



Authorization For Expenditure

Company Entity CIMAREX ENERGY CO		Date Prepared 04/15/2016										
Region Anadarko	Well Name GATZ 1H-3019X	Prospect or Field Name LONE ROCK WASHINGTON PROSPECT	Property Number 350021-098.01	Drilling AFE No. 2216067								
Location SHL: 150' FSL & 330' FEL SEC 30-11N-7W BHL: 150'FNL & 330' FEL SEC 19-11N-7W		County Canadian	State OK	Type Well <table border="1"><tr><td>Oil</td><td></td><td>Expl</td><td>X</td></tr><tr><td>Gas</td><td>X</td><td>Prod</td><td></td></tr></table>	Oil		Expl	X	Gas	X	Prod	
Oil		Expl	X									
Gas	X	Prod										
Estimate Type Original Estimate	X	Est Start Date 06/01/2016	Est. Comp Date 08/01/2016	Formation WOODFORD								
Revised Estimate				Ttl Measured Depth 21,110'								
Supplemental Estimate				Ttl Vertical Depth 11,110'								
Project Description Drill and complete a horizontal test. Drill to 1500', set surface casing. Drill to 10150', set intermediate casing. Drill to 10628' (KOP). Drill curve at 12 DLS build rate to +/- 11110' TVD and a +/- 9730' long lateral in the Woodford formation. Run and cement production casing. Stage frac in 55 stages. Drill out plugs. Run production tubing. Flow to sales through new facility.												
Intangibles		Dry Hole Cost	After Casing Point	Completed Well Cost								
Drilling Costs		\$2,917,000		\$2,917,000								
Completion Costs			\$5,658,177	\$5,658,177								
Total Intangible Costs		\$2,917,000	\$5,658,177	\$8,575,177								
Tangibles												
Well Equipment		\$420,000	\$539,800	\$959,800								
Lease Equipment			\$347,773	\$347,773								
Total Tangible Well Cost		\$420,000	\$887,573	\$1,307,573								
Plug and Abandon Cost		\$0	\$0	\$0								
Total Well Cost		\$3,337,000	\$6,545,750	\$9,882,750								
Comments on Well Costs 1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.												
Well Control Insurance Unless otherwise indicated below, you, as a non-operating working interest owner, agree to be covered by Operator's well control insurance procured by Operator so long as Operator conducts operations hereunder and to pay your prorated share of the premiums therefore. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance acceptable to Operator, as to form and limits, at the time this AFE is returned, if available, but in no event later than commencement of drilling operations. You agree that failure to provide the certificate of insurance, as provided herein, will result in your being covered by insurance procured by Operator. <input type="checkbox"/> I elect to purchase my own well control insurance policy. Well control insurance procured by Operator, provides, among other terms, for \$20,000,000 (100% W.I.) of Combined Single Limit coverage for well control and related redrilling and clean-up/pollution expense covering drilling (through completion) with a \$1,000,000 (100% W.I.) deductible.												
Marketing Election Cimarex sells its gas under arm's-length contracts with third party purchasers. Such contracts may include fees. In addition, penalties may be incurred for insufficient volumes delivered over time. Should you choose to market your share of gas with Cimarex, you will be subject to all of the terms of such contracts. Upon written request to Cimarex's Marketing Department, we will share with you the terms and conditions pursuant to which gas will be sold. Failure to make an election below shall be deemed an election to market your gas with Cimarex under the terms and conditions set forth above. <input type="checkbox"/> I elect to take my gas in kind. <input type="checkbox"/> I elect to market my gas with Cimarex pursuant to the terms and conditions of its contract.												
Comments on AFE The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE, the working interest owner agrees to pay its proportionate share of actual legal, curative, regulatory and well costs under term of the joint operating agreement, regulatory order or other applicable agreement covering this well.												

Cimarex Energy Co. Approval

Prepared by	Drilling and Completion Manager	Regional Manager

Joint Interest Approval

Company	By	Date



Project Cost Estimate

Lease Name:

Intangibles	BCP - Drilling		ACP - Drilling		Completion / Stimulation	
	Codes	(Dry Hole Cost)	Codes		Codes	
Roads & Location Preparation / Restoration	DIDC.100	\$200,000			STIM.100	\$30,000
Damages	DIDC.105	\$26,000				
Mud / Fluids Disposal Charges	DIDC.255	\$120,000			STIM.255	\$60,000
Day Rate 32.00 DH Days 5.00 ACP Days @ \$27,500.00 Per Day	DIDC.115	\$880,000	DICC.120	\$104,000		
Misc Preparation Cost (mouse hole, rat hole, pads, pile clusters, misc.)	DIDC.120	\$30,000				
Bits	DIDC.125	\$130,000	DICC.125	\$0	STIM.125	\$0
Fuel \$1.50 Per Gallon ##### Gallons Per Day	DIDC.135	\$86,000	DICC.130	\$0		
Water for Drilling Rig / Completion Fluids (Not Frac Water)	DIDC.140	\$15,000	DICC.135	\$1,000	STIM.135	\$5,000
Mud & Additives	DIDC.145	\$300,000				
Surface Rentals	DIDC.150	\$55,000	DICC.140	\$0	STIM.140	\$150,000
Downhole Rentals	DIDC.155	\$45,000			STIM.145	\$80,000
Formation Evaluation (DST, Coring including evaluation, G&G Services)	DIDC.160	\$0			STIM.150	\$0
Mud Logging 30.00 Days @ \$1,000.00 Per Day	DIDC.170	\$30,000				
Open Hole Logging	DIDC.180	\$0				
Cementing & Float Equipment	DIDC.185	\$50,000	DICC.155	\$100,000		
Tubular Inspections	DIDC.190	\$15,000	DICC.160	\$5,000	STIM.160	\$0
Casing Crews	DIDC.195	\$15,000	DICC.165	\$17,000	STIM.165	\$0
Extra Labor, Welding, Etc.	DIDC.200	\$10,000	DICC.170	\$2,000	STIM.170	\$0
Land Transportation (Trucking for tangibles)	DIDC.205	\$14,000	DICC.175	\$9,000	STIM.175	\$5,000
Supervision \$3,800.00 Per Day	DIDC.210	\$141,000	DICC.180	\$10,000	STIM.180	\$67,000
Trailer House / Camp / Catering	DIDC.280	\$21,000	DICC.255	\$2,000	STIM.280	\$13,000
Other Misc Expenses	DIDC.220	\$1,000	DICC.190	\$0	STIM.190	\$25,000
Overhead	DIDC.225	\$10,000	DICC.195	\$5,000		
Remedial Cementing	DIDC.231	\$0			STIM.215	\$0
MOB/DEMOB	DIDC.240	\$195,000				
Directional Drilling Services	DIDC.245	\$300,000				
Crane for Construction						
Solids Control	DIDC.260	\$25,000				
Well Control Equip (Snubbing Svcs.)	DIDC.265	\$28,000	DICC.240	\$4,000	STIM.240	\$20,000
Fishing & Sidetrack Operations	DIDC.270	\$0	DICC.245	\$0	STIM.245	\$0
Completion Rig					STIM.115	\$0
Coil Tubing					STIM.260	\$200,000
Completion Logging, Perforating, WL Units, WL Surveys					STIM.200	\$251,000
Composite Plugs					STIM.390	\$83,000
Stimulation Pumping Charges, Chemicals, Additives, Sand					STIM.210	\$3,244,000
Stimulation Water / Water Transfer / Water Storage					STIM.395	\$411,000
Cimarex Owned Frac / Rental Equipment					STIM.305	\$50,000
Legal / Regulatory / Curative	DIDC.300	\$15,000				
Well Control Insurance \$1.00 Per Foot	DIDC.285	\$21,000				
Contingency 5.0 % of Drilling Intangibles	DIDC.435	\$139,000	DICC.220	\$13,000	STIM.220	\$235,000
Construction For Flow Lines						
Construction For Sales P/L						
Total Intangible Cost		\$2,917,000		\$272,000		\$4,929,000

Tangible - Well Equipment

	Size	Feet	\$ / Foot				
Casing							
Drive Pipe	0	0.00	\$0.00	DWEB.150	\$0		
Conductor Pipe	0	0.00	\$0.00	DWEB.130	\$0		
Water String	0	0.00	\$0.00	DWEB.135	\$0		
Surface Casing	13.375	1500.00	\$40.00	DWEB.140	\$60,000		
Intermediate Casing 1	9.625	10150.00	\$32.00	DWEB.145	\$325,000		
Intermediate Casing 2	0	0.00	\$0.00	DWEB.155	\$0		
Drilling Liner	0	0.00	\$0.00	DWEB.160	\$0		
Production Casing or Liner	5.5	21110.00	\$18.00		DWEA.100	\$380,000	
Production Tie-Back	0	0.00	\$0.00		DWEA.165	\$0	STIMT.101 \$0
Tubing	2.375	10730.00	\$5.10				STIMT.105 \$0
Wellhead, Tree, Chokes				DWEB.115	\$35,000	DWEA.120	\$43,000
Liner Hanger, Isolation Packer				DWEB.100	\$0	DWEA.125	\$0
Packer, Nipples							STIMT.400 \$5,000
Pumping Unit, Engine							STIMT.405 \$0
Downhole Lift Equipment (BHP, Rods, Anchors, ESP, GVLs, PC Pump)							STIMT.410 \$0
Tangible - Lease Equipment							
N/C Lease Equipment							
Tanks, Tanks Steps, Stairs							
Battery (Heater Treater, Separator, Gas Treating Equipment)							
Secondary Containments							
Overhead Power Distribution (electric line to facility)							
Facility Electrical & Automation							
SWD Connection							
Flow Lines (Line Pipe from wellhead to central facility)							
Pipeline to Sales							
Meters and Metering Equipment							
Total Tangibles					\$420,000	\$423,000	\$45,000

P&A Costs	DIDC.295	\$0	DICC.275	\$0		
Total Cost		\$3,337,000		\$695,000		\$4,974,000





Project Cost Estimate

Lease Name:

	Production Equipment / Construction	Post Completion	Total Well Cost
Intangibles	Codes	Codes	
Roads & Location Preparation / Restoration	CON.100 \$2,500	PCOM.100 \$1,000	\$233,500
Damages	CON.105 \$0		\$26,000
Mud / Fluids Disposal Charges		PCOM.255 \$91,800	\$271,800
Day Rate 32.00 DH Days 5.00 ACP Days @ \$27,500.00 Per Day			\$984,000
Misc Preparation Cost (mouse hole, rat hole, pads, pile clusters, misc.)			\$30,000
Bits		PCOM.125 \$0	\$130,000
Fuel \$1.50 Per Gallon ##### Gallons Per Day		PCOM.130 \$0	\$86,000
Water for Drilling Rig / Completion Fluids (Not Frac Water)		PCOM.135 \$1,000	\$22,000
Mud & Additives			\$300,000
Surface Rentals	CON.140 \$4,000	PCOM.140 \$179,127	\$388,127
Downhole Rentals		PCOM.145 \$0	\$125,000
Formation Evaluation (DST, Coring including evaluation, G&G Services)			\$0
Mud Logging 30.00 Days @ \$1,000.00 Per Day			\$30,000
Open Hole Logging			\$0
Cementing & Float Equipment			\$150,000
Tubular Inspections		PCOM.160 \$3,700	\$23,700
Casing Crews			\$32,000
Extra Labor, Welding, Etc.	CON.170 \$83,000	PCOM.170 \$0	\$95,000
Land Transportation (Trucking for tangibles)	CON.175 \$9,800	PCOM.175 \$6,800	\$44,600
Supervision \$3,800.00 Per Day	CON.180 \$6,800	PCOM.180 \$13,600	\$238,400
Trailer House / Camp / Catering			\$36,000
Other Misc Expenses	CON.190 \$3,900	PCOM.190 \$0	\$29,900
Overhead			\$15,000
Remedial Cementing		PCOM.215 \$0	\$0
MOB/DEMOB			\$195,000
Directional Drilling Services			\$300,000
Crane for Construction	CON.230 \$4,000		\$4,000
Solids Control			\$25,000
Well Control Equip (Snubbing Svcs.)		PCOM.240 \$25,350	\$77,350
Fishing & Sidetrack Operations		PCOM.245 \$0	\$0
Completion Rig		PCOM.115 \$13,800	\$13,800
Coil Tubing		PCOM.260 \$0	\$200,000
Completion Logging, Perforating, WL Units, WL Surveys		PCOM.200 \$3,500	\$254,500
Composite Plugs		PCOM.390 \$0	\$83,000
Stimulation Pumping Charges, Chemicals, Additives, Sand		PCOM.210 \$0	\$3,244,000
Stimulation Water / Water Transfer / Water Storage			\$411,000
Cimarex Owned Frac / Rental Equipment			\$50,000
Legal / Regulatory / Curative	CON.300 \$0		\$15,000
Well Control Insurance \$1.00 Per Foot			\$21,000
Contingency 5.0 % of Drilling Intangibles	CON.220 \$0	PCOM.220 \$0	\$387,000
Construction For Flow Lines	CON.310 \$3,500		\$3,500
Construction For Sales P/L	CON.265 \$0		\$0
Total Intangible Cost	\$117,500	\$339,677	\$8,575,177

Tangible - Well Equipment			
	Size	Feet	\$ / Foot
Casing			
Drive Pipe	0	0.00	\$0.00
Conductor Pipe	0	0.00	\$0.00
Water String	0	0.00	\$0.00
Surface Casing	13.375	1500.00	\$40.00
Intermediate Casing 1	9.625	10150.00	\$32.00
Intermediate Casing 2	0	0.00	\$0.00
Drilling Liner	0	0.00	\$0.00
Production Casing or Liner	5.5	21110.00	\$18.00
Production Tie-Back	0	0.00	\$0.00
Tubing	2.375	10730.00	\$5.10
Wellhead, Tree, Chokes			
Liner Hanger, Isolation Packer			
Packer, Nipples			
Pumping Unit, Engine			
Downhole Lift Equipment (BHP, Rods, Anchors, ESP, GVLs, PC Pump)			
Tangible - Lease Equipment			
N/C Lease Equipment	CONT.400	\$74,448	\$74,448
Tanks, Tanks Steps, Stairs	CONT.405	\$34,650	\$34,650
Battery (Heater Treater, Separator, Gas Treating Equipment)	CONT.410	\$87,075	\$87,075
Secondary Containments	CONT.415	\$25,700	\$25,700
Overhead Power Distribution (electric line to facility)	CONT.420	\$3,000	\$3,000
Facility Electrical & Automation	CONT.425	\$57,200	\$57,200
SWD Connection	CONT.430	\$0	\$0
Flow Lines (Line Pipe from wellhead to central facility)	CONT.435	\$28,200	\$28,200
Pipeline to Sales	CONT.440	\$0	\$0
Meters and Metering Equipment	CONT.445	\$37,500	\$37,500
Total Tangibles	\$347,773	\$71,800	\$1,307,573

P&A Costs			\$0
Total Cost	\$465,273	\$411,477	\$9,882,750