13 MMBtu/hr
 Btu Value of Gas¹: 1105.6 Btu/scf
 Annual Hours of Operation: 8760 hours/year

	Pollutant	Factor lb/MMscf	Avg. lbs/hr ²	Total tons/yr ³	Source of Factor
CRITERIA	NO _x	100.00	0.012	0.054	AP-42, Table 1.4-1, 7/98
	CO	84.00	0.010	0.045	AP-42, Table 1.4-1, 7/98
	TSP=PM ₁₀ =PM _{2.5}	7.60	0.001	0.004	AP-42, Table 1.4-2, 7/98
	SO ₂ ⁴	0.94	0.000	0.001	AP-42, Table 1.4-2, 7/98 ⁴
	VOC	5.50	0.001	0.003	AP-42, Table 1.4-2, 7/98
HAZARDOUS AIR POLLUTANTS	N-Hexanes ⁵	1.800	0.000	0.001	AP-42, Table 1.4-3, 7/98 ⁵
	Formaldehyde	0.075	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Acetaldehyde	-	-	-	No Emission Factor
	Benzene	0.002	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Toluene	0.003	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Ethylbenzene	-	-	-	No Emission Factor
	Xylenes	-	-	-	No Emission Factor
	<i>Total HAP</i>	-	0.000	0.001	

Notes:

- ¹ AP-42 factors are based upon an average fuel Btu value of 1020 Btu/scf. Emission factors are adjusted accordingly to account for a different value in the fuel rating.
- ² Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lbs/MMscf) * (Burner Rating, MMBtu/hr) * (Btu Value of Gas / 1020) / (Btu Value of Gas, Btu/scf)
- ³ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
- ⁴ AP-42 factor for SO₂ is based upon a fuel content of 2000 gr H₂S/MMscf or 3.2 ppmv. The factor is adjusted to 5 ppmv H₂S/MMscf to account for the maximum allowed sulfur in sweet natural gas.
- ⁵ Emission factor is listed as Hexane in AP-42. Assume all emissions reported are N-hexane as conservative estimate
- ⁶ N₂O emission factor is for uncontrolled emissions.
- ⁷ VOC-u stands for unspeciated volatile organic compounds

United World Energy Corporation
 School Board Facility (P&A'd 3/2011)
 AI: 166487

Emission Unit Description: Norriseal 1001 Level Controllers
 Emission Unit ID: LC-01
 Emission Unit Type: Gas operated pressure/level controllers
 Manufacturer Vent Rate¹ 0.2 standard cubic feet per hour
 Annual Hours of Operation 8760 hours/year
 Number of controllers 2 controllers

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵	
Non-Regulated	Nitrogen	0.908%	28.013	0.254	0.014	0.000	
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.000	
	Methane	92.898%	16.043	14.904	0.841	0.016	
	Ethane	3.491%	30.070	1.050	0.059	0.001	
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	0.001	
	Butanes	0.666%	58.124	0.387	0.022	0.000	
	Pentanes	0.258%	72.151	0.186	0.010	0.000	
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.000	
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.000	
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.000	
	Nonanes	0.008%	128.260	0.010	0.001	0.000	
	Decanes	0.023%	142.280	0.033	0.002	0.000	
	HAZARDOUS AIR POLLUTANTS	N-Hexanes	0.039%	86.178	0.034	0.002	0.000
		Benzene	0.014%	78.114	0.011	0.001	0.000
Toluene		0.007%	92.141	0.006	0.000	0.000	
Ethylbenzene		0.001%	106.168	0.001	0.000	0.000	
2, 2, 4 - Trimethylpentane		0.000%	114.231	0.000	0.000	0.000	
Xylenes	0.004%	106.168	0.004	0.000	0.000		

	lbs/hour	tons/year
Total Hazardous Air Pollutants	0.000	0.000
Total Volatile Organic Compounds	0.001	0.006

Notes:

- ¹ Manufacturer's vent rate is based upon information obtained directly from the manufacturer or as documented on the EPA Natural GasSTAR website.
- ² Partial Mole Weight = Mole Fraction * Molecular Weight
- ³ Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ⁴ Average Lbs/Hour = Manufacturer's Vent Rate (ft³/Hour) * Number of controllers * Component Partial Mole Fraction / (379 ft³ / mole)
- ⁵ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)

United World Energy Corporation
 School Board Facility (P&A'd 3/2011)
 AI: 166487

Emission Unit Description:	<u>Tank Truck Loading</u>
Emission Unit ID:	<u>LF-01</u>
Emission Unit Type:	<u>Tank Truck Loading</u>
Production Rate ¹	0.000 BOPD (No oil was produced during the year.)
Loading Rate ²	150 barrels per hour
Calculated Annual Hours of Operation ³	0.00 hours/year
Crude Oil Emission Factor ⁴	1.7 lbs VOC/1000 gal trans.
Hourly Emissions ⁵	0 lbs/hour
Annual Emission Rate ⁶	0.000 tons/year

Notes:

- ¹ Production Rate is the estimated facility production rate on a daily basis.
- ² The standard loading rate of a tanker truck is 150 barrels per hour
- ³ The annual oil production rate limits the loading potential at the site. Therefore, emissions cannot be calculated on an annual time of 8760 hours per year. Annual Hours of Operation = (Production Rate, Bbl/day) * (365 days/year) / (Loading rate, Bbl/Hr)
- ⁴ Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lb/1000 gallons transferred) * (Loading Rate, Bbl/Hr.) * (42 gallons per barrel)
- ⁵ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
- ⁶ According to AP-42, Table 5.2-5, the uncontrolled organic emission factor for Tank Trucks is 2 lb/1000 gallons transferred. According to note (a) of this table, 15% of the total organic factor can be removed to account for methane/ethane emissions.

United World Energy Corporation
 School Board Facility (P&A'd 3/2011)
 AI: 166487

Emission Unit Description: Oil Storage Tank
 Emission Unit ID: T-01
 Emission Unit Type: Storage Tank

Input Data:

Oil API Gravity	48
Separator Pressure (PSIG)	40
Separator Temperature (F)	70
Site Elevation (Feet above Mean Sea Level)	0
Measured/Calculated Gas Specific Gravity	0.8575
Calculated Atmospheric Pressure @ Site Elevation:	14.7
Calculated GOR via Vasquez & Beggs:	15.414
Actual Oil Production Rate (BOPD):	0.000
Actual Oil Production Rate (gpy):	0 (No oil was produced during the year.)
Hours Operated per Year:	8760

Calculations:

Flash Losses

Total Flash cubic ft/hour:	0.0000	= GOR * BOPD / 24 (hr/day)
Total Flash lbs/hr:	0.0000	
Total Flash tons/yr:	0.0000	

Working and Standing Losses from EPA's TANKS 4.09d Program¹

Total Emissions (lb/yr)	0.00
Total Emissions lbs/hr:	0.0000
Total Emissions tons/yr:	0.0000

Total Hydrocarbon Emissions - Flash, Breathing and Working Losses

Total lbs/hr:	0.0000
Total tons/yr:	0.0000

Speciation Of Estimated VOCs from Flash, Standing & Working Losses

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵	
Non-Regulated	Nitrogen	0.063%	28.013	0.018	0.001	0.000	
	Carbon Dioxide	0.404%	44.010	0.178	0.007	0.000	
	Methane	68.069%	16.043	10.920	0.439	0.000	
	Ethane	13.556%	30.070	4.076	0.164	0.000	
VOLATILE ORGANIC COMPOUNDS	Propane	9.205%	44.097	4.059	0.163	0.000	
	Butanes	6.195%	58.124	3.601	0.145	0.000	
	Pentanes	1.534%	72.151	1.107	0.045	0.000	
	Hexanes (non-toxic)	0.481%	86.178	0.415	0.017	0.000	
	Heptanes (non-toxic)	0.193%	100.204	0.193	0.008	0.000	
	Octanes (non-toxic) +	0.064%	114.231	0.073	0.003	0.000	
	Nonanes	0.019%	128.260	0.024	0.001	0.000	
	Decanes	0.024%	142.280	0.034	0.001	0.000	
	TOXIC AIR POLLUTANTS	N-Hexanes	0.135%	86.178	0.116	0.005	0.000
		Benzene	0.024%	78.114	0.019	0.001	0.000
Toluene		0.019%	92.141	0.018	0.001	0.000	
Ethylbenzene		0.004%	106.168	0.004	0.000	0.000	
2, 2, 4 - Trimethylpentane		0.000%	114.231	0.000	0.000	0.000	
Xylenes		0.011%	106.168	0.012	0.000	0.000	

100.0000%

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.000	0.000
Total Volatile Organic Compounds	0.000	0.000

Notes:

- Emissions from working and breathing losses were calculated using 5 bopd throughput, which is extremely conservative.
- Partial Mole Weight = Mole Fraction * Molecular Weight
- Weight Fraction = Partial Mole Weight / Total Molecular Weight
- Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

Value of Constants for Vasquez-Beggs Equation	API Gravity < 30	API Gravity >30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	25.724	23.931

United World Energy Corporation
 School Board Facility (P&A'd 3/2011)
 AI: 166487

Emission Unit Description: Oil Storage Tank
 Emission Unit ID: T-02
 Emission Unit Type: Storage Tank

Input Data:

Oil API Gravity	48
Separator Pressure (PSIG)	1
Separator Temperature (F)	70
Site Elevation (Feet above Mean Sea Level)	0
Measured/Calculated Gas Specific Gravity	0.8575
Calculated Atmospheric Pressure @ Site Elevation:	14.7
Calculated GOR via Vasquez & Beggs:	3.503
Actual Oil Production Rate (BOPD):	0.000 (No oil was produced during the year.)
Actual Oil Production Rate (gpy):	0
Hours Operated per Year:	8760

Calculations:

Flash Losses

Total Flash cubic ft/hour:	0.0000	= GOR * BOPD / 24 (hr/day)
Total Flash lbs/hr:	0.0000	
Total Flash tons/yr:	0.0000	

Working and Standing Losses from EPA's TANKS 4.09d Program¹

Total Emissions (lb/yr)	0.00
Total Emissions lbs/hr:	0.0000
Total Emissions tons/yr:	0.0000

Total Hydrocarbon Emissions - Flash, Breathing and Working Losses

Total lbs/hr:	0.0000
Total tons/yr:	0.0000

Speciation Of Estimated VOCs from Flash, Standing & Working Losses

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵	
Non-Regulated	Nitrogen	0.063%	28.013	0.018	0.001	0.000	
	Carbon Dioxide	0.404%	44.010	0.178	0.007	0.000	
	Methane	68.069%	16.043	10.920	0.439	0.000	
	Ethane	13.556%	30.070	4.076	0.164	0.000	
VOLATILE ORGANIC COMPOUNDS	Propane	9.205%	44.097	4.059	0.163	0.000	
	Butanes	6.195%	58.124	3.601	0.145	0.000	
	Pentanes	1.534%	72.151	1.107	0.045	0.000	
	Hexanes (non-toxic)	0.481%	86.178	0.415	0.017	0.000	
	Heptanes (non-toxic)	0.193%	100.204	0.193	0.008	0.000	
	Octanes (non-toxic) +	0.064%	114.231	0.073	0.003	0.000	
	Nonanes	0.019%	128.260	0.024	0.001	0.000	
	Decanes	0.024%	142.280	0.034	0.001	0.000	
	TOXIC AIR POLLUTANTS	N-Hexanes	0.135%	86.178	0.116	0.005	0.000
		Benzene	0.024%	78.114	0.019	0.001	0.000
Toluene		0.019%	92.141	0.018	0.001	0.000	
Ethylbenzene		0.004%	106.168	0.004	0.000	0.000	
2, 2, 4 - Trimethylpentane		0.000%	114.231	0.000	0.000	0.000	
Xylenes	0.011%	106.168	0.012	0.000	0.000		

100.000%

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.000	0.000
Total Volatile Organic Compounds	0.000	0.000

Notes:

- Emissions from working and breathing losses were calculated using 5 bopd throughput, which is extremely conservative.
- Partial Mole Weight = Mole Fraction * Molecular Weight
- Weight Fraction = Partial Mole Weight / Total Molecular Weight
- Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

Value of Constants for Vasquez-Beggs Equation	API Gravity < 30	API Gravity > 30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	25.724	23.931

United World Energy Corporation
 School Board Facility (P&A'd 3/2011)
 AI: 166487

Emission Unit Description: Produced Water Storage Tank
 Emission Unit ID: T-03
 Emission Unit Type: Storage Tank

Input Data:

Produced Water Production Rate (BPD):	0.244
Produced Water Production Rate (gpy):	3738
Hours Operated per Year:	8760

Working and Standing Losses from EPA's TANKS 4.09d Program ^{1,2}

Component	Emissions (lb/yr)	Average lbs/hour	Annual tons/year
Total VOC	1002.50	0.114	0.501
N-Hexanes	12.25	0.001	0.006
Benzene	11.54	0.001	0.006
Toluene	5.75	0.001	0.003
Ethylbenzene	0.80	0.000	0.000
Xylenes	2.36	0.000	0.001

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.004	0.016
Total Volatile Organic Compounds	0.114	0.501

Notes:

- ¹ Emissions from the produced water are conservatively estimated using the liquid properties of crude oil.
- ² The speciation profile used is the standard profile in the TANKS 4.09d program.

GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: UWE Hayes Dehy Unit
 File Name: C:\Users\Loni M Gaudet\Dropbox\Shared\Clients\United World Energy\School Board\School Board GLYCALC FILE 2011.DDF
 Date: July 23, 2012

DESCRIPTION:

Description:
 Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

UNCONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.0501	1.202	0.2193
Ethane	0.0010	0.024	0.0044
Propane	0.0002	0.004	0.0007
Isobutane	<0.0001	0.001	0.0001
n-Butane	<0.0001	<0.001	0.0001
Isopentane	<0.0001	0.001	0.0001
Other Hexanes	<0.0001	0.001	0.0002
C8+ Heavies	0.0067	0.161	0.0293
Total Emissions	0.0580	1.393	0.2542
Total Hydrocarbon Emissions	0.0580	1.393	0.2542
Total VOC Emissions	0.0070	0.167	0.0305

EQUIPMENT REPORTS:

ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

Calculated Absorber Stages: 1.25
 Calculated Dry Gas Dew Point: 2.95 lbs. H2O/MMSCF
 Temperature: 84.0 deg. F
 Pressure: 912.0 psig
 Dry Gas Flow Rate: 0.4695 MMSCF/day
 Glycol Losses with Dry Gas: 0.0025 lb/hr
 Wet Gas Water Content: Saturated
 Calculated Wet Gas Water Content: 38.44 lbs. H2O/MMSCF
 Specified Lean Glycol Recirc. Ratio: 3.00 gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
Water	7.68%	92.32%

Carbon Dioxide	99.90%	0.10%
Nitrogen	99.99%	0.01%
Methane	99.99%	0.01%
Ethane	99.98%	0.02%
Propane	99.97%	0.03%
Isobutane	99.95%	0.05%
n-Butane	99.94%	0.06%
Isopentane	99.94%	0.06%
Other Hexanes	99.89%	0.11%
C8+ Heavies	99.31%	0.69%

REGENERATOR

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled Overhead
Water	27.21%	72.79%
Carbon Dioxide	0.00%	100.00%
Nitrogen	0.00%	100.00%
Methane	0.00%	100.00%
Ethane	0.00%	100.00%
Propane	0.00%	100.00%
Isobutane	0.00%	100.00%
n-Butane	0.00%	100.00%
Isopentane	0.50%	99.50%
Other Hexanes	1.00%	99.00%
C8+ Heavies	12.05%	87.95%

