



MONTANA AIR QUALITY REGISTRATION FORM FOR OIL AND GAS WELL FACILITIES

DEQ Air Quality Bureau Field Services Section P.O. Box 200901 Helena, MT 59620-0901 Phone: (406) 444-3490 FAX: (406) 444-1499 Email: DEQ-ARMB-Admin@mt.gov	For State of Montana Use Only
	Registration Number: _____
	Registration Fee Paid? <input type="checkbox"/> Yes <input type="checkbox"/> No
	Amount Paid: \$ _____
AFS Number: _____	

Submit one (1) signed copy (paper or electronic) and the associated registration fee to the above address. An unsigned electronic copy may be submitted but must be followed-up with a signed copy within 30-days. A Department response will be provided to the facility within 30 days after receipt and review of the complete registration information. Please contact us if you have any questions or need assistance.

Register New Facility? Update a Registered Facility? Deregister a Facility?

COMPANY AND FACILITY NAME AND ADDRESS

Company Name: ABE Oil and Gas Corporation

Facility Name: Big Bubba 55-8H-Br

Mailing Address: 2600 North Main St Ste 800
Butte MT 59701

Contact Information

Owner's Name: James W. North Telephone: (000)-000-0000
Email: example@email.com

Contact Person: Nickolas A. South Telephone: (000)-000-0000
Email: example@email.com

PHYSICAL LOCATION AND FACILITY INFORMATION

SE ¼
QTR./QTR.: SE ¼ SEC: 11 TWP: 99N RNG: 99E
LAT: 43.888888 LONG: -111.11111 County: Rosebud

General Nature of Business: Oil & Gas Production

Standard Industrial Classification Codes(s): 1311

Standard Industrial Classification Description(s): Crude Petroleum & Natural Gas

Facility/Well Completion Date: 8/31/07

Oil Production (bbl/day): 60 Gas Production (Mscf/day): 0.2 Water Production (bbl/day): 20

FACILITY PROCESS DESCRIPTION

Provide a brief written description of the site and facility. For example: list the primary operating equipment; describe the process flow; list the name and API number for well(s) supplying facility; list the producing field(s) and formation(s); describe what is done with produced gas; list the pollution control equipment used; indicate if hydrogen sulfide (H₂S) gas is present; specify how oil, gas, and water production rates were determined; and indicate what, if any, oil and/or gas analytical data are included.

Narrative Description of the Site and Facility:

The Big Bubba 55-8H-BR oil and production facility is located in eastern Montana in Rosebud County on the Cedar Creek Anticline. At this facility there is one oil and gas production well that produces to the tank battery. The facility is situated on a two acre site in a rural area with the nearest town (Baker, Montana) located approximately eight miles away. The surrounding area is mainly used for agriculture and livestock grazing.

Site Maps: Provide as an attachment to this form a topographical and facility site map.

Provide a written narrative summarizing purpose of completing this form. For example: indicate a new facility registration; indicate an update to a registered facility and describe the change(s) to the facility; or indicate a request to deregister a facility and include the reason for deregistering.

Narrative Project Summary:

In October 2007, the ABC Oil and Gas Corporation began operation of an oil and gas production facility in Section 49, Township 72 North, Range 88 East in Rosebud County, Montana (See attached Figure 1.). The facility (or tank battery) is known as the Big Bubba 55-8H-BR and consists of the following primary production equipment and capabilities.

- 1 - Heater Treater
- 3 - 400-bbl production tanks
- 1 - 400-bbl produced water tank
- 1 - Oil and gas producing well
- 1 - Gas separator
- 1 - 0.5 MMBtu/hr line heater
- 1 - 25-ft enclosed smokeless combustor for tank flashing and treater emissions
- 1 - 110 BHP rich-burn internal combustion engine equipped with non-selective catalytic reduction
- 1 - Truck loading rack

As provided in the attached facility production schematic/figure (See attached Figure 2.), the product from the oil and gas well at this site is lifted by a small pumping engine to a flow line which transports the oil and gas emulsion in a closed system to a gas separator. Gas from the separator is sent to a natural gas pipeline for sale and the remaining emulsion is transported to the heater treater where additional gas and oil and water are separated. The separated gas is either utilized in the heater treater, engine, or sent to the smokeless combustor flare while the water is pumped to a holding tank and the separated oil is pumped to the production tanks. All the natural gas released to the flare from the heater treater and production tanks is burned automatically using an electric sparking ignition device. The crude oil is ultimately pumped from the production tanks to a truck loading station to be transported off-site for eventual sale. Produced wastewater is periodically trucked away to a processing facility for further treatment.

