

October 18, 2018

U.S. CERTIFIED MAIL - 91 7199 9991 7038 7703 4818

EOG Resources Inc. 5509 Champions Drive Midland, TX 79706 Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #201H

Sec 4: Lot 1, SE/4NE/4, and E/2 SE/4 - T24S-R32E

Sec 9: E/2 E/2 - T24S-R32E

Approximate First Take Point: 100' FNL / 330' FEL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 330' FEL, Sec.9-T24S-R32E

Lea County, New Mexico

#### Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #201H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,450' and a MD of approximately 20,010' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 1, 2, S2NE and SE/4 of Sec. 4-T24S-R32E and the E/2 of Sec. 9-T24S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- · COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have	any questions, please do not hesitate to contact the undersigned at (432) 685-25
Respectfull	у,
19/1	r//h
Adam C. Re Landman	eker
Landman	
	I/We hereby elect to participate in the Mastiff Federal Com #201H.
	I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #201H.
C	FOC Berry Las
Company:	EOG Resources Inc.
D	
Title:	
Date:	



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #202H

Sec 4: Lot 1, SE/4NE/4, and E/2 SE/4 - T24S-R32E

Sec 9: E/2 E/2 - T24S-R32E

Approximate First Take Point: 100' FNL / 1310' FEL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 1310' FEL, Sec.9-T24S-R32E

Lea County, New Mexico

#### Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #202H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,450' and a MD of approximately 20,010' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 1, 2, S2NE and SE/4 of Sec. 4-T24S-R32E and the E/2 of Sec. 9-T24S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have any questions, please do not hesitate to contact the undersigned at (432) 685-2515.
Respectfully,
Adam C. Reker Landman
I/We hereby elect to participate in the Mastiff Federal Com #202H.
I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #202H.
Company: EOG Resources Inc.
Ву:
Name:
Title



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal – Mastiff Federal Com #203H

Sec 4: Lot 2, SW/4NE/4, W/2SE/4 - T24S-R32E

Sec 9: W/2 E/2 - T24S-R32E

Approximate First Take Point: 100' FNL / 2310' FEL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 2310' FEL, Sec.9-T24S-R32E

Lea County, New Mexico

#### Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #203H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,450' and a MD of approximately 20,010' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 1, 2, S2NE and SE/4 of Sec. 4-T24S-R32E and the E/2 of Sec. 9-T24S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- · COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you nave	any questions, please do not nesitate to contact the undersigned at (432) 685-23
Respectfull	у,
17/1	1//L
Adam C. R	eker
Landman	
	INV. b l l
	I/We hereby elect to participate in the Mastiff Federal Com #203H.
	I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #203H.
Company:	EOG Resources Inc.
By:	
Title:	
Date:	



October 18, 2018

U.S. CERTIFIED MAIL - 91 7199 9991 7038 7703 4801

EOG Resources Inc. 5509 Champions Drive Midland, TX 79706 Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #204H

Sec 4: Lot 3, SE/4NW/4, E/2SW/4 - T24S-R32E

Sec 33: E/2 W/2 - T23S-R32E

Approximate First Take Point: 100' FSL / 1720' FWL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 1720' FWL, Sec.33-T23S-R32E

Lea County, New Mexico

Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #204H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,450' and a MD of approximately 20,010' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 3 and 4, S/2NW/4, and SW/4 of Sec. 4-T24S-R32E and the W/2 of Sec. 33-T23S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- · COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have any questions, please do not hesitate to contact the undersigned at (432) 685-2515.
Respectfully,
AL MA
Adam C. Reker
Landman
I/We hereby elect to participate in the Mastiff Federal Com #204H.
I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #204H.
Company: EOG Resources Inc.
Ву:
Name:
Title:



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal – Mastiff Federal Com #205H

Sec 4: Lot 4, SW/4NW/4, and W/2SW/4 - T24S-R32E

Sec 33: W/2 W/2 - T23S-R32E

Approximate First Take Point: 100' FSL / 730' FWL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 730' FWL, Sec.33-T23S-R32E

Lea County, New Mexico

Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #205H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,450' and a MD of approximately 20,010' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 3 and 4, S/2NW/4, and SW/4 of Sec. 4-T24S-R32E and the W/2 of Sec. 33-T23S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have any	questions, please do not hesitate to contact the undersigned at (432) 685-2515.
Respectfully,	
Ah,	
Adam C. Reker	
Landman	
	I/We hereby elect to participate in the Mastiff Federal Com #205H.
	I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #205H.
Company: <u>EO</u>	G Resources Inc.
Ву:	
Name:	
Title:	
Date:	



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #301H

Sec 4: Lot 1, SE/4NE/4, and E/2 SE/4 - T24S-R32E

Sec 9: E/2 E/2 - T24S-R32E

Approximate First Take Point: 100' FNL / 330' FEL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 330' FEL, Sec.9-T24S-R32E

Lea County, New Mexico

#### Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #301H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,685' and a MD of approximately 20,245' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 1, 2, S2NE and SE/4 of Sec. 4-T24S-R32E and the E/2 of Sec. 9-T24S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have	any questions, please do not hesitate to contact the undersigned at (432) 685-2515.
Respectfully	y,
Adam C. Re	eker exercise the second of th
Landman	
	I/We hereby elect to participate in the Mastiff Federal Com #301H.
	I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #301H.
Company:	EOG Resources Inc.
Ву:	
Name:	
Title:	
Date:	



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #302H

Sec 4: Lot 1, SE/4NE/4, and E/2 SE/4 - T24S-R32E

Sec 9: E/2 E/2 - T24S-R32E

Approximate First Take Point: 100' FNL / 825' FEL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 825' FEL, Sec.9-T24S-R32E

Lea County, New Mexico

Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #302H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,575' and a MD of approximately 20,135' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 1, 2, S2NE and SE/4 of Sec. 4-T24S-R32E and the E/2 of Sec. 9-T24S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have ar	ny questions, please do not hesitate to contact the undersigned at (432) 685-251
Respectfully,	
All	
Adam C. Rek	er
Landman	
	I/We hereby elect to participate in the Mastiff Federal Com #302H.
	I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #302H.
Company: _I	EOG Resources Inc.
D	
Бу	
Name: _	
Title:	
Date:	



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal – Mastiff Federal Com #303H

Sec 4: Lot 2, SW/4NE/4, W/2SE/4 - T24S-R32E

Sec 9: W/2 E/2 - T24S-R32E

Approximate First Take Point: 100' FNL / 1520' FEL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 1520' FEL, Sec.9-T24S-R32E

Lea County, New Mexico

# Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #303H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,685' and a MD of approximately 20,245' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 1, 2, S2NE and SE/4 of Sec. 4-T24S-R32E and the E/2 of Sec. 9-T24S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- · COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have ar	ny questions, please do not hesitate to contact the undersigned at (432) 685-2515	5.
Respectfully,		
ALL	112	
Adam C. Rek Landman	er	
Landman		
	I/We hereby elect to participate in the Mastiff Federal Com #303H.	
	I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #303H.	
Company: _	EOG Resources Inc.	
Ву:		
Title:		
Date:		



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #304H

Sec 4: Lot 2, SW/4NE/4, W/2SE/4 - T24S-R32E

Sec 9: W/2 E/2 - T24S-R32E

Approximate First Take Point: 100' FNL / 1850' FEL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 1850' FEL, Sec.9-T24S-R32E

Lea County, New Mexico

### Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #304H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,575' and a MD of approximately 20,135' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 1, 2, S2NE and SE/4 of Sec. 4-T24S-R32E and the E/2 of Sec. 9-T24S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have any questions, please do not hesitate to contact the undersigned at (432) 685-2515.

Respectfully,

Adam C. Reker Landman

	I/We hereby elect to participate in the Mastiff Federal Com #304H.
_	I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #304H.
Company:	EOG Resources Inc.
By:	
Name:	
Title:	
Date:	



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal – Mastiff Federal Com #305H

Sec 4: Lot 2, SW/4NE/4, W/2SE/4 - T24S-R32E

Sec 9: W/2 E/2 - T24S-R32E

Approximate First Take Point: 100' FNL / 2490' FEL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 2490' FEL, Sec.9-T24S-R32E

Lea County, New Mexico

# Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #305H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,685' and a MD of approximately 20,245' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 1, 2, S2NE and SE/4 of Sec. 4-T24S-R32E and the E/2 of Sec. 9-T24S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

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- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have any questions, please do not hesitate to contact t	the undersigned at (432) 685-2515.
Respectfully,	
AL ML	
Adam C. Reker	
Landman	
I/We hereby elect to participate in the Mas	stiff Federal Com #305H.
I/We hereby elect <u>not</u> to participate in the	Mastiff Federal Com #305H.
Company: EOG Resources Inc.	
Ву:	
Name:	
Title:	



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #306H

Sec 4: Lot 3, SE/4NW/4, E/2SW/4 - T24S-R32E

Sec 33: E/2 W/2 - T23S-R32E

Approximate First Take Point: 100' FSL / 2310' FWL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 2310' FWL, Sec.33-T23S-R32E

Lea County, New Mexico

## Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #306H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,575' and a MD of approximately 20,135' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 3 and 4, S/2NW/4, and SW/4 of Sec. 4-T24S-R32E and the W/2 of Sec. 33-T23S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have any questions, please do not hesitate to contact the undersigned at (432) 685-2515. Respectfully, AL ML Adam C. Reker Landman I/We hereby elect to participate in the Mastiff Federal Com #306H. I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #306H. Company: EOG Resources Inc.



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #307H

Sec 4: Lot 3, SE/4NW/4, E/2SW/4 - T24S-R32E

Sec 33: E/2 W/2 - T23S-R32E

Approximate First Take Point: 100' FSL / 1910' FWL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 1910' FWL, Sec.33-T23S-R32E

Lea County, New Mexico

### Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #307H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,685' and a MD of approximately 20,245' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 3 and 4, S/2NW/4, and SW/4 of Sec. 4-T24S-R32E and the W/2 of Sec. 33-T23S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- · COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have any questions, please do not hesitate to cont	act the undersigned at (432) 685-2515.
Respectfully,	
AL ML	
Adam C. Reker	
Landman	
I/We hereby elect to participate in the	Mastiff Federal Com #307H.
I/We hereby elect <u>not</u> to participate in	the Mastiff Federal Com #307H.
·	
Company: EOG Resources Inc.	
Ву:	
Name:	
Title:	



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #308H

Sec 4: Lot 4, SW/4NW/4, and W/2SW/4 - T24S-R32E

Sec 33: W/2 W/2 - T23S-R32E

Approximate First Take Point: 100' FSL / 1310' FWL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 1310' FWL, Sec.33-T23S-R32E

Lea County, New Mexico

# Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #308H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,575' and a MD of approximately 20,135' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 3 and 4, S/2NW/4, and SW/4 of Sec. 4-T24S-R32E and the W/2 of Sec. 33-T23S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have any questions, please do not hesitate to contact the undersigned at (432) 685-2515. Respectfully, Adam C. Reker Landman I/We hereby elect to participate in the Mastiff Federal Com #308H. I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #308H. Company: EOG Resources Inc. Title: \_\_\_\_\_



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #309H

Sec 4: Lot 4, SW/4NW/4, and W/2SW/4 - T24S-R32E

Sec 33: W/2 W/2 - T23S-R32E

Approximate First Take Point: 100' FSL / 920' FWL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 920' FWL, Sec.33-T23S-R32E

Lea County, New Mexico

## Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #309H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,685' and a MD of approximately 20,245' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 3 and 4, S/2NW/4, and SW/4 of Sec. 4-T24S-R32E and the W/2 of Sec. 33-T23S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have any questions, please do not hesitate to contact	et the undersigned at (432) 685-2515.
Respectfully,	
All Me	
Adam C. Reker	
Landman	
I/We hereby elect to participate in the Ma	astiff Federal Com #309H.
I/We hereby elect <u>not</u> to participate in the	Mastiff Federal Com #309H.
Company: EOG Resources Inc.	
Ву:	
Name:	
Title:	



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #310H

Sec 4: Lot 4, SW/4NW/4, and W/2SW/4 - T24S-R32E

Sec 33: W/2 W/2 - T23S-R32E

Approximate First Take Point: 100' FSL / 330' FWL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 330' FWL, Sec.33-T23S-R32E

Lea County, New Mexico

### Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #310H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 9,575' and a MD of approximately 20,135' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$10,396,855.00, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 3 and 4, S/2NW/4, and SW/4 of Sec. 4-T24S-R32E and the W/2 of Sec. 33-T23S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- · COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have any questions, please do not hesitate to contact the undersigned at (432) 685-2515.
Respectfully,
AL ML
Adam C. Reker
Landman
I/We hereby elect to participate in the Mastiff Federal Com #310H.
I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #310H.
Company: EOG Resources Inc.
Ву:
Name:
Title:
Date:



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #501H

Sec 4: Lot 1, SE/4NE/4, and E/2 SE/4 - T24S-R32E

Sec 9: E/2 E/2 - T24S-R32E

Approximate First Take Point: 100' FNL / 330' FEL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 330' FEL, Sec.9-T24S-R32E

Lea County, New Mexico

## Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #501H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 10,600' and a MD of approximately 21,160' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$11,800,385.00 and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 1, 2, S2NE and SE/4 of Sec. 4-T24S-R32E and the E/2 of Sec. 9-T24S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have any questions, please do not nesitate to contact the undersigned at (432) 683-23
Respectfully,
All Me
Adam C. Reker
Landman
I/We hereby elect to participate in the Mastiff Federal Com #501H.
Two horeby elect to participate in the Mastin Federal Com #30111.
I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #501H.
Company: EOG Resources Inc.
Ву:
Name:
Title:
Data



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #502H

Sec 4: Lot 1, SE/4NE/4, and E/2 SE/4 - T24S-R32E

Sec 9: E/2 E/2 - T24S-R32E

Approximate First Take Point: 100' FNL / 990' FEL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 990' FEL, Sec.9-T24S-R32E

Lea County, New Mexico

# Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #502H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 10,840' and a MD of approximately 21,400' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$11,800,385 and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 1, 2, S2NE and SE/4 of Sec. 4-T24S-R32E and the E/2 of Sec. 9-T24S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- · COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have any questions, please do not hesitate to contact the undersigned at (432) 685-2515. Respectfully, Adam C. Reker Landman I/We hereby elect to participate in the Mastiff Federal Com #502H. I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #502H. Company: EOG Resources Inc. Title: Date:



5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #503H

Sec 4: Lot 2, SW/4NE/4, W/2SE/4 - T24S-R32E

Sec 9: W/2 E/2 - T24S-R32E

Approximate First Take Point: 100' FNL / 1650' FEL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 1650' FEL, Sec.9-T24S-R32E

Lea County, New Mexico

Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #503H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 10,600' and a MD of approximately 21,160' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$11,800,385, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 1, 2, S2NE and SE/4 of Sec. 4-T24S-R32E and the E/2 of Sec. 9-T24S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.



If you have	any questions, please do not hesitate to contact the undersigned at (432) 683-2.
Respectfully	/·
AL	1/12
Adam C. Re	eker
Landman	
	I/We hereby elect to participate in the Mastiff Federal Com #503H.
	I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #503H.
Company:	EOG Resources Inc.
By:	
Title:	
Date:	



**EOG Resources Inc.** 

5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #504H

Sec 4: Lot 2, SW/4NE/4, W/2SE/4 - T24S-R32E

Sec 9: W/2 E/2 - T24S-R32E

Approximate First Take Point: 100' FNL / 2310' FEL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 2310' FEL, Sec.9-T24S-R32E

Lea County, New Mexico

Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #504H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 10,840' and a MD of approximately 21,400' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$11,800,385, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 1, 2, S2NE and SE/4 of Sec. 4-T24S-R32E and the E/2 of Sec. 9-T24S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- · COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.

If an agreement cannot be reached within 30 days of the date of this letter, COG will apply to the New Mexico Oil Conservation Division for compulsory pooling of your interest into a spacing unit for the proposed well if uncommitted at such time.



If you nave	any questions, please do not hesitate to contact the undersigned at (432) 685-25
Respectfully	y,
Adam C. Re Landman	eker
	I/We hereby elect to participate in the Mastiff Federal Com #504H.
	I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #504H.
Company: _	EOG Resources Inc.
By:	
Name:	
Title:	
Date:	



**EOG Resources Inc.** 

5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #505H

Sec 4: Lot 4, SW/4NW/4, and W/2SW/4 - T24S-R32E

Sec 33: W/2 W/2 - T23S-R32E

Approximate First Take Point: 100' FSL / 990' FWL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 990' FWL, Sec.33-T23S-R32E

Lea County, New Mexico

Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #505H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 10,840' and a MD of approximately 21,400' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$11,800,385, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 3 and 4, S/2NW/4, and SW/4 of Sec. 4-T24S-R32E and the W/2 of Sec. 33-T23S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- · COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.

If an agreement cannot be reached within 30 days of the date of this letter, COG will apply to the New Mexico Oil Conservation Division for compulsory pooling of your interest into a spacing unit for the proposed well if uncommitted at such time.



Date: \_\_\_\_\_



**EOG Resources Inc.** 

5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #506H

Sec 4: Lot 4, SW/4NW/4, and W/2SW/4 - T24S-R32E

Sec 33: W/2 W/2 - T23S-R32E

Approximate First Take Point: 100' FSL / 330' FWL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 330' FWL, Sec.33-T23S-R32E

Lea County, New Mexico

Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #506H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 10,600' and a MD of approximately 21,160' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$11,800,385, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 3 and 4, S/2NW/4, and SW/4 of Sec. 4-T24S-R32E and the W/2 of Sec. 33-T23S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.

If an agreement cannot be reached within 30 days of the date of this letter, COG will apply to the New Mexico Oil Conservation Division for compulsory pooling of your interest into a spacing unit for the proposed well if uncommitted at such time.



If you have any questions, please do not hesitate to contact the	e undersigned at (432) 685-2515.
Respectfully,	
Ah M	
Adam C. Reker	
Landman	
I/We hereby elect to participate in the Mastiff	Federal Com #506H.
I/We hereby elect <u>not</u> to participate in the Mas	stiff Federal Com #506H.
Company: EOG Resources Inc.	
Ву:	
Name:	
Title:	
Date:	



**EOG Resources Inc.** 

5509 Champions Drive Midland, TX 79706

Attention: Land Department

Re: Well Proposal - Mastiff Federal Com #507H

Sec 4: Lot 4, SW/4NW/4, and W/2SW/4 - T24S-R32E

Sec 33: W/2 W/2 - T23S-R32E

Approximate First Take Point: 100' FSL / 330' FWL, Sec.4-T24S-R32E Approximate Last Take Point: 100' FSL / 330' FWL, Sec.33-T23S-R32E

Lea County, New Mexico

#### Dear Sir/Madam:

COG Operating LLC (COG), as Operator, hereby proposes the drilling and completion of the Mastiff Federal Com #507H well as a horizontal well at the above-captioned location, or at a legal location as approved by the governing regulatory agency, to a TVD of approximately 10,840' and a MD of approximately 21,400' to test the Bone Spring Formation ("Operation"). Surface Hole Location and Bottom Hole Location to be determined in accordance with COG's operating plans and surface restrictions on the property. The total cost of the Operation is estimated to be \$11,800,385, and a detailed description of the cost is set out in the enclosed Authority for Expenditure ("AFE").

COG is proposing to drill this well under the terms of the modified 1989 AAPL form of Operating Agreement which is enclosed for your review and approval. The Operating Agreement's contract lands will cover the Lots 3 and 4, S/2NW/4, and SW/4 of Sec. 4-T24S-R32E and the W/2 of Sec. 33-T23S-R32E. It has the following general provisions:

- 100/300 Non-Consenting Penalty
- \$7,000/\$700 Drilling and Producing Rate
- · COG Operating LLC named as Operator

Please indicate your participation election in the space provided below, sign and return this letter, along with a signed copy of the enclosed AFE and a copy of your geologic well requirements. A self-addressed, postage paid envelope is enclosed for your convenience. If you do not wish to participate, COG would like to term assign your leasehold under the following general terms:

- Reservation unto Assignor of the positive difference, if any, between existing burdens and 20%
- 3 Year Primary Term
- \$3,000/ Net Acre Bonus Consideration

The term assignment offer is subject to the approval of COG's management and verification of title.

If an agreement cannot be reached within 30 days of the date of this letter, COG will apply to the New Mexico Oil Conservation Division for compulsory pooling of your interest into a spacing unit for the proposed well if uncommitted at such time.



If you have any questions, please do not hesitate to contact the undersigned at (432) 685-2515.
Respectfully,
AL ML
Adam C. Reker
Landman
I/We hereby elect to participate in the Mastiff Federal Com #507H.
I/We hereby elect <u>not</u> to participate in the Mastiff Federal Com #507H.
Company: EOG Resources Inc.
Ву:
Name:
Title:
Date:

WELL NAME:	MASTIFF FED COM #201H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FNL & 330 FEL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 9: 100 FSL & 330 FEL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,010	
LEGAL:	Sec 4-24S-32E	TVD:	9,450	

le/Curative/Permit urance urance uranges/Right of Way rvey/Stake Location cation/Pits/Road Expense illing / Completion Overhead urnkey Contract otage Contract upwork Contract rectional Drilling Services ace Equipment ac Chemicals ac Proppant	201 202 203 204 205 206 207 208	20,000 3 7,000 135,000 3	302 303 305	A STATE OF THE STA	351 352 353	45,000			20,0 2,5 20,0 7,0
mages/Right of Way rvey/Stake Location cation/Pits/Road Expense lilling / Completion Overhead rrnkey Contract ortage Contract sywork Contract rectional Drilling Services ac Equipment ac Chemicals	203 204 205 206 207	20,000 3 7,000 135,000 3	303	A ST. II No. 100	352	45,000			20,0
rvey/Stake Location cation/Pits/Road Expense  Illing / Completion Overhead rrikey Contract totage Contract toywork Contract rectional Drilling Services ac Equipment ac Chemicals	204 205 206 207	7,000 135,000	305	A ST. II No. 100	352	4E 000		Note that the second	7,0
cation/Pits/Road Expense  Siling / Completion Overhead  rnkey Contract  otage Contract  sywork Contract  rectional Drilling Services  ac Equipment  ac Chemicals	205 206 207	135,000	3 × 2 × 5			4E 000			
illing / Completion Overhead  rnkey Contract  otage Contract  sywork Contract rectional Drilling Services ac Equipment ac Chemicals	206 207		3 × 2 × 5	10,000			366		190,0
rrikey Contract otage Contract sywork Contract rectional Drilling Services ac Equipment ac Chemicals	207	7,500		1E 000	333	43,000	300	Contract of the last of the la	22,5
otage Contract sywork Contract rectional Drilling Services ac Equipment ac Chemicals	1 688 July 10		306	15,000			- 9		
nywork Contract rectional Drilling Services ac Equipment ac Chemicals	200	0							-
rectional Drilling Services ac Equipment ac Chemicals	The state of the s	0	- 24						40E (
ac Equipment ac Chemicals	209	495,000					- 6		495,0
ac Chemicals	210	186,000					- 1		186,0
ac Chemicals			307	1,418,000		E Ve D			1,418,0
			308	513,000					513,
			309	404,000					404,
ac Proppant Transportation			310	399,000		AND THE RESERVE			399,
	211		311		354		367		166,
el & Power				1,019,000	00.1		368		1,079,
ater	212		312						104,
IS .	213		313	12,000			369		
ud & Chemicals	214	70,000	314	20,000			370	-	90,
ill Stem Test	215	0	315						
oring & Analysis	216	0				STATE OF A STATE OF			
ement Surface	217	25,500							25,
	218	35,000				LUCATE SEN			35,
ement Intermediate	219	130,000							130,
ement 2nd Intermediate/Production							371		
ement Squeeze & Other (Kickoff Plug)	220	0					we to to		32,
oat Equipment & Centralizers	221	32,500		NEET,					
asing Crews & Equipment	222	39,000					2,550		39,
shing Tools & Service	223	0	323				372		
eologic/Engineering	224	6,000	324		355		373		6,
ontract Labor	225	570107000°	325	40,000	356	122,935	374	6,500	175
	226		326	15,000	357		375		47
ompany Supervision			327	182,000	358		376	5,000	272
ontract Supervision	227				550		377	7,	35
esting Casing/Tubing	228		328	5,000			3//		
lud Logging Unit	229		329						28
ogging	230	0					378		-
erforating/Wireline Services	231	4,000	331	538,000			379		542
timulation/Treating			332	12,000			380		12
A DESCRIPTION OF THE PROPERTY		CONTRACTOR OF THE PARTY OF THE	333	90,000			381	8,800	98
ompletion Unit			334				382		
wabbing Unit				466,000	250		383	7,000	598
entals-Surface	235		335	466,000	359			7,000	190
entals-Subsurface	236		336	80,000			384		
rucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243
felding Services	238	3,000	338	5,000	361		386		
/ater Disposal	239	0	339	60,000	362	135,000	387		195
	240		340					Benediction to Assess the	
lug to Abandon	241		341						
eismic Analysis	(30) (30) (3)						389		
liscellaneous	242		342						292
contingency	243		343	250,000	363		390		-
closed Loop & Environmental	244	220,000	344	5,000	364		388		225
lyed Diesel	245		345	484,000					
coil Tubing	-		346						
lowback Crews & Equip		DATE OF THE STREET	347	48,000				The state of the s	48
Offset Directional/Frac	248		348				391		
TOTAL INTANGIBLES		2,346,900		6,198,000		302,935		30,300	8,878
0765-197-03704-68-037555867855	-								
FANGIBLE COSTS Surface Casing	401	48,000						AND REPORT OF	48
ntermediate Casing	402	174,000		INDICATE STATE OF THE					174
	-							THE RESERVE OF	327
Production Casing/Liner	403	327,000	E04	52,030		Description of the second	530	5,000	57
ubing	- /-		504						81
Vellhead Equipment	405	60,000	505	18,700			531	3,000	
Pumping Unit	-17	0.000					506	96,000	96
Prime Mover							507		
Rods							508	35,000	35
Pumps-Sub Surface (BH)	-a		509				532	5,000	
anks	-0.5				510	63,645.00			- 63
lowlines	-34				511				2
	-			LQ. T. E. L. III	512			1.4.200	140
leater Treater/Separator	-0.0				513		533	15,000	145
lectrical System	-0				513	, 130,000.00			
Packers/Anchors/Hangers	414		514	65,000		to the state of	534	2,000	6
Couplings/Fittings/Valves	415			all the state of the	515				100
Dehydration					517				
njection Plant/CO2 Equipment	7.0	The second second		THE REAL PROPERTY.	518	3			
Pumps-Surface	-				521			THE PARTY OF THE PARTY	
	-			AND DESCRIPTIONS OF THE PARTY O	522		529	7,000	1
nstrumentation/SCADA/POC	-						535		
Miscellaneous	419		519		523				
Contingency	420		520		524	-	536		
Meters/LACT	-0			LEAGUE DE LE	525				2
Tares/Combustors/Emission	20				526	3 23,584			2
sas Lift/Compression			527	11,000	516	60,000	528	(,	7
TOTAL TANGIBLES	-5	609,000		146,730		591,990	00 1995	171,000	1,51
TOTAL TANGIBLES TOTAL WELL COSTS	-	2,955,900	•	6,345,000	•	894,925		201,300	10,39
	t	28%	í	61%	ā K	9%		2%	
% of Total Well Cos		1430) <u>24-11</u> -10		E926048544					
% of Total Well Cos		Date Prepared:	_	10/18/18					
	-	error and the second	10						
COG Operating LLC  We approve:		COG Operating LLC	ca						
	-	COG Operating LLC By:	CR	MB				-0	

This AFE is only an estimate. By signing you agree to pay your share of the actual costs incurred.

