

**COG OPERATING LLC
AUTHORITY FOR EXPENDITURE
DRILLING**

WELL NAME:	Pan Head Fee #4H	PROSPECT NAME:	NM Shelf 6001 - 7000' TVD
SHL:	330' FNL, 2310' FWL sec.11 (unit C)	STATE & COUNTY:	New Mexico, Eddy
BHL:	990' FNL, 2310 FWL sec.14 (unit C)	OBJECTIVE:	1.25 mile Yeso Horizontal
FORMATION:	LWR Blinbry	DEPTH:	12,735
LEGAL:	T17S-R32E sec.11 & 14	TVD:	6,850

INTANGIBLE COSTS		BCP	ACP	TOTAL
Title/Curative/Permit	201	10,000		10,000
Insurance	202	22,000	302 0	22,000
Damages/Right of Way	203	15,000	303 0	15,000
Survey/Stake Location	204	3,000	304 0	3,000
Location/Pits/Road Expense	205	60,000	305 25,000	85,000
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-ris @ \$0)	209	388,000	309 47,000	435,000
Directional Drilling Services (0 dir days @ \$0)	210	210,000	310	210,000
Fuel & Power	211	94,000	311 12,000	106,000
Water	212	65,000	312 100,000	165,000
Bits	213	54,500	313 5,000	59,500
Mud & Chemicals	214	53,000	314 0	53,000
Drill Stem Test	215		315 0	0
Coring & Analysis	216			0
Cement Surface	217	38,000		38,000
Cement Intermediate	218	20,000		20,000
Cement 2nd Intermediate/Production	218	0	319 111,000	111,000
Cement Squeeze & Other (Kickoff Plug)	220		320 0	0
Float Equipment & Centralizers	221	2,000	321 30,000	32,000
Casing Crews & Equipment	222	5,000	322 12,000	17,000
Fishing Tools & Service	223		323	0
Geologic/Engineering	224	10,000	324	10,000
Contract Labor	225	20,000	325 21,000	41,000
Company Supervision	226	2,000	326 2,000	4,000
Contract Supervision	227	43,000	327 20,000	63,000
Testing Casing/Tubing	228	3,000	328 12,000	15,000
Mud Logging Unit (logging f/24 days)	229	24,000	329	24,000
Logging	230	25,000	330	25,000
Perforating/Wireline Services	231	3,500	331 50,000	53,500
Stimulation/Treating			332 1,750,000	1,750,000
Completion Unit			333 30,000	30,000
Swabbing Unit			334	0
Rentals-Surface	235	40,000	335 250,000	290,000
Rentals-Subsurface	236	73,000	336 75,000	148,000
Trucking/Forklift/Rig Mobilization	237	57,000	337 20,000	77,000
Welding Services	238	5,000	338 2,500	7,500
Water Disposal	239	0	339 40,000	40,000
Plug to Abandon	240	0	340 0	0
Seismic Analysis	241	0	341 0	0
Closed Loop & Environmental	244	163,000	344 0	163,000
Miscellaneous	242	0	342 0	0
Contingency 10%	243	152,000	343 262,500	414,500
TOTAL INTANGIBLES		1,865,000	2,879,000	4,544,000
TANGIBLE COSTS				
Surface Casing (13 3/8" 48# H40 STC)	401	33,000		33,000
Intermediate Casing(9 5/8" 40# J55 LTC)	402	63,000	503 0	63,000
Production Casing (7" 26# & 5 1/2" 17# L80)			503 242,000	242,000
Tubing			504 35,000	35,000
Wellhead Equipment	405	6,000	505 35,000	41,000
Pumping Unit			506 90,000	90,000
Prime Mover			507 20,000	20,000
Rods			508 20,000	20,000
Pumps			509 10,000	10,000
Tanks			510 21,000	21,000
Flowlines			511 11,000	11,000
Heater Treater/Separator			512 30,000	30,000
Electrical System			513 30,000	30,000
Packers/Anchors/Hangers	414	0	514 2,500	2,500
Couplings/Fittings/Valves	415	500	515 60,000	60,500
Gas Compressors/Meters			516 5,000	5,000
Dehydrator			517	0
Injection Plant/CO2 Equipment			518	0
Miscellaneous	419	500	519 500	1,000
Contingency	420	6,000	520 31,000	37,000
TOTAL TANGIBLES		109,000	643,000	752,000
TOTAL WELL COSTS		1,774,000	3,522,000	5,296,000

COG Operating LLC

By: Carl Blrd

Date Prepared: 5/13/2013

We approve:
% Working Interest

COG Operating LLC

By:

Company:
By:

Printed Name:
Title:
Date:

NMOCD CASE NO. 15030
July 25, 2013
Exhibit No. 5

This AFE is only an estimate. B
of the actual costs incurred.