

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

DISTRIBUTION		
SANTA FE		
FILE		
U.S.G.S.		
LAND OFFICE		
OPERATOR		

5a. Indicate Type of Lease	
State ☒	Fee ☐
5. State Oil & Gas Lease No.	
B-11318	

1a. TYPE OF WELL		OIL WELL ☐		GAS WELL ☒		DRY ☐		OTHER ☐	
b. TYPE OF COMPLETION		NEW WELL ☒		WORK OVER ☐		DEEPEN ☐		PLUG BACK ☐	
				DIFF. RESVR. ☐				OTHER ☐	
2. Name of Operator									
Energy Reserves Group, Inc.									
3. Address of Operator									
P.O. Box 3280 - Casper, Wyoming 82602									
4. Location of Well									
UNIT LETTER <u>M</u> LOCATED <u>1030</u> FEET FROM THE <u>South</u> LINE AND <u>860</u> FEET FROM									
THE <u>West</u> LINE OF SEC. <u>32</u> TWP. <u>29N</u> RGE. <u>12W</u> NMPM <u>San Juan</u>									
15. Date Spudded		16. Date T.D. Reached		17. Date Compl. (Ready to Prod.)		18. Elevations (DF, RKB, RT, GR, etc.)		19. Elev. Casinghead	
3-14-81		3-16-81		5-02-81		G.L. 5,622'; K.B. 5,624'		-----	
20. Total Depth		21. Plug Back T.D.		22. If Multiple Compl., How Many		23. Intervals Drilled By		Rotary Tools	
1,630' K.B.		1,583' K.B.		NA		0-1,630'		Cable Tools	
24. Producing Interval(s), of this completion - Top, Bottom, Name								25. Was Directional Survey Made	
Pictured Cliffs 1,508'-1,520' K.B.								NO	
26. Type Electric and Other Logs Run								27. Was Well Cored	
Induction Electric Log - Density & Neutron Borehole Compensated								NO	
28. CASING RECORD (Report all strings set in well)									
CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD			AMOUNT PULLED		
7"	17#	125'	9-7/8"	65 sx "B" w/2% CaCl ₂ + 1/4# Celloflake/sx			-0-		
4-1/2"	10.5#	1,622'	6-1/4"	200 sx 50-50 Pozmix w/2% Gel, 1/4# Flocele/sx + .5% CFR-2			-0-		
29. LINER RECORD									
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET		
					2-3/8"	1,520' KB	None		
30. TUBING RECORD									
31. Perforation Record (Interval, size and number)					32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.				
1,508'-10' w/1 JSPF					DEPTH INTERVAL				
1,514'-20' 10 perfs					1,508'-1,520'				
					Amount and Kind Material Used				
					Brokedown w/500 gal 7 1/2% acid + additives + 15 ball sealers.				
					Frac'd w/20,000 gal 70% Quality				
					Foam w/22,500# 10-20 sand.				
33. PRODUCTION									
Date First Production		Production Method (Flowing, gas lift, pumping - Size and type pump)					Well Status (Prod. or Shut-in)		
							SI		
Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio		
5-2-81	24	3/8"		0	250	282	NA		
Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API (Corr.)			
85	190		0	250	282	NA			
34. Disposition of Gas (Sold, used for fuel, vented, etc.)							Test Witnessed By		
VENTED DURING TEST							T.C. DURHAM		
35. List of Attachments									
SAMPLE DESCRIPTION ATTACHED									
36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.									
SIGNED <u>[Signature]</u>				TITLE <u>Production Engineer-RMD</u>			DATE <u>5-06-81</u>		

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radioactivity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1165.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico

Northwestern New Mexico

T. Anhy _____	T. Canyon _____	T. Ojo Alamo _____ 167'	T. Penn. "B" _____
T. Salt _____	T. Strawn _____	T. Kirkland-Fruitland _____ 330'	T. Penn. "C" _____
B. Salt _____	T. Atoka _____	T. Pictured Cliffs _____ 1,500'	T. Penn. "D" _____
T. Yates _____	T. Miss _____	T. Cliff House _____	T. Leadville _____
T. 7 Rivers _____	T. Devonian _____	T. Menefee _____	T. Madison _____
T. Queen _____	T. Silurian _____	T. Point Lookout _____	T. Elbert _____
T. Grayburg _____	T. Montoya _____	T. Mancos _____	T. McCracken _____
T. San Andres _____	T. Simpson _____	T. Gallup _____	T. Ignacio Qtzite _____
T. Glorieta _____	T. McKee _____	Base Greenhorn _____	T. Granite _____
T. Paddock _____	T. Ellenburger _____	T. Dakota _____	T. _____
T. Blinberry _____	T. Gr. Wash _____	T. Morrison _____	T. _____
T. Tubb _____	T. Granite _____	T. Todilto _____	T. _____
T. Drinkard _____	T. Delaware Sand _____	T. Entrada _____	T. _____
T. Abo _____	T. Bone Springs _____	T. Wingate _____	T. _____
T. Wolfcamp _____	T. _____	T. Chinle _____	T. _____
T. Penn. _____	T. _____	T. Permian _____	T. _____
T. Cisco (Bough C) _____	T. _____	T. Penn. "A" _____	T. _____

No. 1, from 1,508' to 1,520' OIL OR GAS SANDS OR ZONES
 No. 2, from _____ to _____
 No. 3, from _____ to _____
 No. 4, from _____ to _____
 No. 5, from _____ to _____
 No. 6, from _____ to _____

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from _____ to _____ feet.
 No. 2, from _____ to _____ feet.
 No. 3, from _____ to _____ feet.
 No. 4, from _____ to _____ feet.

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
			Sample Description Attached	167'	330'	163'	Ojo Alamo
				330'	1130'	880'	Kirkland
				1130'	1500'	370'	Fruitland
				1500'			Pictured Cliffs
				1630'			T.D. Driller
				1626'			T.D. Logger

Sample Description

130-40 90% Ss: clr, wht, orange, f-m-crs-vy crs-g, sbrnd,
all loose, gd por, N-S
10% Sh: dk gry-lt gry, buff, blk, firm, sme cly incl
Trace Pyrite

140-50 80% Ss: AA
20% Sh: AA, sme vy. sl. slty

150-60 AA

160-70 90% Ss: AA w/sme cly incl
10% Sh: buff, gry, blk-plty, vy. firm, sme sl sndy, sl. car

170-80 70% Ss: AA
30% Sh: AA
Trace Clystn: lt. gry, blk, vy. soft, swllng

180-90 90% Ss: clr, f-m-crs-vy-crs-g, sbrnd, most loose, sme
w/mod clyfill, sme cly incl, hard, good por, N-S
10% Clystn: AA, also wht
Trace Sh: AA
Trace Pyrite

190-200 90% Ss: AA
10% Ss: AA
Trace Clystn: AA

200-10 80% Ss: Clr-wht-lt.gry-yel-orange, sbrnd-sbang, AA
10% Ss: AA
10% Clystn: AA



210-20 90% Ss: AA
 10% Pyrite
 Trace Clystn: buff, plty, vy. soft, sl. swelling

220-30 100% Ss: AA
 Trace Sh: med-gry, blk, cherty, vy. hard

30-40 80% Ss: AA
 10% Sh: AA
 10% Clystn: AA

240-50 AA

250-60 90% Ss: clr, yel, m-crs-vy crs-g, sbrnd-sbang, all loose,
 sme cly incl, sme mafic incl, gd por, N-S
 10% Sh: lt-dk-gry, blk, cly incl, soft, sl. swelling
 Trace Clystn: AA

60-70 100% Ss: AA
 Trace Sh: AA

70-80 100% Ss: AA w/sme f-g, few pyrite ctngs

80-90 AA
 Trace Pyrite

290-300 90% Ss: clr, m-crs-g, sbang-sbrnd, fair srtng,
 all loose, gd por, N-S
 10% Pyrite
 Trace Sh: AA

300-10 80% Ss: clr, most m-g, few crs, well srted, sb rnd,
 all loose, gd por, N-S
 10% sh: med-gry, blk, vy, soft, swelling
 10% Pyrite

10-20 60% Ss: AA
 20% Sh: AA
 20% Clyst: lt-med-gry, blk, vy soft, swelling

20-30 60% Ss: AA
 30% Sh: lt-dk-gry-blk, plty, sme vy. carb, sme sl. slty,
 soft, few cly incl
 10% Clystn: AA