WELL NAME:	MASTIFF FED COM #202H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FNL & 1310 FEL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 9: 100 FSL & 1310 FEL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,010	
LEGAL:	Sec 4-24S-32E	TVD:	9,450	

NTANGIBLE COSTS itle/Curative/Permit	201	Drlg - Rig Release(D) 20,000		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	<u>TOTAL</u>
surance	202		302					7.31	2
amages/Right of Way	203		303		351			THE PERSON NAMED IN	20,
urvey/Stake Location	204	7,000		NAME OF TAXABLE PARTY.	352	7			7,
ocation/Pits/Road Expense	205	10000000	305	10,000	353	45,000	366		190,
	CONTRACTOR .				333	45,000	300		-
illing / Completion Overhead	206	7,500	306	15,000					22,
urnkey Contract	207	0							
potage Contract	208	0							
aywork Contract	209	495,000		Street Library				DESCRIPTION OF THE PROPERTY OF	495,
irectional Drilling Services	210	186,000	1						186,
	210	100,000	202	4 440 000					
ac Equipment	-		307	1,418,000		TOTAL PROPERTY.			1,418
rac Chemicals		THE PARTY OF THE P	308	513,000					513
rac Proppant			309	404,000					404
rac Proppant Transportation		THE RESERVED	310	399,000					399
	-	00,000			254	-	207		
pel & Power	211		311	68,000	354		367		166
ater	212	60,000	312	1,019,000			368		1,079
its	213	92,000	313	12,000		Land TV	369		104
lud & Chemicals	214	70,000	314	20,000			370		90
			12 To 18	20,000			~ ~		
ill Stem Test	215	0	315						-
oring & Analysis	216	0	- 1						
ement Surface	217	25,500	ij						25
	(2) (Sec.)					William Control of the Control of th			35
ement Intermediate	218	35,000	- 1						
ement 2nd Intermediate/Production	219	130,000							130
ement Squeeze & Other (Kickoff Plug)	220	0	1	Movement Wille		E WIND DAIL	371		
oat Equipment & Centralizers	221	32,500	1					150 B 10 B	32
	07.00		5						
sing Crews & Equipment	222	39,000	1						39
shing Tools & Service	223	0	323			COMPLETE	372		
eologic/Engineering	224	6,000	324		355		373		6
ontract Labor	225	6,500	325	40,000	356	122,935	374	6,500	175
	918 (2.5) ·					122,333		0,000	
ompany Supervision	226	32,400	326	15,000	357		375		47
Contract Supervision	227	85,000	327	182,000	358		376	5,000	272
esting Casing/Tubing	228	30,000	328	5,000			377		35
	229	28,000	329	5,500				THE RESERVE OF THE PERSON NAMED IN	28
lud Logging Unit	/2/2/2/2 ·		329				العصيدا		
ogging	230	0					378		
erforating/Wireline Services	231	4,000	331	538,000			379		542
Stimulation/Treating			332	12,000		The second second	380		12
								9.900	
ompletion Unit	4		333	90,000			381	8,800	98
wabbing Unit			334				382		
entals-Surface	235	125,000	335	466,000	359		383	7,000	598
entals-Subsurface	236	110,000	336	80,000			384		190
rucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243
'elding Services	238	3,000	338	5,000	361		386		8
ater Disposal	239	0	339	60,000	362	135,000	387		195
ug to Abandon	240	0	340						
									9.
eismic Analysis	241	0	341						
fiscellaneous	242	0	342				389		
Contingency	243	42,000	343	250,000	363		390		292
losed Loop & Environmental	244	220,000	344	5,000	364		388		225
		220,000			504		500		
yed Diesel	245		345	484,000					
coll Tubing	1		346			Harman Name of the			
lowback Crews & Equip			347	48,000		2 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1			48
Offset Directional/Frac	248		348				391		S
	240	0.040.000	0.40	0.400.000		200 005	001	20.000	8,878
TOTAL INTANGIBLES		2,346,900		6,198,000		302,935		30,300	0,070
ANGIBLE COSTS									
surface Casing	401	48,000							48
ntermediate Casing	402	174,000							174
roduction Casing/Liner	403	327,000							327
ubing			504	52,030			530	5,000	57
/ellhead Equipment	405	60,000	505	18,700			531	3,000	81
	-100	00,000	500	10,100			506		
								96,000	96
rime Mover							507		
rime Mover								35,000	35
rime Mover lods			509				507 508		
rrime Mover lods rumps-Sub Surface (BH)			509		Fin	00.015.00	507	35,000 5,000	
rrime Mover lods rumps-Sub Surface (BH) anks			509		510		507 508		63
rrime Mover lods rumps-Sub Surface (BH)			509		510 511	63,645.00 26,593.00	507 508		
rrime Mover lods rumps-Sub Surface (BH) anks			509			26,593.00	507 508		63 26
rime Mover ods umps-Sub Surface (BH) anks lowlines eater Treater/Separator			509		511 512	26,593.00 140,007.00	507 508 532	5,000	63 26 140
rrime Mover cods umps-Sub Surface (BH) anks lowlines leater Treater/Separator lectrical System					511	26,593.00 140,007.00	507 508 532 533	5,000	5 63 26 140 145
rime Mover lods umps-Sub Surface (BH) anks lowlines leater Treater/Separator	414		509	65,000	511 512	26,593.00 140,007.00 130,000.00	507 508 532	5,000	5 63 26 140 145
rrime Mover cods umps-Sub Surface (BH) anks lowlines leater Treater/Separator lectrical System	414 415			65,000	511 512	26,593.00 140,007.00 130,000.00	507 508 532 533	5,000	5 63 26 140 145
rime Mover ods umps-Sub Surface (BH) anks lowlines eater Treater/Separator lectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves				65,000	511 512 513 515	26,593.00 140,007.00 130,000.00	507 508 532 533	5,000	5 63 26 140 145
ime Mover ods  umps-Sub Surface (BH) anks  owlines eater Treater/Separator ectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration				65,000	511 512 513 515 517	26,593.00 140,007.00 130,000.00	507 508 532 533	5,000	5 63 26 140 145
ime Mover ods umps-Sub Surface (BH) anks owlines eater Treater/Separator electrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment				65,000	511 512 513 515 517 518	26,593.00 140,007.00 130,000.00 102,282	507 508 532 533	5,000	5 63 26 140 145 67
ime Mover ods umps-Sub Surface (BH) anks owlines eater Treater/Separator electrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment				65,000	511 512 513 515 517	26,593.00 140,007.00 130,000.00	507 508 532 533	5,000	60 26 140 144 60 102
ime Mover ods  umps-Sub Surface (BH) anks  owlines  acter Treater/Separator ectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment umps-Surface				65,000	511 512 513 515 517 518	26,593.00 140,007.00 130,000.00 102,282	507 508 532 533	5,000	66 26 14( 144 66 102
ime Mover ods  Jimps-Sub Surface (BH) anks owlines eater Treater/Separator ectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment Jimps-Surface strumentation/SCADA/POC	415		514	65,000	511 512 513 515 517 518 521 522	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	507 508 532 533 534	15,000 2,000 7,000	66 26 144 144 66 106
ime Mover ods  Jimps-Sub Surface (BH) anks owlines eater Treater/Separator ectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration election Plant/CO2 Equipment Jimps-Surface strumentation/SCADA/POC iscellaneous	415		514	65,000	511 512 513 515 517 518 521 522 523	26,593.00 140,007.00 130,000.00 102,282	507 508 532 533 534 529 535	15,000 2,000	66 26 144 144 66 106
ime Mover ods  imps-Sub Surface (BH) anks  owlines  pater Treater/Separator ectrical System ackers/Anchors/Hangers  ouplings/Fittings/Valves ehydration ection Plant/CO2 Equipment imps-Surface strumentation/SCADA/POC iscellaneous ontingency	415		514	65,000	511 512 513 515 517 518 521 522 523 524	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	507 508 532 533 534	15,000 2,000 7,000	66 22 144 148 66 102
ime Mover ods imps-Sub Surface (BH) unks owtlines outlines outline	415		514	65,000	511 512 513 515 517 518 521 522 523	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	507 508 532 533 534 529 535	15,000 2,000 7,000	66 22 144 148 66 102
ime Mover ods  imps-Sub Surface (BH) anks  owlines eater Treater/Separator ectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration ection Plant/CO2 Equipment amps-Surface strumentation/SCADA/POC iscellaneous ontingency eters/LACT	415		514	65,000	511 512 513 515 517 518 521 522 523 524 525	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	507 508 532 533 534 529 535	15,000 2,000 7,000	63 26 140 145 61 102
ime Mover ods  Jumps-Sub Surface (BH) anks owlines eater Treater/Separator ectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment jumps-Surface strumentation/SCADA/POC iscellaneous ontingency eters/LACT ares/Combustors/Emission	415		514 519 520		511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584	507 508 532 533 534 529 535 536	15,000 2,000 7,000	\$ 63 226 14( 14) 66 102 \$ 17 8
ime Mover ods  umps-Sub Surface (BH) anks owlines eater Treater/Separator lectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment umps-Surface strumentation/SCADA/POC iscellaneous ontingency eters/LACT ares/Combustors/Emission as Litt/Compression	415		514	11,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000	507 508 532 533 534 529 535	5,000 15,000 2,000 7,000 3,000	65 24 144 148 61 102 11 11 12 22 23
ime Mover ods  umps-Sub Surface (BH) anks owlines eater Treater/Separator eectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment umps-Surface strumentation/SCADA/POC iscellaneous ontingency eters/LACT ares/Combustors/Emission	415	609,000	514 519 520		511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584	507 508 532 533 534 529 535 536	15,000 2,000 7,000	65 24 144 148 61 102 11 11 12 22 23
rime Mover ods  umps-Sub Surface (BH) anks lowlines eater Treater/Separator lectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment umps-Surface istrumentation/SCADA/POC iscellaneous ontingency leters/LACT lares/Combustors/Emission as Lift/Compression TOTAL TANGIBLES	415		514 519 520	11,000 146,730	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990	507 508 532 533 534 529 535 536	7,000 3,000	65 24 144 148 65 107 11 11 12 22 27 7
ime Mover ods  umps-Sub Surface (BH) anks owlines eater Treater/Separator lectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment umps-Surface strumentation/SCADA/POC iscellaneous ontingency eters/LACT ares/Combustors/Emission as Litt/Compression	415	609,000 2,955,900	514 519 520	11,000	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000	507 508 532 533 534 529 535 536	5,000 15,000 2,000 7,000 3,000	65 24 144 148 65 107 11 11 12 22 27 7
ime Mover ods  Jamps-Sub Surface (BH) anks owlines eater Treater/Separator eectrical System ackers/Anchors/Hangers outlings/Fittings/Valves ebydration eection Plant/CO2 Equipment Jamps-Surface strumentation/SCADA/POC iscellaneous ontingency eters/LACT ares/Combustors/Emission as Lift/Compression  TOTAL TANGIBLES  TOTAL WELL COSTS	415		514 519 520	11,000 146,730	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990	507 508 532 533 534 529 535 536	7,000 3,000	5 63 26 63 144 145 66 102 12 12 12 12 12 12 12 12 12 12 12 12 12
ime Mover ods  umps-Sub Surface (BH) anks owlines eater Treater/Separator lectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment umps-Surface strumentation/SCADA/POC iscellaneous ontingency eters/LACT ares/Combustors/Emission as Lift/Compression  TOTAL TANGIBLES  TOTAL WELL COSTS  % of Total Well Cost	419 420	2,955,900	514 519 520	11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	507 508 532 533 534 529 535 536	7,000 2,000 7,000 3,000	63
rime Mover ods umps-Sub Surface (BH) anks lowlines leater Treater/Separator lectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment umps-Surface listrumentation/SCADA/POC liscellaneous ontingency leters/LACT lares/Combustors/Emission lass Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost OG Operating LLC	419 420	2,955,900	514 519 520 527	11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	507 508 532 533 534 529 535 536	7,000 2,000 7,000 3,000	5 63 26 140 145 67 102 5 17 8 25 23 71 1,518
rime Mover ods  umps-Sub Surface (BH) anks owlines eater Treater/Separator electrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment umps-Surface strumentation/SCADA/POC iscellaneous ontingency eters/LACT ares/Combustors/Emission as Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost OG Operating LLC	419 420	2,955,900 28% Date Prepared: COG Operating LLC	514 519 520 527	11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	507 508 532 533 534 529 535 536	7,000 2,000 7,000 3,000	5 63 26 140 145 67 102 5 17 8 25 23 71 1,518
rime Mover ods  umps-Sub Surface (BH) anks lowlines eater Treater/Separator lectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves eehtyation jection Plant/CO2 Equipment umps-Surface istrumentation/SCADA/POC liscellaneous ontingency leters/LACT laters/Combustors/Emission as Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost OG Operating LLC	419 420	2,955,900 28% Date Prepared:	514 519 520 527	11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	507 508 532 533 534 529 535 536	7,000 2,000 7,000 3,000	5 63 26 140 145 67 102 5 17 8 25 23 71 1,518
rime Mover ods umps-Sub Surface (BH) anks lowkines eater Treater/Separator lectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration upction Plant/CO2 Equipment umps-Surface ustrumentation/SCADA/POC liscellaneous ontingency leters/LACT lares/Combustors/Emission ias Lift/Compussion TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost Ve approve:	419 420	2,955,900 28% Date Prepared: COG Operating LLC	514 519 520 527	11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	507 508 532 533 534 529 535 536	7,000 2,000 7,000 3,000	65 24 144 148 65 107 11 11 12 22 27 7

WELL NAME:	MASTIFF FED COM #203H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FNL & 2310 FEL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 9: 100 FSL & 2310 FEL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,010	
LEGAL:	Sec 4-24S-32E	TVD:	9,450	

INTANGIBLE COSTS		Drlg - Rig Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL
Title/Curative/Permit	201	20,000	302						20,000
Insurance					254				
Damages/Right of Way	203	20,000	303		351				20,000
Survey/Stake Location	204	7,000			352				7,000
Location/Pits/Road Expense	205	135,000	305	10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206	7,500	306	15,000					22,500
Turnkey Contract	207	0							0
Footage Contract	208	0		ACTUAL VALUE OF STREET					0
	209	495,000						THE STATE OF THE S	495,000
Daywork Contract									186,000
Directional Drilling Services	210	186,000		TONE HALLON					
Frac Equipment			307	1,418,000					1,418,000
Frac Chemicals			308	513,000					513,000
Frac Proppant			309	404,000					404,000
Frac Proppant Transportation			310	399,000					399,000
	244	00,000			354		367		166,000
Fuel & Power	211	98,000		68,000	334				
Water	212	60,000		1,019,000			368		1,079,000
Bits	213	92,000	313	12,000			369		104,000
Mud & Chemicals	214	70,000	314	20,000			370		90,000
Drill Stem Test	215	0	315						0
Coring & Analysis	216	- 0				THE RESIDENCE OF THE PARTY OF T			- 0
		25,500							25,500
Cement Surface	217								-
Cement Intermediate	218	35,000							35,000
Cement 2nd Intermediate/Production	219	130,000						No. of the last of	130,000
Cement Squeeze & Other (Kickoff Plug)	220	0					371		0
Float Equipment & Centralizers	221	32,500							32,500
	222	39,000							39,000
Casing Crews & Equipment			-				070		
Fishing Tools & Service	223	0					372		0
Geologic/Engineering	224	6,000	324		355		373		6,000
Contract Labor	225	6,500	325	40,000	356	122,935	374	6,500	175,935
Company Supervision	226	32,400		15,000	357		375	the Alexander	47,400
		85,000			358		376	5,000	272,000
Contract Supervision	227			182,000	.008			5,000	
Testing Casing/Tubing	228	30,000	10018000	5,000			377		35,000
Mud Logging Unit	229	28,000	329						28,000
Logging	230	0				Controlled the second	378		0
Perforating/Wireline Services	231	4,000	331	538,000			379		542,000
Stimulation/Treating		1,000	332	12,000			380		12,000
Completion Unit			333	90,000			381	8,800	98,800
Swabbing Unit			334				382		0
Rentals-Surface	235	125,000	335	466,000	359		383	7,000	598,000
Rentals-Subsurface	236	110,000		80,000		LOCAL PROPERTY.	384		190,000
	237	200,000		40,000	360		385	3,000	243,000
Trucking/Forklift/Rig Mobilization		- International		- Contractor				3,000	- Committee of the Comm
Welding Services	238	3,000		5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340						0
Seismic Analysis	241	0	341						0
Miscellaneous	242	0	342				389		0
	243	42,000	100000	250,000	363		390		292,000
Contingency			6 0						
Closed Loop & Environmental	244	220,000		5,000	364		388		225,000
Dyed Diesel	245		345	484,000					
Coil Tubing		CONTRACTOR DESIGNATION OF THE PERSON NAMED IN COLUMN	346						0
Flowback Crews & Equip		THE RESERVE AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO IN COLUMN TO THE PERSON NAMED IN COLUM	347	48,000		Section and the second			48,000
Offset Directional/Frac									
Onder Directional Fred	248		348				391		0
TOTAL INTANCIBLES	248	2 346 900	348	6 198 000		303 035	391	30 300	9 979 135
TOTAL INTANGIBLES	248	2,346,900		6,198,000		302,935	391	30,300	8,878,135
Harris Managarian and Paris.	248	2,346,900		6,198,000		302,935	391	30,300	
Harris Managarian and Paris.	248	2,346,900		6,198,000		302,935	391	30,300	
TANGIBLE COSTS	248	2,346,900 48,000		6,198,000		302,935	391	30,300	
TANGIBLE COSTS Surface Casing	401	48,000		6,198,000		302,935	391	30,300	8,878,135 48,000
TANGIBLE COSTS Surface Casing Intermediate Casing	401 402	48,000 174,000		6,198,000		302,935	391	30,300	8,878,135 48,000 174,000
TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner	401	48,000				302,935			48,000 174,000 327,000
TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing	401 402 403	48,000 174,000 327,000	504	52,030		302,935	530	5,000	48,000 174,000 327,000 57,030
TANGIBLE COSTS  Surface Casing Intermediate Casing  Production Casing/Liner  Tubing  Wellhead Equipment	401 402	48,000 174,000	504			302,935	530 531	5,000 3,000	48,000 174,000 327,000 57,030 81,700
TANGIBLE COSTS  Surface Casing Intermediate Casing  Production Casing/Liner  Tubing  Wellhead Equipment	401 402 403	48,000 174,000 327,000	504	52,030		302,935	530	5,000	48,000 174,000 327,000 57,030
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit	401 402 403	48,000 174,000 327,000	504	52,030		302,935	530 531	5,000 3,000	48,000 174,000 327,000 57,030 81,700
TANGIBLE COSTS  Surface Casing Intermediate Casing  Production Casing/Liner  Tubing  Wellhead Equipment  Pumping Unit  Prime Mover	401 402 403	48,000 174,000 327,000	504	52,030		302,935	530 531 506 507	5,000 3,000 96,000	48,000 174,000 327,000 57,030 81,700 96,000
TANGIBLE COSTS  Surface Casing Intermediate Casing  Production Casing/Liner Tubing  Wellhead Equipment  Pumping Unit  Prime Mover  Rods	401 402 403	48,000 174,000 327,000	504 505	52,030		302,935	530 531 506 507 508	5,000 3,000 96,000 35,000	8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH)	401 402 403	48,000 174,000 327,000	504	52,030			530 531 506 507	5,000 3,000 96,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit: Prime Mover Rods Pumps-Sub Surface (BH) Tanks	401 402 403	48,000 174,000 327,000	504 505	52,030	510	63,645.00	530 531 506 507 508	5,000 3,000 96,000 35,000	8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines	401 402 403	48,000 174,000 327,000	504 505	52,030	511	63,645.00 26,593.00	530 531 506 507 508	5,000 3,000 96,000 35,000	8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines	401 402 403	48,000 174,000 327,000	504 505	52,030		63,645.00	530 531 506 507 508	5,000 3,000 96,000 35,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645
TANGIBLE COSTS  Surface Casing  Intermediate Casing  Production Casing/Liner  Tubing  Wellhead Equipment  Pumping Unit  Prime Mover  Rods  Pumps-Sub Surface (BH)  Tanks  Flowlines  Heater Treater/Separator	401 402 403	48,000 174,000 327,000	504 505	52,030	511	63,645.00 26,593.00 140,007.00	530 531 506 507 508	5,000 3,000 96,000 35,000 5,000	8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System	401 402 403 405	48,000 174,000 327,000	504 505	52,030 18,700	511 512	63,645.00 26,593.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007
TANGIBLE COSTS  Surface Casing Intermediate Casing  Production Casing/Liner Tubing  Wellhead Equipment  Pumping Unit  Prime Mover  Rods  Pumps-Sub Surface (BH)  Tanks  Flowlines  Heater Treater/Separator  Electrical System  Packers/Anchors/Hangers	401 402 403 405	48,000 174,000 327,000	504 505	52,030	511 512 513	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000
TANGIBLE COSTS  Surface Casing Intermediate Casing  Production Casing/Liner Tubing  Wellhead Equipment  Pumping Unit  Prime Mover  Rods  Pumps-Sub Surface (BH)  Tanks  Flowlines  Heater Treater/Separator  Electrical System  Packers/Anchors/Hangers  Couplings/Fittings/Valves	401 402 403 405	48,000 174,000 327,000	504 505	52,030 18,700	511 512 513 515	63,645.00 26,593.00 140,007.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration	401 402 403 405	48,000 174,000 327,000	504 505	52,030 18,700	511 512 513	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves	401 402 403 405	48,000 174,000 327,000	504 505	52,030 18,700	511 512 513 515	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment	401 402 403 405	48,000 174,000 327,000	504 505	52,030 18,700	511 512 513 515 517	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282
TANGIBLE COSTS  Surface Casing  Intermediate Casing  Production Casing/Liner  Tubing  Wellhead Equipment  Pumping Unit  Prime Mover  Rods  Pumps-Sub Surface (BH)  Tanks  Flowlines  Heater Treater/Separator  Electrical System  Packers/Anchors/Hangers  Couplings/Fittings/Valves  Dehydration  Injection Plant/CO2 Equipment  Pumps-Surface	401 402 403 405	48,000 174,000 327,000	504 505	52,030 18,700	511 512 513 515 517 518 521	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC	401 402 403 405 414 414	48,000 174,000 327,000	504 505 509	52,030 18,700	511 512 513 515 517 518 521 522	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous	401 402 403 405 414 415	48,000 174,000 327,000	504 505 509 514	52,030 18,700	511 512 513 515 517 518 521 522 523	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency	401 402 403 405 414 414	48,000 174,000 327,000	504 505 509	52,030 18,700	511 512 513 515 517 518 521 522	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration	401 402 403 405 414 415	48,000 174,000 327,000	504 505 509 514	52,030 18,700	511 512 513 515 517 518 521 522 523	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency	401 402 403 405 414 415	48,000 174,000 327,000	504 505 509 514	52,030 18,700	511 512 513 515 517 518 521 522 523 524 525	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156
TANGIBLE COSTS  Surface Casing  Intermediate Casing  Production Casing/Liner  Tubing  Wellhead Equipment  Pumping Unit  Prime Mover  Rods  Pumps-Sub Surface (BH)  Tanks  Flowlines  Heater Treater/Separator  Electrical System  Packers/Anchors/Hangers  Couplings/Fittings/Valves  Dehydration  Injection Plant/CO2 Equipment  Pumps-Surface  Instrumentation/SCADA/POC  Miscellaneous  Contingency  Meters/LACT  Flares/Combustors/Emission	401 402 403 405 414 415	48,000 174,000 327,000	504 505 509 514 519 520	52,030 18,700 65,000	511 512 513 515 517 518 521 522 523 524 525 526	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 5,000 63,645 26,593 140,007 145,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover  Rods Pumps-Sub Surface (BH)  Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Litt/Compression	401 402 403 405 414 415	48,000 174,000 327,000 60,000	504 505 509 514 519 520	52,030 18,700 65,000	511 512 513 515 517 518 521 522 523 524 525	5,000 10,482 5,25,156 23,584 60,000	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 0 0 5,000 17,482 8,241 0 0 25,156 23,584 71,000
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Weilhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Mieters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES	401 402 403 405 414 415	48,000 174,000 327,000 60,000	504 505 509 514 519 520	52,030 18,700 65,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 5,000 17,482 8,241 0 0 25,156 23,584 71,000 1,518,720
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover  Rods Pumps-Sub Surface (BH)  Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Litt/Compression	401 402 403 405 414 415	48,000 174,000 327,000 60,000	504 505 509 514 519 520	52,030 18,700 65,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,25,156 23,584 60,000	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 0 0 5,000 17,482 8,241 0 0 25,156 23,584 71,000
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner Production Casing/Liner Production Casing/Liner Production Casing/Liner Production Casing/Liner Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Fanks Plowlines Plowlines Pleater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Insertine Injection Plant/CO2 Equipment Pumps-Surface Insertine Injection Plant/CO3 Equipment Pumps-Surface Insertine Injection Injection Plant/CO4 Equipment Pumps-Surface Insertine Injection Injection Plant/CO5 Equipment Pumps-Surface Insertine Injection Injection Injection Plant/CO5 Equipment Pumps-Surface Insertine Injection Inject	401 402 403 405 414 415	48,000 174,000 327,000 60,000 609,000 2,955,900	504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 104,82 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valives Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	48,000 174,000 327,000 60,000	504 505 509 514 519 520	52,030 18,700 65,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valives Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	48,000 174,000 327,000 60,000 609,000 2,955,900	504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 104,82 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 5,000 17,482 8,241 0 0 25,156 23,584 71,000 1,518,720
TANGIBLE COSTS  Surface Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	48,000 174,000 327,000 60,000 609,000 2,955,900	504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 104,82 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 5,000 17,482 8,241 0 0 25,156 23,584 71,000 1,518,720
TANGIBLE COSTS  Surface Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	48,000 174,000 327,000 60,000 609,000 2,955,900	504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 104,82 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 5,000 17,482 8,241 0 0 25,156 23,584 71,000 1,518,720
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover  Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28%	504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 104,82 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 5,000 17,482 8,241 0 0 25,156 23,584 71,000 1,518,720
TANGIBLE COSTS  Surface Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28%	504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 104,82 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner  Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	401 402 403 405 414 415	48,000 174,000 327,000 60,000 609,000 2,955,900 28%	504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 104,82 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:	401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared:	504 505 509 514 519 520	52,030 18,700 65,000 61,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 104,82 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
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TANGIBLE COSTS  Surface Casing Production Casing/Liner Production Casing/Liner Production Casing/Liner Puping Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Parks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valives Dehydration njection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Plares/Combustors/Emission Gas Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve: % of Total Well Cost Company: By: Printed Name:	401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared: COG Operating LLC By:	504 505 509 514 519 520	52,030 18,700 65,000 65,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526 516	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 5,000 17,482 8,241 0 0 25,156 23,584 71,000 1,518,720
FANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Furbing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Fanks Flowlines Fleater Treater/Separator Fleetrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% of Total Well Cost Company: By: Printed Name: Fitte:	401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared: COG Operating LLC By:	504 505 509 514 519 520	52,030 18,700 65,000 65,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526 516	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 5,000 17,482 8,241 0 0 25,156 23,584 71,000 1,518,720

