

FORM  
4  
Rev 12/05

State of Colorado



02577466



Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801 Denver, Colorado 80203 Phone: (303)894-2100 Fax: (303)894-2109

## SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

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<b>RECEIVED</b>			
SEP 23 2010			
COGCC/Rifle Office			

1. OGCC Operator Number: <u>66571</u>	4. Contact Name: <u>Daniel I. Padilla</u>	Complete the Attachment Checklist  OP OGCC
2. Name of Operator: <u>OXY USA WTP LP</u>	Phone: <u>970.263.3637</u>	
3. Address: <u>760 Horizon Drive, Suite 101</u> City: <u>Grand Junction</u> State: <u>CO</u> Zip: <u>81506</u>	Fax: <u>970.263.3694</u>	
5. API Number <u>05-045-15261</u>	OGCC Facility ID Number <u>335903</u>	Survey Plat
6. Well/Facility Name: <u>CC</u>	7. Well/Facility Number <u>697-17-50</u>	Directional Survey
8. Location (Qtr/Qtr, Sec, Twp, Rng, Meridian): <u>SWSW, Sec. 17, T6S, R97W, 6th P.M.</u>		Surface Eqmt Diagram
9. County: <u>Garfield</u>	10. Field Name: <u>Grand Valley</u>	Technical Info Page <input checked="" type="checkbox"/>
11. Federal, Indian or State Lease Number: _____		Other Additional page <input checked="" type="checkbox"/>

## General Notice

<input type="checkbox"/> CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)	
Change of Surface Footage from Exterior Section Lines:	<input type="checkbox"/> FNU/FSL <input type="checkbox"/> FEL/FWL
Change of Surface Footage to Exterior Section Lines:	<input type="checkbox"/> <input type="checkbox"/>
Change of Bottomhole Footage from Exterior Section Lines:	<input type="checkbox"/> <input type="checkbox"/>
Change of Bottomhole Footage to Exterior Section Lines:	<input type="checkbox"/> <input type="checkbox"/> attach directional survey
Bottomhole location Qtr/Qtr Sec, Twp, Rng, Mer <u>                    </u>	
Latitude <u>                    </u>	Distance to nearest property line <u>                    </u> Distance to nearest bldg, public rd, utility or RR <u>                    </u>
Longitude <u>                    </u>	Distance to nearest lease line <u>                    </u> Is location in a High Density Area (rule 603b)? Yes/No <u>                    </u>
Ground Elevation <u>                    </u>	Distance to nearest well same formation <u>                    </u> Surface owner consultation date: <u>                    </u>
GPS DATA:	
Date of Measurement <u>                    </u>	PDOP Reading <u>                    </u> Instrument Operator's Name <u>                    </u>
<input type="checkbox"/> CHANGE SPACING UNIT	
Formation <u>                    </u>	Formation Code <u>                    </u> Spacing order number <u>                    </u> Unit Acreage <u>                    </u> Unit configuration <u>                    </u>
<input type="checkbox"/> Remove from surface bond Signed surface use agreement attached <u>                    </u>	
<input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling):	
Effective Date: <u>                    </u>	
Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual	
<input type="checkbox"/> CHANGE WELL NAME	
From: <u>                    </u> NUMBER <u>                    </u>	
To: <u>                    </u>	
Effective Date: <u>                    </u>	
<input type="checkbox"/> ABANDONED LOCATION:	
Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Date Ready for Inspection: <u>                    </u>	
<input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS	
Date well shut in or temporarily abandoned: <u>                    </u>	
Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No	
MIT required if shut in longer than two years. Date of last MIT <u>                    </u>	
<input type="checkbox"/> SPUD DATE: <u>                    </u>	
<input type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)	
<input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK	
*submit cbl and cement job summaries	
Method used <u>                    </u>	Cementing tool setting/perf depth <u>                    </u> Cement volume <u>                    </u> Cement top <u>                    </u> Cement bottom <u>                    </u> Date <u>                    </u>
<input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004.	
Final reclamation will commence on approximately <u>                    </u> <input type="checkbox"/> Final reclamation is completed and site is ready for inspection.	

## Technical Engineering/Environmental Notice

<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Report of Work Done
Approximate Start Date: <u>09/27/10</u>	Date Work Completed: <u>                    </u>
Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)	
<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare
<input type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested
<input type="checkbox"/> Casing/Cementing Program Change	<input checked="" type="checkbox"/> Other: <u>CGC Pilot Test</u>
<input type="checkbox"/> E&P Waste Disposal	<input type="checkbox"/> Beneficial Reuse of E&P Waste
<input type="checkbox"/> Status Update/Change of Remediation Plans for Spills and Releases	

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: Daniel I. PadillaDate: 09/23/10 Email: daniel\_padilla@oxy.comPrint Name: Daniel I. PadillaTitle: Regulatory AdvisorCOGCC Approved: K. J. KijTitle: EIT IIIDate: DEC 01 2010CONDITIONS OF APPROVAL, IF ANY:

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

RECEIVED

SEP 23 2010

COGCC/Rifle Office

- OGCC Operator Number: 66571 API Number: 05-045-15261-00
- Name of Operator: OXY USA WTP LP OGCC Facility ID # 335903
- Well/Facility Name: CC Well/Facility Number: 697-17-50
- Location (QtrQtr, Sec, Twp, Rng, Meridian): SWSW, Sec. 17, T6S, R97W, 6th P.M.