Emissions from this site consist primarily of the heater treater, production tanks (e.g., working, breathing, and flash emissions), produced water tank, prime mover (engine), flare, truck loading operations, and fugitive emissions (e.g., equipment leaks and road dust). To assist in determining the facilities potential to emit (PTE), the oil and gas production capacities of this facility were estimated from at 60 bbls/day and 0.2 MMscf/day, respectively, based on the October 2007 facility production rates. In addition, the produced gas stream and tank vapor samples were collected at the site and analyzed by O&G Laboratories in Billings, Montana. The laboratory results are provided in Appendix D of the application. Hydrogen sulfide (H₂S) gas was measured and not detected at this well. All applicable uncontrolled and

controlled potential emissions from each source are provided below, and calculations, spreadsheets, emission factors, manufacturers' data, field gas composition data, maps, photographs, TANKS program inputs and outputs are provided Appendix A to E of the registration application.

As a registered facility, it would be subject to all the applicable requirements identified in the Administrative Rules of Montana (ARM) Title 17, Chapter 8, Subchapter 17, Registration of Air Contaminant Sources.

EMISSIONS UNIT EQUIPMENT INFORMATION	
Where applicable, provide the following information for each facility emitting unit (including pollution control equipment) such as heater treatment units, dehydrators, tanks, internal combustion engines, wellhead assemblies, and smokeless combustion devices as well as fugitive equipment leaks. For additional emitting units, control equipment, or additional emissions information, provide as a separate attachment, as needed.	
Facility Equipment Emitting Unit(s) Specifications	
Emitting Unit 1: <u>Three (3) 400 bbl crude Tanks</u> Manufacturer's Name: <u>Smith Corporation</u> Unit Type: <u>Welded Steel</u> Date of Manufacture: <u>2007</u> Date of Installation: <u>2007</u> Max Rated Design Capacity/Throughput: <u>250 bbls/day</u>	Model: <u>Unknown</u> Size: <u>400 bbl</u>
Emitting Unit 2: <u>Heater Treater</u> Manufacturer's Name: <u>NWTC Technologies Inc</u> Unit Type: <u>Vertical Treater</u> Date of Manufacture: <u>2006</u> Date of Installation: <u>2007</u> Max Rated Design Capacity/Throughput: <u>300 bbl/day oil and 0.30 MMscf/day gas</u>	Model: <u>XYZ - 1</u> Size: <u>4' (O.D.) by 20' (H)</u>
Emitting Unit 3: <u>Engine (Prime Mover)</u> Manufacturer's Name: <u>Waukesha</u> Unit Type: <u>Natural gas fired rich-burn engine</u> Date of Manufacture: <u>2002</u> Date of Installation: <u>2007</u> Max Rated Design Capacity/Throughput: <u>Not Applicable</u>	Model: <u>F11</u> Size: <u>110 HP</u>
Emitting Unit 4: <u>Produced gas flare</u> Manufacturer's Name: <u>ABC, Inc.</u> Unit Type: <u>Smokeless Combustion Flare</u> Date of Manufacture: <u>2007</u> Date of Installation: <u>October 1, 2007</u> Max Rated Design Capacity/Throughput: <u>10 MMscf/day</u>	Model: <u>FKGT-H25-R20S-EPT</u> Size: <u>25' with 20" stainless tip</u>
Emitting Unit 5: <u>Produced Water Tank</u>	Model: <u>Unknown</u>

Manufacturer's Name:	<u>XYZ Industries</u>	Size:	<u>400 bbl</u>
Unit Type:	<u>400 bbl Water Tank</u>		
Date of Manufacture:	<u>2007</u>		
Date of Installation:	<u>2007</u>		
Max Rated Design Capacity/Throughput:	<u>Not Applicable</u>		