WELL NAME:	MASTIFF FED COM #204H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FSL & 1720 FWL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 33: 100 FNL & 1720 FWL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,010	
LEGAL:	Sec 4-24S-32E	TVD:	9,450	

INTANGIBLE COSTS		Drlq - Riq Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL
Title/Curative/Permit	201	20,000		Completion(o)		Constitution		<u>Equipment('Eu)</u>	20,000
Insurance	202	2,500	302						2,500
	203	20,000	303		351				20,000
Damages/Right of Way			303						
Survey/Stake Location	204	7,000	005	10.000	352	45,000	000	A	7,000
Location/Pits/Road Expense	205	135,000 7,500	305	10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206	- Indiana	306	15,000					-
Turnkey Contract	207	0							0
Footage Contract	208								405.000
Daywork Contract	209	495,000				-			495,000
Directional Drilling Services	210	186,000	207	4 440 000					186,000
Frac Equipment			307	1,418,000					1,418,000
Frac Chemicals			308	513,000					513,000
Frac Proppant			309	404,000					404,000
Frac Proppant Transportation	0100		310	399,000	8		-		399,000
Fuel & Power	211	98,000	311	68,000	354		367		166,000
Water	212	60,000	312	1,019,000			368		1,079,000
Bits	213	92,000	313	12,000			369		104,000
Mud & Chemicals	214	70,000	314	20,000			370		90,000
Drill Stem Test	215	0	315						0
Coring & Analysis	216	0							0
Cement Surface	217	25,500							25,500
Cement Intermediate	218	35,000							35,000
Cement 2nd Intermediate/Production	219	130,000		THE RESERVE					130,000
Cement Squeeze & Other (Kickoff Plug)	220	0		WE SERVE BUT ST			371		0
Float Equipment & Centralizers	221	32,500							32,500
Casing Crews & Equipment	222	39,000						( TO THE	39,000
Fishing Tools & Service	223	0	323				372		0
Geologic/Engineering	224	6,000	324		355		373		6,000
Contract Labor	225	6,500	325	40,000	356	122,935	374	6,500	175,935
Company Supervision	226	32,400	326	15,000	357		375		47,400
Contract Supervision	227	85,000	327	182,000	358		376	5,000	272,000
Testing Casing/Tubing	228	30,000	328	5,000			377		35,000
Mud Logging Unit	229	28,000	329						28,000
Logging	230	0					378		0
Perforating/Wireline Services	231	4,000	331	538,000			379		542,000
Stimulation/Treating			332	12,000			380	<u> </u>	12,000
Completion Unit			333	90,000		ETC. TO STATE OF THE STATE OF	381	8,800	98,800
Swabbing Unit		OVER THE PARTY.	334				382		0
Rentals-Surface	235	125,000	335	466,000	359		383	7,000	598,000
Rentals-Subsurface	236	110,000	336	80,000		OF THE PARTY OF TH	384		190,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services	238	3,000	338	5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340						0
Seismic Analysis	241	0	341			AND DESCRIPTION OF THE PERSON		San Company	0
Miscellaneous	242	0	342				389		0
Contingency	243	42,000	343	250,000	363		390		292,000
Closed Loop & Environmental	244	220,000	344	5,000	364		388		225,000
Dyed Diesel	245	EE0,000	345	484,000	004		500	The second second	223,000
Coll Tubing	240		346	404,000					
			347	48,000					49.000
Flowback Crews & Equip Offset Directional/Frac	248		348	40,000			201		48,000
	248	0.040.000	348	0.100.000		200 005	391	20.000	0
TOTAL INTANGIBLES		2,346,900		6,198,000		302,935		30,300	8,878,135
TANGIBLE COSTS									
A TOTAL STREET AND A STREET AND	401	49.000							40.000
Surface Casing	401	48,000							48,000
Intermediate Casing	402	174,000							174,000
Production Casing/Liner	403	327,000		50.000					327,000
Tubing	170000		504	52,030			530	5,000	57,030
Wellhead Equipment	405	60,000	505	18,700			531	3,000	81,700
Pumping Unit							506	96,000	96,000
Prime Mover							507		0
Rods							508	35,000	35,000
Pumps-Sub Surface (BH)			509				532	5,000	5,000
Tanks					510	63,645.00		CALCULATION OF THE PARTY OF THE	63,645
Flowlines					511	26,593.00			26,593
Heater Treater/Separator					512	140,007.00	200		140,007
Electrical System	1 2/2/04		uncer		513	130,000.00	533	15,000	145,000
Packers/Anchors/Hangers	414		514	65,000		A A STATE OF	534	2,000	67,000
Couplings/Fittings/Valves	415				515	102,282			102,282
Dehydration		All the state of t			517			A CHIEFT PART OF THE PART OF T	0
Injection Plant/CO2 Equipment					518				0
				MILES CO.	521	5,000			5,000
Pumps-Surface		THE RESERVE OF THE PARTY OF THE			522	10,482	529	7,000	17,482
Pumps-Surface Instrumentation/SCADA/POC			519		523	E 241	535	3,000	8,241
	419					5,241			
Instrumentation/SCADA/POC	419 420		520	<u> </u>	524	5,241	536		0
Instrumentation/SCADA/POC Miscellaneous					524 525	25,156			25,156
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission									
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT				11,000	525	25,156			25,156
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission		609,000	520	11,000 146,730	525 526	25,156 23,584	536	171,000	25,156 23,584
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression		609,000 2,955,900	520		525 526	25,156 23,584 60,000	536	171,000 201,300	25,156 23,584 71,000
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS		2,955,900	520	146,730 6,345,000	525 526	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost			520	146,730	525 526	25,156 23,584 60,000 591,990	536	The second secon	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS		2,955,900	520	146,730 6,345,000	525 526	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost		2,955,900	520	146,730 6,345,000 61%	525 526	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost		2,955,900 28% Date Prepared:	520	146,730 6,345,000	525 526	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost		2,955,900 28% Date Prepared:	520	146,730 6,345,000 61%	525 526	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost  We approve:		2,955,900 28% Date Prepared:	520	146,730 6,345,000 61%	525 526	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC		2,955,900 28% Date Prepared:	520	146,730 6,345,000 61%	525 526	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost  We approve:		2,955,900 28%  Date Prepared: COG Operating LLC	520	146,730 6,345,000 61% 10/18/18	525 526	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC  We approve:% Working Interest Company:		2,955,900 28%  Date Prepared: COG Operating LLC	520	146,730 6,345,000 61% 10/18/18	525 526	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC  We approve:% Working Interest		2,955,900 28%  Date Prepared: COG Operating LLC	520	146,730 6,345,000 61% 10/18/18	525 526	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  ** of Total Well Cost COG Operating LLC  We approve:% Working Interest Company: By:		2,955,900 28%  Date Prepared: COG Operating LLC	520	146,730 6,345,000 61% 10/18/18	525 526	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC  We approve:% Working Interest Company: By: Printed Name:		2,955,900 28% Date Prepared: COG Operating LLC By:	520 527	146,730 6,345,000 61% 10/18/18	525 526 516	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  ** of Total Well Cost COG Operating LLC  We approve:% Working Interest Company: By:  Printed Name: Title:		2,955,900 28%  Date Prepared: COG Operating LLC  By:  This AFE is only an estim	520 527	146,730 6,345,000 61% 10/18/18	525 526 516	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720
Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  ** of Total Well Cost COG Operating LLC  We approve:		2,955,900 28% Date Prepared: COG Operating LLC By:	520 527	146,730 6,345,000 61% 10/18/18	525 526 516	25,156 23,584 60,000 591,990 894,925	536	201,300	25,156 23,584 71,000 1,518,720

WELL NAME:	MASTIFF FED COM #205H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FSL & 730 FWL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 33: 100 FNL & 730 FWL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,010	
LEGAL:	Sec 4-24S-32E	TVD:	9,450	

INTANGIBLE COSTS	201	Drlq - Riq Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpg Equipment(PEQ)	TOTAL
Title/Curative/Permit Insurance	201	20,000	302						20,000
Water Control of the					054				
Damages/Right of Way	203	20,000	303		351				20,000
Survey/Stake Location	204	7,000			352				7,000
Location/Pits/Road Expense	205	135,000	305	10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206	7,500	306	15,000					22,500
Turnkey Contract	207	0							0
Footage Contract	208	0							0
Daywork Contract	209	495,000						, 100 pm, 20	495,000
Directional Drilling Services	210	186,000							186,000
Frac Equipment		Annual Control	307	1,418,000					1,418,000
Frac Chemicals			308	513,000					513,000
Frac Proppant			309	404,000					404,000
Frac Proppant Transportation			310	399,000					399,000
Fuel & Power	211	98,000	311	68,000	354		367		166,000
Water	212	60,000	312	1,019,000			368		1,079,000
Bits	213	92,000	313	12,000			369		104,000
Mud & Chemicals	214	70,000	314	20,000			370		90,000
				20,000			370	D.	-
Drill Stem Test	215	0	315						0
Coring & Analysis	216	0							0
Cement Surface	217	25,500							25,500
Cement Intermediate	218	35,000							35,000
Cement 2nd Intermediate/Production	219	130,000							130,000
Cement Squeeze & Other (Kickoff Plug)	220	0					371		.0
Float Equipment & Centralizers	221	32,500		THE RESERVE					32,500
Casing Crews & Equipment	222	39,000							39,000
Fishing Tools & Service	223	0	323				372	0	0
Geologic/Engineering	224	6,000	324		355		373		6,000
Contract Labor	225	6,500	325	40,000	356	122,935	374	6,500	175,935
	226	32,400	326	15,000	357	122,335	375	0,000	
Company Supervision								F 000	47,400
Contract Supervision	227	85,000	327	182,000	358		376	5,000	272,000
Testing Casing/Tubing	228	30,000	328	5,000			377		35,000
Mud Logging Unit	229	28,000	329						28,000
Logging	230	0					378		0
Perforating/Wireline Services	231	4,000	331	538,000		THE BEALEST	379		542,000
Stimulation/Treating			332	12,000			380		12,000
Completion Unit		THE STREET	333	90,000			381	8,800	98,800
Swabbing Unit			334			PERSONAL VIEW	382		0
Rentals-Surface	235	125,000	335	466,000	359		383	7,000	598,000
Rentals-Subsurface	236	110,000	336	80,000		1.05	384	11000	190,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	200		385	2.000	
					360			3,000	243,000
Welding Services	238	3,000	338	5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340						. 0
Seismic Analysis	241	0	341						0
Miscellaneous	242	0	342				389	20	0
Contingency	243	42,000	343	250,000	363		390		292,000
Closed Loop & Environmental	244	220,000	344	5,000	364		388		225,000
Dyed Diesel	245		345	484,000		THE RESERVE OF STREET			
Coil Tubing		TOTAL MANAGEMENT OF THE PARTY O	346					THE PERSON NAMED IN	0
Flowback Crews & Equip			347	48,000					48,000
Offset Directional/Frac	248		348	40,000			391		
TOTAL INTANGIBLES	240	2,346,900	346	6,198,000		302,935	331	20,000	0
TOTAL INTANGIBLES		2,340,300		0,130,000		302,935		30,300	8,878,135
TANGIBLE COSTS									
	.00000	7.007292							
Surface Casing	401	48,000							48,000
Intermediate Casing	402	174,000							174,000
Production Casing/Liner	403	327,000							327,000
Tubing			504	52,030			530	5,000	57,030
Wellhead Equipment	405	60,000	505	18,700			531	3,000	81,700
Pumping Unit							506	96,000	96,000
Prime Mover							507		0
Rods		Like to the second		Established 7/1 R			508	35,000	35,000
Pumps-Sub Surface (BH)			509				532	5,000	5,000
Tanks					510	63,645.00	JUE	5,000	63,645
Flowlines					511	26,593.00			
Heater Treater/Separator									26,593
Electrical System					512 513	140,007.00 130,000.00	Enn	27 444	140,007
	44.4			25 000	313	130,000.00	533	15,000	145,000
Packers/Anchors/Hangers	414		514	65,000			534	2,000	67,000
Couplings/Fittings/Valves	415				515	102,282		10 11 11 11	102,282
Dehydration					517				0
Injection Plant/CO2 Equipment					518				0
Pumps-Surface					521	5,000		DESCRIPTION OF THE PARTY.	5,000
Instrumentation/SCADA/POC		AL NEW DOCUMENT		MINE STEEL STEEL	522	10,482	529	7,000	17,482
Miscellaneous	419		519		523	5,241	535	3,000	8,241
Contingency	420		520		524		536		0
Meters/LACT					525	25,156			25,156
Flares/Combustors/Emission					526	23,584			23,584
Gas Lift/Compression			527	11,000	516	60,000	528		71,000
TOTAL TANGIBLES		609,000	-	146,730		591,990		171,000	1,518,720
TOTAL WELL COSTS		2,955,900		6,345,000		894,925		201,300	10,396,855
		Elenolego		5,040,000		034,325		201,000	10,000,000
% of Total Well Cost		28%		61%		9%		2%	
COG Operating LLC		2002		70.57		(#.0°)		0.071.070	
		Date Prepared:		10/18/18					
- SANDARA PERANTINA		A.	10						
-		COG Operating LLC	LEL						
We approve:									
We approve:% Working Interest		COG Operating LLC A	LEZ	MB				aŭ	
% Working Interest			-	MB					
% Working Interest Company:				МВ				e e	
% Working Interest			12	МВ				er e	
% Working Interest  Company:  By:			II.	МВ					
% Working Interest Company:		By:			N NOTE	r share			
% Working Interest  Company:  By:  Printed Name:		By:	ate. I	MB  By signing you agree to pa	ıy your	r share		ar.	

WELL NAME:	MASTIFF FED COM #301H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FNL & 330 FEL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 9: 100 FSL & 330 FEL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,245	
LEGAL:	Sec 4-24S-32E	TVD:	9,685	

INTANGIBLE COSTS Title/Curative/Permit	201	Drlq - Riq Release(D) 20,000		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL 20,000
-	202	2,500	302						The second secon
Insurance					-				2,500
Damages/Right of Way	203	20,000	303		351				20,000
Survey/Stake Location	204	7,000			352				7,000
Location/Pits/Road Expense	205	135,000	305	10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206	7,500	306	15,000					22,500
Turnkey Contract	207	0							0
Footage Contract	208	0				THE STATE OF THE STATE OF			0
Daywork Contract	209	495,000							495,000
Directional Drilling Services	210	186,000							186,000
Frac Equipment			307	1,418,000		MATERIAL DESIGNATION OF THE PERSON OF THE PE		THE STREET	1,418,000
Frac Chemicals			308	513,000					513,000
Frac Proppant			309	404,000				TRACE STATE OF THE	404,000
Frac Proppant Transportation			310	399,000					399,000
Fuel & Power	211	98,000			254		207		
			311	68,000	354		367		166,000
Water	212	60,000	312	1,019,000			368		1,079,000
Bits	213	92,000	313	12,000			369		104,000
Mud & Chemicals	214	70,000	314	20,000			370		90,000
Drill Stem Test	215	0	315						0
Coring & Analysis	216	0							0
Cement Surface	217	25,500							25,500
Cement Intermediate	218	35,000		Element of the					35,000
Cement 2nd Intermediate/Production	219	130,000							130,000
Cement Squeeze & Other (Kickoff Plug)	220	0		1/10mm20mm00ds/m0			371		0
Float Equipment & Centralizers	221	32,500					200	Maria Maria	32,500
Casing Crews & Equipment	222	39,000							39,000
Fishing Tools & Service	223		322				220		
		000	323		orr		372	-	0
Geologic/Engineering	224	6,000	324	(VCD/IECK)	355	Name and	373	guitariose (	6,000
Contract Labor	225	6,500	325	40,000	356	122,935	374	6,500	175,935
Company Supervision	226	32,400	326	15,000	357		375		47,400
Contract Supervision	227	85,000	327	182,000	358		376	5,000	272,000
Testing Casing/Tubing	228	30,000	328	5,000			377		35,000
Mud Logging Unit	229	28,000	329						28,000
Logging	230	0				- S. L. Congress of the Congre	378		0
Perforating/Wireline Services	231	4,000	331	538,000			379	######################################	542,000
Stimulation/Treating			332	12,000		I Economic Street	380	j <del>et</del> G	12,000
Completion Unit			333	90,000			381	8,800	98,800
Swabbing Unit			334	30,000			382	0,000	- Control of the Cont
	225	125 000		400,000	250			7,000	0
Rentals-Surface	235	125,000	335	466,000	359		383	7,000	598,000
Rentals-Subsurface	236	110,000	336	80,000		THE PARTY OF THE PARTY OF	384	<u> </u>	190,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services	238	3,000	338	5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340						0
Seismic Analysis	241	0	341			CENTRAL PROPERTY.			0
Miscellaneous	242	0	342				389		0
Contingency	243	42,000	343	250,000	363		390		292,000
Closed Loop & Environmental	244	220,000	344	5,000	364		388		225,000
oroco acop a commenta.		220,000			001		000		223,000
Dved Diesel	245		345	484 000		Marie Control of the last of t			
Dyed Diesel Coll Tubing	245		345	484,000					
Coil Tubing	245		346						0
Coil Tubing Flowback Crews & Equip			346 347	484,000 48,000					48,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac	245		346	48,000			391		48,000 0
Coil Tubing Flowback Crews & Equip		2,346,900	346 347			302,935	391	30,300	48,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES		2,346,900	346 347	48,000		302,935	391	30,300	48,000 0
Coil Tubing Flowback Crews & Equip Offset Directional/Frac		2,346,900	346 347	48,000		302,935	391	30,300	48,000 0
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES		2,346,900	346 347	48,000		302,935	391	30,300	48,000 0
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS	248	No. 1960	346 347	48,000		302,935	391	30,300	48,000 0 8,878,135
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing	248	48,000	346 347	48,000		302,935	391	30,300	48,000 0 8,878,135
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing	248 401 402	48,000 174,000	346 347	48,000		302,935	391	30,300	48,000 0 8,878,135 48,000 174,000
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner	248 401 402	48,000 174,000	346 347 348	48,000 6,198,000		302,935		5,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment	248 401 402 403	48,000 174,000 327,000	346 347 348 504	48,000 6,198,000 52,030		302,935	530 531	5,000 3,000	48,000 8,878,135 48,000 174,000 327,000 57,030 81,700
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit	248 401 402 403	48,000 174,000 327,000	346 347 348 504	48,000 6,198,000 52,030		302,935	530 531 506	5,000	48,000 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover	248 401 402 403	48,000 174,000 327,000	346 347 348 504	48,000 6,198,000 52,030		302,935	530 531 506 507	5,000 3,000 96,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods	248 401 402 403	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030		302,935	530 531 506 507 508	5,000 3,000 96,000 35,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH)	248 401 402 403	48,000 174,000 327,000	346 347 348 504	48,000 6,198,000 52,030	Fig.		530 531 506 507	5,000 3,000 96,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks	248 401 402 403	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030	510	63,645.00	530 531 506 507 508	5,000 3,000 96,000 35,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines	248 401 402 403	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030	511	63,645.00 26,593.00	530 531 506 507 508	5,000 3,000 96,000 35,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Weilhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator	248 401 402 403	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030	511 512	63,645.00 26,593.00 140,007.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511	63,645.00 26,593.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	48,000 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030	511 512 513	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511 512	63,645.00 26,593.00 140,007.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	48,000 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511 512 513	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511 512 513 515	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 5,000 53,645 26,593 140,007 145,000 67,000 102,282
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511 512 513 515 517	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521	63,645.00 26,593.00 140,007.00 130,000.00 102,282	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 53,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505 509	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous	248 401 402 403 405 414 415	48,000 174,000 327,000	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522 523	63,645.00 26,593.00 140,007.00 130,000.00 102,282	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505 509	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522 523 524	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 5,000 53,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT	248 401 402 403 405 414 415	48,000 174,000 327,000	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522 523 524 525	5,000 10,482 5,241 25,156	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission	248 401 402 403 405 414 415	48,000 174,000 327,000	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522 523 524 525	5,000 10,482 5,241 25,156 23,584 60,000	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700 65,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coll Tubing Flowback Crews & Equip Offset Directional/Frac  TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Welthead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Litt/Compression	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	48,000 0 8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700 65,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coli Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/Co2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28%	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 609,000 2,955,900 28%	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28%	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared:	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 609,000 2,955,900 28%	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared:	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coli Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve: % Working Interest Company:	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared:	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest Company:	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared:	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest Company: By: Printed Name:	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared:	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coll Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve: % Working Interest Company: By: Printed Name: Title:	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28%  Date Prepared: COG Operating LLC **  By:	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526 516	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest Company: By: Printed Name:	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared: COG Operating LLC &C By:	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700 11,000 146,730 6,345,000 61% MB	511 512 513 515 517 518 521 522 523 524 525 526 516	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	48,000 0 8,878,135  48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720

WELL NAME:	MASTIFF FED COM #302H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FNL & 825 FEL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 9: 100 FSL & 825 FEL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,135	
LEGAL:	Sec 4-24S-32E	TVD:	9,575	

INTANGIBLE COSTS Title/Curative/Permit	201	Drlg - Rig Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL 20,000
Insurance	202	2,500	302						2,500
Damages/Right of Way	203	20,000	303		351				20,000
Survey/Stake Location	204	7,000			352				7,000
Location/Pits/Road Expense	205	135,000	305	10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206	7,500	306	15,000					22,500
Turnkey Contract	207	0	3					MINES NEST N	0
Footage Contract	208	0	ĺ					THE PART PROPERTY.	0
Daywork Contract	209	495,000	1						495,000
Directional Drilling Services	210	186,000							186,000
Frac Equipment			307	1,418,000					1,418,000
Frac Chemicals			308	513,000					513,000
Frac Proppant			309	404,000					404,000
Frac Proppant Transportation Fuel & Power	211	98,000	310	399,000	254		207		399,000
Water	212	60,000	311	68,000 1,019,000	354	THE RESERVE	367		166,000
Bits	213	92,000	313	12,000			369		1,079,000
Mud & Chemicals	214	70,000	314	20,000			370		90,000
Drill Stem Test	215	0	315	20,000			370		90,000
Coring & Analysis	216	0							0
Cement Surface	217	25,500				(-01) (NI - 15:0) (I		No. of the last of	25,500
Cement Intermediate	218	35,000							35,000
Cement 2nd Intermediate/Production	219	130,000	9						130,000
Cement Squeeze & Other (Kickoff Plug)	220	0					371		0
Float Equipment & Centralizers	221	32,500				CAN EVENEU	377	EN JAMES DE	32,500
Casing Crews & Equipment	222	39,000						4-2-3-3	39,000
Fishing Tools & Service	223		323			od form has see i	372		0
Geologic/Engineering	224	6,000	324		355		373	3	6,000
Contract Labor	225	6,500	325	40,000	356	122,935	374	6,500	175,935
Company Supervision	226	32,400	326	15,000	357		375		47,400
Contract Supervision	227	85,000	327	182,000	358		376	5,000	272,000
Testing Casing/Tubing	228	30,000	328	5,000		BURNER WELL	377		35,000
Mud Logging Unit	229	28,000	329						28,000
Logging	230	0					378		0
Perforating/Wireline Services	231	4,000	331	538,000			379		542,000
Stimulation/Treating			332	12,000			380		12,000
Completion Unit			333	90,000			381	8,800	98,800
Swabbing Unit	005	405.000	334	400,000	050		382		0
Rentals-Surface Rentals-Subsurface	235 236	125,000	335		359		383	7,000	598,000
Trucking/Forklift/Rig Mobilization	237	110,000	336	80,000 40,000	360	AND THE RESERVE	384	2.000	190,000
Welding Services	238	3,000	338	5,000	361		386	3,000	243,000
Water Disposal	239	0,000	339	60,000	362	135,000	387		8,000 195,000
Plug to Abandon	240	0	340	00,000	002	103,000	307		195,000
Seismic Analysis	241		341						0
Miscellaneous	242		342				389		0
Contingency	243	42,000	343	250,000	363		390		292,000
Closed Loop & Environmental	244	220,000	344	5,000	364		388		225,000
Dyed Diesel	245		345	484,000					
Coil Tubing			346			Charles A. Co. of			0
Flowback Crews & Equip			347	48,000					48,000
Offset Directional/Frac	248		348				391		0
TOTAL INTANGIBLES		2,346,900	13	6,198,000		302,935		30,300	8,878,135
TANCIBI E COSTS									
TANGIBLE COSTS	404	40.000							
Surface Casing Intermediate Casing	401	48,000	- 2						48,000
Production Casing/Liner	402	174,000 327,000	-						174,000
Tubing	403	- Standingson	504	52,030			530	E 000	327,000
Wellhead Equipment	405		505	18,700			531	5,000 3,000	57,030 81,700
Pumping Unit	100	00,000	505	10,700			506	96,000	
Prime Mover							507	50,000	96,000
Rods						The second	508	35,000	35,000
Pumps-Sub Surface (BH)			509				532	5,000	5,000
Tanks					510	63,645.00			63,645
Flowlines					511	26,593.00			26,593
Heater Treater/Separator					512	140,007.00			140,007
Electrical System			e.v.l		513	130,000.00	533	15,000	145,000
Packers/Anchors/Hangers	414		514	65,000			534	2,000	67,000
Couplings/Fittings/Valves	415				515	102,282			102,282
Dehydration					517				0
Injection Plant/CO2 Equipment					518				0
Pumps-Surface Instrumentation/SCADA/POC			į		521	5,000	ra-		5,000
Instrumentation/SCADA/POC Miscellaneous	419		519		522	10,482	529	7,000	17,482
Contingency	420		520		523 524	5,241	535 536	3,000	8,241
Meters/LACT	76.0		UEU.		525	25,156	000	THE RESERVE OF THE PERSON NAMED IN	25,156
Flares/Combustors/Emission				CO AND THE	526	23,584			23,584
Gas Lift/Compression		2080, F1 (07)	527	11,000	516	60,000	528	-	71,000
TOTAL TANGIBLES		609,000		146,730	ennib()	591,990	-075/11	171,000	1,518,720
TOTAL WELL COSTS		2,955,900	8	6,345,000		894,925		201,300	10,396,855
NO BE THE PERSON OF A PROPERTY		Maran Maran		2500pm1		925.01			
% of Total Well Cost		28%		61%		9%		2%	
COG Operating LLC									
		Date Prepared:		10/18/18					
		N/	R	15/15/10					20
Section of the Company of the Compan		COG Operating LLC							
We approve:  % Working Interest		Due		412022					
% Working Interest		Ву:	_	MB	_				
Company:									
By:									
THE RESIDENCE OF THE PARTY OF T									
Printed Name:		This AFF				242200			
Title:		This AFE is only an estimated the actual costs incurre		ly signing you agree to pay	y your	share			
		This AFE is only an estimate of the actual costs incurred		ly signing you agree to pay	y your	share			