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5.

DESCRIBE PROPOSED OR COMPLETED OPERATIONS

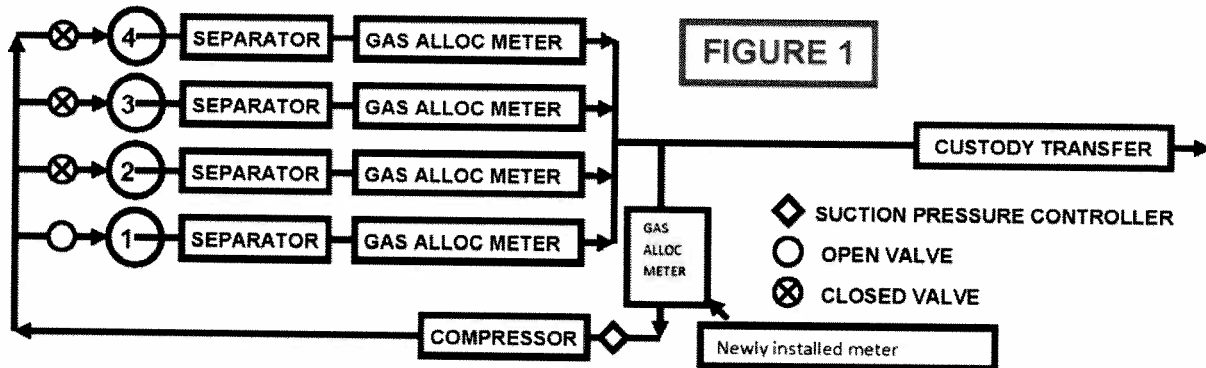
OXY USA WTP LP (Oxy) proposes to conduct a Continuous Gas Circulation (CGC) pilot test program on the following wells located on Oxy 697-17-50 Pad (Facility ID: 335903). The pilot test will be conducted on one or more of the following wells:

- > CC 697-17-50; API No. 05-045-15261
- > CC 697-17-25B; API No. 05-045-15012
- > CC 697-17-41B; API No. 05-045-15263
- > CC 697-17-27B; API No. 05-045-15245
- > CC 697-17-52; API No. 05-045-15252
- > CC 697-18-64A; API No. 05-045-15314
- > CC 697-18-47A; API No. 05-045-15253
- > CC 697-17-33B; API No. 05-045-15260
- > CC 697-17-25A; API No. 05-045-15246
- > CC 697-17-33A; API No. 05-045-15013
- > CC 697-17-19B; API No. 05-045-14709
- > CC 697-17-35A; API No. 05-045-15247
- > Cascade Creek 697-19-08A; API No. 05-045-15313
- > CC 697-18-47B; API No. 05-045-15242
- > CC 697-17-41A; API No. 05-045-15262

The CGC pilot test program will evaluate if Oxy can increase production. Oxy is seeking COGCC review, comment, and approval for this program. A brief overview and scope description for the proposed CGC pilot program is discussed below:

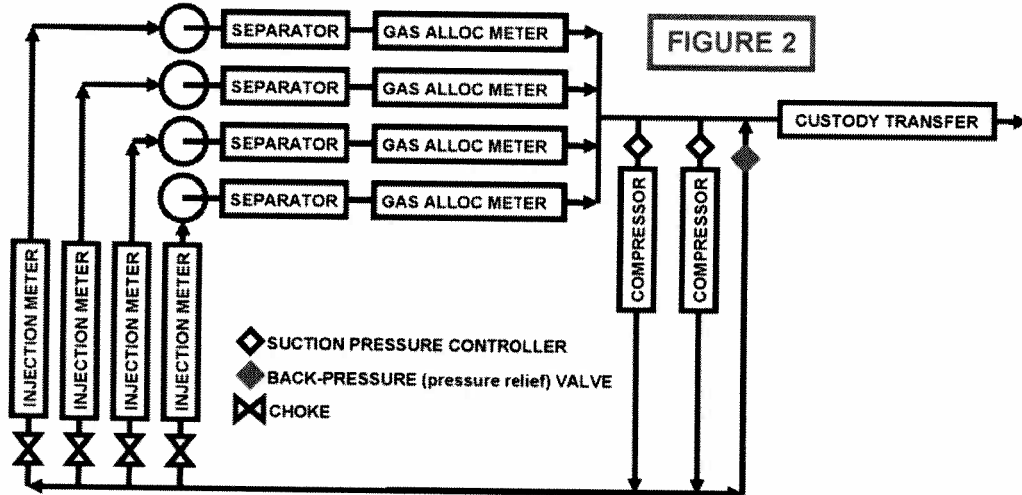
CGC is a method of production, which creates high velocity in the tubing, at or above critical velocity in order to adequately deliquify the well. It is anticipated that when the well is adequately unloaded, production volumes will increase. High velocity in the tubing string will be achieved using a rental compressor (no CDPHE air permit required for the pilot phase). Compressor suction will be plumbed to the pad gas gathering line and the compressor discharge will be plumbed into one of the well casings. An incremental volume of gas will be pumped down the well casing to achieve a minimum of 500 mcf/d tubing flow.