Emitting Unit 6: <u>Fugitive Emissions (road dust (vehicle traffic)) and Equipment Leaks (valves, flanges etc.)</u>		Model:	<u>Not Applicable</u>
Manufacturer's Name:	<u>Not Applicable</u>	Size:	<u>Not Applicable</u>
Unit Type:	<u>Not Applicable</u>		
Date of Manufacture:	<u>Not Applicable</u>		
Date of Installation:	<u>Not Applicable</u>		
Max Rated Design Capacity/Throughput:	<u>Not Applicable</u>		
Emitting Unit 7: <u>Truck Loading</u>		Model:	<u>Not Applicable</u>
Manufacturer's Name:	<u>Not Applicable</u>	Size:	<u>Not Applicable</u>
Unit Type:	<u>Not Applicable</u>		
Date of Manufacture:	<u>Not Applicable</u>		
Date of Installation:	<u>Not Applicable</u>		
Max Rated Design Capacity/Throughput:	<u>Not Applicable</u>		

Facility Air Pollution Control Unit(s) Identification			
Air Pollution Control Unit 1:	<u>Smokeless Combustor Flare</u>	Model:	<u>FKGT-H25-R20S-EPT</u>
Manufacturer's Name:	<u>ABC, Inc</u>	Size:	<u>25' with 20" stainless tip</u>
Unit Type:	<u>Smokeless Combustion Flare</u>		
Date of Manufacture:	<u>2007</u>	Estimated Control Efficiency:	<u>98%</u>
Date of Installation:	<u>October 1, 2007</u>	Emitting Unit Controlled:	<u>Tanks & Treater</u>
Estimated Cost of Control Equipment:	<u>\$11,000</u>		
Air Pollution Control Unit 2:	<u>Non-selective catalytic reduction with air-to-fuel ratio controllers</u>	Model:	<u>A42-B</u>
Manufacturer's Name:	<u>JM Technologies, Inc.</u>	Size:	<u>Not Applicable</u>
Unit Type:	<u>Non-selective catalytic reduction</u>		
Date of Manufacture:	<u>2007</u>	Estimated Control Efficiency:	<u>80-90%</u>

Date of Installation: <u>October 1, 2007</u> Estimated Cost of Control Equipment: <u>\$8,000</u>	Emitting Unit Controlled: <u>Engine</u>
Air Pollution Control Unit 3: _____ Manufacturer's Name: _____ Unit Type: _____ Date of Manufacture: _____ Date of Installation: _____ Estimated Cost of Control Equipment: _____	Model: _____ Size: _____ Estimated Control Efficiency: _____ Emitting Unit Controlled: _____

FACILITY EMISSIONS SUMMARY

The following tables must be completed for each emission source for total uncontrolled and controlled potential emissions from each source. Calculations must be provided as a separate attachment to this form. Potential emissions are to be calculated based on the production at a maximum capacity for 8760 hours per year (hrs/yr). (Note: To estimate produced gas flare emissions during periods of emergency, assume 500 to 2,000 hrs/yr of operation at maximum production capacity.)

Uncontrolled Potential Emissions (Tons Per Year)

EMISSION SOURCE <small>(e.g., crude tanks, water tanks, heater treater, natural gas-fired heater, produced gas flare, flash separator, pneumatic pump, separator gas vent, truck loading, fugitive equipment leaks etc.)</small>	Uncontrolled Potential Emissions (Tons Per Year)						
	VOC	HAPs	NO _x	CO	SO ₂	PM ₁₀	H ₂ S
Three (3) 400 bbl crude Tanks <small>(working, breathing, and flashing losses)</small>	61.64	0.05	Na	na	na	na	0
One (1) Heater Treater burner	0.02	Neg.	0.07	0.25	0.002	0.02	0
One (1) Engine (Prime Mover)	0.27	0.10	11.68	11.68	0.002	0.04	0
One (1) Produced gas flare	1.03	0.05	0.0008	0.0017	Neg.	Neg.	0
One (1) Produced Water Tank	4.37	Neg.	Na	na	na	na	0
Fugitive Emissions (equip. and dust)	0.86	0.02	Na	na	na	0.25	0
Truck Loading	2.50	Neg.	Na	na	na	na	0
TOTAL	70.69	0.22	11.75	11.93	0.004	0.06	0

Controlled Potential Emissions (Tons Per Year)

For controlled potential emission calculations, include controlled emissions from each controlled source and uncontrolled emissions from each source which does not have control.