30-40 70% Ss: clr, wht, orange, vf-f-m-crs-g, sbrnd, most loose
 few with hvy clyfill, hard, gd por, N-S
 20% Sh: AA, sme lt. grn, bent (?)
 10% Pyrite

350-60 AA

360-70 10% Ss: clr, m-g, sbrnd, well srted, carb incls, clean,
soft, sl. por, N-S
80% Sh: lt-med gry-blk, most slty, sme sndy, blk, sl. to
vy. carb, firm
10% Pyrite

370-80 90% Sh: AA
10% Clystn: wht, buff, blk, vy. soft, sl. carb, sl. swelling
Trace Ss: AA

80-90 100% Sh: AA
Trace Ss: AA

390-400 90% Sh: AA
10% Clystn: AA
Trace Pyrite

400-10 100% Sh: med-lt-dk gry-buff, plty, carb, cly incls,
slty, sme sndy, sme cherty, soft-hard

10-20 40% Ss: sht, vf-f-g, sbrnd, fair srtng, cly incls, carb,
sl. to hvy.clyfll, firm-soft, vy. sl. por, N-S
60% Sh: AA

20-30 30% Ss: AA
70% Sh: AA
Trace Pyrite

430-40 60% Ss: clr-wht-yel-orange, sbrnd, f-m-g, most
loose, sme w/sl. to mod clyfll, friable, gd por, N-S
40% Sh: lt gry-dk gry-grn gry, plty, sl. carb, firm.

40-50 AA

450-60 70% Ss: clr, vf-f-g, sbang-sbrnd, vy. few w/hvy clyfill, rest
clean, gd por, N-S
30% Sh: AA

460-70 30% Ss: wht, vf-f-g, sbrnd-sbang, fair srtng, mod to
hvy clyfll, sme shly, sl. carb, soft, tite, N-S
70% Sh: lt-dk gry, buff, blk-plty, sme carb, sme slty,
sme sndy, few chrt, most soft, many cly incls.
Trace Pyrite

470-80 50% Ss: AA
50% Sh: AA
Trace Pyrite

480-90 30% Ss: wht, f-m-g, sbang, fair srtng, mod clyfll,
few cly incls, pyrite ctngs, friable-hard, vy sl.
por, N-S
70% Sh: lt-dk gry, buff, blk-y-plty, sme carb, sme slty,
sme sndy, few chrty, most soft, many cly incls
Trace Pyrite

470-80 50% Ss: AA
50% Ss: AA
Trace Pyrite

480-90 30% Ss: wht, f-m-g, sbang, fair srtng, mod clyfll,
few cly incls, pyrite ctngs, friable-hard, vy sl. por
N-S
70% Sh: AA
Trace Clystn: buff, blk-y, vy soft, sl. swelling, sl. carb

90-500 40% Ss: AA
60% Sh: AA w/increasing chertiness
Trace Pyrite

500-10 60% Ss: clr, wht, org, m-crs-g, sbrnd, most loose, sme w/
sl clyfll, gd por, N-S
40% Sh: AA

10-20 50% Ss: AA
50% Sh: lt gry-grn gry, blk-y-plty, many chrty, many sndy,
sme slty, carb, soft-firm, sme bent
Trace Pyrite

20-30 AA

530-40 60% Ss: clr-wht-yel-org, sbrnd, vf-f-m-crs-g, poor srtng,
most loose, sme w/mod clyfll, carb, ark, friable to
hard, most gd por, N-S
40% Sh: AA

540-50 30% Ss: wht, vf-m-g, sbrnd-sbang, fair srtng, vy.sl. to
mod clyfll, carb, ark, soft, tite, N-S
70% Sh: lt-med gry, blk-y, sl. carb, sme sndy, firm-soft

550-60 20% Ss: AA
70% Sh: AA
10% Clystn: wht-lt gry, plty, carb, vy soft

60-70 20% Ss: AA
80% Sh: AA

70-80 10% Ss: wht, vf-f-g, sbrnd, well srted, hvy clyfll, carb,
ark, soft, tite, N-S
90% Sh: AA
Trace Pyrite

80-90 20% Ss: AA
80% Sh: AA, many sndy, sme wxy

90-600 AA

600-10 10% Ss: clr, wht, f-m-g, sbang, fair srtng, sl. to mod
clyfll, soft, tite, N-S
90% Sh: lt-med gry-grn gry, blk, few sndy, few slty,
carb, firm.