WELL NAME:	MASTIFF FED COM #303H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FNL & 1520 FEL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 9: 100 FSL & 1520 FEL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,245	
LEGAL:	Sec 4-24S-32E	TVD:	9,685	

INTANGIBLE COSTS Title/Curative/Dornit	(88°	Drlq - Riq Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL
Title/Curative/Permit Insurance	201	20,000	302						20,000
Damages/Right of Way	203	20,000	303		351				2,500
Survey/Stake Location	204	7,000	503		352	-			7,000
Location/Pits/Road Expense	205	135,000	305	10,000		45,000	366		190,000
Drilling / Completion Overhead	206	7,500	306	15,000					22,500
Turnkey Contract	207	0						EWINDOWS TO A	0
Footage Contract	208	0						MAN TENE LITTLE	0
Daywork Contract	209	495,000		Par Assault Land					495,000
Directional Drilling Services	210	186,000							186,000
Frac Equipment			307	1,418,000	ġ.			AND THE RESERVE	1,418,000
Frac Chemicals Frac Proppant			308	513,000					513,000
Frac Proppant Transportation		1	310	404,000					399,000
Fuel & Power	211	98,000	311	68,000	354		367		166,000
Water	212	60,000	312	1,019,000		THE SHOWING	368		1,079,000
Bits	213	92,000	313	12,000			369		104,000
Mud & Chemicals	214	70,000	314	20,000	à l		370		90,000
Drill Stem Test	215	0	315					THE BOWN STATE	0
Coring & Analysis	216	0		Max of the last					0
Cement Surface	217	25,500		A HOLIUM					25,500
Cement Intermediate  Cement 2nd Intermediate/Production	218	35,000							35,000
Cement Squeeze & Other (Kickoff Plug)	219	130,000		N. A. C.		X HIZ LINE CO.	371		130,000
Float Equipment & Centralizers	221	32,500					3/1	STATE OF THE STATE	32,500
Casing Crews & Equipment	222	39,000							39,000
Fishing Tools & Service	223	0	323				372		0
Geologic/Engineering	224	6,000	324		355		373		6,000
Contract Labor	225	6,500	325	40,000	356	122,935	374	6,500	175,935
Company Supervision	226	32,400	326	15,000	357	Y	375		47,400
Contract Supervision	227	85,000	327	182,000	358		376	5,000	272,000
Testing Casing/Tubing	228	30,000	328	5,000			377		35,000
Mud Logging Unit	229	28,000	329				970		28,000
Logging Perforating/Wireline Services	230	4,000	331	538,000			378		542,000
Stimulation/Treating	201	4,000	332	12,000			380	<del></del> :	12,000
Completion Unit			333	90,000			381	8,800	98,800
Swabbing Unit			334				382		0
Rentals-Surface	235	125,000	335	466,000	359		383	7,000	598,000
Rentals-Subsurface	236	110,000	336	80,000			384		190,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services	238	3,000	338	5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon Seismic Analysis	240	0 0	340						0
Miscellaneous	242	0	341				389		0
Contingency	243	42,000	343	250,000	363		390		292,000
Closed Loop & Environmental	244	220,000	344	5,000	364		388		225,000
Dyed Diesel	245		345	484,000				LINEME ALBERTA	
Coil Tubing			346						0
Flowback Crews & Equip			347	48,000					48,000
Offset Directional/Frac	248		348				391	·	0
TOTAL INTANGIBLES		2,346,900		6,198,000		302,935		30,300	8,878,135
TANGIBLE COSTS									
Surface Casing	401	48,000							48,000
Intermediate Casing	402	174,000						Cycle Control	174,000
Production Casing/Liner	403	327,000							327,000
Tubing			504	52,030			530	5,000	57,030
Welthead Equipment	405	60,000	505	18,700			531	3,000	81,700
Pumping Unit							506	96,000	96,000
Prime Mover							507		0
Rods Pumps-Sub Surface (BH)			509				508	35,000	35,000
Tanks			TOA		510	63,645.00	532	5,000	5,000 63,645
Flowlines					511	26,593.00			26,593
Heater Treater/Separator					512	140,007.00		The state of the s	140,007
Electrical System					513	130,000.00	533	15,000	145,000
Packers/Anchors/Hangers	414		514	65,000		THE PARTY OF THE	534	2,000	67,000
Couplings/Fittings/Valves	415				515	102,282			102,282
Dehydration					517				0
Injection Plant/CO2 Equipment					518			TE 04 10 10 10 10 10 10 10 10 10 10 10 10 10	0
Pumps-Surface Instrumentation/SCADA/POC					521	5,000	par	W 252	5,000
Miscellaneous	419		519		522 523	10,482 5,241	529 535	7,000	17,482
Contingency	420		520		524	5,241	536	3,000	8,241
Meters/LACT		Terreson Steel	10.00 M	X III	525	25,156	-00		25,156
Flares/Combustors/Emission				A SURFINE HERVILLE	526	23,584			23,584
Gas Lift/Compression			527	11,000	516	60,000	528		71,000
TOTAL TANGIBLES		609,000		146,730		591,990		171,000	1,518,720
TOTAL WELL COSTS		2,955,900		6,345,000		894,925		201,300	10,396,855
% of Total Well Cost		28%		61%		9%		2%	
COG Operating LLC									
		Date Prepared:		10/18/18					
				.3/13/10					
		2							
We approprie		COG Operating LLC	ce-						
We approve: % Working Interest			CR	MO					
We approve:% Working Interest		COG Operating LLC A	CR	МВ				to.	
			CR	МВ			_	5)	
% Working Interest			CR	МВ				70	
% Working Interest  Company:  By:			cr	МВ			_	70	
% Working Interest Company:		Ву:			ay your	r share		7.	
% Working Interest  Company: By:  Printed Name:		Ву:	ate.	MB By signing you agree to pa	ay your	r share		-	

WELL NAME:	MASTIFF FED COM #304H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FNL & 1850 FEL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 9: 100 FSL & 1850 FEL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,135	
LEGAL:	Sec 4-24S-32E	TVD:	9,575	

INTANGIBLE COSTS Title/Curative/Permit	201	Drlg - Rig Release(D) 20,000		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL 20,000
Insurance	202		302						2,500
Damages/Right of Way	203	20,000	303		351				20,000
Survey/Stake Location	204	7,000		A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-	352			TO THE REAL PROPERTY.	7,000
Location/Pits/Road Expense	205		305	10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206		306	15,000		NE TOTAL TOTAL			22,500
Turnkey Contract	207	0							0
Footage Contract	208	405.000							0
Daywork Contract Directional Drilling Services	209	495,000 186,000							495,000
Frac Equipment	210		307	1,418,000					1,418,000
Frac Chemicals			308	513,000					513,000
Frac Proppant			309	404,000		Section (Contract)			404,000
Frac Proppant Transportation			310	399,000					399,000
Fuel & Power	211	98,000	311	68,000	354		367		166,000
Water	212	60,000	312	1,019,000			368		1,079,000
Bits	213	92,000	313	12,000		WE W28.	369		104,000
Mud & Chemicals	214	70,000	314	20,000			370		90,000
Drill Stem Test	215		315					THE PROPERTY OF THE	0
Coring & Analysis	216	0							0
Cement Surface	217	25,500							25,500
Cement Intermediate  Cement 2nd Intermediate/Production	218 219	35,000	- 1						35,000
Cement Squeeze & Other (Kickoff Plug)	220	130,000					371		130,000
Float Equipment & Centralizers	221	32,500					3/1		32,500
Casing Crews & Equipment	222	39,000						THAT OF MENTER	39,000
Fishing Tools & Service	223		323				372		0
Geologic/Engineering	224		324		355		373	- 20	6,000
Contract Labor	225		325	40,000	356	122,935	374	6,500	175,935
Company Supervision	226		326	15,000	357		375		47,400
Contract Supervision	227	85,000	327	182,000	358		376	5,000	272,000
Testing Casing/Tubing	228		328	5,000			377		35,000
Mud Logging Unit	229		329						28,000
Logging	230	0					378		0
Perforating/Wireline Services	231		331	538,000			379		542,000
Stimulation/Treating			332	12,000			380		12,000
Completion Unit			333	90,000			381	8,800	98,800
Swabbing Unit Rentals-Surface	235		334	466,000	359		382	7,000	0
Rentals-Subsurface	236		336	80,000	309		383	7,000	190,000
Trucking/Forklift/Rig Mobilization	237		337	40,000	360		385	3,000	243,000
Welding Services	238		338	5,000	361		386	0,000	8,000
Water Disposal	239		339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340					No. of the last of	0
Seismic Analysis	241	0	341						0
Miscellaneous	242	0	342				389		0
Contingency	243	42,000	343	250,000	363		390		292,000
Closed Loop & Environmental	244	220,000	344	5,000	364		388		225,000
Dyed Diesel	245		345	484,000				TO THE RESIDENCE	
Coll Tubing			346						0
Flowback Crews & Equip			347	48,000				NAME OF TAXABLE PARTY	48,000
Offset Directional/Frac TOTAL INTANGIBLES	248		348	2 402 002		200.000	391		0
TOTAL INTANGIBLES		2,346,900		6,198,000		302,935		30,300	8,878,135
TANGIBLE COSTS									
Surface Casing	401	48,000							48,000
Intermediate Casing	402	174,000				Elo III Room			174,000
Production Casing/Liner	403	327,000							327,000
Tubing		The second division in	504	52,030		No. of Contract of	530	5,000	57,030
Wellhead Equipment	405	60,000	505	18,700		MINICOLD HOUSE	531	3,000	81,700
Pumping Unit				LINE VALUE OF THE PARTY OF THE		WENT TO BUILDING	506	96,000	96,000
Prime Mover							507		0
Rods				The second		Salat Salat	508	35,000	35,000
Pumps-Sub Surface (BH)			509				532	5,000	5,000
Tanks				MA HEALTA	510	63,645.00		THE STATE OF	63,645
Flowlines Heater Treater/Separator					511	26,593.00			26,593
Heater Treater/Separator					512		Enn	45.000	140,007
Electrical System Packers/Anchors/Hangers	414		514	65,000	513	130,000.00	533	15,000	145,000
Couplings/Fittings/Valves	415		y . **	65,000	515	102,282	504	2,000	102,282
Dehydration Dehydration	1.0				517	106,606		THE RESIDENCE	0
Injection Plant/CO2 Equipment					518				0
Pumps-Surface		A STATE OF S			521	5,000		DESCRIPTION OF THE PERSON OF T	5,000
Instrumentation/SCADA/POC					522	10,482	529	7,000	17,482
Miscellaneous	419		519		523	5,241	535	3,000	8,241
Contingency	420		520		524		536		0
Meters/LACT					525	25,156		HIVELA LIBERT	25,156
Flares/Combustors/Emission					526	23,584	12000		23,584
One I MOney control			527	11,000	516	60,000	528		71,000
Gas Lift/Compression		609,000		146,730		591,990		171,000	1,518,720
TOTAL TANGIBLES		2,955,900	9	6,345,000		894,925		201,300	10,396,855
				61%		9%		2%	
TOTAL TANGIBLES		28%							
TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost		28%							
TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost				Page Sheep From					
TOTAL TANGIBLES TOTAL WELL COSTS		Date Prepared:		10/18/18					
TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost			A	10/18/18					
TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost		Date Prepared:	A	10/18/18					
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC		Date Prepared:	A	10/18/18 MB	N.		-	_	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC  We approve:% Working Interest		Date Prepared:  COG Operating LLC	A		S.			-	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost  COG Operating LLC  We approve:		Date Prepared:  COG Operating LLC	A		8		-	-	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC  We approve:% Working Interest		Date Prepared:  COG Operating LLC	A		8			-	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost  COG Operating LLC  We approve:% Working Interest  Company: By:		Date Prepared:  COG Operating LLC	A.			-		-	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost  COG Operating LLC  We approve: % Working Interest  Company: By:  Printed Name: Title:		Date Prepared:  COG Operating LLC  By:  This AFE is only an estima	ate. E	МВ	ıy your	r share	=	-	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost  COG Operating LLC  We approve:		Date Prepared:  COG Operating LLC  By:	ate. E	МВ	ıy your	r share			

WELL NAME:	MASTIFF FED COM #305H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FNL & 2490 FEL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 9: 100 FSL & 2490 FEL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,245	
LEGAL:	Sec 4-24S-32E	TVD:	9,685	

Title/Curative/Permit	201	Release(D) 20,000		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTA
	202	2,500	302						- 20
amages/Right of Way	203	20,000	303		351				- 20
urvey/Stake Location	204	7,000			352				
cation/Pits/Road Expense	205	135,000	305	10,000	353	45,000	366		_
illing / Completion Overhead	206	7,500	306	15,000	000	45,000	300		190
	-		300	15,000					
nkey Contract	207	0							_
tage Contract	208	0							_
work Contract	209	495,000							498
ectional Drilling Services	210	186,000							186
c Equipment		DESCRIPTION OF THE PARTY.	307	1,418,000		NAMES OF STREET			1,418
c Chemicals			308	513,000					513
c Proppant	-		309	404,000					_
	-		HILLS .						404
c Proppant Transportation	2000		310	399,000					399
el & Power	211	98,000	311	68,000	354		367		166
ter	212	60,000	312	1,019,000			368		1,075
	213	92,000	313	12,000			369		104
d & Chemicals	214	70,000	314	20,000			370		
	PERSONAL PROPERTY.			20,000			3/0		90
Stern Test	215	0	315						_
ing & Analysis	216	0							
ment Surface	217	25,500		A REPORT NA					2
ment Intermediate	218	35,000		Committee of the later of the l		No. of the last of			3:
ment 2nd Intermediate/Production	Charles 1								
	219	130,000							130
ment Squeeze & Other (Kickoff Plug)	220	0					371	· <u></u> -:	
at Equipment & Centralizers	221	32,500							32
sing Crews & Equipment	222	39,000							39
hing Tools & Service	223	0	323				372		
	_				255				
blogic/Engineering	224	6,000	324	VV2402000	355		373	·	
ntract Labor	225	6,500	325	40,000	356	122,935	374	6,500	17
npany Supervision	226	32,400	326	15,000	357		375		4
ntract Supervision	227	85,000	327	182,000	358		376	5,000	27
sting Casing/Tubing	228	30,000	328	5,000			377		38
d Logging Unit	229	28,000	329	5,550			2.1		- 21
	50071777		JEJ			7	-		
gging	230	0	marie				378		
rforating/Wireline Services	231	4,000	331	538,000			379		54
mulation/Treating			332	12,000			380		12
mpletion Unit			333	90,000			381	8,800	98
abbing Unit	_		334				382	-	-
	005	100,000		400.000	050			7.000	
ntals-Surface	235	125,000	335	466,000	359		383	7,000	598
ntals-Subsurface	236	110,000	336	80,000			384		190
ucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243
elding Services	238	3,000	338	5,000	361		386		
ater Disposal	239	0	339	60,000	362	135,000	387		198
	_			00,000	JUL	100,000	007		100
ug to Abandon	240	0	340						
ismic Analysis	241 _	0	341						
scellaneous	242		342				389		
ontingency	243	42,000	343	250,000	363		390		29
osed Loop & Environmental	244	220,000	344	5,000	364	-	388		22
	-	220,000		484,000	504		000		
yed Diesel	245		345	464,000					-
pil Tubing	- 12		346						
owback Crews & Equip			347	48,000					48
	248		347 348	48,000			391		48
fset Directional/Frac	248	2,346,900	1			302,935	391	30,300	
	248	2,346,900	1	48,000 6,198,000		302,935	391	30,300	8,878
fset Directional/Frac TOTAL INTANGIBLES	248	2,346,900	1			302,935	391	30,300	
fset Directional/Frac TOTAL INTANGIBLES ANGIBLE COSTS	).= ).=		1			302,935	391	30,300	8,876
set Directional/Frac TOTAL INTANGIBLES ANGIBLE COSTS	248	2,346,900	1			302,935	391	30,300	
set Directional/Frac TOTAL INTANGIBLES ANGIBLE COSTS rface Casing	).= ).=		1			302,935	391	30,300	8,878
fset Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS urface Casing ermediate Casing	401 -	48,000 174,000	1			302,935	391	30,300	8,876 44 174
fset Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS Inface Casing ermediate Casing oduction Casing/Liner	401	48,000	348	6,198,000		302,935			8,876 44 174 32
ffset Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS urface Casing termediate Casing oduction Casing/Liner abing	401 402 403	48,000 174,000 327,000	504	6,198,000 52,030		302,935	530	5,000	8,876 44 174 322 55
ANGIBLE COSTS rtace Casing ermediate Casing/Liner bing althead Equipment	401 -	48,000 174,000	348	6,198,000		302,935	530 531	5,000 3,000	44 174 322 55
Set Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS rface Casing rrmediate Casing aduction Casing/Liner bing althead Equipment	401 402 403	48,000 174,000 327,000	504	6,198,000 52,030		302,935	530	5,000	8,870 41 177 32 55
ANGIBLE COSTS  ANGIBLE COSTS  And Casing  Deduction Casing/Liner  Ding  Ellhead Equipment  Imping Unit	401 402 403	48,000 174,000 327,000	504	6,198,000 52,030		302,935	530 531	5,000 3,000	8,870 41 177 32 55
ANGIBLE COSTS  ANGIBLE COSTS  And Casing	401 402 403	48,000 174,000 327,000	504	6,198,000 52,030		302,935	530 531 506 507	5,000 3,000 96,000	8,870 44 177 32 55 8
fset Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS rface Casing ermediate Casing oduction Casing/Liner bling ellhead Equipment imping Unit ime Mover ids	401 402 403	48,000 174,000 327,000	348 504 505	6,198,000 52,030		302,935	530 531 506 507 508	5,000 3,000 96,000 35,000	8,874 44 177 322 55 8 99
fset Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS  inface Casing ermediate Casing oduction Casing/Liner tibing ellihead Equipment imping Unit ime Mover ods imps-Sub Surface (BH)	401 402 403	48,000 174,000 327,000	504	6,198,000 52,030			530 531 506 507	5,000 3,000 96,000	8,876 44 177 322 55 8 96
fset Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS  urface Casing ermediate Casing oduction Casing/Liner tibing ellhead Equipment urping Unit time Mover tids urps-Sub Surface (BH) unks	401 402 403	48,000 174,000 327,000	348 504 505	6,198,000 52,030	510	63,645.00	530 531 506 507 508	5,000 3,000 96,000 35,000	8,876 44 177 322 55 88 96
fset Directional/Frac  TOTAL INTANGIBLES  ANGIBLE COSTS  urface Casing ermediate Casing oduction Casing/Liner ribing ellhead Equipment imping Unit ime Mover ods imps-Sub Surface (BH) unks owlines	401 402 403	48,000 174,000 327,000	348 504 505	6,198,000 52,030	511	63,645.00 26,593.00	530 531 506 507 508	5,000 3,000 96,000 35,000	8,874 44 177 322 55 88 96
Set Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS  rface Casing  permediate Casing  aduction Casing/Liner  bing  althead Equipment  mping Unit  me Mover  ds  mps-Sub Surface (BH)  nks  wilnes	401 402 403	48,000 174,000 327,000	348 504 505	6,198,000 52,030		63,645.00	530 531 506 507 508	5,000 3,000 96,000 35,000	8,876 44 177 322 55 88 96
ANGIBLE COSTS ANGIBLE COSTS Ander Casing  ermediate Casing  duction Casing/Liner  bing allhead Equipment  mping Unit  me Mover  ds  mps-Sub Surface (BH)  nks  wilnies ater Treater/Separator	401 402 403	48,000 174,000 327,000	348 504 505	6,198,000 52,030	511	63,645.00 26,593.00	530 531 506 507 508	5,000 3,000 96,000 35,000	8,874 44 177 322 55 88 96
Set Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS Inface Casing Inface Infa	401 402 403	48,000 174,000 327,000	504 505 509	52,030 18,700	511 512	63,645.00 26,593.00 140,007.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	8,874 44 177 322 55 8 99 33 66 22 144
ANGIBLE COSTS  ANGIBLE COSTS  Inface Casing  Inface Infa	401 402 403 405	48,000 174,000 327,000	348 504 505	6,198,000 52,030	511 512 513	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	8,874 44 177 322 55 88 96 33 66 22 144 144
Set Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS Inface Casing Permediate Casing Soduction Casing/Liner Ding Solution Casing	401 402 403 405	48,000 174,000 327,000	504 505 509	52,030 18,700	511 512 513 515	63,645.00 26,593.00 140,007.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	8,874 44 177 322 55 88 96 33 66 22 144 144
ANGIBLE COSTS  ANGIBLE COSTS  Infrace Casing ermediate Casing oduction Casing/Liner bing billhead Equipment imping Unit imme Mover ids imps-Sub Surface (BH) inks owines inter Treater/Separator exertical System ckers/Anchors/Hangers interprocess interpr	401 402 403 405	48,000 174,000 327,000	504 505 509	52,030 18,700	511 512 513 515 517	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	8,87 4 177 32 5 8 9 3 6 6 2 14 14
fset Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS  Inface Casing germediate Casing oduction Casing/Liner Jobing Jobi	401 402 403 405	48,000 174,000 327,000	504 505 509	52,030 18,700	511 512 513 515	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	8,87 4 177 32 5 8 9 3 6 6 2 14 14
ANGIBLE COSTS  ANGIBLE COSTS  Inface Casing ermediate Casing oduction Casing/Liner bing ellhead Equipment imping Unit ime Mover ods imps-Sub Surface (BH) inks owlines ater Treater/Separator ections Anchors/Hangers impings/Fittings/Valves inhydration ection Plant/CO2 Equipment	401 402 403 405	48,000 174,000 327,000	504 505 509	52,030 18,700	511 512 513 515 517	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	8,874 44 177 322 55 88 99 339 66 20 144 144 66 100
ANGIBLE COSTS  ANGIBLE COSTS  Ander Casing  Determined to Casing/Liner  Ding  Determined to Casing/Liner  Determined	401 402 403 405	48,000 174,000 327,000	504 505 509	52,030 18,700	511 512 513 515 517 518 521	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000	8,87 4 17: 32: 5 8 9: 33: 66: 2: 14: 14: 6: 10:
Set Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS rface Casing rdace Casing duction Casing/Liner bing allhead Equipment mping Unit me Mover ds mps-Sub Surface (BH) nks wilines ater Treater/Separator setrical System ckers/Anchors/Hangers uplings/Fittings/Valves hydration petion Plant/CO2 Equipment mps-Surface trumentation/SCADA/POC	401 402 403 405 405 414 415	48,000 174,000 327,000	504 505 509	52,030 18,700	511 512 513 515 517 518 521 522	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,87 4 17, 32, 5 8 9 3, 6, 2, 14, 14, 6, 10,
ANGIBLE COSTS ANGIBLE COSTS rface Casing ermediate Casing oduction Casing/Liner bing allihead Equipment mping Unit me Mover ds mps-Sub Surface (BH) nks evilines atter Treater/Separator scritcial System ckers/Anchors/Hangers uplings/Fittings/Valves hydration ection Plant/CO2 Equipment mps-Surface trumentation/SCADA/POC scellaneous	401 402 403 405 405 414 415	48,000 174,000 327,000	504 505 509 514	52,030 18,700	511 512 513 515 517 518 521 522 523	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000	8,87 4 17 32 5 8 9 3 6 2 14 14 6 10
ANGIBLE COSTS  ANGIBLE COSTS  rface Casing  ermediate Casing  duction Casing/Liner  bing  althead Equipment  mping Unit  me Mover  ds  mps-Sub Surface (BH)  nks  wilnes  atter Treater/Separator  setrical System  ckers/Anchors/Hangers  uplings/Fittings/Valves  hydration  action Plant/CO2 Equipment  mgs-Surface  intrumentation/SCADA/POC  scellaneous  nitingency	401 402 403 405 405 414 415	48,000 174,000 327,000	504 505 509	52,030 18,700	511 512 513 515 517 518 521 522	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,87 4 17 32 5 8 9 3 6 2 14 14 6 10
ANGIBLE COSTS  ANGIBLE COSTS  rface Casing  ermediate Casing  duction Casing/Liner  bing  althead Equipment  mping Unit  me Mover  ds  mps-Sub Surface (BH)  nks  wilnes  atter Treater/Separator  setrical System  ckers/Anchors/Hangers  uplings/Fittings/Valves  hydration  action Plant/CO2 Equipment  mgs-Surface  intrumentation/SCADA/POC  scellaneous  nitingency	401 402 403 405 405 414 415	48,000 174,000 327,000	504 505 509 514	52,030 18,700	511 512 513 515 517 518 521 522 523	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,87 4 17 32 5 8 9 3 6 2 14 14 6 10
set Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS Inface Casing Permediate Casing Soduction Casing/Liner Soing Solution Casing/Liner Solution Casing/Liner Solution Casing/Line	401 402 403 405 405 414 415	48,000 174,000 327,000	504 505 509 514	52,030 18,700	511 512 513 515 517 518 521 522 523 524 525	5,000 10,482 5,241	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,87 4,17 32 5 8 9 3 6 2 14,14 6 10
Set Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS  rface Casing  sermediate Casing  duction Casing/Liner  bing  althead Equipment  mping Unit  me Mover  ds  mps-Sub Surface (BH)  nks  wilnes  ater Treater/Separator  cckers/Anchors/Hangers  uplings/Fittings/Valves  hydration  action Plant/CO2 Equipment  mps-Surface  trumentation/SCADA/POC  scellaneous  intingency  iters/LACT  ires/Combustors/Emission	401 402 403 405 405 414 415	48,000 174,000 327,000	504 505 509 514	52,030 18,700	511 512 513 515 517 518 521 522 523 524 525 526	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,87  4 17 32 5 8 9 3 6 2 14 14 6 10
set Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS Inface Casing Permediate Casing Induction Casing/Liner Indigent Cost Casing/Liner Indigent Cost Casing/Liner Indigent Cost Casing/Liner Indigent Casing Cost Casing/Liner Indigent Cost	401 402 403 405 405 414 415	48,000 174,000 327,000 60,000	504 505 509 514	52,030 18,700	511 512 513 515 517 518 521 522 523 524 525	5,000 10,482 5,241 25,156 23,584 60,000	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,87 4 17. 32. 5 8 9 33. 6 22. 14. 14. 6 10. 1. 2. 2. 7
set Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS Inface Casing Permediate Casing Settle Cost of Casing Control of C	401 402 403 405 405 414 415	48,000 174,000 327,000	504 505 509 514	52,030 18,700	511 512 513 515 517 518 521 522 523 524 525 526	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,87  4 17 32 5 8 9 3 6 2 14 14 6 10 1
set Directional/Frac TOTAL INTANGIBLES  INGIBLE COSTS Inface Casing Infa	401 402 403 405 405 414 415	48,000 174,000 327,000 60,000	504 505 509 514	52,030 18,700	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	8,87  4 17 32 5 8 9 33 66 22 14 14 66 10 1
set Directional/Frac TOTAL INTANGIBLES  INGIBLE COSTS face Casing  rrmediate Casing duction Casing/Liner pling duction Casing/Liner pling differed Equipment mping Unit me Mover ds mps-Sub Surface (BH) mks wilnes atter Treater/Separator ctrical System ckers/Anchors/Hangers uplings/Fittings/Valves mydration citicion Plant/CO2 Equipment mps-Surface trumentation/SCADA/POC cellaneous titingency ters/LACT ress/Combustors/Emission s Litt/Compression TOTAL TANGIBLES	401 402 403 405 405 414 415	48,000 174,000 327,000 60,000	504 505 509 514	6,198,000 52,030 18,700 65,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,87  4 17 32 5 8 9 33 66 22 14 14 66 10 1
set Directional/Frac TOTAL INTANGIBLES  INGIBLE COSTS Inface Casing Infrace Casin	401 402 403 405 405 414 415	48,000 174,000 327,000 60,000	504 505 509 514	6,198,000 52,030 18,700 65,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,87  4 17 32 5 8 9 3 6 2 14 14 6 10 1
Set Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS  rface Casing  permediate Casing  aduction Casing/Liner  bing  althead Equipment  mping Unit  me Mover  ds  mps-Sub Surface (BH)  nks  wilines  ater Treater/Separator  cetrical System  cetrical System  cetrical System  cetrical System  cetrical System  cetrical Cost  cetrical Cost  mps-Surface  frumentation/SCADA/POC  scellaneous  nitingency  ters/LACT  res/Combustors/Emission  s Litt/Compression  TOTAL TANGIBLES  TOTAL WELL COSTS	401 402 403 405 405 414 415	48,000 174,000 327,000 60,000 60,000 609,000 2,955,900	504 505 509 514	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,87  4 17 32 5 8 9 3 6 2 14 14 6 10 1
ANGIBLE COSTS  ANGIBLE COSTS  Inface Casing ermediate Casing oduction Casing/Liner bing ellhead Equipment imping Unit ime Mover ids imps-Sub Surface (BH) inks owlines ater Treater/Separator sectrical System secters/Anchors/Hangers supplings/Fittings/Valves shydration ection Plant/CO2 Equipment imps-Surface strumentation/SCADA/POC scellaneous intingency sters/LACT ares/Combustors/Emission is Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 405 414 415	48,000 174,000 327,000 60,000 60,000 609,000 2,955,900	504 505 509 514	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,87  4 17 32 5 8 9 3 6 2 14 14 6 10 1 2 2 7 1,51
ANGIBLE COSTS rface Casing germediate Casing oduction Casing/Liner bing allhead Equipment mping Unit me Mover ds mps-Sub Surface (BH) nks willines ater Treater/Separator setrical System ceters/Anchors/Hangers uplings/Fittings/Valves hydration ection Plant/CO2 Equipment mps-Surface trumentation/SCADA/POC secllaneous intingency ters/LACT ters/Combustors/Emission is Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 405 414 415 419 420	48,000 174,000 327,000 60,000 60,000 2,955,900 28%	504 505 509 514	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,87  4 17 32 5 8 9 33 66 22 14 14 66 10 1
ANGIBLE COSTS  ANGIBLE COSTS  Inface Casing ermediate Casing oduction Casing/Liner bing ellhead Equipment imping Unit ime Mover ids imps-Sub Surface (BH) inks owlines ater Treater/Separator sectrical System secters/Anchors/Hangers supplings/Fittings/Valves shydration ection Plant/CO2 Equipment imps-Surface strumentation/SCADA/POC scellaneous intingency sters/LACT ares/Combustors/Emission is Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 405 414 415 419 420	48,000 174,000 327,000 60,000 60,000 2,955,900 28%	348 504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,87  4 17 32 5 8 9 33 66 22 14 14 66 10 1
fiset Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS  urface Casing ermediate Casing oduction Casing/Liner tibing ellhead Equipment imping Unit ime Mover ods imps-Sub Surface (BH) inks owlines alter Treater/Separator ectrical System cuckers/Anchors/Hangers outplings/Fitings/Valves shydration ection Plant/CO2 Equipment imps-Surface strumentation/SCADA/POC scellaneous omitingency eters/LACT ares/Combustors/Emission as Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 405 414 415 419 420	48,000 174,000 327,000 60,000 609,000 2,955,900 28%	348 504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,87  4 17 32 5 8 9 3 6 2 14 14 6 10 1 2 2 7 1,51
fiset Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS  Inface Casing  ermediate Casing oduction Casing/Liner bing billhead Equipment imping Unit ime Mover ods imps-Sub Surface (BH) inks owlines subtract Treater/Separator sectrical System ckers/Anchors/Hangers inplings/Fittings/Valves inhydration ection Plant/CO2 Equipment imps-Surface strumentation/SCADA/POC scellaneous intingency sters/LACT ires/Combustors/Emission is Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost DG Operating LLC	401 402 403 405 405 414 415 419 420	48,000 174,000 327,000 60,000 60,000 2,955,900 28%	504 505 509 514	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,87  4 17 32 5 8 9 3 6 2 14 14 6 10 1 2 2 7 1,51
fiset Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS  writace Casing ermediate Casing oduction Casing/Liner bibing ellihead Equipment imping Unit ime Mover dds imps-Sub Surface (BH) inits sowlines sowlines sowlines soler Treater/Separator sectrical System sckers/Anchors/Hangers supplings/Fittings/Valves shydration ection Plant/CO2 Equipment imps-Surface strumentation/SCADA/POC scellaneous ontingency sters/LACT ares/Combustors/Emission as Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost DG Operating LLC	401 402 403 405 405 414 415 419 420	48,000 174,000 327,000 60,000 609,000 2,955,900 28%	348 504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,870 44 177 322 55 81 96 20 144 174
ffset Directional/Frac  TOTAL INTANGIBLES  ANGIBLE COSTS  urface Casing termediate Casing roduction Casing/Liner ubing tellhead Equipment umping Unit trime Mover odds umps-Sub Surface (BH) anks owlines eater Treater/Separator ectrical System ackers/Anchors/Hangers ouplings/Fittings/Valves ehydration jection Plant/CO2 Equipment umps-Surface strumentation/SCADA/POC iscellaneous ontingency eters/LACT ares/Combustors/Emission as Lift/Compression TOTAL WELL COSTS	401 402 403 405 405 414 415 419 420	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared:	348 504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,874 44 177 322 55 88 99 339 66 20 144 144 66 100
fiset Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS  Inface Casing ermediate Casing oduction Casing/Liner bing billhead Equipment imping Unit ime Mover ids imps-Sub Surface (BH) inks witines state Treater/Separator secticial System cokers/Anchors/Hangers suplings/Fittings/Valves shydration ection Plant/CO2 Equipment imps-Surface strumentation/SCADA/POC scellaneous intingency sters/LACT ires/Combustors/Emission is Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost DG Operating LLC	401 402 403 405 405 414 415 419 420	48,000 174,000 327,000 60,000 609,000 2,955,900 28%	348 504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,87  4 17 32 5 8 9 3 6 2 14 14 6 10 1 2 2 7 1,51
fiset Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS  Inface Casing ermediate Casing oduction Casing/Liner bibing eillhead Equipment imping Unit ime Mover ods imps-Sub Surface (BH) inks obster Treater/Separator ectrical System tokers/Anchors/Hangers ouplings/Fittings/Valves thydration ection Plant/CO2 Equipment imps-Surface strumentation/SCADA/POC scellaneous intingency eters/LACT ares/Combustors/Emission as Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost DG Operating LLC	401 402 403 405 405 414 415 419 420	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared:	348 504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,874 44 177 322 55 88 99 339 66 20 144 144 66 100
Set Directional/Frac TOTAL INTANGIBLES  ANGIBLE COSTS  rface Casing ermediate Casing oduction Casing/Liner bing althead Equipment reping Unit me Mover ds rmps-Sub Surface (BH) nks witines ater Treater/Separator betrical System ckers/Anchors/Hangers uplings/Fittings/Valves hydration action Plant/CO2 Equipment rmps-Surface strumentation/SCADA/POC scellaneous rntingency eters/LACT res/Combustors/Emission is Litt/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost Discoveries  Go Operating LLC	401 402 403 405 405 414 415 419 420	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared:	348 504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,874 44 177 322 55 88 99 339 66 20 144 144 66 100
set Directional/Frac TOTAL INTANGIBLES  NAGIBLE COSTS Inface Casing Permediate Casing Inface Casing	401 402 403 405 405 414 415 419 420	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared:	348 504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,874 44 177 322 55 88 99 339 66 20 144 144 66 100
set Directional/Frac TOTAL INTANGIBLES  NGIBLE COSTS face Casing rrmediate Casing duction Casing/Liner bing dilhead Equipment mping Unit me Mover ds mps-Sub Surface (BH) liks wilnes ster Treater/Separator ctrical System ckers/Anchors/Hangers uplings/Fittings/Valves hydration ction Plant/CO2 Equipment mps-Surface rrumentation/SCADA/POC cellaneous stitingency ters/LACT res/Combustors/Emission st Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost dapprove:% Working Interest mpany:	401 402 403 405 405 414 415 419 420	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared:	348 504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,874 44 177 322 55 88 99 339 66 20 144 144 66 100
set Directional/Frac TOTAL INTANGIBLES  INGIBLE COSTS face Casing Irrmediate Casing duction Casing/Liner bing Illhead Equipment Imping Unit Impe Mover Is Imperson Surface (BH) Inks Interest Separator Interest System Intere	401 - 402 - 403 - 405 - 414 - 415	48,000 174,000 327,000 60,000 60,000 2,955,900 28% Date Prepared:	504 505 509 514 519 520	52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526 516	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	8,874 44 177 322 55 88 99 339 66 20 144 144 66 100