STREAM REPORTS:

WET GAS STREAM

Temperature: 84.00 deg. F
 Pressure: 926.70 psia
 Flow Rate: 1.96e+004 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	8.10e-002	7.53e-001
Carbon Dioxide	8.99e-002	2.04e+000
Nitrogen	4.67e-001	6.74e+000
Methane	9.90e+001	8.19e+002
Ethane	3.20e-001	4.96e+000
Propane	2.00e-002	4.55e-001
Isobutane	2.00e-003	5.99e-002
n-Butane	9.99e-004	3.00e-002
Isopentane	9.99e-004	3.72e-002
Other Hexanes	9.99e-004	4.44e-002
C8+ Heavies	1.10e-002	9.66e-001
Total Components	100.00	8.36e+002

DRY GAS STREAM

 Temperature: 84.00 deg. F
 Pressure: 926.70 psia
 Flow Rate: 1.96e+004 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	6.23e-003	5.78e-002
Carbon Dioxide	8.99e-002	2.04e+000
Nitrogen	4.67e-001	6.74e+000
Methane	9.91e+001	8.19e+002
Ethane	3.20e-001	4.96e+000
Propane	2.00e-002	4.55e-001
Isobutane	2.00e-003	5.99e-002
n-Butane	9.99e-004	2.99e-002
Isopentane	9.99e-004	3.72e-002
Other Hexanes	9.99e-004	4.44e-002
C8+ Heavies	1.09e-002	9.59e-001
Total Components	100.00	8.35e+002

LEAN GLYCOL STREAM

 Temperature: 84.00 deg. F
 Flow Rate: 3.08e-002 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.85e+001	1.71e+001
Water	1.50e+000	2.60e-001
Carbon Dioxide	1.12e-012	1.94e-013
Nitrogen	2.63e-013	4.55e-014
Methane	9.72e-018	1.68e-018
Ethane	2.72e-009	4.71e-010
Propane	3.63e-011	6.29e-012
Isobutane	5.01e-012	8.67e-013
n-Butane	2.75e-012	4.75e-013
Isopentane	6.90e-007	1.20e-007
Other Hexanes	2.79e-006	4.82e-007
C8+ Heavies	5.30e-003	9.17e-004
Total Components	100.00	1.73e+001

RICH GLYCOL STREAM

 Temperature: 84.00 deg. F
 Pressure: 926.70 psia
 Flow Rate: 3.22e-002 gpm
 NOTE: Stream has more than one phase.

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.44e+001	1.70e+001
Water	5.28e+000	9.54e-001
Carbon Dioxide	1.08e-002	1.94e-003
Nitrogen	2.52e-003	4.55e-004

Methane	2.77e-001	5.01e-002
Ethane	5.53e-003	9.99e-004
Propane	8.55e-004	1.55e-004
Isobutane	1.60e-004	2.89e-005
n-Butane	1.06e-004	1.92e-005
Isopentane	1.32e-004	2.39e-005
Other Hexanes	2.67e-004	4.82e-005
C8+ Heavies	4.21e-002	7.61e-003

Total Components	100.00	1.81e+001

 REGENERATOR OVERHEADS STREAM

Temperature: 212.00 deg. F
 Pressure: 14.70 psia
 Flow Rate: 1.59e+001 scfh

Component	Conc. (vol%)	Loading (lb/hr)

Water	9.22e+001	6.95e-001
Carbon Dioxide	1.06e-001	1.94e-003
Nitrogen	3.88e-002	4.55e-004
Methane	7.46e+000	5.01e-002
Ethane	7.94e-002	9.99e-004
Propane	8.38e-003	1.55e-004
Isobutane	1.19e-003	2.89e-005
n-Butane	7.89e-004	1.92e-005
Isopentane	7.88e-004	2.38e-005
Other Hexanes	1.32e-003	4.77e-005
C8+ Heavies	9.39e-002	6.69e-003

Total Components	100.00	7.55e-001

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: UWE School Board PWT (max)
 City:
 State:
 Company:
 Type of Tank: Vertical Fixed Roof Tank
 Description: UWE School Board PWT (max)

Tank Dimensions

Shell Height (ft): 20.00
 Diameter (ft): 12.00
 Liquid Height (ft): 18.00
 Avg. Liquid Height (ft): 10.00
 Volume (gallons): 15,228.53
 Turnovers: 0.25
 Net Throughput(gal/yr): 3,738.00
 Is Tank Heated (y/n): N

Paint Characteristics

Shell Color/Shade: Gray/Medium
 Shell Condition: Good
 Roof Color/Shade: Gray/Medium
 Roof Condition: Good

Roof Characteristics

Type: Cone
 Height (ft): 0.00
 Slope (ft/ft) (Cone Roof): 0.06

Breather Vent Settings

Vacuum Settings (psig): -0.03
 Pressure Settings (psig): 0.03

Meteorological Data used in Emissions Calculations: Lake Charles, Louisiana (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

UWE School Board PWT (max) - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Crude oil (RVP 5)	All	77.32	66.93	87.70	70.83	3.9995	3.2915	4.8239	50.0000			207.00	Option 4: RVP=5
Benzene						1.8527	1.4110	2.4025	78.1100	0.0060	0.0115	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1936	0.1376	0.2679	106.1700	0.0040	0.0008	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.9508	2.2850	3.7668	86.1700	0.0040	0.0122	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.5542	0.4082	0.7419	92.1300	0.0100	0.0057	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						4.2787	4.2501	4.2535	49.3088	0.9620	0.9674	217.18	
Xylene (-m)						0.1621	0.1149	0.2252	106.1700	0.0140	0.0023	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual**UWE School Board PWT (max) - Vertical Fixed Roof Tank**

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Hexane (-n)	0.16	12.09	12.25
Benzene	0.15	11.38	11.54
Toluene	0.08	5.67	5.75
Ethylbenzene	0.01	0.79	0.80
Xylene (-m)	0.03	2.32	2.36
Unidentified Components	12.91	956.89	969.80
Crude oil (RVP 5)	13.35	989.15	1,002.50

Attachment 4

Lacassine Emission Calculations

EU ID	Description	Criteria Pollutants						VOC
		NO _x lb/hr	CO ton/day	PM10 ton/day	SO2 ton/day	SO2 ton/day	VOC ton/day	
BC-01	Tank Bottoms Circulation Blowcase (Central)	--	--	--	--	--	0.000	0.002
BC-02	Flare Pit and Equipment Skid Sump Blowcase (Central)	--	--	--	--	--	0.000	0.001
BC-03	Glycol Steam Condensed Blowcase (Well 14-2 and 23-1)	--	--	--	--	--	0.000	0.000
BC-04	Platform Drain Blowcase (Well 14-2 and 23-1)	--	--	--	--	--	0.000	0.000
BC-05	Platform Drain Blowcase (Well 14-2 and 23-1)	--	--	--	--	--	0.000	0.000
BC-06	Wellhead Sump Blowcase (Well 14-2)	--	--	--	--	--	0.000	0.000
BC-07	Glycol Steam Blowcase (Well 29-1)	--	--	--	--	--	0.000	0.001
BC-08	Platform Drain Blowcase (Well 29-1)	--	--	--	--	--	0.000	0.000
BC-09	Platform Drain Blowcase (Well 28-1)	--	--	--	--	--	0.000	0.000
BC-10	Well Treer Sump Blowcase (Well 28-1)	--	--	--	--	--	0.000	0.001
BC-11	Glycol Steam Blowcase (Well 29-1 and Lac 29-2)	--	--	--	--	--	0.000	0.000
BC-12	Platform Drain Blowcase (Well 29-1)	--	--	--	--	--	0.000	0.000
BC-13	Platform Drain Blowcase (Well 29-1)	--	--	--	--	--	0.000	0.000
BC-14	Well Treer Sump Blowcase (Well 29-1)	--	--	--	--	--	0.000	0.000
CE-01	Natural Gas Compressor	1.589	6.958	2.674	11.713	0.007	0.030	0.001
CH-01	Chemical Injection Pump (Well 26-1)	--	--	--	--	--	0.000	0.000
CH-02	Chemical Injection Pump (Wells 29-1 and 29-2)	--	--	--	--	--	0.000	0.000
CH-03	Chemical Injection Pump (Wells 29-1 and 29-2)	--	--	--	--	--	0.000	0.000
CH-04	Chemical Injection Pump (Well 14-2)	--	--	--	--	--	0.000	0.000
CH-05	Chemical Injection Pump (Well 23-1)	--	--	--	--	--	0.000	0.000
CH-06	Chemical Injection Pump (Well 23-1)	--	--	--	--	--	0.000	0.000
CH-07	Chemical Injection Pump (Central)	--	--	--	--	--	0.000	0.000
FE-01	Fugitive Emissions (Central)	--	--	--	--	--	0.446	1.953
FE-02	Fugitive Emissions (Well 14-2 and 23-1)	--	--	--	--	--	0.250	1.083
FE-03	Fugitive Emissions (Well 26-1)	--	--	--	--	--	0.182	0.788
FE-04	Fugitive Emissions (Wells 29-1 and 29-2)	--	--	--	--	--	0.180	0.788
FL-01	Combustion Flare	0.098	0.429	0.082	0.361	0.007	0.033	0.001
GR-01	Glycol Reboiler Burner (Wells 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR-02	Glycol Reboiler Burner (Well 26-1)	0.012	0.054	0.010	0.045	0.001	0.004	0.001
GR-03	Glycol Reboiler Burner (Wells 29-1 and 29-2)	0.025	0.107	0.021	0.090	0.002	0.008	0.000
LC-01	Natural 100% Level Controllers (Central)	--	--	--	--	--	0.010	0.043
LC-02	Malira 3200 Level Controllers (Central)	--	--	--	--	--	0.019	0.081
LC-03	Nonriseal 1001 Level Controllers (Wells 14-2 and 23-1)	--	--	--	--	--	0.000	0.000
LC-04	Nonriseal 1001 Level Controllers (Well 26-1)	--	--	--	--	--	0.012	0.054
LC-05	Malira 3200 Level Controllers (Well 26-1)	--	--	--	--	--	0.006	0.027
LC-06	Nonriseal 1001 Level Controllers (Wells 29-1 and 29-2)	--	--	--	--	--	0.012	0.054
LC-07	Malira 3200 Level Controllers (Wells 29-1 and 29-2)	--	--	--	--	--	0.006	0.027
LH-01	Tank Truck (Well 14-2)	0.049	0.215	0.041	0.180	0.004	0.016	0.000
LH-02	Line Heater (Well 26-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001
LH-03	Line Heater (Well 29-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001
LH-04	Line Heater (Well 29-2)	0.098	0.429	0.082	0.361	0.007	0.033	0.001
LH-05	Line Heater (Well 23-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001
T-01	Oil Storage Tank #512	--	--	--	--	--	3.116	13.648
T-02	Oil Storage Tank #513	--	--	--	--	--	3.116	13.648
T-03	Oil Storage Tank #514	--	--	--	--	--	3.116	13.648
T-04	Produced Water Storage Tank #515	--	--	--	--	--	0.119	0.521
T-05	Produced Water Storage Tank #516	--	--	--	--	--	0.119	0.521
T-06	Produced Water Storage Tank #517	--	--	--	--	--	0.119	0.521
GV-01	Glycol Still Column (Wells 14-2 and 23-1)	--	--	--	--	--	--	--
GV-02	Glycol Still Column (Wells 14-2 and 23-1)	--	--	--	--	--	--	--
GV-03	Glycol Still Column (Wells 29-1 and 29-2)	--	--	--	--	--	--	--
GV-04	Glycol Still Column (Well 26-1)	--	--	--	--	--	--	--
GV-05	Glycol Still Column (Well 13-1)	--	--	--	--	--	--	--
GV-06	Glycol Still Column (Well Brouer #1)	--	--	--	--	--	--	--
GV-07	Glycol Still Column (Well Coastal Club 6.1)	--	--	--	--	--	--	--
GV-07	Glycol Still Column (Well Little Lake Miscel)	2.189	9.569	3.179	13.922	0.052	0.230	0.006
							21.551	50.941

EUID	Description	Toxic Air Pollutants													
		Benzene lb/day	1,1-DCE lb/day	1,1-DCE lb/day	1,1-DCE lb/day	1,1-DCE lb/day	1,1-DCE lb/day	1,1-DCE lb/day	1,1-DCE lb/day	1,1-DCE lb/day	1,1-DCE lb/day	H2S lb/day			
BC-01	Tank Bottoms Circulation Blowcase (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-02	Flare Pit and Equipment Skid Sump Blowcase (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-03	Glycol Steam Condensed Blowcase (Well 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-04	Platform Drain Blowcase (Well 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-05	Wellhead Sump Blowcase (Well 14-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-06	Glycol Steam Blowcase (Well 14-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-07	Platform Drain Blowcase (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-08	Platform Drain Blowcase (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-09	Platform Drain Blowcase (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-10	Well Tree Sump Blowcase (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-11	Glycol Steam Blowcase (Well 29-1 and Lac 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-12	Platform Drain Blowcase (Well 29-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-13	Platform Drain Blowcase (Well 29-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-14	Well Tree Sump Blowcase (Well 29-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CE-01	Natural Gas Compressor	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-01	Chemical Injection Pump (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-02	Chemical Injection Pump (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-03	Chemical Injection Pump (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-04	Chemical Injection Pump (Well 14-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-05	Chemical Injection Pump (Well 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-06	Chemical Injection Pump (Well 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-07	Chemical Injection Pump (Well 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FE-01	Fugitive Emissions (Wells 14-2 and 23-1)	0.001	0.004	0.001	0.003	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
FE-02	Fugitive Emissions (Wells 14-2 and 23-1)	0.001	0.004	0.001	0.003	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
FE-03	Fugitive Emissions (Well 26-1)	0.001	0.003	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FE-04	Fugitive Emissions (Wells 29-1 and 29-2)	0.001	0.003	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HT-01	Heater Heater	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FL-01	Combustion Flare	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR-01	Glycol Reboiler Burner (Wells 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR-02	Glycol Reboiler Burner (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR-03	Glycol Reboiler Burner (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-01	Nisselard 1001 Level Controllers (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-02	Nisselard 3200 Level Controllers (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-03	Nisselard 1001 Level Controllers (Wells 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-04	Nisselard 1001 Level Controllers (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-05	Nisselard 3200 Level Controllers (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-06	Nisselard 1001 Level Controllers (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-07	Nisselard 3200 Level Controllers (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LF-01	Tank Truck Loading	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LH-01	Line Heater (Well 14-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LH-02	Line Heater (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LH-03	Line Heater (Well 29-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LH-04	Line Heater (Well 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LH-05	Line Heater (Well 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T-01	Oil Storage Tank #512	0.011	0.049	0.008	0.034	0.002	0.007	0.004	0.019	0.038	0.165	0.000	0.000	0.000	0.000
T-02	Oil Storage Tank #514	0.011	0.049	0.008	0.034	0.002	0.007	0.004	0.019	0.038	0.165	0.000	0.000	0.000	0.000
T-03	Produced Water Storage Tank #515	0.001	0.006	0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T-04	Produced Water Storage Tank #516	0.001	0.006	0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T-05	Produced Water Storage Tank #517	0.001	0.006	0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-01	Glycol Still Column (Wells 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-02	Glycol Still Column (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-03	Glycol Still Column (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-04	Glycol Still Column (Well 13-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-05	Glycol Still Column (Well Brewer #1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-06	Glycol Still Column (Well Coastal Club 6-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-07	Glycol Still Column (Well Little Lake Miser)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes:
 1. There are no emissions associated with these blowcases which handle only rainwater. These emission units should be removed from the permit.
 2. There has not operated since installation. VOC emissions vented to the flare have been vented, not combusted. These emissions are accounted for in the table above for the individual emission units where they are generated.
 3. All glycol dehydrator still emissions are routed to a pipeline where they condense and are disposed of via a commercial disposal company.

