Koch Exploration Company
DRILLING PROGRAM

AHU Wyatt 25-33D-2

WELL:	AHU Wyatt 25-33D-2	**PROPOSED DEPTH:** 7874' MD	
COUNTY:	Rio Blanco	**TRUE VERTICAL DEPTH:** 7405' TVD	
API:	TBD	**ELEVATION:** 5843' GL	
Lease No.	CO10850	**ESTIMATED RKB:** 5865' KB	

SHL: 1022 FSL & 996' FEL (SESE) Section 25, T2N, R97W
40.1085225, -108.2207322 (NAD 83)
BHL: 1553' FSL & 2401' FEL (NWSE) Section 25, T2N, R97W
40.109986, -108.225753 (NAD 83)

1. & 2. Estimated Tops of Important Geologic Markers:
Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:

Formation	TVD Depth	Potential Problems	Resource
Wasatch	Surf		Gas
Wasatch Base (Fort Union Top)	1420	Shallow Gas Shows	Gas
Ohio Creek	2555		Gas
Mesaverde	3315		Gas
Rollins	6215		Gas
Illes	6390		Gas
Cozzzett	7270	Lost circulation	Gas
Corcoron	7370		Gas
PTD	7405		Gas

Anticipated BHP: 3,658 psi

3. Pressure Control Equipment (Schematic Attached):
Please see attached diagram.

4. Proposed Casing & Cementing Program:
Please see attached table.

5. Drilling Fluids Program:
Please see attached table.

6. Evaluation Program:
Mud logging program TBD.
Open hole logs will be run from TD through surface casing including GR-FDC-CNL-LIL.

7. Abnormal Conditions:
Maximum anticipated bottom hole pressure calculated at 7,405' TVD, approximately equals 4,739 psi, assuming 0.64 psi/ft bottom hole pressure gradient.

Maximum anticipated surface pressure equals approximately 3,077 psi, per Onshore Order No. 2 equation:
Max Anticipated Surface Pressure (MASP)
MASP = Pore Pressure at next csg point – (0.22 psi/ft X TVD of next csg point).
Where 0.22 psi/ft is the partially evacuated pressure gradient

8. Anticipated Starting Dates:

Drilling is planned to commence after approval of this application, pending winter location construction and drill timing.

9. Other Information:

DIRECTIONS TO LOCATION:

From Meeker, CO, drive +/- 19.9 Miles NW on HWY 64, Turn Right (North) on CR 71 and drive +/- 0.9 Miles. Lease road will be on your left.

WELL CONTROL

Pressure Control Equipment:

11" 5M with one annular and 2 rams.
BOP schematic attached.

BOP Testing:

BOP will be tested with a professional tester to conform to Onshore Order #2.
Blind and Pipe rams will be tested to rated working pressure, 5,000 psi.
Annular Preventer will be tested to 50% working pressure, 2,500 psi.
Casing will be tested to 0.22 psi / ft. or 1,500psi. Not to exceed 70% of burst strength, whichever is greater.
All lines subject to well pressure will be tested to the same pressure as the blind and pipe rams.
All BOPE specification and configurations will meet Onshore Order #2 requirements.

MUD LOGGING PROGRAM

Sample Collection:

Interval	Depth
30'	Intermediate – TD

Or as directed by KEC personnel or on site Geologist

PROPOSED DIRECTIONAL PROGRAM`

Please see attached directional plan.

CASING PROGRAM

	Depth (ft)	Hole Size (in)	Casing OD (in)	Casing ID (in)	Casing Wt (lb/ft)	Grade	Burst (psi)	Collapse (psi)	Body/Jt Yld (klbs)	Thread
Conductor	60	24	20	19.124	94.00	J-55	2110	520	1480/784	STC
Surface	250	17.5	13 3/8	12.615	54.50	J-55	2730	1130	853/514	STC
Interm.	1100	12.25	9 5/8	8.921	36.00	J-55	3520	2020	564/453	LTC
Production	7874	8.75	5 1/2	4.892	17.00	N-80	7740	6390	397/348	LTC

Casing strings will be pressure tested to 0.22 psi/ft of casing string length or to 1,500 psi whichever is greater (but not to exceed 70% of internal yield of casing), after cementing and prior to drilling out from under the casing shoe. Casing shoes shall be set in competent formation. Surface casing will have centralizers on the bottom three joints with a centralizer every three joints to 100' from surface.

Design Criteria
The casing is designed to exceed the minimum Safety Factors shown below.

Collapse:	Safety Factor	1.25
	External pressure	Mud gradient to total depth of casing string with inside of casing void
Burst:	Safety Factor	1.1
	Max. Internal Pressure	5,000 psi
Tension:	Safety Factors	1.8 joint strength
	Weight of casing in air	1.5 body yield

Assumptions:

Maximum Bottom Hole Temperature (BHT) – 180^0F
Maximum Bottom Hole Pressure (BHP) – 3658 psi (9.5 ppg EMW)
MW for each interval as described in Mud Program of this plan
Frac gradient used: 13.2 ppg @ 1100', 14.0 ppg @ 7,874'.

CEMENT PROGRAM

String	Design	Ft. of Fill	Description	Annular Capacity (ft3/ft)	Excess	Weight (ppg)	Yield (ft3/sk)	Sacks
Surface	Lead	250	Premium Type G Cement	0.6946	50%	15.8	1.15	225
Intermediate	Lead	400	Premium Type V Cement + 0.25#/sk Flocele	0.3132	50%	11.0	3.82	50
	Tail	700	Premium Type G Cement + 0.25#/sk Flocele	0.3132	50%	15.8	1.15	285
	Top Out Cement	278	Premium Type G Cement + 2% CaCl + 0.25#/sk Flocele	0.3132	0%	15.8	1.15	100
Production	Lead	3500	Conventional cmt + 1.0% extender + 0.7% retarder	0.2526	100%	12.0	2.86	615
	Tail	4374	Conventional cmt + 1.0% extender + 0.5% retarder	0.2526	40%	13.6	1.54	1000

Float Equipment and Centralizers

Surface: Guide shoe, 1 jnt, insert float. Thread lock guide shoe.

Production: Float shoe, 2 jnt, float collar. Place 1 centralizer on the first 3 joints and one every third joint thereafter.

MUD PROGRAM

Hole Size and Casing Size (in)	Depth MD (ft)	Formation Depth (ft)	Formation Top	Mud System	Mud Weight (ppg)	Potential Issues
12 1/4"	0'	0'	Wasatch	Water/Spud Mud to weighted	8.4-10	Abnormally pressured gas zones may be present in the surface hole. If it is "known" that a high Gas zone will be encountered, build a light spud mud and increase the mud weight to 9.5+ ppg prior to reaching 400'.
9 5/8"	+/- 1100'	1100'	Surface TD			
8 3/4"				Water/Gel	8.4-8.8	Lost circulation is possible. Maintain a good supply of various types of LCM on location for use as necessary.
		3,000'	MesaVerde	LSND/Gel Water	8.8-9.5	
5 1/2"	7405' TVD 7874' MD	7874'	Production TD			