WELL NAME:	MASTIFF FED COM #306H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FSL & 2310 FWL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 33: 100 FNL & 2310 FWL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,135	
LEGAL:	Sec 4-24S-32E	TVD:	9,575	

INTANGIBLE COSTS		Drlg - Rig Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL
Title/Curative/Permit Insurance	201	20,000						2	20,000
W1024000 DATE OF THE PROPERTY	202	2,500							2,500
Damages/Right of Way	203	20,000			351				20,000
Survey/Stake Location	204	7,000		CAN THE RESIDENCE	352				7,000
Location/Pits/Road Expense	205	135,000		10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206	7,500		15,000					22,500
Turnkey Contract	207	0	1						0
Footage Contract	208	0							0
Daywork Contract	209	495,000							495,000
Directional Drilling Services	210	186,000							186,000
Frac Equipment			307	1,418,000					1,418,000
Frac Chemicals			308	513,000					513,000
Frac Proppant			309	404,000					404,000
Frac Proppant Transportation Fuel & Power			310	399,000			220		399,000
Water	211	98,000		68,000	354		367		166,000
	212	60,000		1,019,000			368		1,079,000
Bits	213	92,000		12,000			369		104,000
Mud & Chemicals	214	70,000	1000	20,000			370		90,000
Drill Stem Test	215	0							0
Coring & Analysis Cement Surface	216	0 0 500							0
Cement Intermediate	217	25,500							25,500
Cement 2nd Intermediate/Production	218	35,000							35,000
Cement Squeeze & Other (Kickoff Plug)	219	130,000							130,000
		0					371		0
Float Equipment & Centralizers  Casing Crews & Equipment	221	32,500							32,500
	222	39,000	200				070		39,000
Fishing Tools & Service Geologic/Engineering	223	6,000			900		372		0
Contract Labor	225	6,000		40.000	355	100.000	373	10.000	6,000
	225			40,000	356	122,935	374	6,500	175,935
Company Supervision Contract Supervision	226	32,400	10000	15,000	357		375		47,400
Testing Casing/Tubing		85,000	10000	182,000	358		376	5,000	272,000
	228	30,000		5,000			377		35,000
Mud Logging Unit	229	28,000	329				0.774		28,000
Logging Perforating/Wireline Services	230	4,000	224	F00.064			378		- 0
Stimulation/Treating	231	4,000	2009/176	538,000			379		542,000
			332	12,000			380		12,000
Completion Unit			333	90,000			381	8,800	98,800
Swabbing Unit	005	100,000	334		050		382		0
Rentals-Surface	235	125,000		466,000	359		383	7,000	598,000
Rentals-Subsurface	236	110,000	336	80,000	000		384		190,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services	238	3,000	338	5,000	361	405 000	386		8,000
Water Disposal	239	0		60,000	362	135,000	387		195,000
Plug to Abandon	240	0							0
Seismic Analysis Miscellaneous	241	0					200		0
Contingency	242	0 40 000		050,000	200		389		0
Closed Loop & Environmental	244	42,000 220,000	343	250,000 5,000	363 364		390		292,000
Closed Loop & Environmental	244	220,000	244	5,000	304		300		225,000
Dyad Diesel	246		DAE	484 000					
Dyed Diesel Coll Tubing	245		345	484,000					
Coll Tubing	245		346						0
Coil Tubing Flowback Crews & Equip			346 347	484,000			201		48,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac	245	2 346 900	346	48,000		302 935	391	30.300	0
Coil Tubing Flowback Crews & Equip		2,346,900	346 347			302,935	391	30,300	
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES		2,346,900	346 347	48,000		302,935	391	30,300	0
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS	248	23-27-22	346 347	48,000		302,935	391	30,300	0 8,878,135
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing	248	48,000	346 347	48,000		302,935	391	30,300	8,878,135 48,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing	248 401 402	48,000 174,000	346 347	48,000		302,935	391	30,300	8,878,135 48,000 174,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner	248	48,000	346 347 348	48,000 6,198,000		302,935			8,878,135 48,000 174,000 327,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing	248 401 402 403	48,000 174,000 327,000	346 347 348	48,000 6,198,000 52,030		302,935	530	5,000	8,878,135 48,000 174,000 327,000 57,030
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment	248 401 402	48,000 174,000	346 347 348 504	48,000 6,198,000		302,935	530 531	5,000 3,000	8,878,135 48,000 174,000 327,000 57,030 81,700
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit	248 401 402 403	48,000 174,000 327,000	346 347 348 504	48,000 6,198,000 52,030		302,935	530 531 506	5,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment	248 401 402 403	48,000 174,000 327,000	346 347 348 504	48,000 6,198,000 52,030		302,935	530 531 506 507	5,000 3,000 96,000	8,878,135 48,000 174,000 327,000 57,030 81,700 96,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods	248 401 402 403	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030		302,935	530 531 506 507 508	5,000 3,000 96,000 35,000	8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover	248 401 402 403	48,000 174,000 327,000	346 347 348 504	48,000 6,198,000 52,030	510		530 531 506 507	5,000 3,000 96,000	8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH)	248 401 402 403	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030	510 511	63,645.00	530 531 506 507 508	5,000 3,000 96,000 35,000	8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks	248 401 402 403	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030	511	63,645.00 26,593.00	530 531 506 507 508	5,000 3,000 96,000 35,000	8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator	248 401 402 403	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030	511 512	63,645.00 26,593.00 140,007.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 53,000 63,645 26,593 140,007
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System	248 401 402 403	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511	63,645.00 26,593.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 53,000 63,645 26,593 140,007
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030	511 512 513	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511 512 513 515	63,645.00 26,593.00 140,007.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 5,000 5,000 63,645 26,593 140,007 145,000 67,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511 512 513	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 35,000 5,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521	63,645.00 26,593.00 140,007.00 130,000.00 102,282	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 0 0 0
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumpis-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC	248 401 402 403 405	48,000 174,000 327,000	346 347 348 504 505 509	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522 523	63,645.00 26,593.00 140,007.00 130,000.00 102,282	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous	248 401 402 403 405 414 415	48,000 174,000 327,000	346 347 348 504 505	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522 523 524	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 5,000 63,645 26,593 140,000 67,000 102,282 0 0 5,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency	248 401 402 403 405 414 415	48,000 174,000 327,000	346 347 348 504 505 509	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522 523	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT	248 401 402 403 405 414 415	48,000 174,000 327,000	346 347 348 504 505 509	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522 523 524 525	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission	248 401 402 403 405 414 415	48,000 174,000 327,000	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522 523 524 525 526	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700 65,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,845 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 609,000 2,955,900	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700 65,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 609,000 2,955,900	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415	48,000 174,000 327,000 60,000 609,000 2,955,900	346 347 348 504 505 509 514	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415 419 420	48,000 174,000 327,000 60,000 609,000 2,955,900 28%	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,845 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415 419 420	48,000 174,000 327,000 60,000 609,000 2,955,900 28%	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,845 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	248 401 402 403 405 414 415 419 420	48,000 174,000 327,000 60,000 609,000 2,955,900	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,845 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	248 401 402 403 405 414 415 419 420	48,000 174,000 327,000 60,000 609,000 2,955,900 28%	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,845 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumpis-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest	248 401 402 403 405 414 415 419 420	48,000 174,000 327,000 60,000 609,000 2,955,900 28% Date Prepared:	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,845 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest Company:	248 401 402 403 405 414 415 419 420	48,000 174,000 327,000 60,000 609,000 2,955,900 28% Date Prepared:	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumpis-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest	248 401 402 403 405 414 415 419 420	48,000 174,000 327,000 60,000 609,000 2,955,900 28% Date Prepared:	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest Company: By:	248 401 402 403 405 414 415 419 420	48,000 174,000 327,000 60,000 609,000 2,955,900 28% Date Prepared:	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 65,000 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest Company:	248 401 402 403 405 414 415 419 420	48,000 174,000 327,000 60,000 60,000 2,955,900 28%  Date Prepared: COG Operating LLC A	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526 516	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925 9%	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Coil Tubing Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumpis-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest Company: By: Printed Name:	248 401 402 403 405 414 415 419 420	48,000 174,000 327,000 60,000 609,000 2,955,900 28% Date Prepared:	346 347 348 504 505 509 514 519 520	48,000 6,198,000 52,030 18,700 11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526 516	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925 9%	530 531 506 507 508 532 533 534	5,000 3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	0 8,878,135 48,000 174,000 327,000 57,030 81,700 96,000 0 35,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720

WELL NAME:	MASTIFF FED COM #307H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FSL & 1910 FWL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 33: 100 FNL & 1910 FWL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,245	
LEGAL:	Sec 4-24S-32E	TVD:	9,685	

INTANGIBLE COSTS Title/Curative/Permit	001	Drlg - Rig Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpg Equipment(PEQ)	TOTAL
Insurance	201	20,000	302						20,000
Damages/Right of Way	203	20,000			254				2,500
Survey/Stake Location	204	7,000	303		351				20,000
Location/Pits/Road Expense	205	135,000	305	10,000	352 353	45,000	366		7,000
Drilling / Completion Overhead	206	7,500	306	15,000	333	45,000	300		190,000
Turnkey Contract	207	0	000	10,000					0
Footage Contract	208	- 0							0
Daywork Contract	209	495,000							495,000
Directional Drilling Services	210	186,000						Contractor of the	186,000
Frac Equipment			307	1,418,000					1,418,000
Frac Chemicals		S 1 51 10 55	308	513,000					513,000
Frac Proppant			309	404,000		TO STATE OF THE			404,000
Frac Proppant Transportation			310	399,000					399,000
Fuel & Power	211	98,000	311	68,000	354		367		166,000
Water	212	60,000	312	1,019,000			368		1,079,000
Bits Mud & Chemicals	213	92,000	313	12,000			369		104,000
Drill Stem Test	215	70,000		20,000			370		90,000
Coring & Analysis	216	0						A Venice of the Section	0
Cement Surface	217	25,500		DEPT TO THE RESERVE		TOTAL SECTION			25,500
Cement Intermediate	218	35,000		PEN A/-					35,000
Cement 2nd Intermediate/Production	219	130,000							130,000
Cement Squeeze & Other (Kickoff Plug)	220	0		Many American			371		0
Float Equipment & Centralizers	221	32,500						MAL DE LESSE	32,500
Casing Crews & Equipment	222	39,000					gar		39,000
Fishing Tools & Service	223	0			055		372		0
Geologic/Engineering Contract Labor	224	6,000	324	40,000	355 356	122,935	373	0.500	6,000
Company Supervision	226	32,400	326	15,000	356	122,935	375	6,500	175,935 47,400
Contract Supervision	227	85,000	327	182,000	358		376	5,000	272,000
Testing Casing/Tubing	228	30,000	328	5,000	nonit.	TOTAL TERMINE	377	3,000	35,000
Mud Logging Unit	229	28,000	329						28,000
Logging	230	0					378		0
Perforating/Wireline Services	231	4,000	331	538,000			379		542,000
Stimulation/Treating			332	12,000			380		12,000
Completion Unit			333	90,000			381	8,800	98,800
Swabbing Unit	005	105 000	334	400,000			382		0
Rentals-Surface Rentals-Subsurface	235	125,000	335	466,000	359		383	7,000	598,000
Trucking/Forklift/Rig Mobilization	236	110,000	336	80,000 40,000	260		384	2.000	190,000
Welding Services	238	3,000	338	5,000	360 361		385	3,000	243,000 8,000
Water Disposal	239	0,000	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340					A ENTY HATTEN	0
Seismic Analysis	241	0	341					THE WINDS AVIII	0
Miscellaneous	242	0	342				389		0
Contingency	243	42,000	343	250,000	363		390		292,000
Closed Loop & Environmental	244	220,000	344	5,000	364		388		225,000
Dyed Diesel	245		345	484,000		700			
Coll Tubing Flowback Crews & Equip			346	40,000					0
Offset Directional/Frac	248		347	48,000			391		48,000
TOTAL INTANGIBLES	4.70	2,346,900	0.00	6,198,000		302,935	331	30,300	8,878,135
<del></del>									
TANGIBLE COSTS									
Surface Casing	401	48,000		Wit E DOGS					48,000
Intermediate Casing	402	174,000							174,000
Production Casing/Liner Tubing	403	327,000	E0.4	***					327,000
Tubing Wellhead Equipment	405	60,000	504 505	52,030 18,700			530	5,000	57,030
Pumping Unit	400	00,000	500	10,700			531 506	3,000 96,000	96,000
Prime Mover							507	90,000	96,000
Rods							508	35,000	35,000
Pumps-Sub Surface (BH)			509			Marketter State S	532	5,000	5,000
Tanks					510	63,645.00			63,645
Flowlines					511	26,593.00			26,593
Heater Treater/Separator					512	140,007.00	120401		140,007
Electrical System Packers/Anchors/Hangers	414		614	05.000	513	130,000.00	533	15,000	145,000
Couplings/Fittings/Valves	415		514	65,000	515	102,282	534	2,000	67,000
Dehydration				TWO ELLIS THE	517	102,282			102,282
Injection Plant/CO2 Equipment				100 mm 2 100 mm	518			S. Albert Burk	- 0
Pumps-Surface					521	5,000		NOTES IN THE	5,000
Instrumentation/SCADA/POC				CHEST LESS	522	10,482	529	7,000	17,482
Miscellaneous	419		519		523	5,241	535	3,000	8,241
Contingency	420		520		524		536		0
Meters/LACT					525	25,156			25,156
Flares/Combustors/Emission Gas Lift/Compression			507	24 600	526	23,584	200		23,584
TOTAL TANGIBLES		609,000	527	11,000 146,730	516	60,000 591,990	528	171,000	71,000
TOTAL WELL COSTS		2,955,900		6,345,000		894,925		201,300	1,518,720
7 Tours appear to the 12-12 December 1				-10701000		004,023		201,000	.0,000,000
% of Total Well Cost		28%		61%		9%		2%	
COG Operating LLC									
		Date Prepared:		10/18/18					
We approve		COG Operating LLC							
We approve:% Working Interest		By:		МВ					
		<u></u>		MB			_	20	
Company:									
By:									
Printed Name:									
Title:		This AFE is only an estim	ate.	By signing you agree to pa	IV VOU	r share			
Date:		of the actual costs incurre		, organing you agree to pa	, juul	CONTROL OF			

WELL NAME:	MASTIFF FED COM #308H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FSL & 1310 FWL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 33: 100 FNL & 1310 FWL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,135	
LEGAL:	Sec 4-24S-32E	TVD:	9,575	