Criteria Pollutants

EU ID	Description	NO _x		CO		PM10		SO ₂		VOC	
		lb/yr	ton/yr	lb/yr	ton/yr	lb/yr	ton/yr	lb/yr	ton/yr	lb/yr	ton/yr
BC-01	Tank Bottoms Circulation Blowcase (Central)	---	---	---	---	---	---	---	---	0.000	0.002
BC-02	Flare Pit and Equipment Skid Sump Blowcase (Central)	---	---	---	---	---	---	---	---	0.000	0.001
BC-03	Glycol Steam Converter Blowcase (Well 14-2 and 23-1)	---	---	---	---	---	---	---	---	0.000	0.000
BC-04	Platform Drain Blowcase (Well 14-2 and 23-1)	---	---	---	---	---	---	---	---	0.000	0.000
BC-05	Platform Drain Blowcase (Well 14-2 and 23-1)	---	---	---	---	---	---	---	---	0.000	0.000
BC-06	Wellhead Sump Blowcase (Well 14-2)	---	---	---	---	---	---	---	---	0.000	0.000
BC-07	Glycol Steam Blowcase (Well 28-1)	---	---	---	---	---	---	---	---	0.000	0.001
BC-08	Platform Drain Blowcase (Well 28-1)	---	---	---	---	---	---	---	---	0.000	0.000
BC-09	Platform Drain Blowcase (Well 28-1)	---	---	---	---	---	---	---	---	0.000	0.000
BC-10	Well Tree Sump Blowcase (Well 28-1)	---	---	---	---	---	---	---	---	0.000	0.000
BC-11	Glycol Steam Blowcase (Well 29-1 and Lac 29-2)	---	---	---	---	---	---	---	---	0.000	0.001
BC-12	Platform Drain Blowcase (Well 29-1)	---	---	---	---	---	---	---	---	0.000	0.000
BC-13	Platform Drain Blowcase (Well 29-1)	---	---	---	---	---	---	---	---	0.000	0.000
BC-14	Well Tree Sump Blowcase (Well 29-1)	---	---	---	---	---	---	---	---	0.000	0.000
CE-01	Natural Gas Compressor	1,589	6,958	2,874	11,713	0.007	0.030	0.001	0.003	0.021	0.059
CH-01	Chemical Injection Pump (Well 26-1)	---	---	---	---	---	---	---	---	0.008	0.036
CH-02	Chemical Injection Pump (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	0.008	0.036
CH-03	Chemical Injection Pump (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	0.008	0.036
CH-04	Chemical Injection Pump (Well 14-2)	---	---	---	---	---	---	---	---	0.008	0.036
CH-05	Chemical Injection Pump (Well 23-1)	---	---	---	---	---	---	---	---	0.008	0.036
CH-06	Chemical Injection Pump (Well 23-1)	---	---	---	---	---	---	---	---	0.008	0.036
CH-07	Chemical Injection Pump (Central)	---	---	---	---	---	---	---	---	0.008	0.036
FE-01	Fugitive Emissions (Central)	---	---	---	---	---	---	---	---	0.008	0.036
FE-02	Fugitive Emissions (Wells 14-2 and 23-1)	---	---	---	---	---	---	---	---	0.446	1.853
FE-03	Fugitive Emissions (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	0.229	0.768
FE-04	Fugitive Emissions (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	0.156	0.788
HE-01	Heater Treater	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.005	0.024
FL-01	Combustion Flare	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR-01	Glycol Reboiler Burner (Wells 14-2 and 23-1)	0.012	0.054	0.010	0.045	0.001	0.004	0.000	0.001	0.001	0.003
GR-02	Glycol Reboiler Burner (Well 26-1)	0.025	0.107	0.021	0.090	0.002	0.008	0.000	0.001	0.001	0.006
GR-03	Glycol Reboiler Burner (Wells 29-1 and 29-2)	0.025	0.107	0.021	0.090	0.002	0.008	0.000	0.001	0.001	0.006
LC-01	Wellhead 3200 Level Controllers (Central)	---	---	---	---	---	---	---	---	0.010	0.043
LC-02	Wellhead 3200 Level Controllers (Central)	---	---	---	---	---	---	---	---	0.019	0.081
LC-03	Wellhead 1001 Level Controllers (Wells 14-2 and 23-1)	---	---	---	---	---	---	---	---	0.000	0.000
LC-04	Wellhead 1001 Level Controllers (Wells 14-2 and 23-1)	---	---	---	---	---	---	---	---	0.012	0.054
LC-05	Wellhead 3200 Level Controllers (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	0.006	0.027
LC-06	Wellhead 1001 Level Controllers (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	0.012	0.054
LC-07	Wellhead 3200 Level Controllers (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	0.006	0.027
LE-01	Tank Truck Loading	---	---	---	---	---	---	---	---	10.710	4.356
LH-01	Line Heater (Well 26-1)	0.049	0.215	0.041	0.180	0.004	0.016	0.000	0.002	0.003	0.012
LH-02	Line Heater (Well 26-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.005	0.024
LH-03	Line Heater (Well 29-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.005	0.024
LH-04	Line Heater (Well 29-2)	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.005	0.024
LH-05	Line Heater (Well 23-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.005	0.024
T-01	Oil Storage Tank #512	---	---	---	---	---	---	---	---	4.364	19.116
T-02	Oil Storage Tank #513	---	---	---	---	---	---	---	---	4.364	19.116
T-03	Oil Storage Tank #514	---	---	---	---	---	---	---	---	4.364	19.116
T-04	Produced Water Storage Tank #515	---	---	---	---	---	---	---	---	0.131	0.574
T-05	Produced Water Storage Tank #516	---	---	---	---	---	---	---	---	0.131	0.574
T-06	Produced Water Storage Tank #517	---	---	---	---	---	---	---	---	0.131	0.574
GV-01	Glycol Still Column (Wells 14-2 and 23-1)	---	---	---	---	---	---	---	---	---	---
GV-02	Glycol Still Column (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	---	---
GV-03	Glycol Still Column (Well 26-1)	---	---	---	---	---	---	---	---	---	---
GV-04	Glycol Still Column (Well 23-1)	---	---	---	---	---	---	---	---	---	---
GV-05	Glycol Still Column (Well 23-1)	---	---	---	---	---	---	---	---	---	---
GV-06	Glycol Still Column (Well Breaker #1)	---	---	---	---	---	---	---	---	---	---
GV-07	Glycol Still Column (Well Little Lake Miscel)	---	---	---	---	---	---	---	---	---	---
GV-08	Glycol Still Column (Well Little Lake Miscel)	2,189	9,558	3,179	13,922	0.052	0.230	0.006	0.028	25.433	88.642

Criteria Pollutants

EU ID	Description	Criteria Pollutants				Criteria Pollutants				Criteria Pollutants				
		NO _x t/yr	CO t/yr	PM10 t/yr	SO ₂ t/yr	NO _x t/yr	CO t/yr	PM10 t/yr	SO ₂ t/yr	NO _x t/yr	CO t/yr	PM10 t/yr	SO ₂ t/yr	VOC t/yr
BC-01	Tank Bottoms Circulation Blower (Central)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-02	Flare Pit and Equipment Skid Sump Blower (Central)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-03	Glycol Steam Converter Blowers (Wells 14-2 and 23-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-04	Platform Drain Blower (Well 14-2 and 23-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-05	Platform Drain Blower (Well 14-2 and 23-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-06	Wellhead Sump Blower (Well 14-2)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-07	Glycol Steam Blower (Well 26-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-08	Platform Drain Blower (Well 26-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-09	Platform Drain Blower (Well 26-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-10	Well Tree Sump Blower (Well 26-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-11	Glycol Steam Blower (Wells 29-1 and Lac 29-2)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-12	Platform Drain Blower (Well 29-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-13	Platform Drain Blower (Well 29-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
BC-14	Well Tree Sump Blower (Well 29-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
CE-01	Natural Gas Compressor	1.589	6.958	2.674	11.713	0.007	0.030	0.001	0.003	---	---	---	---	---
CH-01	Chemical Injection Pump (Well 26-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
CH-02	Chemical Injection Pump (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	---	---	---	---	---
CH-03	Chemical Injection Pump (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	---	---	---	---	---
CH-04	Chemical Injection Pump (Well 14-2)	---	---	---	---	---	---	---	---	---	---	---	---	---
CH-05	Chemical Injection Pump (Well 23-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
CH-06	Chemical Injection Pump (Well 23-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
CH-07	Chemical Injection Pump (Central)	---	---	---	---	---	---	---	---	---	---	---	---	---
FE-01	Fugitive Emissions (Central)	---	---	---	---	---	---	---	---	---	---	---	---	---
FE-02	Fugitive Emissions (Well 14-2 and 23-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
FE-03	Fugitive Emissions (Well 26-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
FE-04	Fugitive Emissions (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	---	---	---	---	---
HT-01	Heater Triangulate	---	---	---	---	---	---	---	---	---	---	---	---	---
FI-01	Combustion Flare	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	---	---	---	---	---
GR-01	Glycol Reboiler Burner (Wells 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	---	---	---	---
GR-02	Glycol Reboiler Burner (Well 26-1)	0.012	0.054	0.010	0.045	0.001	0.004	0.000	0.000	---	---	---	---	---
GR-03	Glycol Reboiler Burner (Wells 29-1 and 29-2)	0.025	0.107	0.021	0.090	0.002	0.008	0.000	0.001	---	---	---	---	---
LC-01	Norriseal 1001 Level Controllers (Central)	0.025	0.107	0.021	0.090	0.002	0.008	0.000	0.001	---	---	---	---	---
LC-02	Mallard 1200 Level Controllers (Central)	---	---	---	---	---	---	---	---	---	---	---	---	---
LC-03	Norriseal 1001 Level Controllers (Wells 14-2 and 23-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
LC-04	Norriseal 1001 Level Controllers (Well 26-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
LC-05	Mallard 1200 Level Controllers (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	---	---	---	---	---
LC-06	Norriseal 1001 Level Controllers (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	---	---	---	---	---
LC-07	Mallard 1200 Level Controllers (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	---	---	---	---	---
LF-01	Tank Truck Loading	---	---	---	---	---	---	---	---	---	---	---	---	---
LH-01	Line Heater (Well 14-2)	0.049	0.215	0.041	0.180	0.004	0.016	0.000	0.002	0.003	0.012	0.005	0.024	0.000
LH-02	Line Heater (Well 26-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.005	0.024	0.005	0.024	0.000
LH-03	Line Heater (Well 29-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.005	0.024	0.005	0.024	0.000
LH-04	Line Heater (Well 29-2)	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.005	0.024	0.005	0.024	0.000
LH-05	Line Heater (Well 23-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.005	0.024	0.005	0.024	0.000
T-01	Oil Storage Tank #512	---	---	---	---	---	---	---	---	---	---	---	---	---
T-02	Oil Storage Tank #513	---	---	---	---	---	---	---	---	---	---	---	---	---
T-03	Oil Storage Tank #514	---	---	---	---	---	---	---	---	---	---	---	---	---
T-04	Produced Water Storage Tank #515	---	---	---	---	---	---	---	---	---	---	---	---	---
T-05	Produced Water Storage Tank #516	---	---	---	---	---	---	---	---	---	---	---	---	---
T-06	Produced Water Storage Tank #517	---	---	---	---	---	---	---	---	---	---	---	---	---
GV-01	Glycol Still Column (Wells 14-2 and 23-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
GV-02	Glycol Still Column (Wells 29-1 and 29-2)	---	---	---	---	---	---	---	---	---	---	---	---	---
GV-03	Glycol Still Column (Well 26-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
GV-04	Glycol Still Column (Well 13-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
GV-05	Glycol Still Column (Well Brown #1)	---	---	---	---	---	---	---	---	---	---	---	---	---
GV-06	Glycol Still Column (Well Coastal Club 6-1)	---	---	---	---	---	---	---	---	---	---	---	---	---
GV-07	Glycol Still Column (Well Little Lake Misere)	---	---	---	---	---	---	---	---	---	---	---	---	---
		2.189	9.589	3.179	13.922	0.052	0.230	0.006	0.028	28.322	82.465	---	---	---

Toxic Air Pollutants

EU ID	Description	Benzene		Toluene		Ethylbenzene		Xylenes		n-Heptane		HPS	
		lb/yr	ton/yr	lb/yr	ton/yr	lb/yr	ton/yr	lb/yr	ton/yr	lb/yr	ton/yr	lb/yr	ton/yr
BC-01	Tank Bottoms Circulation Blowase (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-02	Flare Pit and Equipment Skid Sump Blowase (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-03	Glycol Steam Converted Blowase (Well 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-04	Platform Drain Blowase (Well 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-05	Platform Drain Blowase (Well 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-06	Wellhead Sump Blowase (Well 14-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-07	Glycol Steam Blowase (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-08	Platform Drain Blowase (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-09	Platform Drain Blowase (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-10	Well Tree Sump Blowase (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-11	Glycol Steam Blowase (Well 29-1 and Lac-29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-12	Platform Drain Blowase (Well 29-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-13	Platform Drain Blowase (Well 29-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-14	Well Tree Sump Blowase (Well 29-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CE-01	Natural Gas Compressor	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-01	Chemical Injection Pump (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-02	Chemical Injection Pump (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-03	Chemical Injection Pump (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-04	Chemical Injection Pump (Well 14-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-05	Chemical Injection Pump (Well 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-06	Chemical Injection Pump (Well 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-07	Chemical Injection Pump (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FE-01	Fugitive Emissions (Central)	0.002	0.008	0.001	0.005	0.000	0.001	0.000	0.001	0.024	0.105	0.000	0.000
FE-02	Fugitive Emissions (Wells 14-2 and 23-1)	0.001	0.004	0.001	0.003	0.000	0.000	0.000	0.000	0.013	0.056	0.000	0.000
FE-03	Fugitive Emissions (Well 26-1)	0.001	0.003	0.000	0.002	0.000	0.000	0.000	0.000	0.009	0.038	0.000	0.000
FE-04	Fugitive Emissions (Wells 29-1 and 29-2)	0.001	0.003	0.000	0.002	0.000	0.000	0.000	0.000	0.009	0.039	0.000	0.000
HT-01	Heater Treater	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.008	0.000	0.000
FL-01 2	Combustion Flare	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR-01	Glycol Reboiler Burner (Wells 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR-02	Glycol Reboiler Burner (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR-03	Glycol Reboiler Burner (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-01	Norissal 1001 Level Controllers (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-02	Mallard 3200 Level Controllers (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-03	Norissal 1001 Level Controllers (Wells 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-04	Norissal 1001 Level Controllers (Wells 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-05	Mallard 3200 Level Controllers (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-06	Norissal 1001 Level Controllers (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-07	Mallard 3200 Level Controllers (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LF-01	Tank Truck Loading	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LH-01	Line Heater (Well 14-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.004	0.000	0.000
LH-02	Line Heater (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.008	0.000	0.000
LH-03	Line Heater (Well 29-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.008	0.000	0.000
LH-04	Line Heater (Well 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.008	0.000	0.000
LH-05	Line Heater (Well 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.008	0.000	0.000
T-01	Oil Storage Tank #512	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T-02	Oil Storage Tank #513	0.017	0.075	0.012	0.054	0.003	0.011	0.007	0.032	0.064	0.280	0.000	0.000
T-03	Oil Storage Tank #514	0.017	0.075	0.012	0.054	0.003	0.011	0.007	0.032	0.064	0.280	0.000	0.000
T-04	Produced Water Storage Tank #515	0.017	0.075	0.012	0.054	0.003	0.011	0.007	0.032	0.064	0.280	0.000	0.000
T-05	Produced Water Storage Tank #516	0.002	0.008	0.001	0.004	0.000	0.001	0.000	0.002	0.002	0.009	0.000	0.000
T-06	Produced Water Storage Tank #517	0.002	0.008	0.001	0.004	0.000	0.001	0.000	0.002	0.002	0.009	0.000	0.000
GV-01	Glycol Still Column (Wells 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-02	Glycol Still Column (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-03	Glycol Still Column (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-04	Glycol Still Column (Well 13-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-05	Glycol Still Column (Well Brewer #1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-06	Glycol Still Column (Well Coastal Club 6-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-07	Glycol Still Column (Well Little Lake Misere)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		0.062	0.271	0.043	0.190	0.009	0.038	0.024	0.106	0.263	1.153	0.000	0.000

Notes:

- 1 There are no emissions associated with these blowases which handle only rainwater. These emission units should be removed from the permit.
- 2 The flare has not operated since installation. VOC emissions vented to the flare have been vented, not combusted. These emissions are accounted for in the table above for the individual emission units where they are generated.
- 3 All glycol dehydrator still emissions are routed to a pipeline where they condense and are disposed of via a commercial disposal company.

