DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
Permit Application Analysis
A0000949

September 14, 2015

NAME OF FIRM:	Ultra Resources, Inc.
MAILING ADDRESS:	116 Inverness Drive East, Suite 400 Englewood, CO 80112
RESPONSIBLE OFFICIAL:	Kelly Bott Regulatory and Environmental Manager
TELEPHONE NUMBER:	(303) 645-9809
TYPE OF OPERATION:	multiple well, gas/condensate central production facility
FACILITY NAME:	**Warbonnet 12-2 PAD**
FACILITY LOCATION:	NW¼ SW¼ Section 2, T30N, R108W Latitude: 42.59608° Longitude: 109.69121° Sublette County, Wyoming
DATE FACILITY BECAME OPERATIONAL:	1/2/2009, startup of Warbonnet 12-2 PAD 6/20/2015, addition of production equipment
REVIEWER:	Heather Bleile, Air Quality Engineer

PURPOSE OF APPLICATION: Ultra Resources filed this application to modify the Warbonnet 12-2 PAD with the addition of production equipment.

PERMIT HISTORY: The Warbonnet 12-2 PAD currently operates under Air Quality Permit, MD-14715, issued on October 15, 2013. Smokeless combustion devices were required to control volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions associated with the dehydration units and pneumatic pumps.

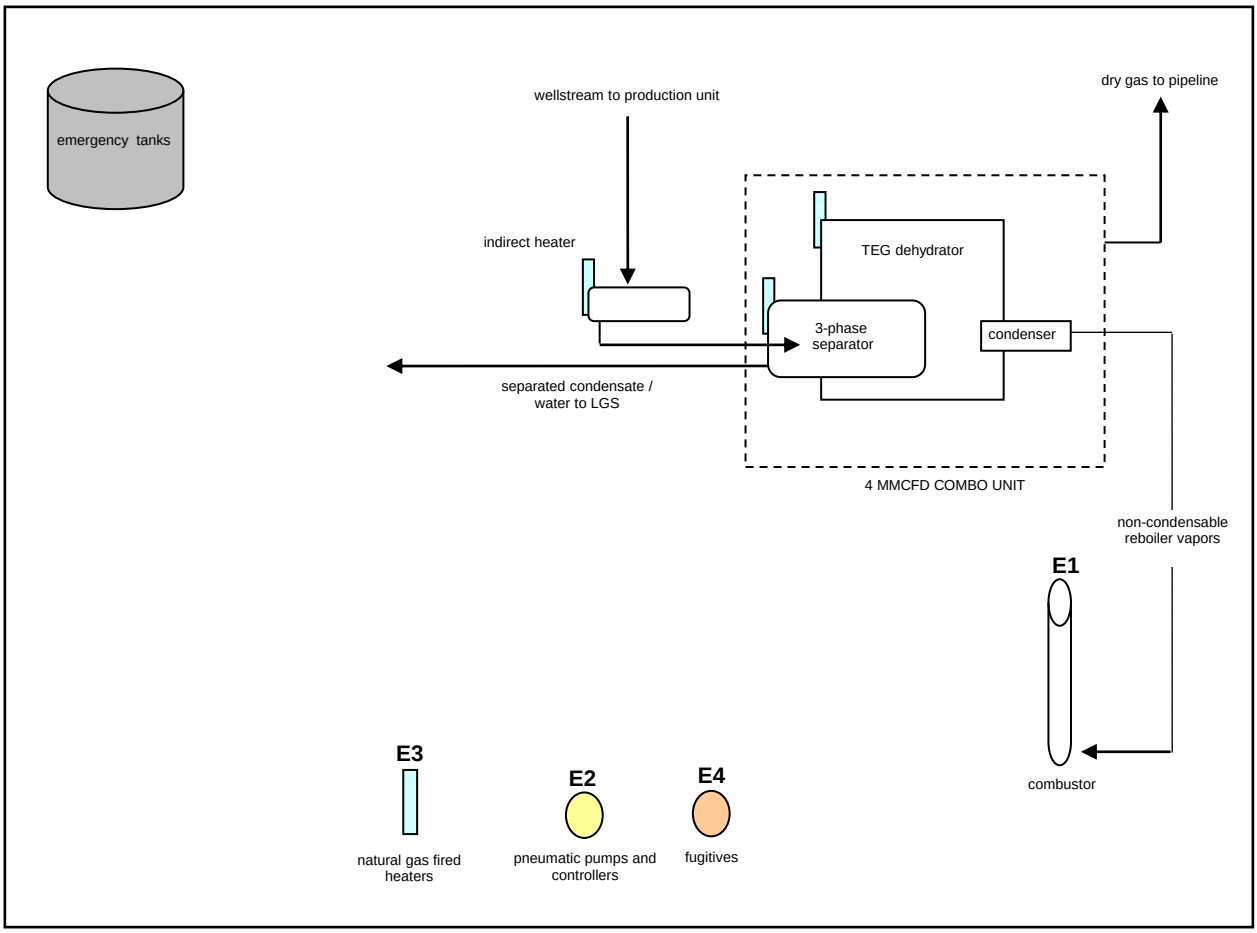
This permit shall supersede MD-14715 for the Warbonnet 12-2 PAD.