INTANGIBLE COSTS Titla (Curativa (Parmit	20.4	Drlg - Rig Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL
Title/Curative/Permit Insurance	201	20,000	302						20,000
Damages/Right of Way					2004				2,500
Survey/Stake Location	203	20,000	303	A STATE OF THE STA	351				20,000
Location/Pits/Road Expense	205	7,000	305	10,000	352 353	45,000	200		7,000
Drilling / Completion Overhead	206	7,500		15,000	333	45,000	366		190,000
Turnkey Contract	207	0		10,000		4			22,500
Footage Contract	208	- 0		EVICE INTERNAL					0
Daywork Contract	209	495,000							495,000
Directional Drilling Services	210	186,000		WE VINUE		THE PERSON NAMED IN			186,000
Frac Equipment			307	1,418,000					1,418,000
Frac Chemicals			308	513,000					513,000
Frac Proppant			309	404,000					404,000
Frac Proppant Transportation			310	399,000		N. MINK			399,000
Fuel & Power	211	98,000	311	68,000	354		367		166,000
Water	212	60,000	312	1,019,000			368		1,079,000
Bits	213	92,000	313	12,000			369		104,000
Mud & Chemicals	214	70,000	314	20,000			370		90,000
Drill Stem Test	215	0	315						0
Coring & Analysis	216	0							0
Cement Surface	217	25,500							25,500
Cement Intermediate	218	35,000							35,000
Cement 2nd Intermediate/Production	219	130,000							130,000
Cement Squeeze & Other (Kickoff Plug) Float Equipment & Centralizers	220	32,500					371		0 22 500
Casing Crews & Equipment	222	39,000							32,500
Fishing Tools & Service	223	39,000	323				372		39,000
Geologic/Engineering	224	6,000	324		355		373		
Contract Labor	225	6,500	325	40,000	356	122,935	374	6,500	175 935
Company Supervision	226	32,400	326	15,000	357	122,935	374	6,500	175,935 47,400
Contract Supervision	227	85,000	327	182,000	358		376	5,000	272,000
Testing Casing/Tubing	228	30,000	328	5,000	500		377	3,000	35,000
Mud Logging Unit	229	28,000	329	5,000		West States		ATRICK NEWS	28,000
Logging	230	0		THE RESERVE OF THE PERSON OF T			378		0
Perforating/Wireline Services	231	4,000	331	538,000			379		542,000
Stimulation/Treating			332	12,000			380		12,000
Completion Unit			333	90,000			381	8,800	98,800
Swabbing Unit			334				382		0
Rentals-Surface	235	125,000	335	466,000	359		383	7,000	598,000
Rentals-Subsurface	236	110,000	336	80,000			384		190,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services	238	3,000	338	5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340						0
Seismic Analysis	241	0	341				400		0
Miscellaneous	242	0					389		0
Contingency	243	42,000	343	250,000	363		390		292,000
Closed Loop & Environmental  Dyed Diesel	244	220,000	344	5,000	364		388		225,000
Coll Tubing	245	Annual Control of the	346	484,000					
Flowback Crews & Equip			347	48,000					48,000
Offset Directional/Frac	248		348	40,000			391		46,000
TOTAL INTANGIBLES		2,346,900		6,198,000		302,935	-	30,300	8,878,135
						- Carthelin Color			
TANGIBLE COSTS									
Surface Casing	401	48,000							48,000
Intermediate Casing	402	174,000							174,000
Production Casing/Liner	403	327,000						TERMINET COLUMN	327,000
Tubing		NAME OF TAXABLE PARTY.	504	52,030			530	5,000	57,030
Wellhead Equipment	405	60,000	505	18,700		Maria Maria	531	3,000	81,700
Pumping Unit							506	96,000	96,000
Prime Mover						WELLEN HOLES	507		0
Rods  Dumor Sub Surface (RM)						THE PARTY OF THE P	508	35,000	35,000
Pumps-Sub Surface (BH) Tanks			509		Fee	20.045.00	532	5,000	5,000
Flowlines					510 511	63,645.00			63,645
Heater Treater/Separator					511	26,593.00 140,007.00			26,593 140,007
Electrical System					513	130,000.00	533	15,000	145,000
Packers/Anchors/Hangers	414	-	514	65,000		,50,000.00	534	2,000	67,000
Couplings/Fittings/Valves	415		123000	55,550	515	102,282	757	2,000	102,282
Dehydration				and the same of th	517				0
Injection Plant/CO2 Equipment					518			EAST NEW YORK OF THE	0
Pumps-Surface					521	5,000			5,000
Instrumentation/SCADA/POC					522	10,482	529	7,000	17,482
Miscellaneous	419		519		523	5,241	535	3,000	8,241
Contingency	420		520		524		536		0
Meters/LACT		MILLERALL			525	25,156			25,156
Flares/Combustors/Emission					526	23,584			23,584
Gas Lift/Compression			527	11,000	516	. 60,000	528		71,000
TOTAL TANGIBLES		609,000		146,730		591,990		171,000	1,518,720
TOTAL WELL COSTS		2,955,900		6,345,000		894,925		201,300	10,396,855
% of Total Well Cost		28%		61%		(patri)		AA/	
COG Operating LLC		2076		01%		9%		2%	
5 A									
		Date Prepared:		10/18/18					
		000 0	, D						
We approve:		COG Operating LLC	-						
% Working Interest		By:		MB					
Talas weeding College			_	IVID	_		_	-	
Company:									
By:									
Drinted Names									
Printed Name: Title:		This AFF is not an action	ato '	By signing you acres to		reham			
Date:		of the actual costs incurre		By signing you agree to pa	y your	orialit			

WELL NAME:	MASTIFF FED COM #309H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FSL & 920 FWL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 33: 100 FNL & 920 FWL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,245	
LEGAL:	Sec 4-24S-32E	TVD:	9,685	

INTANGIBLE COSTS Title/Curative/Permit	201	Drlq - Riq Release(D) 20,000		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL
Insurance	202	2,500	302						20,000
Damages/Right of Way	203	20,000	303		351				20,000
Survey/Stake Location	204	7,000	000		352				7,000
Location/Pits/Road Expense	205	135,000	305	10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206	7,500	306	15,000	0.00	10,000	000	DOCTOR OF CHARLES	22,500
Turnkey Contract	207	0		District Control					0
Footage Contract	208	0							0
Daywork Contract	209	495,000							495,000
Directional Drilling Services	210	186,000							186,000
Frac Equipment			307	1,418,000					1,418,000
Frac Chemicals			308	513,000					513,000
Frac Proppant			309	404,000					404,000
Frac Proppant Transportation		THE RESERVE	310	399,000					399,000
Fuel & Power	211	98,000	311	68,000	354		367		166,000
Water	212	60,000	312	1,019,000			368		1,079,000
Bits	213	92,000	313	12,000			369		104,000
Mud & Chemicals	214	70,000	314	20,000			370		90,000
Drill Stem Test	215	0	315						0
Coring & Analysis Cement Surface	216	0							0
Cement Intermediate	217	25,500 35,000							25,500
Cement 2nd Intermediate/Production	219	130,000							35,000
Cement Squeeze & Other (Kickoff Plug)	220	130,000					371		130,000
Float Equipment & Centralizers	221	32,500					011		32,500
Casing Crews & Equipment	222	39,000							39,000
Fishing Tools & Service	223	0	323				372		39,000
Geologic/Engineering	224	6,000	324		355		373		6,000
Contract Labor	225	6,500	325	40,000	356	122,935	374	6,500	175,935
Company Supervision	226	32,400	326	15,000	357		375		47,400
Contract Supervision	227	85,000	327	182,000	358		376	5,000	272,000
Testing Casing/Tubing	228	30,000	328	5,000			377		35,000
Mud Logging Unit	229	28,000	329						28,000
Logging	230	0		INVESTIGATION		STATE OF THE STATE OF	378		0
Perforating/Wireline Services	231	4,000	331	538,000			379		542,000
Stimulation/Treating			332	12,000			380		12,000
Completion Unit	1		333	90,000			381	8,800	98,800
Swabbing Unit			334				382		0
Rentals-Surface	235	125,000	335	466,000	359		383	7,000	598,000
Rentals-Subsurface	236	110,000	336	80,000	ana a	LINE BUILDING	384	-	190,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services	238	3,000	338	5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon Seismic Analysis	240	0	340						0
Miscellaneous	242	0	342				389		0
Contingency	243	42,000	343	250,000	363		390		292,000
Closed Loop & Environmental	244	220,000	344	5,000	364		388		225,000
Dyed Diesel	245		345	484,000				Day Mary Mary Street	
Coll Tubing		Jackson I was	346					The same of the same of	0
Flowback Crews & Equip			347	48,000					48,000
Offset Directional/Frac	248		348				391		0
TOTAL INTANGIBLES	5	2,346,900		6,198,000		302,935		30,300	8,878,135
TANGIRI E COSTO									
TANGIBLE COSTS									
Surface Casing	401	48,000		The second second					48,000
									174,000
Intermediate Casing	402	174,000							
Production Casing/Liner	402	327,000	504	50,000			500	5.000	327,000
Production Casing/Liner Tubing	403	327,000	504	52,030			530	5,000	57,030
Production Casing/Liner Tubing Wellhead Equipment		- CONTRACTOR	504 505	52,030 18,700			531	3,000	57,030 81,700
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit	403	327,000					531 506		57,030 81,700 96,000
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover	403	327,000					531 506 507	3,000 96,000	57,030 81,700 96,000 0
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit	403	327,000	505				531 506 507 508	3,000 96,000 35,000	57,030 81,700 96,000 0 35,000
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods	403	327,000			510	63,645,00	531 506 507	3,000 96,000	57,030 81,700 96,000 0 35,000 5,000
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH)	403	327,000	505		510 511	63,645.00 26,593.00	531 506 507 508	3,000 96,000 35,000	57,030 81,700 96,000 0 35,000 5,000 63,645
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks	403	327,000	505				531 506 507 508	3,000 96,000 35,000	57,030 81,700 96,000 0 35,000 5,000
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines	403	327,000	505		511	26,593.00	531 506 507 508	3,000 96,000 35,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator	403	327,000	505		511 512	26,593.00 140,007.00	531 506 507 508 532	3,000 96,000 35,000 5,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System	403	327,000	505	18,700	511 512	26,593.00 140,007.00	531 506 507 508 532	3,000 96,000 35,000 5,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers	403 405 414	327,000	505	18,700	511 512 513	26,593.00 140,007.00 130,000.00	531 506 507 508 532	3,000 96,000 35,000 5,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment	403 405 414	327,000	505	18,700	511 512 513 515 517 518	26,593.00 140,007.00 130,000.00	531 506 507 508 532	3,000 96,000 35,000 5,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 102,282
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface	403 405 414	327,000	505	18,700	511 512 513 515 517 518 521	26,593.00 140,007.00 130,000.00 102,282	531 506 507 508 532 533 534	3,000 96,000 35,000 5,000 15,000 2,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 0 0 5,000
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC	403 405 414 415	327,000	505	18,700	511 512 513 515 517 518 521 522	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	531 506 507 508 532 533 534	3,000 96,000 35,000 5,000 15,000 2,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous	403 405 414 415	327,000	505 509 514	18,700	511 512 513 515 517 518 521 522 523	26,593.00 140,007.00 130,000.00 102,282	531 506 507 508 532 533 534	3,000 96,000 35,000 5,000 15,000 2,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency	403 405 414 415	327,000	505	18,700	511 512 513 515 517 518 521 522 523 524	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	531 506 507 508 532 533 534	3,000 96,000 35,000 5,000 15,000 2,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT	403 405 414 415	327,000	505 509 514	18,700	511 512 513 515 517 518 521 522 523 524 525	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	531 506 507 508 532 533 534	3,000 96,000 35,000 5,000 15,000 2,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/ScADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission	403 405 414 415	327,000	505 509 514 519 520	18,700 65,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Meters/LACT Flares/Combustors/Emission Gas Lift/Compression	403 405 414 415	327,000 60,000	505 509 514	18,700 65,000	511 512 513 515 517 518 521 522 523 524 525	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000	531 506 507 508 532 533 534	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 0 25,156 23,584 71,000
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES	403 405 414 415	327,000 60,000 609,000	505 509 514 519 520	18,700 65,000 11,000 146,730	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Meters/LACT Flares/Combustors/Emission Gas Lift/Compression	403 405 414 415	327,000 60,000	505 509 514 519 520	18,700 65,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 0 25,156 23,584 71,000
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	403 405 414 415	327,000 60,000 609,000	505 509 514 519 520	18,700 65,000 11,000 146,730	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	403 405 414 415	60,000 60,000 609,000 2,955,900	505 509 514 519 520	11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	403 405 414 415 419 420	60,000 60,000 609,000 2,955,900	505 509 514 519 520	11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	403 405 414 415 419 420	327,000 60,000 609,000 2,955,900 28% Date Prepared:	505 509 514 519 520	11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	403 405 414 415 419 420	60,000 60,000 609,000 2,955,900 28%	505 509 514 519 520	11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC	403 405 414 415 419 420	327,000 60,000 609,000 2,955,900 28% Date Prepared:	505 509 514 519 520	11,000 116,730 6.345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	403 405 414 415 419 420	327,000 60,000 609,000 2,955,900 28% Date Prepared:	505 509 514 519 520	11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC	403 405 414 415 419 420	327,000 60,000 609,000 2,955,900 28% Date Prepared:	505 509 514 519 520	11,000 116,730 6.345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC  We approve:% Working Interest	403 405 414 415 419 420	327,000 60,000 609,000 2,955,900 28% Date Prepared:	505 509 514 519 520	11,000 116,730 6.345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost Company: % Working Interest Company: By:	403 405 414 415 419 420	327,000 60,000 609,000 2,955,900 28% Date Prepared:	505 509 514 519 520	11,000 116,730 6.345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  *6 of Total Well Cost COG Operating LLC  We approve:% Working Interest Company: By: Printed Name:	403 405 414 415 419 420	327,000 60,000 609,000 2,955,900 28% Date Prepared: COG Operating LLC	505 509 514 519 520	11,000 116,730 6345,000 61% MB	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Production Casing/Liner Tubing Welthead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost Company: We approve:% Working Interest Company: By:	403 405 414 415 419 420	327,000 60,000 609,000 2,955,900 28% Date Prepared: COG Operating LLC	505 509 514 519 520 527	11,000 116,730 6.345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 35,000 5,000 15,000 2,000 7,000 3,000	57,030 81,700 96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720

WELL NAME:	MASTIFF FED COM #310H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FSL & 330 FWL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 33: 100 FNL & 330 FWL	OBJECTIVE:	Drill and Complete	
FORMATION:	Avalon Shale	DEPTH:	20,135	
LEGAL:	Sec 4-24S-32E	TVD:	9,575	

INTANGIBLE COSTS Title/Curative/Permit	201	Drlg - Rig Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL 20,000
Insurance	202	2,500	302		į.				2,500
Damages/Right of Way	203	20,000	303		351			Land Market Street	20,000
Survey/Stake Location	204	7,000			352			The second of the second of	7,000
Location/Pits/Road Expense	205	135,000		10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206	7,500	306	15,000					22,500
Turnkey Contract Footage Contract	207	0	3						0
Daywork Contract	209	495,000	1						105.000
Directional Drilling Services	210	186,000							495,000 186,000
Frac Equipment			307	1,418,000					1,418,000
Frac Chemicals			308	513,000				Name of the last o	513,000
Frac Proppant			309	404,000				- T - 19/19 (0x - 11)	404,000
Frac Proppant Transportation			310	399,000				-//	399,000
Fuel & Power	211	98,000	311	68,000	354		367		166,000
Water Bits	212	60,000	312	1,019,000			368		1,079,000
Mud & Chemicals	213	92,000	313	12,000			369		104,000
Drill Stem Test	215	70,000	315	20,000			370	N - N - 100	90,000
Coring & Analysis	216	0	0.0						0
Cement Surface	217	25,500							25,500
Cement Intermediate	218	35,000				TOTAL TRANSPORT			35,000
Cement 2nd Intermediate/Production	219	130,000				TOTAL WE TO !!			130,000
Cement Squeeze & Other (Kickoff Plug)	220						371		0
Float Equipment & Centralizers	221	32,500							32,500
Casing Crews & Equipment	222	39,000							39,000
Fishing Tools & Service	223	0					372		0
Geologic/Engineering Contract Labor	224	6,000	324	40.000	355	100 000	373		6,000
Company Supervision	225	6,500 32,400	325	40,000 15,000	356 357	122,935	374	6,500	175,935
Contract Supervision	227	85,000	326	182,000	357		375 376	5,000	47,400 272,000
Testing Casing/Tubing	228	30,000	328	5,000	555	Charles of the last	377	5,000	35,000
Mud Logging Unit	229	28,000	329				57 M	DISTRICT THE PARTY OF THE	28,000
Logging	230	0					378		0
Perforating/Wireline Services	231	4,000	331	538,000			379		542,000
Stimulation/Treating			332	12,000			380		12,000
Completion Unit			333	90,000		4-3-20-241	381	8,800	98,800
Swabbing Unit	205	107.000	334		10.01	A NORTH AND DESCRIPTION OF THE PERSON OF THE	382		0
Rentals-Surface Rentals-Subsurface	235	125,000	335	466,000	359		383	7,000	598,000
Trucking/Forklift/Rig Mobilization	236 237	110,000	336	80,000 40,000	200		384	0.000	190,000
Welding Services	238	3,000	338	5,000	360 361		385 386	3,000	243,000 8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340						0
Seismic Analysis	241	0	341						0
Miscellaneous	242	0	342				389		0
Contingency	243	42,000	343	250,000	363		390		292,000
Closed Loop & Environmental	244	220,000	344	5,000	364		388		225,000
Dyed Diesel	245		345	484,000					
Coil Tubing Flowback Crews & Equip			346	40.000					0
Offset Directional/Frac	248		348	48,000			391		48,000
TOTAL INTANGIBLES		2,346,900	-	6,198,000		302,935	001	30,300	8,878,135
TANGIBLE COSTS									
Surface Casing Intermediate Casing	401	48,000							48,000
Production Casing/Liner	402	174,000 327,000							174,000
Tubing	-100	321,000	504	52,030			530	5,000	327,000 57,030
Wellhead Equipment	405	60,000	505	18,700				3,000	
Pumping Unit			1000				531		81,700
Prime Mover			14				531 506	96,000	96,000
Rods									The state of the s
							506 507 508	96,000 35,000	96,000
Pumps-Sub Surface (BH)			509				506 507	96,000	96,000 0 35,000 5,000
Pumps-Sub Surface (BH) Tanks			509		510	63,645.00	506 507 508	96,000 35,000	96,000 0 35,000 5,000 63,645
Pumps-Sub Surface (BH) Tanks Flowlines			509		511	26,593.00	506 507 508	96,000 35,000	96,000 0 35,000 5,000 63,645 26,593
Pumps-Sub Surface (BH) Tanks			509			26,593.00 140,007.00	506 507 508 532	96,000 35,000 5,000	96,000 0 35,000 5,000 63,645 26,593 140,007
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator	414		509	65,000	511 512	26,593.00	506 507 508	96,000 35,000 5,000	96,000 0 35,000 5,000 63,645 26,593 140,007
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System	414 415			65,000	511 512	26,593.00 140,007.00	506 507 508 532	96,000 35,000 5,000	96,000 0 35,000 5,000 63,645 26,593 140,007
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration				65,000	511 512 513	26,593.00 140,007.00 130,000.00	506 507 508 532	96,000 35,000 5,000	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment				65,000	511 512 513 515 517 518	26,593.00 140,007.00 130,000.00	506 507 508 532	96,000 35,000 5,000	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface				65,000	511 512 513 515 517 518 521	26,593.00 140,007.00 130,000.00 102,282	506 507 508 532 533 534	96,000 35,000 5,000 15,000 2,000	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC	415		514	65,000	511 512 513 515 517 518 521 522	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	506 507 508 532 533 534	96,000 35,000 5,000 15,000 2,000	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous	415		514	65,000	511 512 513 515 517 518 521 522 523	26,593.00 140,007.00 130,000.00 102,282	506 507 508 532 533 534 529 535	96,000 35,000 5,000 15,000 2,000	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC	415		514	65,000	511 512 513 515 517 518 521 522 523 524	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	506 507 508 532 533 534	96,000 35,000 5,000 15,000 2,000	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency	415		514	65,000	511 512 513 515 517 518 521 522 523	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156	506 507 508 532 533 534 529 535	96,000 35,000 5,000 15,000 2,000	96,000  35,000  5,000  63,645  26,593  140,007  145,000  67,000  102,282  0  0  5,000  17,482  8,241  0  25,156
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT	415		514	65,000	511 512 513 515 517 518 521 522 523 524 525	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	506 507 508 532 533 534 529 535	96,000 35,000 5,000 15,000 2,000	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Filtings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES	415	609,000	514 519 520		511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584	506 507 508 532 533 534 529 535 536	96,000 35,000 5,000 15,000 2,000	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression	415	609,000 2,955,900	514 519 520	11,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000	506 507 508 532 533 534 529 535 536	96,000 35,000 5,000 15,000 2,000 7,000 3,000	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Filtings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES	415		514 519 520	11,000 146,730	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990	506 507 508 532 533 534 529 535 536	96,000 35,000 5,000 15,000 2,000 7,000 3,000	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost	419 420	2,955,900	514 519 520	11,000 146,730 6,345,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	506 507 508 532 533 534 529 535 536	96,000 35,000 5,000 15,000 2,000 7,000 3,000 171,000 201,300	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	419 420	2,955,900	514 519 520	11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	506 507 508 532 533 534 529 535 536	96,000 35,000 5,000 15,000 2,000 7,000 3,000 171,000 201,300	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost	419 420	2,955,900 28% Date Prepared:	514 519 520	11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	506 507 508 532 533 534 529 535 536	96,000 35,000 5,000 15,000 2,000 7,000 3,000 171,000 201,300	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Filtings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC	419 420	2,955,900 28% Date Prepared: COG Operating LLC	514 519 520	11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	506 507 508 532 533 534 529 535 536	96,000 35,000 5,000 15,000 2,000 7,000 3,000 171,000 201,300	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Filtings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  ** of Total Well Cost COG Operating LLC  We approve:% Working Interest Company: By:	419 420	2,955,900 28% Date Prepared: COG Operating LLC	514 519 520	11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	506 507 508 532 533 534 529 535 536	96,000 35,000 5,000 15,000 2,000 7,000 3,000 171,000 201,300	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  ** of Total Well Cost COG Operating LLC  We approve:% Working Interest Company:	419 420	2,955,900 28% Date Prepared: COG Operating LLC AU By:	514 519 520 527	11,000 146,730 6,345,000 61% 10/18/18	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	506 507 508 532 533 534 529 535 536	96,000 35,000 5,000 15,000 2,000 7,000 3,000 171,000 201,300	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720
Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  ** of Total Well Cost COG Operating LLC  We approve:% Working Interest Company: By: Printed Name:	419 420	2,955,900 28% Date Prepared: COG Operating LLC AU By:	514 519 520 527	11,000 146,730 6,345,000 61%	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	506 507 508 532 533 534 529 535 536	96,000 35,000 5,000 15,000 2,000 7,000 3,000 171,000 201,300	96,000 0 35,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 71,000 1,518,720

WELL NAME:	MASTIFF FED COM #501H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FNL & 330 FEL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 9: 100 FSL & 330 FEL	OBJECTIVE:	DRILL AND COMPLETE	
FORMATION:	2nd Bone Spring	DEPTH:	21,160	
LEGAL:	Sec 4-24S-32E	TVD:	10,600	

INTANGIBLE COSTS Title/Curative/Permit	201	Drlg - Rig Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL 20,000
Insurance	202	2,500	302						2,500
Damages/Right of Way	203	20,000	303		351				20,000
Survey/Stake Location	204	7,000			352				7,000
Location/Pits/Road Expense	205	135,000	305	10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206	8,400	306	15,000					23,400
Turnkey Contract	207	0							0
Footage Contract  Daywork Contract	208	720,000							700,000
Directional Drilling Services	210	243,000							720,000
Frac Equipment	210	240,000	307	1,418,000					1,418,000
Frac Chemicals			308	473,000					473,000
Frac Proppant		AL SALVEY OF	309	404,000				A A LONG I	404,000
Frac Proppant Transportation			310	399,000				The second	399,000
Fuel & Power	211	152,000	311	68,000	354		367		220,000
Water	212	105,000	312	945,000			368		1,050,000
Bits	213	92,000	313	9,000			369		101,000
Mud & Chemicals	214	95,000	314	46,000			370		141,000
Drill Stern Test	215	0	315						0
Coring & Analysis Cement Surface	216	37,000							0
Cement Intermediate	218	60,000							37,000 60,000
Cement 2nd Intermediate/Production	219	130,000							130,000
Cement Squeeze & Other (Kickoff Plug)	220	0					371		0
Float Equipment & Centralizers	221	50,000				DE CUESTA IL E	50.0	SERVIN INCH	50,000
Casing Crews & Equipment	222	52,000							52,000
Fishing Tools & Service	223	0	323			and the same had	372		0
Geologic/Engineering	224	7,200	324		355		373		7,200
Contract Labor	225	6,500	325	23,800	356	122,935	374	6,500	159,735
Company Supervision	226	50,400	326	15,000	357		375		65,400
Contract Supervision	227	123,000	327	268,000	358		376	5,000	396,000
Testing Casing/Tubing	228	30,000	328	5,000			377		35,000
Mud Logging Unit	229	36,000	329				970		36,000
Logging Perforating/Wireline Services	230	4,000	331	538,000			378		542,000
Stimulation/Treating	201	4,000	332	12,000			380		12,000
Completion Unit			333	138,000			381	8,800	146,800
Swabbing Unit			334	100,000			382	0,000	0
Rentals-Surface	235	150,000	335	385,000	359		383	7,000	542,000
Rentals-Subsurface	236	135,000	336	90,000		TO VICE TO THE	384		225,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services	238	3,000	338	5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340						0
Seismic Analysis	241	0	341						.0
Miscellaneous	242	0	342	5,000			389		5,000
Closed Loop & Environmental	243	54,000 275,000	343	250,000	363 364		390		304,000
Dyed Diesel	245	275,000	345	484,000	504		300		275,000
Coil Tubing	2.10		346	750,000				No. of the last of	750,000
Flowback Crews & Equip			347	48,000					48,000
Offset Directional/Frac	248		348				391		0
TOTAL INTANGIBLES		3,003,000		6,903,800		302,935		30,300	10,240,035
TANGIBLE COSTS	223	020023							
Surface Casing	401	65,000							65,000
Intermediate Casing	402	169,000							169,000
Production Casing/Liner Tubing	403	361,000	504	53,460			FOO		361,000
Wellhead Equipment	405	28,000	505	20,900			530 531	3,000	58,460 51,900
Pumping Unit	100	20,000	000	2.0,000			506	96,000	96,000
Prime Mover				0			507	90,000	90,000
Rods							508	55,000	55,000
Pumps-Sub Surface (BH)			509	0		THE RESERVE OF THE RE	532	5,000	5,000
Tanks					510	63,645.00			63,645
Flowlines					511	26,593.00			26,593
Heater Treater/Separator					512	140,007.00			140,007
Electrical System  Realized Application (Management Application Ap		NAME OF TAXABLE PARTY.		SIVE STATE OF THE	513	130,000.00	533	15,000	145,000
Packers/Anchors/Hangers Couplings/Fittings/Alabase	414		514	65,000			534	2,000	67,000
Couplings/Fittings/Valves Debydration	415				515	102,282			102,282
Dehydration Injection Plant/CO2 Equipment					517				0
Pumps-Surface				0	518 521	5,000			0
Instrumentation/SCADA/POC				0	522	10,482	529	7,000	5,000 17,482
Miscellaneous	419		519		523	5,241	535	3,000	8,241
Contingency	420		520		524	- 0,641	536	0,000	0,241
Meters/LACT			5		525	25,156			25,156
Flares/Combustors/Emission					526	23,584			23,584
Gas Lift/Compression			527	15,000	516	60,000	528		75,000
TOTAL TANGIBLES		623,000		154,360		591,990		191,000	1,560,350
TOTAL WELL COSTS		3,626,000		7,059,000		894,925		221,300	11,800,385
% of Total Well Cost		31%		60%		8%		2%	
COG Operating LLC		5776		5576		076		€ 70	
		Land Description of the Control of t							
· · · · · · · · · · · · · · · · · · ·		Date Prepared:	_	10/18/18					
		COG Operating LLC	R						
We approve:		Sharming arts							
% Working Interest		By:		MB					
								7.	
Company: By:									
Printed Name:									
Title:				By signing you agree to pa	y your	share			
Data									
Date:		of the actual costs incurre	eq.						