Criteria Pollutants

EUIID	Description	NO _x		CO		PM10		SO ₂		VOC	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
BC-01	Tank Bottoms Circulation Blowcase (Central)										
BC-02	Flare Pit and Equipment Skid Sump Blowcase (Central)										
BC-03	Glycol Still Column (Wells 14-2 and 23-1)										
BC-04	Glycol Still Column (Wells 14-2 and 23-1)										
BC-05	Platform Drain Blowcase (Well 14-2 and 23-1)										
BC-06	Wellhead Sump Blowcase (Well 14-2)										
BC-07	Glycol Steam Blowcase (Well 26-1)										
BC-08	Platform Drain Blowcase (Well 26-1)										
BC-09	Platform Drain Blowcase (Well 26-1)										
BC-10	Well Tree Sump Blowcase (Well 26-1)										
BC-11	Glycol Steam Blowcase (Well 26-1 and Lac 28-2)										
BC-12	Platform Drain Blowcase (Well 29-1)										
BC-13	Platform Drain Blowcase (Well 29-1)										
BC-14	Well Tree Sump Blowcase (Well 29-1)										
CE-01	Natural Gas Compressor	1.989	6.958	2.674	11.713	0.007	0.030	0.001	0.003		
CE-02	Chemical Injection Pump (Well 26-1)										
CE-03	Chemical Injection Pump (Wells 26-1 and 28-2)										
CE-04	Chemical Injection Pump (Wells 26-1 and 28-2)										
CE-05	Chemical Injection Pump (Well 14-2)										
CE-06	Chemical Injection Pump (Well 23-1)										
CE-07	Chemical Injection Pump (Well 23-1)										
FE-01	Fugitive Emissions (Central)										
FE-02	Fugitive Emissions (Wells 14-2 and 23-1)										
FE-03	Fugitive Emissions (Well 26-1)										
FE-04	Fugitive Emissions (Wells 29-1 and 29-2)										
HT-01	Heater Header	0.429	0.361	0.082	0.361	0.007	0.033	0.001	0.004	0.180	0.758
HT-02	Heater Header	0.098	0.082	0.021	0.082	0.001	0.004	0.000	0.000	0.006	0.024
GR-01	Glycol Reboiler Burner (Wells 14-2 and 23-1)	0.012	0.054	0.010	0.045	0.001	0.004	0.000	0.001	0.001	0.003
GR-02	Glycol Reboiler Burner (Well 26-1)	0.025	0.107	0.021	0.090	0.002	0.008	0.000	0.001	0.001	0.003
GR-03	Glycol Reboiler Burner (Wells 26-1 and 28-2)	0.025	0.107	0.021	0.090	0.002	0.008	0.000	0.001	0.001	0.003
LC-01	Norrieal 1001 Level Controllers (Central)										
LC-02	Mallard 3200 Level Controllers (Central)										
LC-03	Norrieal 1001 Level Controllers (Wells 14-2 and 23-1)										
LC-04	Norrieal 1001 Level Controllers (Well 26-1)										
LC-05	Mallard 3200 Level Controllers (Well 26-1)										
LC-06	Norrieal 1001 Level Controllers (Wells 26-1 and 29-2)										
LC-07	Mallard 3200 Level Controllers (Wells 29-1 and 29-2)										
LT-01	Tank Truck Loading										
LH-01	Line Heater (Well 14-2)	0.429	0.361	0.082	0.361	0.007	0.033	0.001	0.004	0.180	0.758
LH-02	Line Heater (Well 26-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.006	0.024
LH-03	Line Heater (Well 26-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.006	0.024
LH-04	Line Heater (Well 23-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.006	0.024
LH-05	Line Heater (Well 23-1)	0.098	0.429	0.082	0.361	0.007	0.033	0.001	0.004	0.006	0.024
T-01	Oil Storage Tank #512										
T-02	Oil Storage Tank #513										
T-03	Oil Storage Tank #514										
T-04	Produced Water Storage Tank #515										
T-05	Produced Water Storage Tank #516										
T-06	Produced Water Storage Tank #517										
GV-01	Glycol Still Column (Wells 14-2 and 23-1)										
GV-02	Glycol Still Column (Wells 14-2 and 23-1)										
GV-03	Glycol Still Column (Well 26-1)										
GV-04	Glycol Still Column (Wells 26-1 and 28-2)										
GV-05	Glycol Still Column (Well Header #1)										
GV-06	Glycol Still Column (Well Coastal Club 6-1)										
GV-07	Glycol Still Column (Well Little Lake Misere)										
		2.189	9.589	3.179	13.922	0.052	0.230	0.006	0.028	29.331	86.376

EJ ID	Description	Toxic Air Pollutants							HPS	
		Benzene lb/hr	1,1-DCE lb/hr	1,2-DCE lb/hr	Ethylbenzene lb/hr	Xylenes lb/hr	o-Hexane lb/hr	Styrene lb/hr		
BC-01	Tank Bottoms Circulation Blowcase (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-02	Flare Pit and Equipment Skid Sump Blowcase (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-03	Glycol Steam Converted Blowcase (Well 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-04	Platform Drain Blowcase (Well 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-05	Platform Drain Blowcase (Well 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-06	Wellhead Sump Blowcase (Well 14-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-07	Glycol Steam Blowcase (Well 28-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-08	Platform Drain Blowcase (Well 28-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-09	Platform Drain Blowcase (Well 28-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-10	Well Tree Sump Blowcase (Well 28-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-11	Glycol Steam Blowcase (Well 29-1 and Lac 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-12	Platform Drain Blowcase (Well 29-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-13	Platform Drain Blowcase (Well 29-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BC-14	Well Tree Sump Blowcase (Well 29-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CE-01	Natural Gas Compressor	0.001	0.005	0.000	0.000	0.002	0.000	0.000	0.001	0.000
G-01	Chemical Injection Pump (Well 28-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
G-02	Chemical Injection Pump (Wells 29-1 and 28-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
G-03	Chemical Injection Pump (Wells 29-1 and 28-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
G-04	Chemical Injection Pump (Well 14-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
G-05	Chemical Injection Pump (Well 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
G-06	Chemical Injection Pump (Well 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
G-07	Chemical Injection Pump (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FE-01	Fugitive Emissions (Central)	0.002	0.008	0.001	0.005	0.000	0.001	0.000	0.001	0.024
FE-02	Fugitive Emissions (Well 28-2 and 23-1)	0.001	0.003	0.000	0.002	0.000	0.000	0.000	0.001	0.038
FE-03	Fugitive Emissions (Well 28-2 and 23-1)	0.001	0.003	0.000	0.002	0.000	0.000	0.000	0.001	0.038
FE-04	Fugitive Emissions (Wells 29-1 and 29-2)	0.001	0.003	0.000	0.002	0.000	0.000	0.000	0.001	0.039
HI-01	Heater Treater	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.008
FL-01	Combustion Flare	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.008
GR-01	Glycol Reboiler Burner (Wells 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002
GR-02	Glycol Reboiler Burner (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
GR-03	Glycol Reboiler Burner (Wells 28-1 and 28-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
LC-01	Norrisal 1001 Level Controllers (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
LC-02	Mallard 3200 Level Controllers (Central)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
LC-03	Norrisal 1001 Level Controllers (Wells 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-04	Norrisal 1001 Level Controllers (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
LC-05	Mallard 3200 Level Controllers (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-06	Norrisal 1001 Level Controllers (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
LC-07	Mallard 3200 Level Controllers (Wells 29-1 and 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LF-01	Tank Truck Loading	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LH-01	Line Heater (Well 14-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.004	0.008
LH-02	Line Heater (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.008	0.008
LH-03	Line Heater (Well 28-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.008	0.008
LH-04	Line Heater (Well 29-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.008	0.008
LH-05	Line Heater (Well 28-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.008	0.008
LH-06	Line Heater (Well 28-1)	0.016	0.070	0.012	0.052	0.003	0.011	0.007	0.031	0.274
LH-07	Oil Storage Tank #412	0.016	0.070	0.012	0.052	0.003	0.011	0.007	0.031	0.274
LH-08	Oil Storage Tank #413	0.016	0.070	0.012	0.052	0.003	0.011	0.007	0.031	0.274
LH-09	Oil Storage Tank #414	0.016	0.070	0.012	0.052	0.003	0.011	0.007	0.031	0.274
T-03	Produced Water Storage Tank #515	0.007	0.030	0.003	0.015	0.000	0.002	0.001	0.006	0.032
T-04	Produced Water Storage Tank #516	0.007	0.030	0.003	0.015	0.000	0.002	0.001	0.006	0.032
T-05	Produced Water Storage Tank #517	0.007	0.030	0.003	0.015	0.000	0.002	0.001	0.006	0.032
T-06	Produced Water Storage Tank #518	0.007	0.030	0.003	0.015	0.000	0.002	0.001	0.006	0.032
GV-01	Glycol Still Column (Wells 14-2 and 23-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-02	Glycol Still Column (Wells 28-1 and 28-2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-03	Glycol Still Column (Well 26-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-04	Glycol Still Column (Well 13-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-05	Glycol Still Column (Well Brewer #1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-06	Glycol Still Column (Well Coastal Club 6-1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-07	Glycol Still Column (Well Little Lake Misere)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-08	Glycol Still Column (Well Little Lake Misere)	0.075	0.327	0.049	0.217	0.009	0.041	0.027	0.117	0.277
GV-09	Glycol Still Column (Well Little Lake Misere)	0.075	0.327	0.049	0.217	0.009	0.041	0.027	0.117	0.277

Notes:
 1 There are no emissions associated with these blowcases which handle only rainwater. These emission units should be removed from the permit.
 2 The flare has not operated since installation. VOC emissions vented to the flare have been vented, not combusted. These emissions are accounted for in the table above for the individual emission units where they are generated.
 3 All glycol dehydrator still emissions are routed to a pipeline where they condense and are disposed of via a commercial disposal company.

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: UWE Lacassane T-01 2010 (Max)
City:
State:
Company:
Type of Tank: Vertical Fixed Roof Tank
Description: UWE Lacassane T-01 2010 (Max)

Tank Dimensions

Shell Height (ft): 20.00
Diameter (ft): 12.00
Liquid Height (ft): 18.00
Avg. Liquid Height (ft): 10.00
Volume (gallons): 15,228.53
Turnovers: 413.65
Net Throughput(gal/yr): 6,299,237.00
Is Tank Heated (y/n): N

Paint Characteristics

Shell Color/Shade: Gray/Medium
Shell Condition: Good
Roof Color/Shade: Gray/Medium
Roof Condition: Good

Roof Characteristics

Type: Cone
Height (ft): 0.00
Slope (ft/ft) (Cone Roof): 0.06

Breather Vent Settings

Vacuum Settings (psig): -0.03
Pressure Settings (psig): 0.03

Meteorological Data used in Emissions Calculations: Lake Charles, Louisiana (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

UWE Lacassane T-01 2010 (Max) - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg	Min	Max		Avg	Min	Max					
Crude oil (RVP 5)	All	77.32	66.93	87.70	70.83	3.9995	3.2915	4.8239	50.0000			207.00	Option 4: RVP=5
Benzene						1.8527	1.4110	2.4025	78.1100	0.0060	0.0115	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1936	0.1376	0.2679	106.1700	0.0040	0.0008	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.9508	2.2850	3.7668	86.1700	0.0040	0.0122	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.5542	0.4082	0.7419	92.1300	0.0100	0.0057	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						4.2787	4.2501	4.2535	49.3088	0.9620	0.9674	217.18	
Xylene (-m)						0.1621	0.1149	0.2252	106.1700	0.0140	0.0023	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

UWE Lacassane T-01 2010 (Max) - Vertical Fixed Roof Tank

Components	Losses(lbs)		Total Emissions
	Working Loss	Breathing Loss	
Crude oil (RVP 5)	5,380.49	989.15	6,369.64
Hexane (-n)	65.74	12.09	77.82
Benzene	61.91	11.38	73.30
Toluene	30.87	5.67	36.54
Ethylbenzene	4.31	0.79	5.10
Xylene (-m)	12.64	2.32	14.97
Unidentified Components	5,205.02	956.89	6,161.91

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	UWE Lacassane PWT 2010
City:	
State:	
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	UWE Lacassane PWT 2010

Tank Dimensions

Shell Height (ft):	20.00
Diameter (ft):	12.00
Liquid Height (ft) :	18.00
Avg. Liquid Height (ft):	10.00
Volume (gallons):	15,228.53
Turnovers:	8.06
Net Throughput(gal/yr):	122,668.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition:	Good
Roof Color/Shade:	Gray/Medium
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Lake Charles, Louisiana (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

UWE Lacassane PWT 2010 - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg	Min.	Max.		Avg	Min.	Max.					
Crude oil (RVP 5)	All	77.32	66.93	87.70	70.83	3.9995	3.2915	4.8239	50.0000			207.00	Option 4: RVP=5
Benzene						1.8527	1.4110	2.4025	78.1100	0.0060	0.0115	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1936	0.1376	0.2679	106.1700	0.0040	0.0008	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.9508	2.2850	3.7668	86.1700	0.0040	0.0122	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.5542	0.4082	0.7419	92.1300	0.0100	0.0057	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						4.2787	4.2501	4.2535	49.3088	0.9620	0.9674	217.18	
Xylene (-m)						0.1621	0.1149	0.2252	106.1700	0.0140	0.0023	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

UWE Lacassane PWT 2010 - Vertical Fixed Roof Tank

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Crude oil (RVP 5)	438.04	985.23	1,423.28
Hexane (-n)	5.35	12.04	17.39
Benzene	5.04	11.34	16.38
Toluene	2.51	5.65	8.17
Ethylbenzene	0.35	0.79	1.14
Xylene (-m)	1.03	2.31	3.34
Unidentified Components	423.76	953.10	1,376.86