The following equipment operates at the Warbonnet 12-2 PAD:

- two (2) three-phase separators w/ 0.75 million Btu per hour (MMBtu/hr) heaters (one out of service)
- one (1) 0.75 MMBtu/hr line heater secondary burner control
- two (2) 4.0 million cubic feet per day (MMCFD) triethylene glycol (TEG) dehydration units w/ Kimray Model 4015PV glycol pumps, 0.085 MMBtu/hr reboiler heaters and reboiler overheads condensers (one out of service)
- two (2) 300-barrel (bbl) emergency tanks
- one (1) 225-gallon chemical tank
- one (1) pneumatic heat trace pump
- one (1) pneumatic methanol injection pump
- six (6) intermittent-bleed pneumatic liquid level controllers (three out of service)
- one (1) smokeless combustion device w/ continuous pilot monitoring system (non-condensable reboiler emission control)

For the modifications described under this permit, involving the installation of equipment associated with a new well or the tying in of production associated with wells at separate locations, the permitting and emission control guidance which is specific to oil and gas production facilities in the Upper Green River Basin, revised September 2013, applies.

PROCESS DESCRIPTION: The following is a schematic representation of the production process at this facility. A complete process description is found in the permit application.



ESTIMATED EMISSIONS: (summarized in the attached tables)

dehydration units:

reboiler still vents:

Potential, uncontrolled VOC and HAP emissions are estimated using GRI-GLYCalc V4.0 software based on the average hydrocarbon composition of wet gas from area wells, reported operating parameters, the maximum circulation rate for the Kimray Model 4015PV glycol pump and the average daily gas production rate as reported by the applicant.

Controlled VOC and HAP emissions (**Emission Source E1, Process Flow Diagram**) are estimated in the same fashion except that a condenser and combustion device were added to the overhead still vent. The condenser is proposed to operate at 100ºF and 12 psig. The combustion device has a reported 98% destruction efficiency. Nitrogen oxide (NO_X) and carbon monoxide (CO) emissions from the combustion of non-condensable reboiler vapors are based on 0.14 lb NO_X/MMBtu and 0.035 lb CO/MMBtu and the estimated volume of vapors.

pneumatic pumps and controllers: (**Emission Source E2, Process Flow Diagram**)

Uncontrolled emissions from pneumatic pumps are based on estimated gas consumption rates for each pump, the VOC and HAP content of the instrument gas used and vented by the pumps and 8760 annual operating hours.

Uncontrolled emissions from pneumatic controllers are based on the manufacturer's bleed rate for each controller, the VOC and HAP content of the gas used and 8760 annual operating hours.