EMISSION SOURCE	Controlled Potential Emissions (Tons Per Year)						
	VOC	HAPs	NO _x	CO	SO ₂	PM ₁₀	H ₂ S

Three (3) 400 bbl crude Tanks (working, breathing, and flashing losses)	1.23	Neg.	Na	na	na	na	0
One (1) Heater Treater burner	0.02	Neg.	0.07	0.25	0.002	0.02	0
One (1) Engine (Prime Mover)	0.03	0.10	1.17	1.17	0.002	0.04	0
One (1) Produced gas flare	1.03	0.05	0.0008	0.0017	Neg.	Neg.	0
One (1) Produced Water Tank	0.09	Neg.	Neg.	na	na	na	0
Fugitive Emissions	0.86	0.02	Na	na	na	0.25	0
Truck Loading	2.50	Neg.	Na	na	na	na	0
TOTAL	5.76	0.17	1.24	1.42	0.004	0.31	0

- Notes:** 1.) Calculations for the uncontrolled and controlled potential emissions must be provided as a separate attachment to this form. Please make sure to include all applicable calculations, spreadsheets, emission factors, manufacturers' data, field gas composition data, E&PTANKS program inputs and outputs, and/or any other appropriate model input and outputs.
- 2.) For air emissions that are determined to be minimal or negligible, please provide a brief written statement or explanation justifying this designation.

CERTIFICATION OF ACCURACY AND COMPLETENESS

I hereby certify that, to the best of my knowledge, information and belief, formed after reasonable inquiry, the information provided in this facility registration form is true, accurate, and complete.

(Name, title, and signature of company representative)

Name: _____
(Print or Type)

Title: _____ Telephone: _____

Signature: _____ Date: _____
(Original Signature Required)

Oil and Gas Well Facilities Checklist for a Complete Registration

INDUSTRY		MDEQ
<input type="checkbox"/>	Company Name/Contact Information	<input type="checkbox"/>
<input type="checkbox"/>	Well/Facility Name	<input type="checkbox"/>
<input type="checkbox"/>	Legal Locations/Facility Information (e.g., Lat., Long., Sec., Twns., and Range)	<input type="checkbox"/>
<input type="checkbox"/>	Current Facility Production Rates (Oil and gas production rates)	<input type="checkbox"/>
<input type="checkbox"/>	Facility Process Description	<input type="checkbox"/>
<input type="checkbox"/>	Facility Plot Plan/Maps	<input type="checkbox"/>
<input type="checkbox"/>	List of Equipment Onsite	<input type="checkbox"/>
<input type="checkbox"/>	Facility Equipment Emission Calculations (e.g., heater treaters, oil tanks, water tanks, engines, flares, fugitive leaks etc.)	<input type="checkbox"/>
<input type="checkbox"/>	All Pertinent Dates (e.g., well completion and control installation dates etc.)	<input type="checkbox"/>
<input type="checkbox"/>	Gas Stream Composition Analyses (including H ₂ S)	<input type="checkbox"/>
<input type="checkbox"/>	Crude Oil Composition Analyses (if necessary) (Note: sample must be taken from the upstream side of the storage tank)	<input type="checkbox"/>
<input type="checkbox"/>	Emission Models (Inputs/Outputs)	<input type="checkbox"/>
<input type="checkbox"/>	Other Calculations	<input type="checkbox"/>
<input type="checkbox"/>	Signed Facility Registration Form	<input type="checkbox"/>

Note: In order for the Air Quality Oil and Gas Services Section to adequately review the application, make sure to include all applicable calculations, spreadsheets, emission factors, manufacturers' data, field gas and/or crude oil composition data, raw laboratory data, E & P TANKS simulation program inputs and outputs, and/or any other appropriate model input and outputs. Contact us if you have any questions.