Attachment 5

John N. John Emission Calculations

Emission Summary

EU ID	Description	Criteria Pollutants											
		NOx		CO		PM10		SO2		VOC			
		lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr		
BC-01	Rainwater Blowcase	--	--	--	--	--	--	--	--	--	--	--	--
BC-02	Glycol Still Column Blowcase	--	--	--	--	--	--	--	--	0.000	0.000	0.000	0.000
CI-01	Chemical Injection Pump	--	--	--	--	--	--	--	--	0.005	0.022	0.005	0.022
DP-01	Tank Bottom Circulating Pump	--	--	--	--	--	--	--	--	4.408	0.022	4.408	0.022
FE-01	Fugitive Emissions	--	--	--	--	--	--	--	--	0.189	0.829	0.189	0.829
Flash-01	Heater Treater Flash Gas	--	--	--	--	--	--	--	--	0.110	0.484	0.110	0.484
GR-01	Glycol Reboiler Burner	0.012	0.054	0.010	0.045	0.001	0.004	0.000	0.001	0.001	0.003	0.001	0.003
HT-01	Heater Treater	0.049	0.215	0.041	0.180	0.004	0.016	0.000	0.002	0.003	0.012	0.003	0.012
LC-01	Norrisal 1001 Level Controllers	--	--	--	--	--	--	--	--	0.001	0.006	0.001	0.006
LC-02	Norrisal 1100 Level Controllers	--	--	--	--	--	--	--	--	0.003	0.013	0.003	0.013
GV-01	Glycol Still Column	--	--	--	--	--	--	--	--	0.031	0.136	0.031	0.136
LF-01	Tank Truck Loading	--	--	--	--	--	--	--	--	10.710	0.004	10.710	0.004
LH-01	Line Heater	0.092	0.404	0.039	0.172	0.007	0.033	0.001	0.004	0.005	0.024	0.005	0.024
LH-02	Line Heater	0.092	0.404	0.039	0.172	0.007	0.033	0.001	0.004	0.005	0.024	0.005	0.024
T-01	Gun Barrel Tank	--	--	--	--	--	--	--	--	0.119	0.523	0.119	0.523
T-02 (2)	Oil Storage Tank	--	--	--	--	--	--	--	--	0.125	0.548	0.125	0.548
T-03	Produced Water Storage Tank	0.246	1.076	0.130	0.569	0.020	0.086	0.002	0.011	15.836	3.171	0.002	0.011

EU ID	Description	Toxic Air Pollutants											
		Benzene		Toluene		Ethylbenzene		Xylene		n-Hexane			
		lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr		
BC-01	Rainwater Blowcase ¹	--	--	--	--	--	--	--	--	--	--	--	--
BC-02	Glycol Still Column Blowcase	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CI-01	Chemical Injection Pump	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001
DP-01	Tank Bottom Circulating Pump	0.035	0.000	0.020	0.000	0.003	0.000	0.013	0.000	0.106	0.001	0.013	0.000
FE-01	Fugitive Emissions	0.001	0.003	0.001	0.002	0.000	0.000	0.000	0.001	0.012	0.051	0.000	0.001
Flash-01	Heater Treater Flash Gas	0.000	0.001	0.000	0.001	0.000	0.000	0.000	0.001	0.001	0.006	0.000	0.001
GR-01	Glycol Reboiler Burner	0.000	0.000	0.000	0.000	--	--	--	--	0.000	0.001	0.000	0.001
HT-01	Heater Treater	0.000	0.000	0.000	0.000	--	--	--	--	0.001	0.004	0.000	0.001
LC-01	Norrisal 1001 Level Controllers	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LC-02	Norrisal 1100 Level Controllers	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GV-01	Glycol Still Column	0.006	0.025	0.005	0.023	0.001	0.005	0.007	0.029	0.000	0.002	0.000	0.002
LF-01	Tank Truck Loading	--	--	--	--	--	--	--	--	--	--	--	--
LH-01	Line Heater	0.000	0.000	0.000	0.000	--	--	--	--	0.002	0.008	0.002	0.008
LH-02	Line Heater	0.000	0.000	0.000	0.000	--	--	--	--	0.002	0.008	0.002	0.008
T-01	Gun Barrel Tank	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T-02 (2)	Oil Storage Tank	0.001	0.006	0.001	0.003	0.000	0.000	0.000	0.001	0.001	0.006	0.000	0.001
T-03	Produced Water Storage Tank	0.001	0.006	0.001	0.003	0.000	0.000	0.000	0.001	0.000	0.002	0.000	0.001
		0.044	0.043	0.028	0.032	0.005	0.007	0.021	0.033	0.127	0.093	0.021	0.033

Notes:
¹ There are no emissions associated with the rainwater blowcase.

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Glycol Still Column Blowcase
 Emission Unit ID: BC-02
 Emission Unit Type: Blowcase

Input Data:

Blow case volume: 1.103 cubic feet Gas specific gravity: 0.614
 Driving gas pressure: 10 psig Blowdowns per year: 52

Calculations:

Gas Vented/blowdown = 0.000 scf
 Emissions/blowdown = 0.000 lb/blowdown
 Emissions/yr = 0.000 lb/yr
 0.0000 lb/hr
 0.0000 tpy

Component		Mole Fraction	Molecular Weight	Partial Mole Weight ¹	Weight Fraction ²	Average lbs/hour ³	Annual tons/year ⁴
Non-Regulated	Nitrogen	0.908%	28.013	0.254	0.014	0.000	0.000
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.000	0.000
	Methane	92.898%	16.043	14.904	0.841	0.000	0.000
	Ethane	3.491%	30.070	1.050	0.059	0.000	0.000
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	0.000	0.000
	Butanes	0.666%	58.124	0.387	0.022	0.000	0.000
	Pentanes	0.258%	72.151	0.186	0.010	0.000	0.000
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.000	0.000
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.000	0.000
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.000	0.000
	Nonanes	0.008%	128.260	0.010	0.001	0.000	0.000
	Decanes	0.023%	142.280	0.033	0.002	0.000	0.000
TOXIC AIR POLLUTANTS	N-Hexanes	0.039%	86.178	0.034	0.002	0.000	0.000
	Benzene	0.014%	78.114	0.011	0.001	0.000	0.000
	Toluene	0.007%	92.141	0.006	0.000	0.000	0.000
	Ethylbenzene	0.001%	106.168	0.001	0.000	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000	0.000
	Xylenes	0.004%	106.168	0.004	0.000	0.000	0.000
		100.000%					

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.000	0.000
Total Volatile Organic Compounds	0.000	0.000

Notes:

This blowcase handles rainwater and blowdown from the glycol steam condenser. Emissions from this blowcase are conservatively estimated using the profile of the separator gas.

¹ Partial Mole Weight = Mole Fraction * Molecular Weight

² Weight Fraction = Partial Mole Weight / Total Molecular Weight

³ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent

⁴ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Chemical Injection Pump
 Emission Unit ID: CI-01
 Emission Unit Type: Pneumatic Pump

Input Data:

Annual Operation 8760 hr/yr Gas specific gravity: 0.614
 Venting Rate 1.35 scfh
 Total Gas Vented 11826.0 scf/yr

Calculations:

Gas Vented Hourly = 0.063 lb/hr
 = 0.276 tpy

Component		Mole Fraction	Molecular Weight	Partial Mole Weight ¹	Weight Fraction ²	Average lbs/hour ³	Annual tons/year ⁴
Non-Regulated	Nitrogen	0.908%	28.013	0.254	0.014	0.001	0.004
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.000	0.002
	Methane	92.898%	16.043	14.904	0.841	0.053	0.232
	Ethane	3.491%	30.070	1.050	0.059	0.004	0.016
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	0.002	0.008
	Butanes	0.666%	58.124	0.387	0.022	0.001	0.006
	Pentanes	0.258%	72.151	0.186	0.010	0.001	0.003
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.000	0.002
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.000	0.001
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.000	0.000
	Nonanes	0.008%	128.260	0.010	0.001	0.000	0.000
	Decanes	0.023%	142.280	0.033	0.002	0.000	0.001
TOXIC AIR POLLUTANTS	N-Hexanes	0.039%	86.178	0.034	0.002	0.000	0.001
	Benzene	0.014%	78.114	0.011	0.001	0.000	0.000
	Toluene	0.007%	92.141	0.006	0.000	0.000	0.000
	Ethylbenzene	0.001%	106.168	0.001	0.000	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000	0.000
	Xylenes	0.004%	106.168	0.004	0.000	0.000	0.000
		100.000%					

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.000	0.001
Total Volatile Organic Compounds	0.005	0.022

Notes:

- ¹ Partial Mole Weight = Mole Fraction * Molecular Weight
- ² Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ³ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁴ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Tank Bottom Circulating Pump
 Emission Unit ID: DP-01

Emission Unit Type: Pneumatic Pump

Input Data:

Annual Operation 10 hr/yr Gas specific gravity: 0.614
 Venting Rate 1200 scfh

Calculations:

Gas Vented Hourly = 55.969 lb/hr
 = 0.280 tpy

Component		Mole Fraction	Molecular Weight	Partial Mole Weight ¹	Weight Fraction ²	Average lbs/hour ³	Annual tons/year ⁴
Non-Fluorinated	Nitrogen	0.908%	28.013	0.254	0.014	0.803	0.004
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.393	0.002
	Methane	92.898%	16.043	14.904	0.841	47.051	0.235
	Ethane	3.491%	30.070	1.050	0.059	3.314	0.017
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	1.652	0.008
	Butanes	0.666%	58.124	0.387	0.022	1.222	0.006
	Pentanes	0.258%	72.151	0.186	0.010	0.588	0.003
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.321	0.002
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.221	0.001
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.090	0.000
	Nonanes	0.008%	128.260	0.010	0.001	0.032	0.000
	Decanes	0.023%	142.280	0.033	0.002	0.103	0.001
TOXIC AIR POLLUTANTS	N-Hexanes	0.039%	86.178	0.034	0.002	0.106	0.001
	Benzene	0.014%	78.114	0.011	0.001	0.035	0.000
	Toluene	0.007%	92.141	0.006	0.000	0.020	0.000
	Ethylbenzene	0.001%	106.168	0.001	0.000	0.003	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000	0.000
	Xylenes	0.004%	106.168	0.004	0.000	0.013	0.000
		100.000%					

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.178	0.001
Total Volatile Organic Compounds	4.408	0.022

Notes:

- ¹ Partial Mole Weight = Mole Fraction * Molecular Weight
- ² Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ³ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁴ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Fugitive Emissions
 Emission Unit ID: FE-01

Emission Unit Type: Fugitive Emissions - Oil & Gas Production

Emission Summary

Compound	Emission Rate	
	Hourly (Lbs/Hr)	Annual ¹ (Tons/Year)
NONREGULATED POLLUTANTS	Methane	0.552
	Ethane	0.102
CRITERIA POLLUTANTS	VOC (total)	0.189
	VOC (non-TAP)	0.176
HAZARDOUS AIR POLLUTANTS	n-Hexane	0.012
	Benzene	0.001
	Toluene	0.001
	Ethylbenzene	0.000
	1, 2, 4 - Trimethylbenzene	
	Xylenes	0.000

Component Type	Gas Service			Liquid Service ²		
	Number	Emission Factor ⁴ (lb/day-component)	VOC Emissions (lb/day)	Number	Emission Factor ⁴ (lb/day-component)	VOC Emissions (lb/day)
Valves	16	0.24	3.84	30	0.13	3.90
Flanges	7	0.02	0.15	1	0.0058	0.01
Connectors	92	0.01	1.01	68	0.011	0.75
Open-ends	0	0.11	0.00	0	0.074	0.00
Other	14	0.47	6.58	10	0.4	4.00

TOTALS: *Gas Service* 11.58 Pounds per day *Liquid Service* 8.65 Pounds per day

Gas Service		Estimated Hydrocarbon Speciation ³	Hourly Emissions ¹ (Lbs/Hour)	Annual Emissions ² (Tons/Year)
NONREGULATED POLLUTANTS	Methane	68.7%	0.331	1.452
	Ethane	14.2%	0.069	0.300
CRITERIA POLLUTANTS	VOC (total)	17.1%	0.083	0.361
	VOC (non-toxic)	-	0.079	0.344
HAZARDOUS AIR POLLUTANTS	n-Hexane	0.693%	0.003	0.015
	Benzene	0.069%	0.000	0.001
	Toluene	0.038%	0.000	0.001
	Ethylbenzene	0.003%	0.000	0.000
	Xylenes	0.009%	0.000	0.000

Liquid Service		Estimated Hydrocarbon Speciation ³	Hourly Emissions ¹ (Lbs/Hour)	Annual Emissions ² (Tons/Year)
NONREGULATED POLLUTANTS	Methane	61.2%	0.221	0.967
	Ethane	9.2%	0.033	0.145
CRITERIA POLLUTANTS	VOC (total)	29.6%	0.107	0.467
	VOC (non-toxic)	-	0.097	0.427
HAZARDOUS AIR POLLUTANTS	n-Hexane	2.300%	0.008	0.036
	Benzene	0.121%	0.000	0.002
	Toluene	0.105%	0.000	0.002
	Ethylbenzene	0.016%	0.000	0.000
	Xylenes	0.033%	0.000	0.001

Notes:

- Hourly Emission Rate (Lbs/Hr) = (Estimated Speciation) * (Total Daily Emissions, MMscf/day) / (24 Hrs/day)
- Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (8760 Hr/Yr) / (2,000 Lbs/Ton)
- All non-gas service will be considered light oil service. Additional factors are available for water/oil and water service. However, the factors for light oil service provide more conservative estimation and therefore will be used.
- Table 1 and Table 2 of Method 1 in API Publication No. 4638 contains the EPA Emission Factors and Typical Speciation Fractions for calculating fugitive emissions in Gas and Light Liquid service.