Emissions from the pneumatic pumps are routed through a closed-loop fuel gas system and used as fuel for the line heater secondary burner controls. Vapors associated with the pneumatic controllers are vented to the atmosphere.

natural gas fired heaters: **(Emission Source E3, Process Flow Diagram)**

NO_X and CO emissions are based on AP-42 EF for fuel boilers and heaters.

fugitive sources: (**Emission Source E4, Process Flow Diagram**)

VOC and HAP emissions are based on EPA and API EF and the number of fugitive sources at the well sites.

BEST AVAILABLE CONTROL TECHNOLOGY (BACT): The following table summarizes Presumptive BACT notice and control installation requirements under the 2013 Chapter 6, Section 2 Oil and Gas Production Facilities Permitting Guidance (C6 S2 Guidance).

Application, Emissions Controls, Monitoring	Date Due	Date Filed/Installed
Application	8/20/2015 (within 60-days of modification)	7/17/2015
Tank Emissions Control	N/A, no active condensate tanks	N/A, no active condensate tanks
Dehy Emissions Control	6/20/2015 (upon modification)	1/1/2009
Pneumatic Pump Emissions Control	6/20/2015 (upon modification)	1/1/2009
Continuous Monitoring	6/20/2015 (upon modification)	1/1/2009
Active Water Tank Emission Control	N/A, no active water tanks	N/A, no active water tanks
Low-Bleed Controllers	6/20/2015 (upon modification)	12/3/2012

The emission control, reporting and monitoring requirements under the 2013 C6 S2 Guidance have been met.

Periodic site evaluations of air pollution control equipment, institution of annual equipment maintenance programs and operator training on the proper operation of pollution control equipment have been incorporated in the conditions of this permit to ensure effective operation of the pollution control equipment installed to meet the BACT requirements of the C6 S2 Guidance.

NEW SOURCE PERFORMANCE STANDARDS (NSPS): The condensate storage tank at this facility is not subject to Subpart K, K_a or K_b since it is operated prior to custody transfer.

40 CFR part 60, subpart OOOO - *Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution* applies to any new, modified or reconstructed emission source installed after August 23, 2011 at oil and gas production and gas processing facilities. The Warbonnet 12-2 PAD is not subject to 40 CFR part 60, subpart OOOO as this facility was constructed prior to the effective date.

PREVENTION OF SIGNIFICANT DETERIORATION (PSD): Emissions from this facility are less than the major source levels defined in WAQSR Chapter 6, Section 4.

CHAPTER 6, SECTION 3 (Operating Permit): Emissions from this facility are less than the major source levels defined in WAQSR Chapter 6, Section 3.

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (MACT): Emissions from this facility are less than the major source levels of 10 TPY of any individual HAP and 25 TPY of any combination of HAPs; therefore this facility is not subject to 40 CFR part 63, subpart HH requirements for oil and gas production facilities which are major sources of HAP emissions.

Ultra Resources operates glycol dehydration units which are affected area sources under 40 CFR part 63, subpart HH. Based on the information in the application, the glycol dehydration unit(s) are exempt from the control requirements of 40 CFR part 63, subpart HH for glycol dehydration units because the actual annual average flowrate of natural gas to the glycol dehydration units is less than 85 thousand standard cubic meters (3.0 MMSCFD) or the actual average emissions of benzene from the glycol dehydration unit process vents to the atmosphere are less than 0.90 megagrams per year (1.0 tons per year). Ultra Resources shall maintain records of the actual annual average flowrate of natural gas to the glycol dehydration units or actual average emissions of benzene from the glycol dehydration unit process vents for each year of operation in accordance with 63.774(d)(1). The procedures in 63.772(b) shall be used to determine the glycol dehydration unit flowrate or benzene emissions. Ultra Resources shall comply with all applicable requirements of 40 CFR part 63, subpart HH.

CHAPTER 6, SECTION 13 – NON-ATTAINMENT PERMIT REQUIREMENTS: The Warbonnet 12-2 PAD is located in an area that has been designated as non-attainment for ozone. Since this facility is a minor source (<100 tpy of VOC based on a "Marginal" classification for the area) this permitting action is not subject to the non-attainment permitting requirements of Chapter 6, Section 13 of the WAQSR.