WELL NAME:	MASTIFF FED COM #502H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FNL & 990 FEL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 9: 100 FSL & 990 FEL	OBJECTIVE:	DRILL AND COMPLETE	
FORMATION:	2nd Bone Spring	DEPTH:	21,400	
LEGAL:	Sec 4-24S-32E	TVD:	10,840	

INTANGIBLE COSTS Title/Curative/Permit	201	Drlq - Riq Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL 20,000
Insurance	202	2,500	302						2,500
Damages/Right of Way	203	20,000	303		351				20,000
Survey/Stake Location	204	7,000		THE RESIDENCE	352			CONTRACTOR OF THE PARTY OF THE	7,000
Location/Pits/Road Expense	205	135,000	305	10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206	8,400	306	15,000	}	(reference)			23,400
Turnkey Contract	207	0							0
Footage Contract	208	0		THE REAL PROPERTY OF THE PERSON NAMED IN					0
Daywork Contract	209	720,000							720,000
Directional Drilling Services	210	243,000	150.0						243,000
Frac Equipment Frac Chemicals			307	1,418,000					1,418,000
Frac Proppant			308	473,000					473,000
Frac Proppant Transportation			310	404,000					404,000
Fuel & Power	211	152,000		68,000	354		367		399,000
Water	212	105,000		945,000	054		368		220,000
Bits	213	92,000		9,000			369		1,050,000
Mud & Chemicals	214	95,000	314	46,000			370		141,000
Drill Stem Test	215	0				The second second	0,0	THE STATE OF THE S	0
Coring & Analysis	216	0						District Control of the Control	0
Cement Surface	217	37,000				A STATE LIVE		CONTRACT LA CONTRACTOR	37,000
Cement Intermediate	218	60,000				The second		THE RESIDENCE OF	60,000
Cement 2nd Intermediate/Production	219	130,000		A A Second Property of the					130,000
Cement Squeeze & Other (Kickoff Plug)	220	0				THE PARTY OF	371		0
Float Equipment & Centralizers	221	50,000							50,000
Casing Crews & Equipment	222	52,000		AND DESCRIPTION OF THE PERSON		A THE RESERVE			52,000
Fishing Tools & Service	223	0					372		0
Geologic/Engineering	224	7,200	324		355		373		7,200
Contract Labor	225	6,500	325	23,800	356	122,935	374	6,500	159,735
Contract Supervision	226	50,400	326	15,000	357		375		65,400
Contract Supervision Testing Casing/Tubing	227	123,000	327	268,000	358		376	5,000	396,000
Mud Logging Unit	228	30,000	328 329	5,000			377		35,000
Logging Onit	230	36,000	929				378		36,000
Perforating/Wireline Services	231	4,000	331	538,000			378		542,000
Stimulation/Treating	1,000		332	12,000			380		12,000
Completion Unit			333	138,000		LANGE STOWN	381	8,800	146,800
Swabbing Unit			334				382		0
Rentals-Surface	235	150,000	335	385,000	359		383	7,000	542,000
Rentals-Subsurface	236	135,000	336	90,000			384		225,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services Water Disposal	238	3,000	338	5,000	361 362	125 000	386		8,000
Plug to Abandon	240	- 0	340	60,000	302	135,000	387		195,000
Seismic Analysis	241	0	341						0
Miscellaneous	242	- 0	342	5,000		BEEVE TO THE	389		5,000
Contingency	243	54,000	343	250,000	363		390		304,000
Closed Loop & Environmental	244	275,000	344		364		388		275,000
Dyed Diesel	245		345	484,000		THE REPORT OF THE PARTY OF THE			
Coil Tubing			346	750,000					750,000
Flowback Crews & Equip			347	48,000					48,000
Offset Directional/Frac TOTAL INTANGIBLES	248	3,003,000	348	6,903,800		302,935	391	20.200	0
TOTAL INTRIGUELO		3,000,000		0,903,000		302,833		30,300	10,240,035
TANGIBLE COSTS									
Surface Casing	401	65,000				in formation			65,000
Intermediate Casing	402	169,000		E THURSDAY!					169,000
Production Casing/Liner	403	361,000				ALL THE LAN		2 2 5 5 10 119	361,000
Tubing		AND THE RESIDENCE	504	53,460			530	5,000	58,460
Wellhead Equipment	405	28,000	505	20,900		Mark Committee of the	531	3,000	51,900
Pumping Unit				EU WERLAND		Mark The Park	506	96,000	96,000
Prime Mover Rods				0		9 2 2 2 3	507	0	0
Pumps-Sub Surface (BH)			con				508	55,000	55,000
Tanks			509	0	510	63,645.00	532	5,000	5,000
Flowlines					511	26,593.00			63,645 26,593
Heater Treater/Separator				3-2-1-5-5-	512	140,007.00			140,007
Electrical System					513	130,000.00	533	15,000	145,000
Packers/Anchors/Hangers	414		514	65,000			534	2,000	67,000
Couplings/Fittings/Valves	415				515	102,282			102,282
Dehydration					517				0
Injection Plant/CO2 Equipment				0	518				0
Pumps-Surface				0	521	5,000	The second	THE RESERVE	5,000
Instrumentation/SCADA/POC Miscellaneous	440		E 40	-43-	522	10,482	529	7,000	17,482
Contingency	419 420		519 520		523 524	5,241	535 536	3,000	8,241
Meters/LACT	TEU		320		525	25,156	330	The second second	25,156
Flares/Combustors/Emission					526	23,584			23,584
Gas Lift/Compression			527	15,000	516	60,000	528		75,000
TOTAL TANGIBLES		623,000	3	154,360		591,990		191,000	1,560,350
TOTAL WELL COSTS		3,626,000		7,059,000		894,925		221,300	11,800,385
% of Total Well Cost		31%		60%		8%		2%	
COG Operating LLC		2.70		55/6		0.70		4.70	
		Data Breased		201241-					
		Date Prepared:		10/18/18					
		COG Operating LLC	CR						
We approve:		arabah		202,404					
% Working Interest		By:		MB				5	
Company:									
By:									
Printed Name:									
Title:		This AFE is only an estim	ate. F	By signing you agree to pa	ly your	share			
Date:		of the actual costs incurre			4.4000	emenus MARTES			

WELL NAME:	MASTIFF FED COM #503H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FNL & 1650 FEL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 9: 100 FSL & 1650 FEL	OBJECTIVE:	DRILL AND COMPLETE	
FORMATION:	2nd Bone Spring	DEPTH:	21,160	
LEGAL:	Sec 4-24S-32E	TVD:	10,600	

INTANGIBLE COSTS Title/Curative/Permit	201	Drlg - Rig Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL
Insurance	201	20,000	302					THE PARTY OF THE P	20,000
Damages/Right of Way	203	20,000	302		351				2,500
Survey/Stake Location	204	7,000	303		352				20,000
Location/Pits/Road Expense	205	135,000	305	10,000	353	45,000	366		7,000
Drilling / Completion Overhead	206	8,400	306	15,000			-		23,400
Turnkey Contract	207	0						A STATE OF SERVICE	0
Footage Contract	208	0		DAMES OF THE OWNER, THE					0
Daywork Contract	209	720,000		A SELECTION OF		2 / 18			720,000
Directional Drilling Services	210	243,000							243,000
Frac Equipment Frac Chemicals			307	1,418,000					1,418,000
Frac Proppant		AND DESCRIPTION	308	473,000					473,000
Frac Proppant Transportation			309	404,000					404,000
Fuel & Power	211	152,000	311	399,000	354		367		399,000
Water	212	105,000	312	945,000	334		368		220,000
Bits	213	92,000	313	9,000			369		1,050,000
Mud & Chemicals	214	95,000	314	46,000			370		141,000
Drill Stem Test	215	0	315				7.5.00		0
Coring & Analysis	216	0						Distribution of the	0
Cement Surface	217	37,000							37,000
Cement Intermediate	218	60,000							60,000
Cement 2nd Intermediate/Production	219	130,000						CAYNEAU SCHILL	130,000
Cement Squeeze & Other (Kickoff Plug)	220	0		COLUMN TO STATE OF THE STATE OF		LINOU RESERVE	371		0
Float Equipment & Centralizers	221	50,000							50,000
Casing Crews & Equipment	222	52,000	ner				gazra		52,000
Fishing Tools & Service	223	7 200	323		0==		372		0
Geologic/Engineering  Contract Labor	224	7,200	324	00.000	355	100.000	373		7,200
Company Supervision	225	6,500 50,400	325	23,800	356 357	122,935	374	6,500	159,735
Contract Supervision	227	123,000	326	268,000	357	7	375 376	5,000	65,400
Testing Casing/Tubing	228	30,000	328	5,000	000		376	5,000	396,000
Mud Logging Unit	229	36,000	329	5,000			Jet.	63.35 (5 )	36,000
Logging	230	0	- 77				378		0
Perforating/Wireline Services	231	4,000	331	538,000		Name of Street	379		542,000
Stimulation/Treating			332	12,000			380		12,000
Completion Unit			333	138,000			381	8,800	146,800
Swabbing Unit		72 PM X B	334				382		0
Rentals-Surface	235	150,000	335	385,000	359		383	7,000	542,000
Rentals-Subsurface	236	135,000	336	90,000			384		225,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services	238	3,000	338	5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340						0
Seismic Analysis Miscellaneous	241	0	341	E 000			389		- 0
Contingency	243	54,000	342	5,000 250,000	363		390		5,000
Closed Loop & Environmental	244	275,000	344	250,000	364	7	388		275,000
Dyed Diesel	245		345	484,000			000	A CHARLEST AND DESCRIPTION OF	
Coil Tubing			346	750,000					750,000
Flowback Crews & Equip			247						48,000
The state of the s			347	48,000					40,000
Offset Directional/Frac	248		348	48,000			391		48,000
	248	3,003,000		6,903,800		302,935	391	30,300	-
Offset Directional/Frac TOTAL INTANGIBLES	248	3,003,000				302,935	391	30,300	0
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS		W. 25 14 14 1				302,935	391	30,300	0
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing	401	65,000				302,935	391	30,300	0 10,240,035 65,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing	401 402	65,000 169,000				302,935	391	30,300	0 10,240,035 65,000 169,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner	401	65,000	348	6,903,800		302,935			65,000 169,000 361,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing	401 402 403	65,000 169,000 361,000	348 504	6,903,800 53,460		302,935	530	5,000	0 10,240,035 65,000 169,000 361,000 58,460
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment	401 402	65,000 169,000	348	6,903,800		302,935	530 531	5,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit	401 402 403	65,000 169,000 361,000	348 504	6,903,800 53,460 20,900		302,935	530 531 506	5,000 3,000 96,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover	401 402 403	65,000 169,000 361,000	348 504	6,903,800 53,460		302,935	530 531 506 507	5,000 3,000 96,000 0	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods	401 402 403	65,000 169,000 361,000	348 504 505	6,903,800 53,460 20,900		302,935	530 531 506 507 508	5,000 3,000 96,000 0 55,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH)	401 402 403	65,000 169,000 361,000	348 504	53,460 20,900	510	302,935 63,645.00	530 531 506 507	5,000 3,000 96,000 0	65,000 169,000 361,000 58,460 51,900 96,000 0 55,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks	401 402 403	65,000 169,000 361,000	348 504 505	53,460 20,900	510 511		530 531 506 507 508	5,000 3,000 96,000 0 55,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines	401 402 403	65,000 169,000 361,000	348 504 505	53,460 20,900		63,645.00	530 531 506 507 508	5,000 3,000 96,000 0 55,000	65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 63,645
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Prumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System	401 402 403	65,000 169,000 361,000	348 504 505	53,460 20,900	511	63,645.00 26,593.00	530 531 506 507 508	5,000 3,000 96,000 0 55,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 63,645 26,593
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers	401 402 403 405	65,000 169,000 361,000	348 504 505	53,460 20,900	511 512	63,645.00 26,593.00 140,007.00	530 531 506 507 508 532	5,000 3,000 96,000 0 55,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 5,000 63,645 26,593 140,007
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves	401 402 403 405	65,000 169,000 361,000	348 504 505 509	53,460 20,900 0	511 512 513 515	63,645.00 26,593.00 140,007.00	530 531 506 507 508 532	5,000 3,000 96,000 0 55,000 5,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 5,000 63,645 26,593 140,007
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration	401 402 403 405	65,000 169,000 361,000	348 504 505 509	53,460 20,900 0 65,000	511 512 513 515 517	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 0 55,000 5,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment	401 402 403 405	65,000 169,000 361,000	348 504 505 509	6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 0 55,000 5,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 63,645 26,593 140,007 145,000 67,000 102,282
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface	401 402 403 405	65,000 169,000 361,000	348 504 505 509	53,460 20,900 0 65,000	511 512 513 515 517 518 521	63,645.00 26,593.00 140,007.00 130,000.00 102,282	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 55,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC	401 402 403 405	65,000 169,000 361,000	348 504 505 509	6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518 521 522	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 55,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous	401 402 403 405 414 415	65,000 169,000 361,000	504 505 509 514	6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518 521 522 523	63,645.00 26,593.00 140,007.00 130,000.00 102,282	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 55,000 55,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency	401 402 403 405	65,000 169,000 361,000	348 504 505 509	6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518 521 522 523 524	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 0 0 55,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT	401 402 403 405 414 415	65,000 169,000 361,000	504 505 509 514	6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518 521 522 523 524 525	5,000 10,482 5,241 25,156	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 55,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission	401 402 403 405 414 415	65,000 169,000 361,000	504 505 509 514	6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission	401 402 403 405 414 415	65,000 169,000 361,000 28,000	504 505 509 514	6,903,800 53,460 20,900 0 0 65,000	511 512 513 515 517 518 521 522 523 524 525	5,000 10,482 5,241 25,156 23,584 60,000	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS  Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression	401 402 403 405 414 415	65,000 169,000 361,000	504 505 509 514	6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	65,000 169,000 361,000 28,000 623,000 3,626,000	504 505 509 514	53,460 20,900 0 0 65,000 154,360 7,059,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	65,000 169,000 361,000 28,000	504 505 509 514	6,903,800 53,460 20,900 0 0 65,000 154,360	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	65,000 169,000 361,000 28,000 623,000 3,626,000	504 505 509 514	53,460 20,900 0 0 65,000 154,360 7,059,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Filtings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	65,000 169,000 361,000 28,000 623,000 3,626,000	504 505 509 514	53,460 20,900 0 0 65,000 154,360 7,059,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Filtings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415 419 420	65,000 169,000 361,000 28,000 28,000 3,626,000 31%	504 505 509 514 519 520	53,460 20,900 0 0 65,000 154,360 7,059,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	401 402 403 405 414 415 419 420	65,000 169,000 361,000 28,000 623,000 3,626,000	504 505 509 514 519 520	53,460 20,900 0 0 65,000 154,360 7,059,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  ** of Total Well Cost COG Operating LLC  We approve:	401 402 403 405 414 415 419 420	65,000 169,000 361,000 28,000 28,000 3,626,000 31% Date Prepared:	504 505 509 514 519 520	6,903,800  53,460 20,900  0  0  15,000  154,360 7,059,000  60%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	401 402 403 405 414 415 419 420	65,000 169,000 361,000 28,000 28,000 3,626,000 31%	504 505 509 514 519 520	53,460 20,900 0 0 65,000 154,360 7,059,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest	401 402 403 405 414 415 419 420	65,000 169,000 361,000 28,000 28,000 3,626,000 31% Date Prepared:	504 505 509 514 519 520	6,903,800  53,460 20,900  0  0  15,000  154,360 7,059,000  60%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL WELL COSTS  We approve:% Working Interest Company:	401 402 403 405 414 415 419 420	65,000 169,000 361,000 28,000 28,000 3,626,000 31% Date Prepared:	504 505 509 514 519 520	6,903,800  53,460 20,900  0  0  15,000  154,360 7,059,000  60%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:	401 402 403 405 414 415 419 420	65,000 169,000 361,000 28,000 28,000 3,626,000 31% Date Prepared:	504 505 509 514 519 520	6,903,800  53,460 20,900  0  0  15,000  154,360 7,059,000  60%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest Company: By: Printed Name:	401 402 403 405 414 415 419 420	65,000 169,000 361,000 28,000 28,000 3,626,000 31% Date Prepared: COG Operating LLC A	504 505 509 514 519 520 527	6,903,800  53,460 20,900  0  0  15,000  154,360 7,059,000  60%	511 512 513 515 517 518 521 522 523 524 525 526 516	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:	401 402 403 405 414 415 419 420	65,000 169,000 361,000 28,000 28,000 3,626,000 31% Date Prepared: COG Operating LLC A	504 505 509 514 519 520	6,903,800  53,460 20,900  0  0  15,000  154,360 7,059,000  60%	511 512 513 515 517 518 521 522 523 524 525 526 516	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350

WELL NAME:	MASTIFF FED COM #504H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FNL & 2310 FEL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 9: 100 FSL & 2310 FEL	OBJECTIVE:	DRILL AND COMPLETE	
FORMATION:	2nd Bone Spring	DEPTH:	21,400	
LEGAL:	Sec 4-24S-32E	TVD:	10,840	

INTANGIBLE COSTS Title/Curative/Permit	201	Drlq - Riq Release(D) 20,000		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL 20,000
Insurance	202	2,500	302						2,500
Damages/Right of Way	203	20,000			351				20,000
Survey/Stake Location	204	7,000			352				7,000
Location/Pits/Road Expense	205	135,000	305	10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206	8,400		15,000					23,400
Turnkey Contract	207	0						W THEORY INCOME.	0
Footage Contract	208	0							0
Daywork Contract	209	720,000							720,000
Directional Drilling Services	210	243,000							243,000
Frac Equipment			307	1,418,000		STATE OF THE STATE			1,418,000
Frac Chemicals			308	473,000					473,000
Frac Proppant			309	404,000					404,000
Frac Proppant Transportation			310	399,000					399,000
Fuel & Power	211	152,000	311	68,000	354		367		220,000
Water	212	105,000	312	945,000			368		1,050,000
Bits	213	92,000	313	9,000			369		101,000
Mud & Chemicals	214	95,000	314	46,000			370		141,000
Drill Stem Test	215	0	315			MANAGEMENT OF THE PARTY OF THE		N. S	0
Coring & Analysis	216	0							0
Cement Surface	217	37,000							37,000
Cement Intermediate  Cement 2nd Intermediate/Production	218	60,000							60,000
Cement Squeeze & Other (Kickoff Plug)	219	130,000					074		130,000
Float Equipment & Centralizers	220	50,000					371		- 0
Casing Crews & Equipment	222	52,000							50,000
Fishing Tools & Service	223	52,000	323				372		52,000
Geologic/Engineering	224	7,200	324		355		373		7,200
Contract Labor	225	6,500	325	23,800	356	122,935	374	6,500	159,735
Company Supervision	226	50,400	326	15,000	357	125,000	375	0,000	65,400
Contract Supervision	227	123,000	327	268,000	358		376	5,000	396,000
Testing Casing/Tubing	228	30,000	328	5,000			377		35,000
Mud Logging Unit	229	36,000	329				O.		36,000
Logging	230	0					378		0
Perforating/Wireline Services	231	4,000	331	538,000		S. A. S. Land Street, March	379		542,000
Stimulation/Treating			332	12,000			380		12,000
Completion Unit			333	138,000			381	8,800	146,800
Swabbing Unit			334				382		0
Rentals-Surface	235	150,000	335	385,000	359		383	7,000	542,000
Rentals-Subsurface	236	135,000	336	90,000			384		225,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services	238	3,000	338	5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340						.0
Seismic Analysis Miscellaneous	241	0	341	F 000			200		0
Contingency	242	54,000	342	5,000 250,000	363		389		5,000
Closed Loop & Environmental	244	275,000	344	230,000	364		388	<del></del>	304,000 275,000
Dyed Diesel	245		345	484,000			000		270,000
Coil Tubing			346	750,000					750,000
Flowback Crews & Equip			347	48,000					48,000
Flowback Crews & Equip Offset Directional/Frac	248		347 348				391		The second secon
Flowback Crews & Equip	248	3,003,000				302,935	391	30,300	48,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES	248	3,003,000		48,000		302,935	391	30,300	48,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS		Kanabada		48,000		302,935	391	30,300	48,000 0 10,240,035
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing	401	65,000		48,000		302,935	391	30,300	48,000 0 10,240,035
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing	401 402	65,000 169,000		48,000		302,935	391	30,300	48,000 0 10,240,035 65,000 169,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner	401	65,000	348	48,000 6,903,800		302,935			48,000 0 10,240,035 65,000 169,000 361,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing	401 402 403	65,000 169,000 361,000	348 504	48,000 6,903,800 53,460		302,935	530	5,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment	401 402	65,000 169,000	348	48,000 6,903,800		302,935	530 531	5,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing	401 402 403	65,000 169,000 361,000	348 504	48,000 6,903,800 53,460		302,935	530 531 506	5,000 3,000 96,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit	401 402 403	65,000 169,000 361,000	348 504	48,000 6,903,800 53,460 20,900		302,935	530 531	5,000 3,000 96,000 0	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover	401 402 403	65,000 169,000 361,000	348 504	48,000 6,903,800 53,460 20,900		302,935	530 531 506 507	5,000 3,000 96,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods	401 402 403	65,000 169,000 361,000	348 504 505	48,000 6,903,800 53,460 20,900	510	302,935 302,935	530 531 506 507 508	5,000 3,000 96,000 0 55,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH)	401 402 403	65,000 169,000 361,000	348 504 505	48,000 6,903,800 53,460 20,900	510 511		530 531 506 507 508	5,000 3,000 96,000 0 55,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 5,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Weilhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks	401 402 403	65,000 169,000 361,000	348 504 505	48,000 6,903,800 53,460 20,900		63,645.00	530 531 506 507 508	5,000 3,000 96,000 0 55,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 63,645
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines	401 402 403	65,000 169,000 361,000	348 504 505	48,000 6,903,800 53,460 20,900	511	63,645.00 26,593.00	530 531 506 507 508	5,000 3,000 96,000 0 55,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 63,645 26,593
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers	401 402 403 405	65,000 169,000 361,000	348 504 505	48,000 6,903,800 53,460 20,900	511 512	63,645.00 26,593.00 140,007.00	530 531 506 507 508 532	5,000 3,000 96,000 0 55,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 63,645 26,593 140,007
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Weilhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves	401 402 403 405	65,000 169,000 361,000	348 504 505	48,000 6,903,800 53,460 20,900 0	511 512 513 515	63,645.00 26,593.00 140,007.00	530 531 506 507 508 532	5,000 3,000 96,000 0 55,000 5,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 63,645 26,593 140,007 145,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration	401 402 403 405	65,000 169,000 361,000	348 504 505	48,000 6,903,800 53,460 20,900 0	511 512 513 515 517	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 0 55,000 5,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 63,645 26,593 140,007 145,000 67,000 102,282
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Weilhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment	401 402 403 405	65,000 169,000 361,000	348 504 505	48,000 6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532	5,000 3,000 96,000 0 55,000 5,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface	401 402 403 405	65,000 169,000 361,000	348 504 505	48,000 6,903,800 53,460 20,900 0	511 512 513 515 517 518 521	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC	401 402 403 405 414 415	65,000 169,000 361,000	348 504 505 509	48,000 6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518 521 522	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous	401 402 403 405 414 415	65,000 169,000 361,000	348 504 505 509 514	48,000 6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518 521 522 523	63,645.00 26,593.00 140,007.00 130,000.00	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Weilhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency	401 402 403 405 414 415	65,000 169,000 361,000	348 504 505 509	48,000 6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518 521 522 523 524	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous	401 402 403 405 414 415	65,000 169,000 361,000	348 504 505 509 514	48,000 6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518 521 522 523 524 525	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT	401 402 403 405 414 415	65,000 169,000 361,000	348 504 505 509 514 519 520	48,000 6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518 521 522 523 524 525 526	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission	401 402 403 405 414 415	65,000 169,000 361,000	348 504 505 509 514	48,000 6,903,800 53,460 20,900 0 65,000	511 512 513 515 517 518 521 522 523 524 525	5,000 10,482 5,241 25,156 23,584 60,000	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 55,000 63,645 26,593 140,007 145,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression	401 402 403 405 414 415	85,000 169,000 361,000 28,000	348 504 505 509 514 519 520	48,000 6,903,800 53,460 20,900 0 0 65,000	511 512 513 515 517 518 521 522 523 524 525 526	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	65,000 169,000 361,000 28,000 623,000 3,626,000	348 504 505 509 514 519 520	48,000 6,903,800 53,460 20,900 0 65,000 0 154,360 7,059,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 0 55,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	65,000 169,000 361,000 28,000	348 504 505 509 514 519 520	48,000 6,903,800 53,460 20,900 0 0 65,000 0 154,360	511 512 513 515 517 518 521 522 523 524 525 526	5,000 10,482 5,241 25,156 23,584 60,000 591,990	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	65,000 169,000 361,000 28,000 623,000 3,626,000	504 505 509 514	48,000 6,903,800 53,460 20,900 0 65,000 0 154,360 7,059,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	65,000 169,000 361,000 28,000 623,000 3,626,000	504 505 509 514	48,000 6,903,800 53,460 20,900 0 65,000 0 154,360 7,059,000	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	401 402 403 405 414 415	65,000 169,000 361,000 28,000 28,000 3,626,000 31%	504 505 509 514 519 520	48,000 6,903,800 53,460 20,900 0 0 65,000 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	401 402 403 405 414 415	65,000 169,000 361,000 28,000 28,000 3,626,000 31%	504 505 509 514	48,000 6,903,800 53,460 20,900 0 0 65,000 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:	401 402 403 405 414 415	65,000 169,000 361,000 28,000 28,000 3,626,000 31% Date Prepared:	504 505 509 514 519 520	48,000 6,903,800 53,460 20,900 0 0 65,000 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	401 402 403 405 414 415	65,000 169,000 361,000 28,000 28,000 3,626,000 31%	504 505 509 514 519 520	48,000 6,903,800 53,460 20,900 0 0 65,000 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest Company:	401 402 403 405 414 415	65,000 169,000 361,000 28,000 28,000 3,626,000 31% Date Prepared:	504 505 509 514 519 520	48,000 6,903,800 53,460 20,900 0 0 65,000 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest	401 402 403 405 414 415	65,000 169,000 361,000 28,000 28,000 3,626,000 31% Date Prepared:	504 505 509 514 519 520	48,000 6,903,800 53,460 20,900 0 0 65,000 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest  Company: By:	401 402 403 405 414 415	65,000 169,000 361,000 28,000 28,000 3,626,000 31% Date Prepared:	504 505 509 514 519 520	48,000 6,903,800 53,460 20,900 0 0 65,000 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	5,000 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest Company: By: Printed Name:	401 402 403 405 414 415	65,000 169,000 361,000 28,000 28,000 3,626,000 31% Date Prepared: COG Operating LLC By:	504 505 509 514 519 520	48,000 6,903,800 53,460 20,900 0 0 65,000 154,360 7,059,000 60% 10/18/18	511 512 513 515 517 518 521 522 523 524 526 516	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Flowback Crews & Equip Offset Directional/Frac TOTAL INTANGIBLES  TANGIBLE COSTS Surface Casing Intermediate Casing Production Casing/Liner Tubing Wellhead Equipment Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest  Company: By:	401 402 403 405 414 415	65,000 169,000 361,000 28,000 28,000 3,626,000 31% Date Prepared: COG Operating LLC By:	348 504 505 509 514 519 520 527	48,000 6,903,800 53,460 20,900 0 0 65,000 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 526 516	63,645.00 26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	530 531 506 507 508 532 533 534	5,000 3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	48,000 0 10,240,035 65,000 169,000 361,000 58,460 51,900 96,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350