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Heater Treater Flash Gas
 Emission Unit ID: Flash-01
 Emission Unit Type: Heater Treater Flash Gas

Input Data:

Oil API Gravity	48	
Separator Pressure (PSIG)	780	30
Separator Temperature (F)	65	110
Site Elevation (Feet above Mean Sea Level)	0	
Measured/Calculated Gas Specific Gravity	0.8575	
Calculated Atmospheric Pressure @ Site Elevation:	14.700	
Cubic Feet Vapor per Barrel Oil per Vasquez & Beggs Correlation:	377.07	10.42
Calculated GOR via Vasquez & Beggs:	366.65	
Actual Oil Production Rate (BOPD):	0.288	
Hours Operated per Year:	8760	

Calculations:

Total HC = GOR (scf/bbl) * Production (bbl/day) * Gas MW (lb/lb-mol) * 1/385 scf/lb-mole * 365 d/yr * 1 ton/2000 lbs
 = 1.24 tpy
 = 0.28 lb/hr
 = 6.81 lb/day

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ¹	Weight Fraction ²	Average lbs/hour ³	Annual tons/year ⁴	
Non-Regulated	Nitrogen	28.013	0.018	0.001	0.000	0.001	
	Carbon Dioxide	44.010	0.178	0.007	0.002	0.009	
	Methane	16.043	10.920	0.439	0.125	0.546	
	Ethane	30.070	4.076	0.164	0.047	0.204	
VOLATILE ORGANIC COMPOUNDS	Propane	44.097	4.059	0.163	0.046	0.203	
	Butanes	58.124	3.601	0.145	0.041	0.180	
	Pentanes	72.151	1.107	0.045	0.013	0.055	
	Hexanes (non-toxic)	86.178	0.415	0.017	0.005	0.021	
	Heptanes (non-toxic)	100.204	0.193	0.008	0.002	0.010	
	Octanes (non-toxic) +	114.231	0.073	0.003	0.001	0.004	
	Nonanes	128.260	0.024	0.001	0.000	0.001	
	Decanes	142.280	0.034	0.001	0.000	0.002	
	TOXIC AIR POLLUTANTS	N-Hexanes	86.178	0.116	0.005	0.001	0.006
		Benzene	78.114	0.019	0.001	0.000	0.001
Toluene		92.141	0.018	0.001	0.000	0.001	
Ethylbenzene		106.168	0.004	0.000	0.000	0.000	
2, 2, 4 - Trimethylpentane		114.231	0.000	0.000	0.000	0.000	
Xylenes		106.168	0.012	0.000	0.000	0.001	
100.000%							

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.002	0.008
Total Volatile Organic Compounds	0.110	0.484

Notes:

- Partial Mole Weight = Mole Fraction * Molecular Weight
- Weight Fraction = Partial Mole Weight / Total Molecular Weight
- Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

Vasquez-Beggs Constants	API Gravity < 30	API Gravity > 30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	25.724	23.931

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Glycol Reboiler Burner
 Emission Unit ID: GR-01

Emission Unit Type: Natural Gas Fired Heater

Rated Burner Rating: 0.13 MMBtu/hr
 Btu Value of Gas¹ 1105.6 Btu/scf
 Annual Hours of Operation 8760 hours/year

	Pollutant	Factor lb/MMscf	Avg. lbs/hr ²	Total tons/yr ³	Source of Factor
CRITERIA	NO _x	100.00	0.012	0.054	AP-42, Table 1.4-1, 7/98
	CO	84.00	0.010	0.045	AP-42, Table 1.4-1, 7/98
	TSP=PM ₁₀ =PM _{2.5}	7.60	0.001	0.004	AP-42, Table 1.4-2, 7/98
	SO ₂ ⁴	0.94	0.000	0.001	AP-42, Table 1.4-2, 7/98 ⁴
	VOC	5.50	0.001	0.003	AP-42, Table 1.4-2, 7/98
HAZARDOUS AIR POLLUTANTS	N-Hexanes ⁵	1.800	0.000	0.001	AP-42, Table 1.4-3, 7/98 ⁵
	Formaldehyde	0.075	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Acetaldehyde	-	-	-	No Emission Factor
	Benzene	0.002	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Toluene	0.003	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Ethylbenzene	-	-	-	No Emission Factor
	Xylenes	-	-	-	No Emission Factor
	Total HAP	-	0.000	0.001	

Notes:

- ¹ AP-42 factors are based upon an average fuel Btu value of 1020 Btu/scf. Emission factors are adjusted accordingly to account for a different value in the fuel rating.
- ² Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lbs/MMscf) * (Burner Rating, MMBtu/hr) * (Btu Value of Gas / 1020) / (Btu Value of Gas, Btu/scf)
- ³ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
- ⁴ AP-42 factor for SO₂ is based upon a fuel content of 2000 gr H₂S/MMscf or 3.2 ppmv. The factor is adjusted to 5 ppmv H₂S/MMscf to account for the maximum allowed sulfur in sweet natural gas.
- ⁵ Emission factor is listed as Hexane in AP-42. Assume all emissions reported are N-hexane as conservative estimate
- ⁶ N₂O emission factor is for uncontrolled emissions.
- ⁷ VOC-u stands for unspecified volatile organic compounds

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Heater Treater
 Emission Unit ID: HT-01

Emission Unit Type: Natural Gas Fired Heater

Rated Burner Rating: 0.50 MMBtu/hr
 Btu Value of Gas¹ 1105.6 Btu/scf
 Annual Hours of Operation 8760 hours/year

	Pollutant	Factor lb/MMscf	Avg. lbs/hr ²	Total tons/yr ³	Source of Factor
CRITERIA	NO _x	100.00	0.049	0.215	AP-42, Table 1.4-1, 7/98
	CO	84.00	0.041	0.180	AP-42, Table 1.4-1, 7/98
	TSP=PM ₁₀ =PM _{2.5}	7.60	0.004	0.016	AP-42, Table 1.4-2, 7/98
	SO ₂ ⁴	0.94	0.000	0.002	AP-42, Table 1.4-2, 7/98 ⁴
	VOC	5.50	0.003	0.012	AP-42, Table 1.4-2, 7/98
HAZARDOUS AIR POLLUTANTS	N-Hexanes ⁵	1.800	0.001	0.004	AP-42, Table 1.4-3, 7/98 ⁵
	Formaldehyde	0.075	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Acetaldehyde	-	-	-	No Emission Factor
	Benzene	0.002	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Toluene	0.003	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Ethylbenzene	-	-	-	No Emission Factor
	Xylenes	-	-	-	No Emission Factor
	Total HAP	-	0.001	0.004	

Notes:

- ¹ AP-42 factors are based upon an average fuel Btu value of 1020 Btu/scf. Emission factors are adjusted accordingly to account for a different value in the fuel rating.
- ² Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lbs/MMscf) * (Burner Rating, MMBtu/hr) * (Btu Value of Gas / 1020) / (Btu Value of Gas, Btu/scf)
- ³ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
- ⁴ AP-42 factor for SO₂ is based upon a fuel content of 2000 gr H₂S/MMscf or 3.2 ppmv. The factor is adjusted to 5 ppmv H₂S/MMscf to account for the maximum allowed sulfur in sweet natural gas.
- ⁵ Emission factor is listed as Hexane in AP-42. Assume all emissions reported are N-hexane as conservative estimate
- ⁶ N₂O emission factor is for uncontrolled emissions.
- ⁷ VOC-u stands for unspiciated volatile organic compounds

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Norriseal 1001 Level Controllers
 Emission Unit ID: LC-01
 Emission Unit Type: Gas operated pressure/level controllers
 Manufacturer Vent Rate¹ 0.2 standard cubic feet per hour
 Annual Hours of Operation 8760 hours/year
 Number of controllers 2 controllers

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵	
Non-Regulated	Nitrogen	0.908%	28.013	0.254	0.014	0.000	
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.001	
	Methane	92.898%	16.043	14.904	0.841	0.016	
	Ethane	3.491%	30.070	1.050	0.059	0.001	
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	0.001	
	Butanes	0.666%	58.124	0.387	0.022	0.000	
	Pentanes	0.258%	72.151	0.186	0.010	0.000	
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.000	
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.000	
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.000	
	Nonanes	0.008%	128.260	0.010	0.001	0.000	
	Decanes	0.023%	142.280	0.033	0.002	0.000	
	HAZARDOUS AIR POLLUTANTS	N-Hexanes	0.039%	86.178	0.034	0.002	0.000
		Benzene	0.014%	78.114	0.011	0.001	0.000
Toluene		0.007%	92.141	0.006	0.000	0.000	
Ethylbenzene		0.001%	106.168	0.001	0.000	0.000	
2, 2, 4 - Trimethylpentane		0.000%	114.231	0.000	0.000	0.000	
Xylenes		0.004%	106.168	0.004	0.000	0.000	

	lbs/hour	tons/year
Total Hazardous Air Pollutants	0.000	0.000
Total Volatile Organic Compounds	0.001	0.006

Notes:

- ¹ Manufacturer's vent rate is based upon information obtained directly from the manufacturer or as documented on the EPA Natural GasSTAR website.
- ² Partial Mole Weight = Mole Fraction * Molecular Weight
- ³ Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ⁴ Average Lbs/Hour = Manufacturer's Vent Rate (ft³/Hour) * Number of controllers * Component Partial Mole Fraction / (379 ft³ / mole)
- ⁵ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Norriseal 1100 Level Controllers
 Emission Unit ID: LC-02
 Emission Unit Type: Gas operated pressure/level controllers
 Manufacturer Vent Rate¹ 0.2 standard cubic feet per hour
 Annual Hours of Operation 8760 hours/year
 Number of controllers 4 controllers

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵
Non-Regulated	Nitrogen	0.908%	28.013	0.254	0.014	0.002
	Carbon Dioxide	0.283%	44.010	0.125	0.007	0.001
	Methane	92.898%	16.043	14.904	0.841	0.138
	Ethane	3.491%	30.070	1.050	0.059	0.010
VOLATILE ORGANIC COMPOUNDS	Propane	1.187%	44.097	0.523	0.030	0.005
	Butanes	0.666%	58.124	0.387	0.022	0.001
	Pentanes	0.258%	72.151	0.186	0.010	0.000
	Hexanes (non-toxic)	0.118%	86.178	0.102	0.006	0.000
	Heptanes (non-toxic)	0.070%	100.204	0.070	0.004	0.000
	Octanes (non-toxic) +	0.025%	114.231	0.029	0.002	0.000
	Nonanes	0.008%	128.260	0.010	0.001	0.000
	Decanes	0.023%	142.280	0.033	0.002	0.000
	N-Hexanes	0.039%	86.178	0.034	0.002	0.000
	HAZARDOUS AIR POLLUTANTS	Benzene	0.014%	78.114	0.011	0.001
Toluene		0.007%	92.141	0.006	0.000	0.000
Ethylbenzene		0.001%	106.168	0.001	0.000	0.000
2, 2, 4 - Trimethylpentane		0.000%	114.231	0.000	0.000	0.000
Xylenes		0.004%	106.168	0.004	0.000	0.000

	lbs/hour	tons/year
Total Hazardous Air Pollutants	0.000	0.001
Total Volatile Organic Compounds	0.003	0.013

Notes:

- ¹ Manufacturer's vent rate is based upon information obtained directly from the manufacturer or as documented on the EPA Natural GasSTAR website.
- ² Partial Mole Weight = Mole Fraction * Molecular Weight
- ³ Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ⁴ Average Lbs/Hour = Manufacturer's Vent Rate (ft³/Hour) * Number of controllers * Component Partial Mole Fraction / (379 ft³ / mole)
- ⁵ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description:	Tank Truck Loading
Emission Unit ID:	LF-01
Emission Unit Type:	Tank Truck Loading
Production Rate ¹	0.3 BOPD
Loading Rate ²	150 barrels per hour
Calculated Annual Hours of Operation ³	0.70 hours/year
Crude Oil Emission Factor ⁴	1.7 lbs VOC/1000 gal trans.
Hourly Emissions ⁵	10.71 lbs/hour
Annual Emission Rate ⁶	0.004 tons/year

Notes:

- ¹ Production Rate is the estimated facility production rate on a daily basis.
- ² The standard loading rate of a tanker truck is 150 barrels per hour
- ³ The annual oil production rate limits the loading potential at the site. Therefore, emissions cannot be calculated on an annual time of 8760 hours per year. Annual Hours of Operation = (Production Rate, Bbl/day) * (365 days/year) / (Loading rate, Bbl/Hr)
- ⁴ Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lb/1000 gallons transferred) * (Loading Rate, Bbl/Hr.) * (42 gallons per barrel)
- ⁵ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
- ⁶ According to AP-42, Table 5.2-5, the uncontrolled organic emission factor for Tank Trucks is 2 lb/1000 gallons transferred. According to note (a) of this table, 15% of the total organic factor can be removed to account for methane/ethane emissions.

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Line Heater
 Emission Unit ID: LH-01

Emission Unit Type: Natural Gas Fired Heater

Rated Burner Rating: 1.00 MMBtu/hr
 Btu Value of Gas¹ 1105.6 Btu/scf
 Annual Hours of Operation 8760 hours/year

	Pollutant	Factor lb/MMscf	Avg. lbs/hr ²	Total tons/yr ³	Source of Factor
CRITERIA	NO _x	94.00	0.092	0.404	AP-42, Table 1.4-1, 7/98
	CO	40.00	0.039	0.172	AP-42, Table 1.4-1, 7/98
	TSP=PM ₁₀ =PM _{2.5}	7.60	0.007	0.033	AP-42, Table 1.4-2, 7/98
	SO ₂ ⁴	0.94	0.001	0.004	AP-42, Table 1.4-2, 7/98 ⁴
	VOC	5.50	0.005	0.024	AP-42, Table 1.4-2, 7/98
HAZARDOUS AIR POLLUTANTS	N-Hexanes ⁵	1.800	0.002	0.008	AP-42, Table 1.4-3, 7/98 ⁵
	Formaldehyde	0.075	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Acetaldehyde	--	--	--	No Emission Factor
	Benzene	0.002	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Toluene	0.003	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Ethylbenzene	--	--	--	No Emission Factor
	Xylenes	--	--	--	No Emission Factor
	Total HAP	-	0.002	0.008	

Notes:

- ¹ AP-42 factors are based upon an average fuel Btu value of 1020 Btu/scf. Emission factors are adjusted accordingly to account for a different value in the fuel rating.
- ² Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lbs/MMscf) * (Burner Rating, MMBtu/hr) * (Btu Value of Gas / 1020) / (Btu Value of Gas, Btu/scf)
- ³ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
- ⁴ AP-42 factor for SO₂ is based upon a fuel content of 2000 gr H₂S/MMscf or 3.2 ppmv. The factor is adjusted to 5 ppmv H₂S/MMscf to account for the maximum allowed sulfur in sweet natural gas.
- ⁵ Emission factor is listed as Hexane in AP-42. Assume all emissions reported are N-hexane as conservative estimate
- ⁶ N₂O emission factor is for uncontrolled emissions.
- ⁷ VOC-u stands for unspiciated volatile organic compounds

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Line Heater
 Emission Unit ID: LH-02
 Emission Unit Type: Natural Gas Fired Heater
 Rated Burner Rating: 1.00 MMBtu/hr
 Btu Value of Gas¹: 1105.6 Btu/scf
 Annual Hours of Operation: 8760 hours/year

	Pollutant	Factor lb/MMscf	Avg. lbs/hr ²	Total tons/yr ³	Source of Factor
CRITERIA	NO _x	94.00	0.092	0.404	AP-42, Table 1.4-1, 7/98
	CO	40.00	0.039	0.172	AP-42, Table 1.4-1, 7/98
	TSP=PM ₁₀ =PM _{2.5}	7.60	0.007	0.033	AP-42, Table 1.4-2, 7/98
	SO ₂ ⁴	0.94	0.001	0.004	AP-42, Table 1.4-2, 7/98 ⁴
	VOC	5.50	0.005	0.024	AP-42, Table 1.4-2, 7/98
HAZARDOUS AIR POLLUTANTS	N-Hexanes ⁵	1.800	0.002	0.008	AP-42, Table 1.4-3, 7/98 ⁵
	Formaldehyde	0.075	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Acetaldehyde	--	--	--	No Emission Factor
	Benzene	0.002	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Toluene	0.003	0.000	0.000	AP-42, Table 1.4-3, 7/98
	Ethylbenzene	--	--	--	No Emission Factor
	Xylenes	--	--	--	No Emission Factor
	Total HAP	-	0.002	0.008	

Notes:

- ¹ AP-42 factors are based upon an average fuel Btu value of 1020 Btu/scf. Emission factors are adjusted accordingly to account for a different value in the fuel rating.
- ² Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lbs/MMscf) * (Burner Rating, MMBtu/hr) * (Btu Value of Gas / 1020) / (Btu Value of Gas, Btu/scf)
- ³ Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
- ⁴ AP-42 factor for SO₂ is based upon a fuel content of 2000 gr H₂S/MMscf or 3.2 ppmv. The factor is adjusted to 5 ppmv H₂S/MMscf to account for the maximum allowed sulfur in sweet natural gas.
- ⁵ Emission factor is listed as Hexane in AP-42. Assume all emissions reported are N-hexane as conservative estimate
- ⁶ N₂O emission factor is for uncontrolled emissions.
- ⁷ VOC-u stands for unspiciated volatile organic compounds

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Gun Barrel Tank
 Emission Unit ID: T-01
 Emission Unit Type: Storage Tank

Input Data:

Oil API Gravity	48
Separator Pressure (PSIG)	40
Separator Temperature (F)	70
Site Elevation (Feet above Mean Sea Level)	0
Measured/Calculated Gas Specific Gravity	0.8575
Calculated Atmospheric Pressure @ Site Elevation:	14.7
Calculated GOR via Vasquez & Beggs:	15.414
Actual Oil Production Rate (BOPD):	0.288
Actual Oil Production Rate (gpy):	4410
Hours Operated per Year:	8760

Calculations:

Flash Losses

Total Flash cubic ft/hour:	0.1848	= GOR * BOPD / 24 (hr/day)
Total Flash lbs/hr:	0.0120	
Total Flash tons/yr:	0.0527	

Working and Standing Losses from EPA's TANKS 4.09d Program ¹

Component	Emissions (lb/yr)	Average lbs/hour	Annual tons/year
Total VOC	1004.90	0.1147	0.5025
N-Hexanes	12.28	0.001	0.006
Benzene	11.56	0.001	0.006
Toluene	5.77	0.001	0.003
Ethylbenzene	0.81	0.000	0.000
Xylenes	2.36	0.000	0.001

Speciation Of VOCs from Flashing Losses

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵
Non-Regulated	Nitrogen	0.063%	28.013	0.018	0.001	0.000
	Carbon Dioxide	0.404%	44.010	0.178	0.007	0.000
	Methane	68.069%	16.043	10.920	0.439	0.005
	Ethane	13.556%	30.070	4.076	0.164	0.002
VOLATILE ORGANIC COMPOUNDS	Propane	9.205%	44.097	4.059	0.163	0.002
	Butanes	6.195%	58.124	3.601	0.145	0.002
	Pentanes	1.534%	72.151	1.107	0.045	0.001
	Hexanes (non-toxic)	0.481%	86.178	0.415	0.017	0.000
	Heptanes (non-toxic)	0.193%	100.204	0.193	0.008	0.000
	Octanes (non-toxic) +	0.064%	114.231	0.073	0.003	0.000
	Nonanes	0.019%	128.260	0.024	0.001	0.000
	Decanes	0.024%	142.280	0.034	0.001	0.000
TOXIC AIR POLLUTANTS	N-Hexanes	0.135%	86.178	0.116	0.005	0.000
	Benzene	0.024%	78.114	0.019	0.001	0.000
	Toluene	0.019%	92.141	0.018	0.001	0.000
	Ethylbenzene	0.004%	106.168	0.004	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000
	Xylenes	0.011%	106.168	0.012	0.000	0.000

100.000%

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.004	0.017
Total Volatile Organic Compounds	0.119	0.523

Notes:

- ¹ The speciation profile used is the standard profile in the TANKS 4.09d program without the non-TAP components.
- ² Partial Mole Weight = Mole Fraction * Molecular Weight
- ³ Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ⁴ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁵ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

Value of Constants for Vasquez-Beggs Equation	API Gravity < 30	API Gravity >30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	25.724	23.931

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Oil Storage Tank
 Emission Unit ID: T-02 (2)
 Emission Unit Type: Storage Tank

Input Data:

Oil API Gravity	48
Separator Pressure (PSIG)	40
Separator Temperature (F)	70
Site Elevation (Feet above Mean Sea Level)	0
Measured/Calculated Gas Specific Gravity	0.8575
Calculated Atmospheric Pressure @ Site Elevation:	14.7
Calculated GOR via Vasquez & Beggs:	15.414
Actual Oil Production Rate (BOPD):	0.288
Actual Oil Production Rate (gpy):	4410
Hours Operated per Year:	8760

Calculations:

Flash Losses

Total Flash cubic ft/hour:	0.1848	= GOR * BOPD / 24 (hr/day)
Total Flash lbs/hr:	0.0120	
Total Flash tons/yr:	0.0527	

Working and Standing Losses from EPA's TANKS 4.09d Program ¹

Component	Emissions (lb/yr)	Average lbs/hour	Annual tons/year
Total VOC	1004.90	0.1147	0.5025
N-Hexanes	12.28	0.001	0.006
Benzene	11.56	0.001	0.006
Toluene	5.77	0.001	0.003
Ethylbenzene	0.81	0.000	0.000
Xylenes	2.36	0.000	0.001

Speciation Of VOCs from Flashing Losses

Component	Mole Fraction	Molecular Weight	Partial Mole Weight ²	Weight Fraction ³	Average lbs/hour ⁴	Annual tons/year ⁵
Non-Regulated	Nitrogen	0.063%	28.013	0.018	0.001	0.000
	Carbon Dioxide	0.404%	44.010	0.178	0.007	0.000
	Methane	68.069%	16.043	10.920	0.439	0.005
	Ethane	13.556%	30.070	4.076	0.164	0.002
VOLATILE ORGANIC COMPOUNDS	Propane	9.205%	44.097	4.059	0.163	0.002
	Butanes	6.195%	58.124	3.601	0.145	0.002
	Pentanes	1.534%	72.151	1.107	0.045	0.001
	Hexanes (non-toxic)	0.481%	86.178	0.415	0.017	0.000
	Heptanes (non-toxic)	0.193%	100.204	0.193	0.008	0.000
	Octanes (non-toxic) +	0.064%	114.231	0.073	0.003	0.000
	Nonanes	0.019%	128.260	0.024	0.001	0.000
	Decanes	0.024%	142.280	0.034	0.001	0.000
TOXIC AIR POLLUTANTS	N-Hexanes	0.135%	86.178	0.116	0.005	0.000
	Benzene	0.024%	78.114	0.019	0.001	0.000
	Toluene	0.019%	92.141	0.018	0.001	0.000
	Ethylbenzene	0.004%	106.168	0.004	0.000	0.000
	2, 2, 4 - Trimethylpentane	0.000%	114.231	0.000	0.000	0.000
	Xylenes	0.011%	106.168	0.012	0.000	0.000
100.000%						

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.004	0.017
Total Volatile Organic Compounds	0.119	0.523

Notes:

- ¹ The speciation profile used is the standard profile in the TANKS 4.09d program without the non-TAP components.
- ² Partial Mole Weight = Mole Fraction * Molecular Weight
- ³ Weight Fraction = Partial Mole Weight / Total Molecular Weight
- ⁴ Average Lbs/Hour = Total Emissions (lb/hr) * Component Weight Percent
- ⁵ Annual Emission Rate (Tons/Yr) = Total Emissions (tpy) * Component Weight Percent

Value of Constants for Vasquez-Beggs Equation	API Gravity < 30	API Gravity > 30
C1	0.0362	0.0178
C2	1.0937	1.187
C3	25.724	23.931

United World Energy Corporation
 John N. John Facility (P&A Planned 2012)
 AI: 166514

Emission Unit Description: Produced Water Storage Tank
 Emission Unit ID: T-03
 Emission Unit Type: Storage Tank

Input Data:

Produced Water Production Rate (BPD):	1.942
Produced Water Production Rate (gpy):	29778
Hours Operated per Year:	8760

Calculations:

Working and Standing Losses from EPA's TANKS 4.09d Program ^{1,2}

Component	Emissions (lb/yr)	Average lbs/hour	Annual tons/year
Total VOC	1095.480	0.1251	0.5477
N-Hexanes	13.380	0.002	0.007
Benzene	12.610	0.001	0.006
Toluene	6.280	0.001	0.003
Ethylbenzene	0.880	0.000	0.000
Xylenes	2.570	0.000	0.001

	lbs/hour	tons/year
Total Toxic Air Pollutants	0.004	0.018
Total Volatile Organic Compounds	0.125	0.548

Notes:

- ¹ Emissions from the produced water are conservatively estimated using the liquid properties of crude oil.
- ² The speciation profile used is the standard profile in the TANKS 4.09d program.

GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: UWE Hayes Dehy Unit

File Name: C:\Users\Loni M Gaudet\Dropbox\Shared\Clients\United World Energy\John N.
John\John N John GLYCALC FILE.DDF

Date: July 24, 2012

DESCRIPTION:

Description:

Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

UNCONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.0070	0.167	0.0305
Ethane	0.0016	0.039	0.0072
Propane	0.0014	0.034	0.0063
Isobutane	0.0008	0.019	0.0034
n-Butane	0.0010	0.024	0.0043
Isopentane	0.0006	0.015	0.0027
n-Pentane	0.0005	0.012	0.0023
n-Hexane	0.0004	0.010	0.0018
Other Hexanes	0.0009	0.023	0.0041
Heptanes	0.0009	0.022	0.0041
Benzene	0.0058	0.139	0.0254
Toluene	0.0052	0.124	0.0227
Ethylbenzene	0.0012	0.028	0.0051
Xylenes	0.0066	0.157	0.0287
C8+ Heavies	0.0058	0.140	0.0255
Total Emissions	0.0397	0.953	0.1740
Total Hydrocarbon Emissions	0.0397	0.953	0.1740
Total VOC Emissions	0.0311	0.747	0.1364
Total HAP Emissions	0.0191	0.459	0.0837
Total BTEX Emissions	0.0187	0.449	0.0819

EQUIPMENT REPORTS:

ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

Calculated Absorber Stages: 1.25
Calculated Dry Gas Dew Point: 2.94 lbs. H2O/MMSCF

Temperature: 80.0 deg. F
Pressure: 780.0 psig

Dry Gas Flow Rate: 0.0755 MMSCF/day
 Glycol Losses with Dry Gas: 0.0003 lb/hr
 Wet Gas Water Content: Saturated
 Calculated Wet Gas Water Content: 38.36 lbs. H2O/MMSCF
 Specified Lean Glycol Recirc. Ratio: 3.00 gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
Water	7.65%	92.35%
Carbon Dioxide	99.91%	0.09%
Nitrogen	99.99%	0.01%
Methane	99.99%	0.01%
Ethane	99.98%	0.02%
Propane	99.97%	0.03%
Isobutane	99.95%	0.05%
n-Butane	99.94%	0.06%
Isopentane	99.93%	0.07%
n-Pentane	99.91%	0.09%
n-Hexane	99.85%	0.15%
Other Hexanes	99.89%	0.11%
Heptanes	99.72%	0.28%
Benzene	93.61%	6.39%
Toluene	90.31%	9.69%
Ethylbenzene	86.84%	13.16%
Xylenes	81.38%	18.62%
C8+ Heavies	99.26%	0.74%

REGENERATOR

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled Overhead
Water	27.17%	72.83%
Carbon Dioxide	0.00%	100.00%
Nitrogen	0.00%	100.00%
Methane	0.00%	100.00%
Ethane	0.00%	100.00%
Propane	0.00%	100.00%
Isobutane	0.00%	100.00%
n-Butane	0.00%	100.00%
Isopentane	0.50%	99.50%
n-Pentane	0.50%	99.50%
n-Hexane	0.50%	99.50%
Other Hexanes	1.00%	99.00%
Heptanes	0.50%	99.50%
Benzene	5.00%	95.00%
Toluene	7.90%	92.10%
Ethylbenzene	10.42%	89.58%
Xylenes	12.94%	87.06%
C8+ Heavies	12.03%	87.97%

STREAM REPORTS:

WET GAS STREAM

 Temperature: 80.00 deg. F
 Pressure: 794.70 psia
 Flow Rate: 3.15e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	8.08e-002	1.21e-001
Carbon Dioxide	2.83e-001	1.03e+000
Nitrogen	9.08e-001	2.11e+000
Methane	9.29e+001	1.24e+002
Ethane	3.49e+000	8.71e+000
Propane	1.19e+000	4.34e+000
Isobutane	3.40e-001	1.64e+000
n-Butane	3.18e-001	1.53e+000
Isopentane	1.58e-001	9.46e-001
n-Pentane	1.00e-001	5.98e-001
n-Hexane	3.90e-002	2.79e-001
Other Hexanes	1.18e-001	8.44e-001
Heptanes	4.00e-002	3.32e-001
Benzene	1.40e-002	9.07e-002
Toluene	7.00e-003	5.35e-002
Ethylbenzene	1.00e-003	8.81e-003
Xylenes	4.00e-003	3.52e-002
C8+ Heavies	5.60e-002	7.91e-001
Total Components	100.00	1.47e+002

DRY GAS STREAM

 Temperature: 80.00 deg. F
 Pressure: 794.70 psia
 Flow Rate: 3.15e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	6.19e-003	9.24e-003
Carbon Dioxide	2.83e-001	1.03e+000
Nitrogen	9.08e-001	2.11e+000
Methane	9.29e+001	1.24e+002
Ethane	3.49e+000	8.71e+000
Propane	1.19e+000	4.34e+000
Isobutane	3.40e-001	1.64e+000
n-Butane	3.18e-001	1.53e+000
Isopentane	1.58e-001	9.45e-001
n-Pentane	1.00e-001	5.98e-001
n-Hexane	3.90e-002	2.78e-001
Other Hexanes	1.18e-001	8.43e-001
Heptanes	3.99e-002	3.32e-001
Benzene	1.31e-002	8.49e-002
Toluene	6.32e-003	4.83e-002
Ethylbenzene	8.69e-004	7.65e-003
Xylenes	3.26e-003	2.87e-002
C8+ Heavies	5.56e-002	7.85e-001
Total Components	100.00	1.47e+002

LEAN GLYCOL STREAM

 Temperature: 80.00 deg. F
 Flow Rate: 4.92e-003 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.84e+001	2.73e+000
Water	1.50e+000	4.16e-002
Carbon Dioxide	3.27e-012	9.08e-014
Nitrogen	4.70e-013	1.30e-014
Methane	8.43e-018	2.34e-019
Ethane	2.78e-008	7.71e-010
Propane	2.11e-009	5.84e-011
Isobutane	8.46e-010	2.34e-011
n-Butane	8.77e-010	2.43e-011
Isopentane	1.13e-004	3.13e-006
n-Pentane	9.36e-005	2.60e-006
n-Hexane	7.48e-005	2.07e-006
Other Hexanes	3.42e-004	9.48e-006
Heptanes	1.69e-004	4.69e-006
Benzene	1.10e-002	3.05e-004
Toluene	1.61e-002	4.45e-004
Ethylbenzene	4.86e-003	1.35e-004
Xylenes	3.51e-002	9.74e-004
C8+ Heavies	2.87e-002	7.95e-004
Total Components	100.00	2.77e+000

RICH GLYCOL STREAM

 Temperature: 80.00 deg. F
 Pressure: 794.70 psia
 Flow Rate: 5.23e-003 gpm
 NOTE: Stream has more than one phase.