Oxy proposes to hook up the temporary compressor to 4 wells at a time. In Figure 1, even though 4 wells are shown, the compressor can be used on only one well at a time (note well 1 in Figure 1).



The compressor will be connected to the casing of all the wells on the pad via steel piping; roustabout crews would run the steel piping and valves to casing of the wells at same time the compressor is being installed. This way, when Oxy tests a different well, it would only have to close the valve of the tested well and open a new valve to test the next well. Oxy will coordinate the testing with its gas metering personnel. Oxy will determine the "net" sales of a well being tested by subtracting injected volumes from those volumes seen on the gas allocation meter. As the testing is moved from well to well, Oxy's gas metering personnel will be informed of the metered volumes per well to ensure that the proper injected volumes are being subtracted from the correct well. See attached page for additional details.

Should the pilot test program prove viable, Oxy would consider the following permanent CGC installation program, (Figure 2). Multiple compressors (with approved CDPHE permits), with each compressor supporting approximately 6 wells will be installed and operated similarly as above, but with an injection meter and choke also being installed on each well. The "net" sales of each well will be determined by subtracting the injected volume from the gas volume displaced on the gas allocation meter. Oxy will seek COGCC approval prior to installing a permanent CGC package.



Oxy is proposing to test CGC method, which is a relatively new solution for liquid loading in low rate gas wells. Other better known solutions for liquid loading are plunger lift and foam.

In gas wells producing at high rates (usually newly drilled wells); the high velocity gas easily carries the produced liquids to the surface. However, as producing rates decline, the lower velocity gas is no longer capable of efficiently carrying the liquids to the surface. Instead, liquids begin collecting in the wellbore, creating a heavy gradient, and placing additional back-pressure on the formation. As a result, production decreases. The collecting of liquids in the wellbore is called liquid loading and it begins when the gas velocity falls below the "critical" velocity. In summary; low gas rates/velocities lead to higher flowing bottom-hole pressures (FBHP), which in turn leads to even lower gas rates.

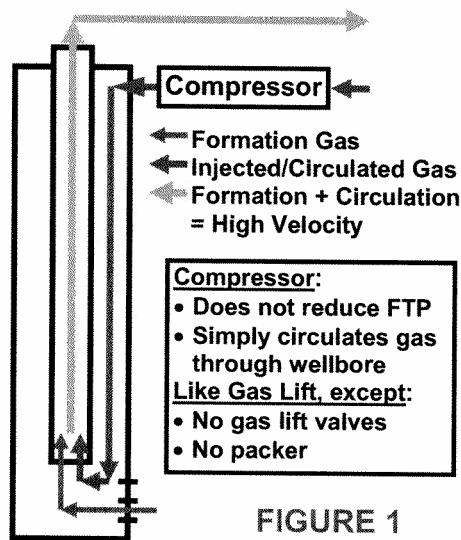


FIGURE 1

CGC injects/circulates gas through the wellbore to eliminate liquid loading in gas wells (Figure 1). CGC continuously injects/circulates gas through the wellbore, creates high velocity in the tubing (i.e.; above "critical"), easily carries liquids to the surface with the high velocity gas, and increases production.

CGC recreates an ideal condition that previously existed in that very well. The condition recreated is that which existed in the well just before the gas velocity fell below critical and just before liquid loading became a problem. It is an ideal condition because at no other time in the history of the well will the FBHP be any lower. CGC recreates that low FBHP by recreating the gas rate/velocity that existed earlier in the life of the well.

Figure 2 compares two conditions of the same well (i.e.; at differing points in the well life).