610-20 10% Ss: AA
90% Sh: AA
Trace Clystn: wht, blk, vy. soft
Trace Pyrite

20-30 100% Sh: lt-med-dk gry, blk-plty, sndy-slty,
sme chrty, cly incl, firm
Trace Ss: wht, m-g, sbang, well srted, sl. clyfll, friable,
fair por, N-S

30-40 80% Sh: AA
20% Clystn: lt. gry, blk, carb, vy. soft, vy sl. swelling

40-50 AA

650-60 100% Sh: AA

60-70 10% Ss: wht, f-m-g, sbrnd, fair srtng, mod to hvy clyfll,
cly incl, sl. carb, soft, tite, N-S
80% Sh: AA
10% Clystn: wht, AA
Trace Pyrite

70-80 10% Ss: AA
80% Sh: AA, sme sl. swelling
10% Clystn: AA

80-90 100% Sh: med gry-wht, blk-plty, many vy. sndy, many
slty, few chrty, cly incl, carb, firm-soft
Trace Ss: AA

90-700 80% Sh: AA
20% Clystn: buff-wht-lt.gry, blk, sme scrted quartz
grns, sl. carb, vy. soft, swelling
Trace Ss: AA

700-10 100% Sh: lt. gry-rd brn, most vy. slty, many sndy,
many cly incls, plty, firm

10-20 10% Ss: wht, f-f-g, sbrnd, well srted, mod clyfll, carb,
sl. ark, firm, sl. por, N-S
90% Sh: AA
Trace Clystn: lt. gry, blk, soft

20-30 100% Sh: grn gry, lt. gry, blk, most chrty, many cly
incls, hard-firm
Trace Ss: AA

30-40 10% Ss: AA
90% Sh: AA

740-50 AA

750-60 AA

760-70 30% Ss: wht, f-m-crs-g, sbang-sbrnd, sl. to mod. clyfll,
cly incls, hard, sl. por, N-S
70% Sh: lt-dk gry, blk, many cly incls, sme chrty,
sme sndy, few slty, firm
Trace Coal: dk brn, plty, vy. hard, cly incls
Trace Pyrite

770-80 40% Ss: AA
50% Sh: AA
10% Coal: AA

780-90 20% Ss: wht-clr, m-g, sbang, well srted, sl. clean, carb
incls, hard, sl. por, N-S
60% Sh: AA
20% Clystn: wht, blk, few scttrd qtz grns, vy. swllng,
vy/ soft.

790-800 30% Ss: AA
60% Sh: AA
10% Clystn: AA
Trace Coal: dk brn-blk, plty, cly incls, vy. hard
Trace Pyrite

800-10 10% Ss: AA
90% Sh: AA

810-20 10% Ss: clr, m-g, sbang, clean, well srted, hard, sl. por, N-S
90% Sh: lt gry-brn, blk-plty, slty, sme sndy, many cly
incls, sl. carb, hard
Trace Coal: blk, blk, hard, few cly incls

820-30 10% Ss: AA, sme shly
90% Sh: AA
Trace Inoceramus frags

30-40 20% Ss: wht-lt.gry, f-m-g, sbrnd, mod clyfll,
cly incls, friable, sl. por, N-S
70% Sh: AA
10% Clystn: lt. brn, blk, carb, soft.