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.33e+001	2.73e+000
Water	5.24e+000	1.53e-001
Carbon Dioxide	3.11e-002	9.08e-004
Nitrogen	4.45e-003	1.30e-004
Methane	2.38e-001	6.96e-003
Ethane	5.59e-002	1.63e-003
Propane	4.91e-002	1.43e-003
Isobutane	2.67e-002	7.82e-004
n-Butane	3.35e-002	9.80e-004
Isopentane	2.14e-002	6.26e-004
n-Pentane	1.78e-002	5.19e-004
n-Hexane	1.42e-002	4.15e-004
Other Hexanes	3.24e-002	9.48e-004
Heptanes	3.21e-002	9.38e-004
Benzene	2.09e-001	6.10e-003
Toluene	1.93e-001	5.63e-003
Ethylbenzene	4.42e-002	1.29e-003
Xylenes	2.58e-001	7.53e-003
C8+ Heavies	2.26e-001	6.61e-003
Total Components	100.00	2.92e+000

REGENERATOR OVERHEADS STREAM

 Temperature: 212.00 deg. F
 Pressure: 14.70 psia
 Flow Rate: 2.67e+000 scfh

Component	Conc. (vol%)	Loading (lb/hr)
-----	-----	-----
Water	8.79e+001	1.12e-001
Carbon Dioxide	2.93e-001	9.08e-004
Nitrogen	6.60e-002	1.30e-004
Methane	6.16e+000	6.96e-003
Ethane	7.71e-001	1.63e-003
Propane	4.62e-001	1.43e-003
Isobutane	1.91e-001	7.82e-004
n-Butane	2.39e-001	9.80e-004
Isopentane	1.22e-001	6.23e-004
n-Pentane	1.02e-001	5.17e-004
n-Hexane	6.79e-002	4.13e-004
Other Hexanes	1.55e-001	9.38e-004
Heptanes	1.32e-001	9.33e-004
Benzene	1.05e+000	5.80e-003
Toluene	7.99e-001	5.19e-003
Ethylbenzene	1.55e-001	1.16e-003
Xylenes	8.76e-001	6.56e-003
C8+ Heavies	4.84e-001	5.81e-003
-----	-----	-----
Total Components	100.00	1.52e-001

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: UWE John N John Tank T-01 (max)
 City:
 State:
 Company:
 Type of Tank: Vertical Fixed Roof Tank
 Description: UWE John N John Tank T-01

Tank Dimensions

Shell Height (ft):	20.00
Diameter (ft):	12.00
Liquid Height (ft) :	18.00
Avg. Liquid Height (ft):	10.00
Volume (gallons):	15,228.53
Turnovers:	0.29
Net Throughput(gal/yr):	4,410.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition:	Good
Roof Color/Shade:	Gray/Medium
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.06

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Lake Charles, Louisiana (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

UWE John N John Tank T-01 (max) - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg	Min.	Max.		Avg	Min.	Max.					
Crude oil (RVP 5)	All	77.32	66.93	87.70	70.83	3.9995	3.2915	4.8239	50.0000			207.00	Option 4: RVP=5
Benzene						1.8527	1.4110	2.4025	78.1100	0.0080	0.0115	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1936	0.1376	0.2679	106.1700	0.0040	0.0008	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.9508	2.2850	3.7668	86.1700	0.0040	0.0122	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.5542	0.4082	0.7419	92.1300	0.0100	0.0057	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						4.2787	4.2501	4.2535	49.3088	0.9620	0.9674	217.18	
Xylene (-m)						0.1621	0.1149	0.2252	106.1700	0.0140	0.0023	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

UWE John N John Tank T-01 (max) - Vertical Fixed Roof Tank

Components	Losses(lbs)		Total Emissions
	Working Loss	Breathing Loss	
Crude oil (RVP 5)	15.75	989.15	1,004.90
Hexane (-n)	0.19	12.09	12.28
Benzene	0.18	11.38	11.56
Toluene	0.09	5.67	5.77
Ethylbenzene	0.01	0.79	0.81
Xylene (-m)	0.04	2.32	2.36
Unidentified Components	15.23	956.89	972.12

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: UWE John N John Tank T-03
 City:
 State:
 Company:
 Type of Tank: Vertical Fixed Roof Tank
 Description: UWE John N John Tank T-03

Tank Dimensions

Shell Height (ft): 20.00
 Diameter (ft): 12.00
 Liquid Height (ft) : 18.00
 Avg. Liquid Height (ft): 10.00
 Volume (gallons): 15,228.53
 Turnovers: 1.96
 Net Throughput(gal/yr): 29,778.00
 Is Tank Heated (y/n): N

Paint Characteristics

Shell Color/Shade: Gray/Medium
 Shell Condition: Good
 Roof Color/Shade: Gray/Medium
 Roof Condition: Good

Roof Characteristics

Type: Cone
 Height (ft) 0.00
 Slope (ft/ft) (Cone Roof) 0.06

Breather Vent Settings

Vacuum Settings (psig): -0.03
 Pressure Settings (psig) 0.03

Meteorological Data used in Emissions Calculations: Lake Charles, Louisiana (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

UWE John N John Tank T-03 - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg	Min.	Max.		Avg.	Min.	Max.					
Crude oil (RVP 5)	All	77.32	66.93	87.70	70.83	3.9995	3.2915	4.8239	50.0000			207.00	Option 4: RVP=5
Benzene						1.8527	1.4110	2.4025	78.1100	0.0060	0.0115	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1936	0.1376	0.2679	106.1700	0.0040	0.0008	106.17	Option 2: A=6.875, B=1424.255, C=213.21
Hexane (-n)						2.9508	2.2850	3.7668	86.1700	0.0040	0.0122	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.5542	0.4082	0.7419	92.1300	0.0100	0.0057	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						4.2787	4.2501	4.2535	49.3088	0.9620	0.9674	217.18	
Xylene (-m)						0.1621	0.1149	0.2252	106.1700	0.0140	0.0023	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

UWE John N John Tank T-03 - Vertical Fixed Roof Tank

Components	Losses(lbs)		Total Emissions
	Working Loss	Breathing Loss	
Crude oil (RVP 5)	106.34	989.15	1,095.48
Hexane (-n)	1.30	12.09	13.38
Benzene	1.22	11.38	12.61
Toluene	0.61	5.67	6.28
Ethylbenzene	0.09	0.79	0.88
Xylene (-m)	0.25	2.32	2.57
Unidentified Components	102.87	956.89	1,059.76

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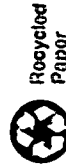
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ATTN: David Seymour
P.O. Box 4312
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August 12, 2019

Louisiana Department of Environmental Quality
Office of Environmental Services
Air Permits Division
602 N. Fifth Street
Baton Rouge, LA 70802
Attn: Bryan Johnston

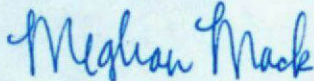
Handwritten notes: "m of G Viator" and "JOA" with a checkmark.

**RE: Application for Approval of Miscellaneous Permitting Actions
Request to Rescind Air Permit
United World Energy Corporation
Hayes U-1 Well #1 Facility
Permit No.: 1360-00558-00; AI No.: 166486 ✓
Jefferson Davis Parish, LA**

On behalf of United World Energy Corporation (UWE), please find enclosed three (3) sets of the referenced application which serves to notify the department that this facility is permanently out of service. Therefore, it is requested that permit number 1360-00558-00 be rescinded.

If you have any questions concerning this matter, please contact me at (337) 839-1075 or mmack@hlpengineering.com. All written correspondence should be sent to: **United World Energy Corporation, 2006 Ambassador Caffery Pkwy, Lafayette, LA 70506, Attn.: Wayne Landry.** Thank you in advance for your assistance with this matter.

Sincerely,
HLP ENGINEERING, INC.




Meghan Mack
Enclosures

xc: Wayne Landry - UWE

2019 AUG 16 PM 12:37

DEQ - OES

Department of Environmental Quality Office of Environmental Services Air Permits Division P.O. Box 4313 Baton Rouge, LA 70821-4313 (225) 219-3417	<h1>LOUISIANA</h1> <h2>Application for Approval of Miscellaneous Permitting Actions</h2>	
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PLEASE TYPE OR PRINT

1. Facility Information

Facility Name or Unit Name (if any) Hayes U-1 Well #1 Facility		<input checked="" type="checkbox"/> All Process Units <input type="checkbox"/> Process Unit-Specific Action
Agency Interest Number (A.I. Number) 166486	Currently Effective Permit Number(s) 1360-00558-00	
Company - Name of Owner United World Energy Corporation		
Company - Name of Operator (if different from Owner)		
Parent Company (if Company – Name of Owner given above is a division) United World International LLC		
Parish(es) where facility is located: Jefferson Davis		

2. Type of Request

Check only one box to indicate the type of request being made.

- | | |
|---|--|
| <input type="checkbox"/> Small Source Exemption*† | <input checked="" type="checkbox"/> Permit Rescission Date of closure: <u>3/13/2019</u> |
| <input type="checkbox"/> Exemption To Test† | <input type="checkbox"/> Application Withdrawal |
| <input type="checkbox"/> Variance***† | <input type="checkbox"/> Change of Tank Service |
| <input type="checkbox"/> Letter of Response/Letter of No Objection† | <input type="checkbox"/> Relocation of a Portable Facility |
| <input type="checkbox"/> Administrative Amendment† | <input type="checkbox"/> Authorization to Construct and Operate (ATC)† |

* Fee required

† Justification required

** Fee required unless source is operating under an air permit.

Estimated date that requested activity will commence _____

3. Application Fee

Complete this section if a fee is required for the request being made. Consult instructions.

Fee Code: N/A Amount Enclosed: \$ N/A

Electronic Fund Transfer (EFT): If paying the application fee using an Electronic Fund Transfer (EFT), please include the EFT Transaction Number, the Date that the EFT was made, and the total dollar amount submitted in the EFT. If not paying the application fee using EFT, leave blank.

EFT Transaction Number	Date of Submittal	Total Dollar Amount
_____ <u>N/A</u> _____	_____ <u>N/A</u> _____	\$ _____ <u>N/A</u> _____

4. Description of Exceptional Circumstances to Justify a Variance Request

Requested Duration of Variance: _____ Months _____ Days

Explain the need for the variance.

Identify the affected source(s), as well as the applicable regulation(s) from which the source(s) need a variance. Include relevant details as necessary (e.g., a description of the how the process normally functions and how it is operating now) and describe any measures undertaken or that will be undertaken to remedy the situation prompting the variance request.

N/A

Identify the exceptional circumstances.

Identify the exceptional circumstances that preclude strict conformity with the regulation(s) identified above. Explain how strict conformity with such regulations would cause would 1.) cause undue hardship; 2.) be unreasonable; 3.) be impractical; or 4.) not be feasible under the circumstances; or would otherwise result in the practical closing and elimination of any lawful business, occupation, or activity without sufficient corresponding benefit or advantage to the people of the state.

N/A

Note: It is important that the reason for the variance request be made plain. The explanation of extenuating circumstances will form the primary basis upon which LDEQ will either grant or deny the variance request.

5. Required Information

Submittal of this Information Is Not Optional

For all requests:

- Detailed description of the proposed activity is included.
- Justification for the request is included. (Justification may include supporting calculations, reasoning to support a determination of why strict conformity with the regulations is not feasible, etc)

For Relocation of a Portable Facility requests only:

- Documentation is attached that shows compliance with all applicable zoning criteria for the proposed location (for Relocation of a Portable Facility requests only). [Required per LAC 33:III.513.C.1.a]
- A map showing the proposed location of the Portable Facility is included (for Relocation of a Portable Facility requests only) [Required per LAC 33:III.513.C.2]

Enter the **current** location of the facility (for Relocation of a Portable Facility requests only):

Street _____ City _____ Parish _____

Latitude _____ Longitude _____

Enter the **proposed** location of the facility (for Relocation of a Portable Facility requests only):

Street _____ City _____ Parish _____

Latitude _____ Longitude _____

Enter the Make, Model, and Serial Number of each portable combustion emissions source to be permitted. Otherwise, leave blank. Do **NOT** list any motor vehicles. Add rows as necessary (for Relocation of Portable Facility requests only).

Make _____ Model _____ Serial Number _____

6. Emissions Summary Table

For each pollutant, enter the pre-project emission rate in the "Before" column and enter the post-project emission rate in the "After" column. Enter the difference between the "Before" and "After" values in the "Change" column. Add rows as necessary to show any Toxic Air Pollutant (TAP) or Hazardous Air Pollutant (HAP) emissions. All values in this table should be represented in tons per year or per variance period (if applying for a variance).

Pollutant	Before (tons per year/variance period)	After (tons per year/variance period)	Change (tons per year/variance period)
PM _{2.5}	N/A	N/A	N/A
PM ₁₀	N/A	N/A	N/A
SO ₂	N/A	N/A	N/A
NO _x	N/A	N/A	N/A
CO	N/A	N/A	N/A
VOC	N/A	N/A	N/A

7. Contact Information

a. Person to contact with written correspondence					
Name		Wayne Landry			
Title		President & Owner			
Company		United World Energy Corporation			
Suite, mail drop, or division					
Street or P.O. Box		2006 Ambassador Caffery Pkwy			
City	Lafayette	State	LA	Zip	70506
Business phone		337-319-3779			
Email address		wlandryuwe@aol.com			

b. Person who prepared this report					
Name		Meghan Mack			
Title		Engineer			
Company		HLP Engineering, Inc.			
Suite, mail drop, or division					
Street or P.O. Box		P.O. Box 52805			
City	Lafayette	State	LA	Zip	70505
Business phone		337-839-1075			
Email address		mmack@hlpengineering.com			

8. Certification of Compliance With Applicable Requirements

For corporations only: By signing this form, I certify that, in accordance with the definition of Responsible Official found in LAC 33:III.502, (1) I am a president, secretary, treasurer, or vice-president in charge of a principal business function, or other person who performs similar policy or decision-making functions; or (2) I am a duly authorized representative of such person; am responsible for the overall operation of one or more manufacturing, production, or operating facilities addressed in this permit application; and either the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or the delegation of authority has been approved by LDEQ prior to this certification.*

I certify, under provisions in Louisiana and United States law which provide criminal penalties for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Application for Approval of Miscellaneous Permitting Actions, including all attachments thereto, are true, accurate, and complete. Further, I have been informed that any written approval from LDEQ does not relieve the proposed activity from the requirement to comply with any other city, parish, state, and/or federal requirements.

Responsible Official:

Name (please print or type):


Signature:

Wayne Landry

Title:

President & Owner

Date:


8/13/2017

*Approval of a delegation of authority can be requested by completing a Duly Authorized Representative Designation Form (Form_7218) available on LDEQ's website at <http://deq.louisiana.gov/page/air-permit-applications>.



AIR PERMIT ROUTING/APPROVAL SLIP-Misc.



97979

AI No.	166486	Company	United World Energy Corp	Date Received	8/16/19
Activity No.	PER20090001	Facility	Hayes U-1 Well #1 Facility		
CDS No.	1360-00558	Permit No.	1360-00558-00	Expedited Permit	<input type="checkbox"/> yes <input type="checkbox"/> no

Regulatory Permit	Variance	Exemption	Authorization to Construct	Change of Tank Service
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Case by Case Insignificant Activity	Letter	Additional Information Request	Company Notification Letter	Other: rescission
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

1. Technical Review	Approved	Date received	Date forwarded	Comments
Permit Writer	MDL		8/26/2019	
Air Quality / Modeling				
Toxics				
PSD/NNSR				
Technical Advisor				
Supervisor				
Other				

2. Final Approval	Approved	Date received	Date forwarded	Comments
Supervisor	ASU		9/6/19	letterhead
ES Manager	KAP		9/16/19	
Administrator	BDS		9/16/19	
Assistant Secretary				

Other Information	Comments
Fee Assessment Created <input type="checkbox"/> yes <input type="checkbox"/> no	EDMS # 006796538

JOHN BEL EDWARDS
GOVERNOR



CHUCK CARR BROWN, PH.D.
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Agency Interest No. 166486
Activity No. PER20090001

Mr. Wayne Landry
President & Owner
United World Energy Corporation
2006 Ambassador Caffery Parkway
Lafayette, LA 70506

RE: Permit Rescission, Permit No. 1360-00558-00
United World Energy Corporation - Hayes U-1 Well #1 Facility
Lake Arthur, Jefferson Davis Parish, Louisiana

Dear Mr. Landry:

By application received by DEQ on August 16, 2019, United World Energy Corporation (UWE) requested that Permit No. 1360-00558-00 for the above referenced facility be rescinded. According to the application, the facility has ceased operations and no longer requires an air permit.

The Air Permits Division hereby rescinds Permit No. 1360-00558-00.

Sincerely,

A handwritten signature in cursive script that reads "Bryan D. Johnston".

Bryan D. Johnston
Air Permits Division Administrator
BDJ: mdl

9/16/19
Date