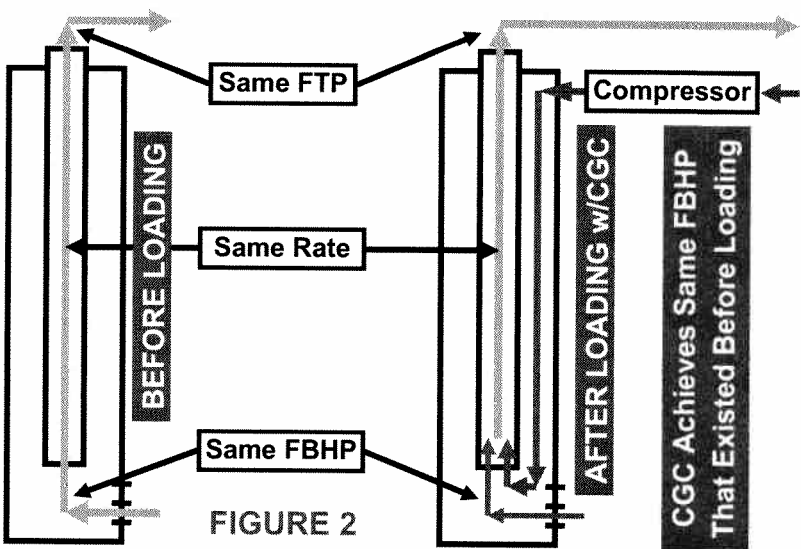


FIGURE 2

The 1<sup>st</sup> condition (on the left) shows the well producing at high rates, just before liquid loading becomes a problem. Thus, the FBHP is very low. The 2<sup>nd</sup> condition (on the right) shows the same well producing at lower gas rates, where liquid loading would normally be a problem. However, CGC has been installed to prevent liquid loading.

- In both conditions:
1. FTP is the same.
  2. The gas rates/velocities in the tubing are the same.
  3. Thus, in both conditions the FBHP is the same.

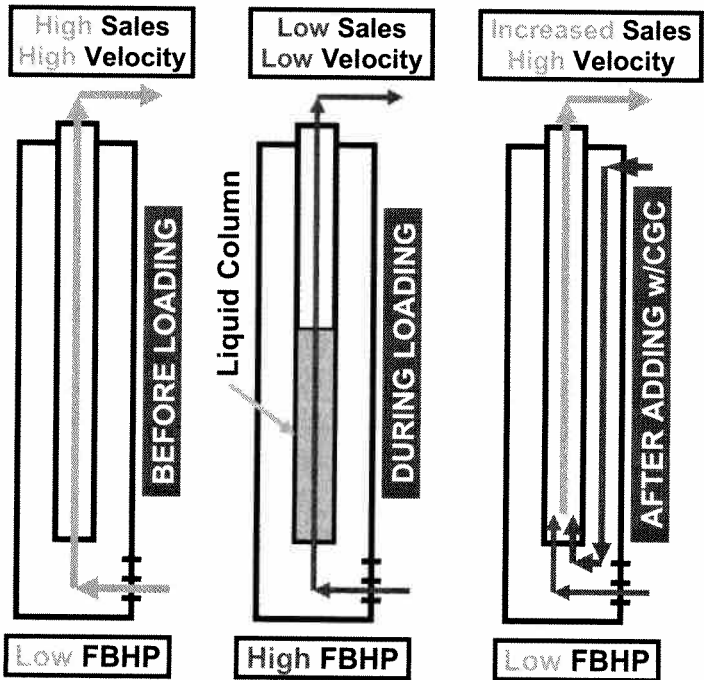


FIGURE 3

Thus, CGC achieves the same low FBHP that existed before liquid loading became a problem.

Figure 3 takes the explanation of CGC a step further.

On the far left is shown a well that is still producing high gas rates/velocities. Because of these high rates/velocities, there is not yet any liquid loading and the FBHP remains low.

In the center, that same well has now declined to the point where production is below critical. Thus, liquid loading has begun, liquids are no longer being carried to the surface, a liquid column has accumulated in the wellbore, and the FBHP has increased substantially. Thus, production is depressed even further.

On the right, CGC has now been installed in the well. CGC is designed to create the same gas

velocity that existed earlier in the life of the well (on the left). Because of the high gas velocity, liquids are now efficiently carried to the surface and no liquids accumulate in the wellbore. Thus, the FBHP is returned to the same low level that was seen before liquid loading (on the left). And because of the reduced FBHP, gas production is increased.

"Continuous gas circulation" (CGC) is one of the most direct solutions for liquid loading. Liquid loading began (liquids accumulated, the FBHP increased, and production suffered) because the gas rate/velocity in the tubing fell too low (below critical). CGC directly attacks the problem by:

- Again creating high gas rate/velocity in the tubing.
- Liquids are again carried to the surface with the high velocity gas.
- A light flowing gradient is again created.
- FBHP is again returned to low levels.
- THE RESULT: Production is increased.

Please let Oxy know if you require additional information.

