

**COG OPERATING LLC
AUTHORITY FOR EXPENDITURE
DRILLING**

WELL NAME:	Ragnar Fed Com #25H	PROSPECT NAME:	NM Shelf 6500' TVD
SHL:	185' FNL, 2358' FEL UL-B	STATE & COUNTY:	New Mexico, Lea
BHL:	330' FNL, 2304' FEL UL-B	OBJECTIVE:	Yeso Horizontal
FORMATION:	YESO	DEPTH:	11,300
LEGAL:	Sec. 15, W2E2, T17S-R32E	TVD:	6,350

INTANGIBLE COSTS		BCP	ACP	TOTAL
Title/Curative/Permit	201	11,000		11,000
Insurance	202	5,000	302 0	5,000
Damages/Right of Way	203	12,000	303 0	12,000
Survey/Stake Location	204	3,000	304 0	3,000
Location/Pits/Road Expense	205	80,000	305 25,000	105,000
Drilling / Completion Overhead	206	4,000	306 2,000	6,000
Turnkey Contract	207		307	0
Footage Contract	208		308	0
Daywork Contract (0 days f/spud-ris @ \$0)	209	208,000	309 0	208,000
Directional Drilling Services (0 dir days @ \$0)	210	86,000	310	86,000
Fuel & Power	211	32,000	311 5,000	37,000
Water	212	38,000	312 120,000	158,000
Bits	213	50,600	313 5,000	55,600
Mud & Chemicals	214	45,000	314 0	45,000
Drill Stem Test	215		315 0	0
Coring & Analysis	216			0
Cement Surface	217	31,000		31,000
Cement Intermediate	218	25,000		25,000
Cement 2nd Intermediate/Production	218	0	319 55,000	55,000
Cement Squeeze & Other (Kickoff Plug)	220		320 0	0
Float Equipment & Centralizers	221	3,000	321 7,000	10,000
Casing Crews & Equipment	222	8,000	322 12,000	20,000
Fishing Tools & Service	223		323	0
Geologic/Engineering	224		324	0
Contract Labor	225	5,000	325 38,000	43,000
Company Supervision	226		326 2,000	2,000
Contract Supervision	227	24,000	327 46,000	70,000
Testing Casing/Tubing	228	2,490	328 4,500	6,990
Mud Logging Unit	229	25,000	329	25,000
Logging	230	25,000	330	25,000
Perforating/Wireline Services	231	1,500	331 135,000	136,500
Stimulation/Treating			332 1,100,000	1,100,000
Completion Unit			333 35,000	35,000
Swabbing Unit			334	0
Rentals-Surface	235	52,000	335 230,000	282,000
Rentals-Subsurface	236	64,000	336 28,000	92,000
Trucking/Forklift/Rig Mobilization	237	61,000	337 50,000	111,000
Welding Services	238	5,000	338 3,000	8,000
Water Disposal	239	0	339 5,000	5,000
Plug to Abandon	240	0	340 0	0
Seismic Analysis	241	0	341 0	0
Closed Loop & Environmental	244	74,000	344 0	74,000
Miscellaneous	242	0	342 0	0
Contingency 2%	243	20,410	343 39,500	59,910
TOTAL INTANGIBLES		1,002,000	1,947,000	2,949,000

TANGIBLE COSTS				
Surface Casing (13 3/8" 54.5# J55 STC)	401	32,000		32,000
Intermediate Casing (9 5/8" 40# J55 LTC)	402	56,000	503 0	56,000
Production Casing (7" 29# & 5 1/2" 17# L80)			503 227,000	227,000
Tubing			504 31,000	31,000
Wellhead Equipment	405	8,200	505 14,000	22,200
Pumping Unit			506 72,000	72,000
Prime Mover			507 0	0
Rods			508 16,000	16,000
Pumps			509 63,000	63,000
Tanks			510 19,000	19,000
Flowlines			511 11,000	11,000
Heater Treater/Separator			512 29,000	29,000
Electrical System			513 18,000	18,000
Packers/Anchors/Hangers	414	0	514 2,000	2,000
Couplings/Fittings/Valves	415	500	515 36,000	36,500
Gas Compressors/Meters			516 4,000	4,000
Dehydrator			517	0
Injection Plant/CO2 Equipment			518	0
Miscellaneous	419	500	519 4,000	4,500
Contingency	420	800	520 0	800
TOTAL TANGIBLES		98,000	546,000	644,000
TOTAL WELL COSTS		1,100,000	2,493,000	3,593,000

COG Operating LLC

By: Carl Bird

We approve:
% Working Interest

Company:
By:

Printed Name:
Title:
Date:

Date Prepared: 8/7/2015

COG Operating LLC

By:

OCD Case No. 15392

**COG OPERATING
Exhibit #5**

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