CHAPTER 6, SECTION 2(c)(ii) DEMONSTRATION: Ultra has met the demonstration requirements under Chapter 6, Section 2(c)(ii) for this permitting action since current emissions are less than emissions during the baseline period. VOC emissions have decreased 0.4 TPY from the baseline period and NO_X emissions have decreased 0.4 TPY from the baseline period. These reductions have been added to Ultra's offset bank to use for future permitting actions.

PROPOSED PERMIT CONDITIONS: The Division proposes to issue an Air Quality Permit to Ultra Resources, Inc. for the Warbonnet 12-2 PAD with the following conditions:

1. Authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rule, regulation, standard, permit or order.

2. All substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as a condition of this permit.

3. A permit to operate in accordance with Chapter 6, Section 2(a)(iii) of the WAQSR is required after a 120-day start-up period in order to operate this facility.

4. All notifications, reports and correspondence required by this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 510 Meadowview Dr., Lander, WY 82520. Submissions may also be done electronically through https://airimpact.wyo.gov to satisfy requirements of this permit.

5. All records required under this permit shall be kept for a period of at least five (5) years and shall be made available to the Division upon request.

6. Effective upon permit issuance, this permit shall supersede Air Quality Permit MD-14715 for the Warbonnet 12-2 PAD.

7. Periodic training on the proper operation of equipment, systems and devices used to contain, control, eliminate or reduce pollution shall be provided to company personnel whose primary job is to regularly ensure that facility production equipment is functional. The training shall provide these personnel with the ability to recognize, correct and report all instances of malfunctioning equipment, systems and devices associated with air pollution control. These equipment, systems and devices include, but are not limited to combustion units, reboiler overheads condensers, hydrocarbons liquids storage tanks, drip tanks, vent lines, connectors, fittings, valves, relief valves, hatches and any other appurtenance employed to, or involved with, eliminating, reducing, containing or collecting vapors and transporting them to a pollution control system or device.

8. Trained personnel shall perform, at a minimum, a quarterly site evaluation of the operation of the air pollution control equipment, systems and devices under Condition 7. The first quarterly site evaluation shall be conducted within the second quarter after issuance of this permit.

9. At least one of the quarterly evaluations per calendar year under Condition 8 shall include an evaluation of the facility for leaks from the equipment, systems and devices under Condition 7 using an optical gas imaging instrument. Monitoring utilizing the no detectable emissions test methods and procedures in 40 CFR §60.5416(b)(1) through (8) may be utilized to satisfy the requirements of this condition for the equipment, systems, and devices under Condition 7 in lieu of using an optical gas imaging instrument.

10. Notification shall be provided to the Division at least fifteen (15) days prior to each quarterly evaluation under Condition 8.

11. An annual preventative maintenance program shall be instituted to inspect and replace equipment, systems and devices under Condition 7 as necessary to ensure their proper operation.

12. Results of all inspections, evaluations and periodic monitoring shall be documented and maintained for review by the Division upon request. Digital files of any optical gas imaging instrument evaluations need not be maintained.

13. For the TEG dehydration unit with condenser, reboiler still vent vapors shall be routed to the condenser. Condensed reboiler still vent liquids shall be collected and routed to a liquids gathering system. The non-condensable reboiler still vent vapors and scrubber pot vapors shall be routed to the combustion device. The condenser and combustion device shall reduce the mass content of total HAP and VOC emissions in the reboiler still vent and scrubber pot vapors by at least ninety-eight percent (98%) by weight.

14. The motive gas discharge line on each pneumatic pump shall be routed into a fuel gas supply line or any gas or liquid collection line which is ultimately routed into a closed system or emission control system or each pump shall be replaced with an electric, solar or air-operated pump or other device in order to reduce VOC emissions associated with the pump discharge gas stream by at least ninety-eight percent (98%) by weight.

15. All natural gas-operated pneumatic process controllers (temperature control, pressure control, level control, flow control, etc.) shall be low or no-bleed controllers, with low bleed defined as less than six (6) cubic feet per hour vent or bleed rate, or the controller discharge streams shall be routed into a closed loop system so there are no volatile organic compound or hazardous air pollutants emitted to the atmosphere.