840-50 90% Sh: AA
10% Clystn: AA

50-60 10% Ss: gry, mg, sbang, sl cly fld, cly incls, sl calc, fri,
sl por, N-S 90% Sh: AA

60-70 20% Ss: wht, f-mg, sbang, sl to mod cly fld, cly incls,
vy sl carb, sl calc, sft, tite, N-S
80% Sh: AA

70-90 10% Ss: AA, but w/incr. shaliness, few pyrite incls,
90% Sh: lt-med gry, many sndy, most slty, sl carb, cly
inclcs, frm-hard
Tr. Clyst : brn, blk, carb, vy sft, vy sl swlg

90-900 20% Ss: wht, f-mg, sbang-sbrnd, fair srtg, sl carb, sl ark,
calc, in part, fri-sft, sl to mod cly fld, sl por, N-S
80% Sh: AA

900-10 20% Ss: AA
80% Sh: AA, but also red-brn
Tr. Pyrite

10-20 30% Ss: wht, f-mg, sbang-sbrnd, wl srtg, mod to hvy cly fld,
sl carb, sl ark, most calc, fri, sl por, N-S
70% Sh: AA
Tr. Pyrite

20-40 30% Ss: wht, vfn-mg, sbrnd, clean to mod cly fld, sl calc
sl carb, sft-fri, fair to sl por, N-S
70% Sh: lt-med gry, grn-gry, plty, carb, sme chrty & hard,
few cly inclcs, most frm-sft

40-50 40% Ss: AA
60% Sh: AA
Tr. Coal: blk, blk, cly inclcs, hard
Tr. Pyrite

50-70 30% Ss: wht, vfn-f-g, sbrnd, mod-hvy cly fld, sme calc,
vy sl carb, sl ark, sft, tite, N-S
70% Sh: AA

70-80 30% Ss: AA, w/sbang, some sl por, N-S
60% Sh: AA
10% Coal: AA

80-90 20% Ss: AA, w/sme pyrite ctngs
80% Sh: AA
Tr. Coal: AA

90-1000 10% Ss: AA
90% Sh: AA

1000-10 90% Sh: AA
10% Clystn: AA
Tr. Ss: AA and Tr. Pyrite

1010 - 20 10% Ss: buff-wht, f-mg, sbrnd, wl srted, carb, vy sl
 cly fld, calc, ark, fri, fair por, N-S
 80% Sh: AA, w/sme pyrite ctngs
 10% Clystn: AA

20 - 30 20% Ss: wht, vfn-fg, mod cly fld, AA, but sft, tite, N-S
 70% Sh: AA
 10% Clystn: AA

30 - 40 30% Ss: AA
 70% Sh: lt-med gry, med brn, plty, carb, sme cly incl, s, sndy in part, sme slty, frm

40 - 50 20% Ss: clr, mg, sbrnd, wl srted, vy sl cly fld to mod
 cly fld, carb, sme calc, ark, fri, sme fair por, N-S
 70% Sh: AA
 10% Clystn: wht-buff, blk, vy sft, vy swlg

50 - 60 10% Ss: AA
 90% Sh: AA

60 - 70 20% Ss: wht, mg, sbrnd, mod-hvy cly fld, sme shly AA, but
 sft, tite, N-S
 70% Sh: AA
 10% Clystn: AA
 Tr. Pyrite

70 - 80 10% Ss: AA
 80% Sh: AA
 10% Clystn: AA, also carb

80 - 90 20% Ss: wht, f-mg, sbrnd, wl srted, sl-mod cly fld, carb,
 sme calc, sl ark, sme shly, fri-sft, some sl por, N-S
 60% Sh: AA
 20% Clystn: AA, w/sme scatt. qtz. grns
 Tr. Coal: blk, vit, blk, few cly incl

90 - 1100 20% Ss: AA
 70% Sh: AA
 10% Clystn: AA

1100 - 10 20% Ss: AA, w/sme sbang, sme vy carb
 50% Sh: AA
 20% Clystn: buff-lt gry, blk, sme wxy looking, vy sft,
 sl carb, sme sl swlg
 10% Coal: AA, sme striated

10 - 20 20% Ss: clr-wht, vfn-mg, sbrnd, fair srtg, clean-mod cly
 fld, carb, ark, calc, most sft, poss sl por, N-S
 80% Sh: lt gry-dk brn-med gry, blk, vy carb, sme pyrite
 incl, many slty, frm
 Tr. Pyrite and Tr. Coal: AA

20 - 30 10% Ss: AA
 80% Sh: AA, w/sme sndy
 10% Coal: blk, vit-earthly, blk, cly incl, hard

30 - 40 30% Ss: wht, vfn-g, sbrnd, wl srted, mod cly fld, carb,
 ark, calc, sft, tite, N-S
 60% Sh: AA
 10% Coal: AA
 Tr. Calcite: buff, vy crs-xln, sbang, transl, lse

40 - 50 10% Ss: AA
 80% Sh: AA, w/sme vy sndy, sme chrty
 10% Coal: AA
 Tr. Pyrite

50 - 60 10% Ss: AA
 90% Sh: AA

1160 - 70 50% Ss: wht, vfn-m-g, sbrnd-sbang, cln to vy sl cly fld,
sl carb sl ark, calc in part, sme shly w/hvy cly
fill, hard-sft, sme fair por, N-S
50% Sh: AA, w/sme grn & bent.

