OCD Case No. 15557

COG OPERATING
Exhibit # 7

COG OPERATING LLC
AUTHORITY FOR EXPENDITURE
DRILLING

WELL NAME:	**Copperhead 31 Fed Com 3H**	PROSPECT NAME:	Atlas 717049	**SL WC no PH 1.5M**
SHL:	SEC 30: 349 FNL & 773 FEL	STATE & COUNTY:	New Mexico, Eddy	
BHL:	SEC 31: 50 FSL & 660 FEL	OBJECTIVE:	Drill and Complete	
FORMATION:	WOLFCAMP	DEPTH:	17,400	
LEGAL:	30-26S-29E	TVD:	10,635	

INTANGIBLE COSTS		Drlg - Rig Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpg Equipment(PEQ)	TOTAL
Title/Curative/Permit	201	11,000							11,000
Insurance	202	4,000	302						4,000
Damages/Right of Way	203	5,000	303		351				5,000
Survey/Stake Location	204	6,000			352				6,000
Location/Pits/Road Expense	205	120,000	305	53,648	353	80,000	366		253,648
Drilling / Completion Overhead	206	7,800	306						7,800
Turnkey Contract	207	0	307						0
Footage Contract	208	0	308						0
Daywork Contract	209	795,000	309						795,000
Directional Drilling Services	210	190,000	310						190,000
Fuel & Power	211	61,000	311	5,000	354		367		66,000
Water	212	40,000	312	810,000			368		850,000
Bits	213	64,000	313	9,000			369		73,000
Mud & Chemicals	214	73,000	314	25,000			370		98,000
Drill Stem Test	215	0	315						0
Coring & Analysis	216	0							0
Cement Surface	217	14,250							14,250
Cement Intermediate	218	23,750							23,750
Cement 2nd Intermediate/Production	219	93,250							93,250
Cement Squeeze & Other (Kickoff Plug)	220	0					371		0
Float Equipment & Centralizers	221	10,200							10,200
Casing Crews & Equipment	222	28,000							28,000
Fishing Tools & Service	223	0	323				372		0
Geologic/Engineering	224	0	324		355		373		0
Contract Labor	225	6,500	325	8,200	356	82,000	374		96,700
Company Supervision	226	46,800	326	30,000	357		375		76,800
Contract Supervision	227	79,000	327	90,000	358		376		169,000
Testing Casing/Tubing	228	30,000	328	5,000			377		35,000
Mud Logging Unit	229	30,000	329						30,000
Logging	230	0					378		0
Perforating/Wireline Services	231	4,000	331	273,000			379		277,000
Stimulation/Treating			332	2,199,000			380		2,199,000
Completion Unit			333	60,000			381		60,000
Swabbing Unit			334				382		0
Rentals-Surface	235	140,000	335	196,000	359		383		336,000
Rentals-Subsurface	236	120,000	336	65,000			384		185,000
Trucking/Forklift/Rig Mobilization	237	130,000	337	22,500	360		385		152,500
Welding Services	238	3,500	338	5,000	361		386		8,500
Water Disposal	239	0	339	37,500	362	271,000	387		308,500
Plug to Abandon	240	0	340						0
Seismic Analysis	241	0	341						0
Miscellaneous	242	0	342				389		0
Contingency	243	43,000	343	25,000	363		390		68,000
Closed Loop & Environmental	244	75,000	344	5,000	364		388		80,000
Coil Tubing			346	90,000					90,000
Flowback Crews & Equip			347	98,000					98,000
Offset Directional/Frac	248	0	348						0
TOTAL INTANGIBLES		2,254,050		4,111,848		433,000		0	6,798,898

TANGIBLE COSTS		Drlg - Rig Release(D)		Completion(C)		Tank Btty Constrctn(TB)		Pmpg Equipment(PEQ)	TOTAL
Surface Casing	401	10,000							10,000
Intermediate Casing	402	48,000							48,000
Production Casing/Liner	403	253,000							253,000
Tubing			504	43,000			530		43,000
Wellhead Equipment	405	20,000	505	25,000			531		45,000
Pumping Unit				0			506		0
Prime Mover							507		0
Rods				0			508		0
Pumps-Sub Surface (BH)			509	0			532		0
Tanks					510	75,000			75,000
Flowlines					511	100,000			100,000
Heater Treater/Separator					512	95,000			95,000
Electrical System					513	65,000	533		65,000
Packers/Anchors/Hangers	414	72,000	514	6,000			534		78,000
Couplings/Fittings/Valves	415	0			515	215,000			215,000
Dehydration					517				0
Injection Plant/CO2 Equipment					518				0
Pumps-Surface					521	25,000			25,000
Instrumentation/SCADA/POC					522	15,000	529		15,000
Miscellaneous	419	0	519	0	523	63,434	535		63,434
Contingency	420	0	520		524		536		0
Meters/LACT					525				0
Flares/Combusters/Emission					526	45,000			45,000
Gas Lift/Compression			527	15,000	516	1,364	528		16,364
TOTAL TANGIBLES		403,000		89,000		699,798		0	1,191,798
TOTAL WELL COSTS		2,657,050		4,200,848		1,132,798		0	7,990,696
% of Total Well Cost		**33%**		**53%**		**14%**		**0%**	

COG Operating LLC

Date Prepared: 7/28/16 BZ

COG Operating LLC

DWD Ken LaFortune

We approve:
_____% Working Interest

Company:
By:

Printed Name:
Title:
Date:

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