WELL NAME:	MASTIFF FED COM #505H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FSL & 990 FWL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 33: 100 FNL & 990 FWL	OBJECTIVE:	DRILL AND COMPLETE	
FORMATION:	2nd Bone Spring	DEPTH:	21,400	
LEGAL:	Sec 4-24S-32E	TVD:	10,840	

INTANGIBLE COSTS Title/Curative/Permit	201	Drlq - Riq Release(D) 20,000		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL 20,000
Insurance	202	2,500	302						
MAN AND AND AND AND AND AND AND AND AND A	203	20,000	Control of		25.4				2,500
Damages/Right of Way			303		351				20,000
Survey/Stake Location	204	7,000			352				7,000
Location/Pits/Road Expense	205	135,000		10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206	8,400	306	15,000					23,400
Turnkey Contract	207	0							0
Footage Contract	208	0						SALVANIA TO THE	0
Daywork Contract	209	720,000							720,000
Directional Drilling Services	210	243,000	i.						243,000
Frac Equipment			307	1,418,000				I I TOO DOWN	1,418,000
Frac Chemicals			308	473,000					473,000
Frac Proppant			309	404,000					404,000
Frac Proppant Transportation	erangra:		310	399,000					399,000
Fuel & Power	211	152,000	311	68,000	354		367		220,000
Water	212	105,000	312	945,000			368		1,050,000
Bits	213	92,000	313	9,000			369		101,000
Mud & Chemicals	214	95,000	314	46,000			370		141,000
Drill Stem Test	215	0	315					THE RESERVE OF	0
Coring & Analysis	216	0						A-HILL VILLE	0
Cernent Surface	217	37,000						-2-1, 1-1-1-1	37,000
Cement Intermediate	218	60,000							60,000
Cement 2nd Intermediate/Production	219	130,000							130,000
Cement Squeeze & Other (Kickoff Plug)	220	0		THE RESERVE AND			371		0
Float Equipment & Centralizers	221	50,000		Marillo III					50,000
Casing Crews & Equipment	222	52,000							52,000
Fishing Tools & Service	223	0					372		0
Geologic/Engineering	224	7,200	324		355		373		7,200
Contract Labor	225	6,500	325	23,800	356	122,935	374	6,500	159,735
Company Supervision	226	50,400	326	15,000	357		375		65,400
Contract Supervision	227	123,000	327	268,000	358		376	5,000	396,000
Testing Casing/Tubing	228	30,000	328	5,000			377		35,000
Mud Logging Unit	229	36,000	329						36,000
Logging	230	0					378		0
Perforating/Wireline Services	231	4,000	331	538,000			379		542,000
Stimulation/Treating		A SHARE THE REAL PROPERTY.	332	12,000			380		12,000
Completion Unit			333	138,000			381	8,800	146,800
Swabbing Unit			334				382		0
Rentals-Surface	235	150,000	335	385,000	359		383	7,000	542,000
Rentals-Subsurface	236	135,000	336	90,000		EXTRACTOR IN THE TAIL	384		225,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services	238	3,000	338	5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340						0
Seismic Analysis	241	0	341						0
Miscellaneous	242	0	342	5,000		EVILLYED L. E.	389		5,000
Contingency	243	54,000	343	250,000	363		390		304,000
Closed Loop & Environmental	244	275,000	344		364		388		275,000
Dyed Diesel	245		345	484,000					
Coil Tubing			346	750,000					750,000
Flowback Crews & Equip			347	48,000				DESCRIPTION OF THE PROPERTY OF	48,000
Offset Directional/Frac	248	,	348				391		0
TOTAL INTANGIBLES		3,003,000		6,903,800		302,935		30,300	10,240,035
City Committee C						· <del></del>			
TANGIBLE COSTS									
Surface Casing	401	65,000							65,000
Intermediate Casing	402	169,000							169,000
Production Casing/Liner	403	361,000				TO THE PARTY OF TH		MADE BELLVIOLEN	361,000
Tubing			504	53,460		and the second	530	5,000	58,460
Wellhead Equipment	405	28,000	505	20,900			531	3,000	51,900
Pumping Unit				- Committee of the			506	96,000	96,000
Prime Mover				0			507	0	0
Rods				Name of the last			508	55,000	55,000
Pumps-Sub Surface (BH)			509	0			532	5,000	5,000
Tanks		INVESTIGATION OF THE PARTY OF T			510	63,645.00			63,645
Flowlines				EN ENGRICA	511	26,593.00			26,593
Heater Treater/Separator					512	140,007.00			140,007
Electrical System					513	130,000.00	533	15,000	145,000
Packers/Anchors/Hangers	414		514	65,000			534	2,000	67,000
Couplings/Fittings/Valves	415			Maria de la compansión de	515	102,282			102,282
Dehydration					517				0
Injection Plant/CO2 Equipment				0	518				0
Pumps-Surface				0	521	5,000			5,000
Instrumentation/SCADA/POC					522	10,482	529	7,000	17,482
Miscellaneous	419		519		523	5,241	535	3,000	8,241
Contingency	420		520		524	0,241	536	3,000	0,241
Meters/LACT	4500		200000	CALL TO SERVICE	525	25,156	200		25,156
Flares/Combustors/Emission					526	23,584			23,584
Gas Lift/Compression		THE WAR	527	15,000	516	60,000	528	-	75,000
TOTAL TANGIBLES		623,000		154,360		591,990	Jeo	191,000	1,560,350
TOTAL WELL COSTS		3,626,000		7,059,000		894,925		221,300	11,800,385
the second section of the second section secti		0,0601000		,,500,000		094,023		221,000	11,000,000
% of Total Well Cost		31%		60%		8%		2%	
COG Operating LLC								Kearco	
		Date Prepared:		10/18/18					
		COG Operating LLC							
We approve:		ood operating eco							
We approve: % Working Interest				MD					
We approve:% Working Interest		Ву:		MB					
% Working Interest				МВ				e.	
				МВ					
% Working Interest  Company:  By:				МВ				ē.	
% Working Interest  Company:  By:  Printed Name:		Ву:						e e e e e e e e e e e e e e e e e e e	
% Working Interest  Company:  By:		Ву:		MB By signing you agree to pa	y your	r share		e e e e e e e e e e e e e e e e e e e	

WELL NAME:	MASTIFF FED COM #506H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FSL & 330 FWL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 33: 100 FNL & 330 FWL	OBJECTIVE:	DRILL AND COMPLETE	
FORMATION:	2nd Bone Spring	DEPTH:	21,160	
LEGAL:	Sec 4-24S-32E	TVD:	10,600	

INTANGIBLE COSTS Title/Curative/Permit	201	Drlq - Riq Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL
Insurance	202		302						20,000
					251				
Damages/Right of Way	203		303		351				20,000
Survey/Stake Location	204	7,000			352	-			7,000
Location/Pits/Road Expense	205		305	10,000	353	45,000	366		190,000
Drilling / Completion Overhead	206		306	15,000					23,400
Turnkey Contract	207	0						The Company of	0
Footage Contract	208	0							0
Daywork Contract	209	720,000							720,000
Directional Drilling Services	210	243,000	Second S						243,000
Frac Equipment			307	1,418,000					1,418,000
Frac Chemicals			308	473,000	6 5				473,000
Frac Proppant			309	404,000	8 3				404,000
Frac Proppant Transportation			310	399,000					399,000
Fuel & Power	211		311	68,000	354		367		220,000
Water	212		312	945,000		2 2 3	368		1,050,000
Bits	213		313	9,000			369		101,000
Mud & Chemicals	214		314	46,000	3		370		141,000
Drill Stem Test	215		315						0
Coring & Analysis	216	0						1000	0
Cement Surface	217	37,000							37,000
Cement Intermediate	218	60,000							60,000
Cement 2nd Intermediate/Production	219	130,000							130,000
Cement Squeeze & Other (Kickoff Plug)	220	0					371		0
Float Equipment & Centralizers	221	50,000							50,000
Casing Crews & Equipment	222	52,000					12000		52,000
Fishing Tools & Service	223		323		Sean.		372		0
Geologic/Engineering	224		324		355		373		7,200
Contract Labor	225		325	23,800	356	122,935	374	6,500	159,735
Company Supervision	226		326	15,000	357		375		65,400
Contract Supervision	227		327	268,000	358		376	5,000	396,000
Testing Casing/Tubing	228		328	5,000			377		35,000
Mud Logging Unit	229	36,000	329						36,000
Logging	230	0					378	<u> </u>	0
Perforating/Wireline Services	231	4,000	331	538,000			379		542,000
Stimulation/Treating			332	12,000		DAY SAY DE	380		12,000
Completion Unit			333	138,000			381	8,800	146,800
Swabbing Unit			334				382		0
Rentals-Surface	235	150,000	335	385,000	359		383	7,000	542,000
Rentals-Subsurface	236	135,000	336	90,000			384		225,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services	238	3,000	338	5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340						0
Seismic Analysis	241	0	341						0
Miscellaneous	242	0	342	5,000			389		5,000
Contingency	243	54,000	343	250,000	363		390		304,000
Closed Loop & Environmental	244	275,000	344		364		388	71	275,000
Dyed Diesel	245		345	484,000					
Coil Tubing			346	750,000		A DECEMBER OF THE			750,000
Flowback Crews & Equip			347	48,000				THE PARTY OF THE P	48,000
Offset Directional/Frac	248		348				391		0
TOTAL INTANGIBLES		3,003,000		6,903,800		302,935		30,300	10,240,035
TANGIBLE COSTS									
Surface Casing	401	65,000							65,000
Intermediate Casing	402	169,000		AND DESCRIPTION OF THE PARTY OF					169,000
Production Casing/Liner	403	361,000						THE RESIDENCE	361,000
Tubing			504	53,460			530	5,000	58,460
Wellhead Equipment	405	-	505	20,900			531	3,000	51,900
Pumping Unit							506	96,000	96,000
Prime Mover				0			507	0	96,000
Rods		STREET, STREET,					508	55,000	55,000
Pumps-Sub Surface (BH)			509	0			532	5,000	5,000
Tanks		THE RESERVE			510	63,645.00	JUE	9,000	63,645
Flowlines					511	26,593.00			26,593
Heater Treater/Separator					512	140,007.00		Language and the second	140,007
Electrical System					513	130,000.00	533	15,000	145,000
Packers/Anchors/Hangers	414		514	65,000		100,000.00	534	2,000	67,000
Couplings/Fittings/Valves	415	<del> </del>		55,500	515	102,282	207	2,000	102,282
Dehydration					517	100-100			-
Injection Plant/CO2 Equipment				0	518				0
Pumps-Surface				0	521	5,000			
Instrumentation/SCADA/POC				0	521	10,482	529	7.000	5,000
Miscellaneous	419		519		523	5,241	535	7,000	17,482
Contingency	420		520		524	3,241		3,000	8,241
Meters/LACT					525	25,156	536		0
Flares/Combustors/Emission					525	25,156			25,156
The state of the s			527	15,000	516	60,000	600		23,584
Gas Lift/Compression		623,000	- tel	154,360	510	591,990	528	191,000	75,000
Gas Lift/Compression TOTAL TANGIBLES		The state of the s		7,059,000					1,560,350
TOTAL TANGIBLES		3 836 000		000,860,1		894,925		221,300	11,800,385
		3,626,000							
TOTAL TANGIBLES		3,626,000		60%		8%		294	
TOTAL TANGIBLES TOTAL WELL COSTS				60%		8%		2%	
TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost				60%		8%		2%	
TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost				10/18/18		8%		2%	
TOTAL TANGIBLES TOTAL WELL COSTS % of Total Well Cost		31%  Date Prepared:	P-			8%		2%	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC		31% Date Prepared:	un-			8%		2%	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC  We approve:		Date Prepared:  COG Operating LLC	A-	10/18/18		8%		2%	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC		31%  Date Prepared:	P-			8%		-	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost  COG Operating LLC  We approve:% Working Interest		Date Prepared:  COG Operating LLC	A-	10/18/18		8%		-	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost  COG Operating LLC  We approve:		Date Prepared:  COG Operating LLC	A-	10/18/18		8%		-	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost  COG Operating LLC  We approve:% Working Interest		Date Prepared:  COG Operating LLC	æ	10/18/18		8%		-	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost  COG Operating LLC  We approve:% Working Interest  Company: By:  Printed Name:		Date Prepared:  COG Operating LLC	A-	10/18/18		8%		-	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost  COG Operating LLC  We approve:		Date Prepared:  COG Operating LLC  By:  This AFE is only an estima	ate. E	10/18/18 MB	iy your			2%	
TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost  COG Operating LLC  We approve:% Working Interest  Company: By:  Printed Name:		Date Prepared:  COG Operating LLC  By:	ate. E	10/18/18 MB	iy your			2%	

WELL NAME:	MASTIFF FED COM #507H	PROSPECT NAME:	Bulldog 2432 (717113)	
FTP:	Sec 4: 100 FSL & 330 FWL	STATE & COUNTY:	New Mexico, Lea	
LTP:	Sec 33: 100 FNL & 330 FWL	OBJECTIVE:	DRILL AND COMPLETE	
FORMATION:	2nd Bone Spring	DEPTH:	21,400	
LEGAL:	Sec 4-24S-32E	TVD:	10,840	

INTANGIBLE COSTS Title/Curethye/Parmit	00+	Drlg - Rig Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpq Equipment(PEQ)	TOTAL
Title/Curative/Permit	201	20,000	Alaman)						20,000
Insurance	202	2,500			10000			CHIS-IN CO.	2,500
Damages/Right of Way	203	20,000	303		351				20,000
Survey/Stake Location	204	7,000			352				7,000
Location/Pits/Road Expense	205	135,000	305	10,000	353	45,000	366	: Y <u></u>	190,000
Drilling / Completion Overhead	206	8,400	306	15,000					23,400
Turnkey Contract	207	0				STATE OF THE PARTY OF			0
Footage Contract	208	0		Out of the same		CONTRACTOR OF THE PARTY OF THE		Real Property Commencer	0
Daywork Contract	209	720,000	0						720,000
Directional Drilling Services	210	243,000	d						243,000
Frac Equipment	2.10	£40,000	307	1,418,000					
Frac Chemicals			0.00						1,418,000
			308	473,000					473,000
Frac Proppant			309	404,000					404,000
Frac Proppant Transportation			310	399,000					399,000
Fuel & Power	211	152,000	311	68,000	354		367		220,000
Water	212	105,000	312	945,000			368		1,050,000
Bits	213	92,000	313	9,000			369		101,000
Mud & Chemicals	214	95,000	314	46,000		THE RESERVE AND ADDRESS.	370		141,000
Drill Stem Test	215	0	· Variable						0
Coring & Analysis	216	0						All	0
Cement Surface	217	37,000	9						
									37,000
Cement Intermediate	218	60,000							60,000
Cement 2nd Intermediate/Production	219	130,000							130,000
Cement Squeeze & Other (Kickoff Plug)	220	0					371		0
Float Equipment & Centralizers	221	50,000		The same of the sa		THE RESERVE OF THE PERSON		Unk Landerson	50,000
Casing Crews & Equipment	222	52,000							52,000
Fishing Tools & Service	223	0	323				372		0
Geologic/Engineering	224	7,200	324		355		373	<del></del> :	7,200
Contract Labor	225	6,500		23,800	356	122,935	374	6,500	159,735
Company Supervision	226	50,400		15,000	357	166,331	375	0,000	The state of the s
Contract Supervision		- Contraction and Contraction							65,400
	227	123,000	327	268,000	358		376	5,000	396,000
Testing Casing/Tubing	228	30,000	328	5,000			377		35,000
Mud Logging Unit	229	36,000	329						36,000
Logging	230	0					378		0
Perforating/Wireline Services	231	4,000	331	538,000			379		542,000
Stimulation/Treating			332	12,000			380	S	12,000
Completion Unit			333	138,000			381	8,800	146,800
Swabbing Unit			334				382		0
Rentals-Surface	235	150,000	335	385,000	359		383	7,000	
Rentals-Subsurface					339			7,000	542,000
	236	135,000	336	90,000	9)		384		225,000
Trucking/Forklift/Rig Mobilization	237	200,000	337	40,000	360		385	3,000	243,000
Welding Services	238	3,000	338	5,000	361		386		8,000
Water Disposal	239	0	339	60,000	362	135,000	387		195,000
Plug to Abandon	240	0	340			No. of the last of		I STATE OF THE PARTY OF	0
Seismic Analysis	241	0	341						0
Miscellaneous	242	0	342	5,000			389		5,000
Contingency	243	54,000	343	250,000	363		390		304,000
Closed Loop & Environmental	244	275,000	344	200,000	364		388		
Dyed Diesel	245	273,000	345	404.000	304		.300		275,000
	243			484,000					
Coll Tubing			346	750,000		- A - A			750,000
Flowback Crews & Equip			347	48,000					48,000
Offset Directional/Frac	248		348				391		0
TOTAL INTANGIBLES		3,003,000		6,903,800		302,935		30,300	10,240,035
TANGIBLE COSTS									
Surface Casing	401	65,000							65,000
Intermediate Casing	402	169,000	2						169,000
Production Casing/Liner	403	361,000	5						361,000
Tubing	18000		504					5,000	001,000
				53.460			530		59.400
Wellhead Equipment	405	29 000		53,460			530		58,460
Wellhead Equipment	405	28,000	505	53,460 20,900			531	3,000	51,900
Pumping Unit	405	28,000		20,900			531 506	3,000 96,000	51,900 96,000
Pumping Unit Prime Mover	405	28,000					531 506 507	3,000 96,000 0	51,900 96,000 0
Pumping Unit Prime Mover Rods	405	28,000	505	20,900			531 506 507 508	3,000 96,000 0 55,000	51,900 96,000 0 55,000
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH)	405	28,000		20,900			531 506 507	3,000 96,000 0	51,900 96,000 0 55,000 5,000
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks	405	28,000	505	20,900	510	63,645.00	531 506 507 508	3,000 96,000 0 55,000	51,900 96,000 0 55,000
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines	405	28,000	505	20,900	510 511	63,645.00 26,593.00	531 506 507 508	3,000 96,000 0 55,000	51,900 96,000 0 55,000 5,000
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks	405	28,000	505	20,900			531 506 507 508	3,000 96,000 0 55,000	51,900 96,000 0 55,000 5,000 63,645
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines	405	28,000	505	20,900	511	26,593.00	531 506 507 508	3,000 96,000 0 55,000	51,900 96,000 0 55,000 5,000 63,645 26,593
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator	405	28,000	505	20,900	511 512	26,593.00 140,007.00	531 506 507 508 532	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers	414	28,000	505	20,900	511 512 513	26,593.00 140,007.00 130,000.00	531 506 507 508 532	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System		28,000	505	20,900	511 512 513 515	26,593.00 140,007.00	531 506 507 508 532	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration	414	28,000	505	20,900 0 0	511 512 513 515 517	26,593.00 140,007.00 130,000.00	531 506 507 508 532	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment	414	28,000	505	20,900 0 0 65,000	511 512 513 515 517 518	26,593.00 140,007.00 130,000.00	531 506 507 508 532	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 53,645 26,593 140,007 145,000 67,000 102,282 0
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface	414	28,000	505	20,900 0 0	511 512 513 515 517 518 521	26,593.00 140,007.00 130,000.00 102,282	531 506 507 508 532 533 534	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC	414 415	28,000	505 509 514	20,900 0 0 65,000	511 512 513 515 517 518 521 522	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482	531 506 507 508 532 533 534	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous	414 415	28,000	505 509 514	20,900 0 0 65,000	511 512 513 515 517 518 521 522 523	26,593.00 140,007.00 130,000.00 102,282	531 506 507 508 532 533 534	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency	414 415	28,000	505 509 514	20,900 0 0 65,000	511 512 513 515 517 518 521 522 523 524	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	531 506 507 508 532 533 534	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT	414 415	28,000	505 509 514	20,900 0 0 65,000	511 512 513 515 517 518 521 522 523 524 525	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	531 506 507 508 532 533 534	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission	414 415	28,000	505 509 514 519 520	20,900 0 0 65,000	511 512 513 515 517 518 521 522 523 524	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	531 506 507 508 532 533 534	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT	414 415	28,000	505 509 514	20,900 0 0 65,000	511 512 513 515 517 518 521 522 523 524 525	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241	531 506 507 508 532 533 534	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission	414 415	28,000	505 509 514 519 520	20,900 0 0 65,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000	51,900 96,000 0 55,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression	414 415		505 509 514 519 520	20,900 0 0 65,000 0	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	414 415	623,000	505 509 514 519 520	20,900 0 0 65,000 0 0 154,360	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	414 415	623,000	505 509 514 519 520	20,900 0 0 65,000 0 0 154,360	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	414 415	623,000 3,626,000	505 509 514 519 520	20,900 0 0 65,000 0 0 154,360 7,059,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000 191,000 221,300	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	414 415	623,000 3,626,000 31%	505 509 514 519 520	20,900 0 0 65,000 0 0 15,000 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000 191,000 221,300	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS	414 415	623,000 3,626,000	505 509 514 519 520	20,900 0 0 65,000 0 0 154,360 7,059,000	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000 191,000 221,300	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	414 415	623,000 3,626,000 31% Date Prepared:	505 509 514 519 520	20,900 0 0 65,000 0 0 15,000 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000 191,000 221,300	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	414 415	623,000 3,626,000 31%	505 509 514 519 520	20,900 0 0 65,000 0 0 15,000 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000 191,000 221,300	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  ** of Total Well Cost COG Operating LLC  We approve:	414 415	623,000 3,626,000 31%  Date Prepared:  COG Operating LLC AC	505 509 514 519 520	20,900 0 0 0 65,000 0 0 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000 191,000 221,300	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost	414 415	623,000 3,626,000 31% Date Prepared:	505 509 514 519 520	20,900 0 0 65,000 0 0 15,000 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000 191,000 221,300	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  % of Total Well Cost COG Operating LLC  We approve:% Working Interest	414 415	623,000 3,626,000 31%  Date Prepared:  COG Operating LLC AC	505 509 514 519 520	20,900 0 0 0 65,000 0 0 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000 191,000 221,300	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest Company:	414 415	623,000 3,626,000 31%  Date Prepared:  COG Operating LLC AC	505 509 514 519 520	20,900 0 0 0 65,000 0 0 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000 191,000 221,300	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  ** of Total Well Cost COG Operating LLC  We approve:	414 415	623,000 3,626,000 31%  Date Prepared:  COG Operating LLC AC	505 509 514 519 520	20,900 0 0 0 65,000 0 0 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000 191,000 221,300	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  ** of Total Well Cost  We approve:	414 415	623,000 3,626,000 31%  Date Prepared:  COG Operating LLC AC	505 509 514 519 520	20,900 0 0 0 65,000 0 0 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000 191,000 221,300	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve:% Working Interest Company: By: Printed Name:	414 415	623,000 3,626,000 31%  Date Prepared: COG Operating LLC AC By:	505 509 514 519 520 527	20,900 0 0 65,000 0 0 0 15,000 154,360 7,059,000 60% 10/18/18	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
Pumping Unit Prime Mover Rods Pumps-Sub Surface (BH) Tanks Flowlines Heater Treater/Separator Electrical System Packers/Anchors/Hangers Couplings/Fittings/Valves Dehydration Injection Plant/CO2 Equipment Pumps-Surface Instrumentation/SCADA/POC Miscellaneous Contingency Meters/LACT Flares/Combustors/Emission Gas Lift/Compression TOTAL TANGIBLES TOTAL WELL COSTS  We approve: % Working Interest Company: By: Printed Name: Title:	414 415	623,000 3,626,000 31%  Date Prepared: COG Operating LLC NO. By:	505 509 514 519 520 527	20,900 0 0 0 65,000 0 0 154,360 7,059,000 60%	511 512 513 515 517 518 521 522 523 524 525 526 516	26,593.00 140,007.00 130,000.00 102,282 5,000 10,482 5,241 25,156 23,584 60,000 591,990 894,925	531 506 507 508 532 533 534 529 535 536	3,000 96,000 0 55,000 5,000 15,000 2,000 7,000 3,000	51,900 96,000 0 55,000 5,000 63,645 26,593 140,007 145,000 67,000 102,282 0 0 5,000 17,482 8,241 0 25,156 23,584 75,000 1,560,350
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