70 - 80 LCM

80 - 1200 30% Ss: AA, sme vy carb
50% Sh: lt-med gry, plty, lam, sme fissile, many slty,
carb, frm
20% Clystn: lt brn, blk, carb, vy sft, swlg
Tr. Pyrite

1200 - 10 50% Ss: wht-lt gry, f-mg, sbrnd, wl srted, vy sl to mod
cly fld, carb, vy calc, fri, fair por, dull org fluor
w/vy wk cut
50% Sh: lt gry-dk gry-brn, plty, sl carb, sme slty, cly
incls, frm

10 - 20 AA, w/cut AA
Tr. Coal: blk, earthy, blk, hard
Tr. Pyrite

20 - 30 40% Ss: wht-clr, f-mg, sbrnd, sme clean, sme vy sl-mod
cly fld, carb, calc, ark, fri-sft, fair por, dull org
fluor w/vy wk cut
60% Sh: AA
Tr. Pyrite

30 - 40 50% Ss: AA, w/cut AA
50% Sh: AA

40 - 50 30% Ss: wht, mg, sbrnd-sbang, wl srted, vy sl-mod -hvy cly
fld, carb, ark, vy calc, hard, sl por, fluor and cutAA
50% Sh: AA
10% Clystn: buff, blk, sl carb, vy sft
10% Pyrite

50 - 60 30% Ss: wht, vfn-f-mg, AA, but sl-hvy cly fld, vy sl por, N-S
60% Sh: AA, w/sme lam, sme waxy
10% Clystn: AA
Tr. Coal: blk, vit, blk, pyrite ctng

60 - 70 40% Ss: wht, mg, sbrnd, wl srted, mod-hvy cly fld, calc,
carb, ark, hard-sft, poss vy sl por, N-S
50% Sh: AA, sme sl swlg.
10% Clystn: AA
Tr. Pyrite

70 - 80 30% Ss: AA
70% Sh: med gry-lt brn-grn, plty-blk, carb, vy few pyrite
incls, cly incls, sme lam, frm

80 - 1300 30% Ss: AA
60% Sh: AA
10% Coal: AA
Tr. Pyrite

1300 - 10 30% Ss: wht-lt gry, vfn-mg, sbrnd, vy sl-mod cly fld, calc,
carb, ark, hard-frm, sme sl por, N-S
70% Sh: AA
Tr. Coal: blk, vit, blk, many cly incls

10 - 20 30% Ss: AA
40% Sh: AA
20% Clystn: buff-brn-wht, blk, sme scatt. qtz. grns,
sl carb, vy sft, sme swlg.
10% Coal: AA