16. The presence of the combustion device pilot flame shall be monitored using a thermocouple and continuous recording device or any other equivalent device to detect and record the presence of the flame. Records shall be maintained noting periods during active well site operation when the pilot flame is not present. The records shall contain a description of the reason(s) for absence of the pilot flame and steps taken to return the pilot flame to proper operation.

17. Emission control equipment, including the VOC and HAP emission control systems or devices, reboiler overheads condensers and all vent lines, connections, fittings, valves, relief valves, hatches or any other appurtenance employed to contain and collect vapors and transport them to the emission control system or device, shall be maintained and operated during any time the wells are producing such that the emissions are controlled at all times. Records shall be maintained noting dates and durations of times during such operation when any VOC or HAP emissions control system or device or the associated containment and collection equipment is not functioning to control emissions as required by this permit.

18. All combustion devices shall be designed, constructed, operated and maintained to be smokeless, per Chapter 3, Section 6(b)(i) of the WAQSR, with no visible emissions except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours as determined by 40 CFR part 60, appendix A, Method 22.

19. Produced water, condensate, scrubber pot and blow case pot liquids from the Warbonnet 12-2 PAD shall be routed via pipeline to a liquids gathering system.

20. The emergency tanks shall be utilized for malfunctions only as described in Chapter 1, Section 5 of the WAQSR.

21. If the emergency tanks are utilized, they must be emptied within seven (7) calendar days. Records of tank usage shall be maintained for a period of five (5) years and made available to the Division upon request.

22. Emissions from this facility shall not exceed the major source threshold as defined in Chapter 6, Section 3 of the WAQSR.

23. Ultra Resources, Inc. shall comply with all applicable requirements of 40 CFR part 63, subpart HH.

EQUIPMENT LIST

- two (2) three-phase separators w/ 0.75 MMBtu/hr heaters (one out of service)
- one (1) 0.75 MMBtu/hr line heater secondary burner control
- two (2) 4.0 MMCFD TEG dehydration units w/ Kimray Model 4015PV glycol pumps, 0.085 MMBtu/hr reboiler heaters and reboiler overheads condensers (one out of service)
- two (2) 300-bbl emergency tanks
- one (1) 225-gallon chemical tank
- one (1) pneumatic heat trace pump
- one (1) pneumatic methanol injection pump
- six (6) intermittent-bleed pneumatic liquid level controllers (three out of service)
- one (1) smokeless combustion device w/ continuous pilot monitoring system (non-condensable reboiler emission control)

EMISSIONS SUMMARY

Warbonnet 12-2 PAD
0.5 MMCFD total gas [1]

one well: Warbonnet 12d1-2

SOURCE	EMISSIONS (TPY) [2]			
	VOC	HAP	NO_X	CO
Dehydration Units				
POTENTIAL	13.2	6.1		
CONTROLLED	0.2	0.1	0.1	insig
Pneumatic Pumps [3]				
UNCONTROLLED	1.1	insig		
CONTROLLED	insig	insig	insig	insig
Process Heaters	insig	insig	0.7	0.6
Intermittent-Bleed Pneumatic Liquid Level Controllers	0.1	insig		
Fugitives	0.1	insig		
Total Uncontrolled Facility Emissions	**14.5**	**6.1**	**0.7**	**0.6**
Total Controlled Facility Emissions	**0.4**	**0.1**	**0.8**	**0.6**

[1] average daily rates reported by Ultra
[2] rounded to the nearest 0.1 ton
[3] emissions from the pneumatic pumps are routed through a closed-loop fuel gas system and used as fuel for the line heater secondary burner controls

Offset Requirements

Emissions / Production	VOC (TPY)	NO_X (TPY)
Current Actual Emissions (0.5 MMCFD)	0.4	0.8
Baseline Emissions (0.6 MMCFD)	0.8	1.2
Difference	-0.4	-0.4
Offset Required	**none**	**none**