COG OPERATING LLC
AUTHORITY FOR EXPENDITURE
DRILLING

WELL NAME:	Pan Head Fee #2H	PROSPECT NAME:	NM Shelf 5500' TVD
SHL:	330' FNL & 990' FWL (Sec. 11)	STATE & COUNTY:	New Mexico, Eddy
BHL:	986' FNL & 986' FWL (Sec. 14)	OBJECTIVE:	SH45 Yeso ~~Horizontal~~
FORMATION:	YESO	DEPTH:	9,915
LEGAL:	Sec. 11, T17S, R32E (Unit D)	TVD:	5,825

INTANGIBLE COSTS		BCP		ACP	TOTAL
Title/Curative/Permit	201	11,000			11,000
Insurance	202	22,000	302	0	22,000
Damages/Right of Way	203	15,000	303	0	15,000
Survey/Stake Location	204	7,000	304	0	7,000
Location/Pits/Road Expense	205	80,000	305	25,000	105,000
Drilling / Completion Overhead	206	5,000	306	2,000	7,000
Turnkey Contract	207		307		0
Footage Contract	208		308		0
Daywork Contract (0 days f/spud-rls @ $0)	209	189,000	309	29,000	218,000
Directional Drilling Services (0 dir days @ $0)	210	130,000	310		130,000
Fuel & Power	211	49,000	311	8,000	57,000
Water	212	34,000	312	130,000	164,000
Bits	213	54,500	313	5,000	59,500
Mud & Chemicals	214	28,000	314	0	28,000
Drill Stem Test	215		315	0	0
Coring & Analysis	216				0
Cement Surface	217	20,000			20,000
Cement Intermediate	218	17,000			17,000
Cement 2nd Intermediate/Production	218	0	319	87,000	87,000
Cement Squeeze & Other (Kickoff Plug)	220		320	0	0
Float Equipment & Centralizers	221	2,000	321	20,000	22,000
Casing Crews & Equipment	222	5,000	322	12,000	17,000
Fishing Tools & Service	223		323		0
Geologic/Engineering	224	2,000	324		2,000
Contract Labor	225	39,000	325	21,000	60,000
Company Supervision	226	2,000	326	2,000	4,000
Contract Supervision	227	23,000	327	40,000	63,000
Testing Casing/Tubing	228	3,000	328	5,000	8,000
Mud Logging Unit	229	17,000	329		17,000
Logging	230	20,000	330		20,000
Perforating/Wireline Services	231	3,500	331	95,000	98,500
Stimulation/Treating			332	1,000,000	1,000,000
Completion Unit			333	45,000	45,000
Swabbing Unit			334		0
Rentals-Surface	235	21,000	335	300,000	321,000
Rentals-Subsurface	236	38,000	336	50,000	88,000
Trucking/Forklift/Rig Mobilization	237	45,000	337	40,000	85,000
Welding Services	238	5,000	338	2,500	7,500
Water Disposal	239	0	339	30,000	30,000
Plug to Abandon	240	0	340	0	0
Seismic Analysis	241	0	341	0	0
Closed Loop & Environmental	244	85,000	344	0	85,000
Miscellaneous	242	0	342	0	0
Contingency 10%	243	98,000	343	195,500	293,500
TOTAL INTANGIBLES		1,070,000		2,144,000	3,214,000

TANGIBLE COSTS		BCP		ACP	TOTAL
Surface Casing (13 3/8" 48# H40 STC)	401	16,000			16,000
Intermediate Casing(1800' 9 5/8" 40# J55 LTC)	402	50,000	503	0	50,000
Production Casing (7" 26# & 5 1/2" 17# L80)			503	200,000	200,000
Tubing			504	29,000	29,000
Wellhead Equipment	405	6,000	505	20,000	26,000
Pumping Unit			506	80,000	80,000
Prime Mover			507	20,000	20,000
Rods			508	12,000	12,000
Pumps			509	10,000	10,000
Tanks			510	21,000	21,000
Flowlines			511	12,000	12,000
Heater Treater/Separator			512	33,000	33,000
Electrical System			513	20,000	20,000
Packers/Anchors/Hangers	414	0	514	2,500	2,500
Couplings/Fittings/Valves	415	500	515	40,000	40,500
Gas Compressors/Meters			516	5,000	5,000
Dehydrator			517		0
Injection Plant/CO2 Equipment			518		0
Miscellaneous	419	500	519	4,000	4,500
Contingency	420	4,000	520	26,500	30,500
TOTAL TANGIBLES		77,000		535,000	612,000
TOTAL WELL COSTS		1,147,000		2,679,000	3,826,000

COG Operating LLC

By: Carl Bird

Date Prepared: 3/18/2014 TC 9/16/2014

COG Operating LLC

By: __________

We approve:
_____% Working Interest

Company: __________
By: __________

Printed Name: __________
Title: __________
Date: __________

BEFORE THE OIL CONVERSATION DIVISION
Santa Fe, New Mexico
Exhibit No. 5
Submitted by: COG OPERATING LLC
Hearing Date: February 5, 2015

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