20 - 30 20% Ss: AA
80% Sh: AA
Tr. Coal: AA

1330 - 40 20% Ss: wht, mg, sbrnd, wl srted, vy sl-sl cly fld, carb,
 ark, vy calc, frm, fair por, N-S
 70% Sh: AA
 10% Pyrite
 40 - 50 20% Ss: AA
 60% Sh: lt gry-brn, plty, carb, sme cherty, sme sndy,
 sme slty, sme cly incls, most frm, sme sft
 20% Coal: blk, vit, blk, sme cly incls, sme pyrite ctngs
 50 - 70 30% Ss: wht-clr, vfn-mg, sbrnd, clean to sl cly fld, AA, N-S
 50% Sh: AA
 20% Coal: AA
 70 - 80 40% Ss: AA
 50% Sh: AA
 10% Coal: AA
 Tr. Pyrite
 80 - 90 30% Ss: wht, mg, sbrnd, wl srted, mod-hvy cly fld, carb,
 calc, ark, sft, tite, N-S
 60% Sh: AA
 10% Coal: AA
 Tr. Pyrite
 90 - 1400 30% Ss: AA
 50% Sh: AA, w/sme sl swlg
 20% Coal: AA
 1400 - 10 40% Ss: wht, mg, sbang, wl srted, vy sl-mod cly fld, carb,
 ark, most vy calc, fri, sme fair por, N-S
 50% Sh: AA
 10% Coal: AA
 10 - 20 30% Ss: AA
 50% Sh: AA
 10% Coal: AA
 10% Pyrite
 20 - 30 30% Ss: AA, w/sme fg, sme sl glauc
 60% Sh: gry-brn-grn, blk-plty, sme cherty, sme slty,
 sl carb, sme sl swlg, hard-frm
 10% Pyrite
 Tr. Coal: AA
 30 - 40 30% Ss: AA
 70% Sh: AA
 Tr. Pyrite
 40 - 50 40% Ss: wht, mg, sbrnd, wl srted, vy sl-sl cly fld, carb, sl
 ark, calc, hard
 50% Sh: AA
 10% Coal: AA
 50 - 60 30% Ss: AA
 70% Sh: buff, gry, lt brn, red-brn, plty-blky, sl carb,
 sme cherty, sme sl slty, hard
 Tr. Pyrite
 60 - 70 AA, w/tr. Coal
 70 - 90 10% Ss: wht, vfn-mg, AA
 90% Sh: AA
 Tr. Coal: AA
 90 - 1500 10% Ss: wht, f-mg, sbang-sbrnd, vy sl clyfld, sl carb, sl
 ark, vy calc, fri, fair por, N-S
 50% Sh: AA
 40% Coal: blk, vit, blk, sme cly incls, hard

1500 - 10 20% Ss: wht, vfn-mg, sbrnd-sbang, vy sl to mod cly fld,
carb, few pyrite inclcs, sl ark, calc, fri-sft, sme fair
por, N-S
60% Sh: lt gry-red brn-buff, blk, slty, carb, calc in
part, frm
20% Coal: AA
Tr. Pyrite

10 - 30 20% Ss: AA
40% Sh: AA
20% Coal: AA
10% Calcite: clr, vy crs-xln, sbang, transl, lse
10% Pyrite

30 - 40 30% Ss: wht, mg, sbrnd, wl srted, clean to vy sl cly fld,
carb, ark, calc, hard, sl por, N-S
40% Sh: AA
20% Coal: AA, w/many pyrite frac. fillings
10% Pyrite

40 - 50 50% Ss: AA, w/sme vy sl glauc, sme fri
30% Sh: AA
10% Coal: AA
10% Pyrite

50 - 60 60% Ss: wht, f-mg, sbrnd, fair srtng, sl to mod cly fld,
carb, ark, vy calc, fri-hrd, sl por, N-S
20% Sh: AA
20% Coal: AA, w/no pyrite
Tr. Pyrite

60 - 80 50% Ss: AA
20% Sh: AA
20% Coal: AA
10% Pyrite

80 - 90 40% Ss: AA, w/sl to mod to hvy cly fld, sme sft and tite, N-S
40% Sh: gry-brn, plty-blk, sme slty, carb, sme cly inclcs,
sl swlg
10% Coal: blk, vit, blk-plty, hard
10% Pyrite

90 - 1600 40% Ss: wht, vfn-mg, sbrnd, fair srtng, mod to hvy cly fld,
carb, ark, calc, most sft, tite, N-S
60% Sh: AA
Tr. Calcite: wht, vy crs-xln, sbang, lse

1600 - 10 40% Ss: AA
40% Sh: AA
20% Coal: AA, w/sme cly inclcs

10 - 20 60% Ss: AA, sme sl shly, sme vy sl glauc
10% Sh: AA
30% Coal: blk, vit, blk, hard
Tr. Clystn: buff, blk, carb, vy sft, swlg

20 - 30 30% Ss: AA, w/hvy cly fld, carb, calc, shly, sft, tite, N-S
10% Sh: gry, blk, vy carb, frm
50% Clystn: AA, w/sme scatt. qtz. grns
10% Coal: AA

1630' TD