Form 9-33
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: SF-078828-A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME: Gallegos Canyon Unit

8. FARM OR LEASE NAME:

2. NAME OF OPERATOR: Energy Reserves Group, Inc.

9. WELL NO.: 311

3. ADDRESS OF OPERATOR: P.O. Box 3280 - Casper, Wyoming 82602

10. FIELD AND POOL, OR WILDCAT: West Kutz Pictured Cliffs

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface ~~1,100~~ 1110' FSL & 1,100' FWL (SW/SW)
At top prod. interval reported below
At total depth

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 14-T28N-R12W

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: San Juan | 13. STATE: New Mexico

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
2-22-81	2-25-81	4-09-81	KB 5,720' (GRD + 2')	----------

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
1,800' K.B.	1,758' K.B.	NA	→	Surface to T.D.	----------

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
1,579'-87' K.B. Pictured Cliffs

25. WAS DIRECTIONAL SURVEY MADE: NO

26. TYPE ELECTRIC AND OTHER LOGS RUN
Induction Electric Log & Density & Neutron Borehole Compensated

27. WAS WELL CORED: NO

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
7"	17#/ft	124' KB	9-7/8"	50 sx Class "B" w/2% CaCl, & 1/4# Flocele/sk.	-0-
4-1/2"	10.5#/ft	1,799' KB	6-1/4"	325 sx 50-50 Pozmix w/2% Gel & 1/4# Flocele/sk.	-0-

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
		None		

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8"	1,610' KB	No

31. PERFORATION RECORD (*Interval, size and number*)
1,579'-87'; 0.39" hole; 9 holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
1,579'-87' KB	Breakdown: See Back Fracture: See Back

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
4-09-81	Flowing	SI

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
4-13-81	24	1/2"		NA	465	135	NA

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
125 psi	SICP 240psi		NA	465	135	NA

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)
VENTED DURING TEST

TEST WITNESSED BY: T.C. DURHAM

35. LIST OF ATTACHMENTS
SAMPLE DESCRIPTIONS

ACCEPTED FOR RECORD

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Bobby Patrick TITLE Production Engineer- RMD DATE 4-16-81

APR 20 1981
FARMINGTON DISTRICT
BY RB

*(See Instructions and Spaces for Additional Data on Reverse Side)

NMOCC

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.
If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.
Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.
Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.
Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.
Item 29: "*Sacks Cement*": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.
Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
No DST's were run.			See Attached Continued from other side Breakdown - BD perfs 1,579'-87' w/500 gals. 7-1/2% HCl plus additives. Fracture - Frac'd perfs 1,579'-87' w/ 10,000 gals. gelled-wtr pad, 2000 gals. wtr, 5000 gals.70% Foam pad, 15,000 gals foam w/ 40,000# 10-20 sd.

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
LOG TOPS		
Nacimiento	Surface	
Ojo Alamo	337'	
Kirtland	436'	
Fruitland	1,239'	
Pictured Cliffs	1,561'	
Lewis	1,758'	
T.D. Logger	1,796'	
Driller	1,800'	

U.S. GOVERNMENT PRINTING OFFICE : 1963 O-683636

SAMPLE DESCRIPTION

120-130	10% Ss: clr, vf-m-g, sbrnd, loose, good por, N-S 90% Sh: lt. gry-rd. brn, blky, soft
30-40	10% Ss: clr, wht, vf-m-g, most loose, sme hvy. clyfll, glauc, sme shly and soft, sme good por, N-S 90% Sh: AA
40-50	10% Ss: AA, all loose 90% Sh: AA w/sme grn, chrty, hard, sme slty
150-60	10% Ss: AA, sme yel 90% Sh: grn-lt gry-rd brn, blky, v. sl. carb, sme slty, sme sndy, sme bent and chrty, most soft-firm Trace Pyrite
60-70	20% Ss: clr, wht, vf-f-g, sbrnd, most loose, sme mod. to hvy clyfll, v. sl. glauc, sme good por. N-S 80% Sh: AA Trace Clyst: wht, blky, v. soft, swllng, scattered sand grains throughout
70-80	AA
80-90	10% Ss: AA 90% Sh: AA
90-200	10% Ss: AA, but f-m-g 90% Sh: gry-rd. brn, blky, sme slty-sndy, cly incls, soft-firm
200-10	10% Ss: clr, vf-m-g, sbang-sbrnd, sl. to v. clyflld, sme shly and swlng, sl.carb, sme soft, most gd por, N-S Trace Clyst: AA
10-20	10% Ss: AA, sme v. sl. glauc 90% Sh: AA
20-30	10% Ss: clr, m-g, sbrnd, loose, gd por, N-S 90% Sh: AA, sme wxy
30-40	100% Sh: lt. gry, brn, blky, soft
40-50	90% Sh: AA 10% Clyst: gry, wht, buff, blky, v. soft, few scattered quartz grains, swllng
250-60	90% Ss: clr, org, m-crs-g, sbang, loose, gd por, N-S 10% Sh: lt. grn-rd brn-gry, blky, soft

60-70
90% Ss: AA
10% Sh: AA w/sme cly incls, sl. carb

70-80
100% Ss: clr, wht, org, m-crs-g, sbang-sbrnd, fair srtng, most loose, sme mod. clyfll, sl. glauc, sme hard, v.sl. calc, sme gd por, N-S
Trace Sh: gry, blky, clyey, carb, soft

80-90
100% Ss: AA w/sme lt. grn
Trace pyrite

290-300
90% Ss: AA
10% Sh: rd brn-lt gry, blky, sl. slty, soft
Trace Clyst: buff, blky, soft, v. sl. carb

300-10
40% Ss: clr, m-crs-g, sbang, loose, good por, N-S
60% Sh: lt. gry, brn, rd-brn, blky, sme slty, vy. sl. carb, sl. glauc, most soft, sme firm

10-20
60% Ss: AA, sme mod clyfll, carb, hard, tite, N-S
30% Sh: AA
10% Pyrite
Trace Calcite: clr, buff, v-crs-xln, sbang, translucent, loose

20-30
70% Ss: clr, wht, org, f-crs-g, sbang-sbrnd, most loose, sme sl. clyfll, cly incls, sme calc, sme gd por, N-S
30% Sh: AA
Trace Pyrite

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

40-50
90% Ss: AA w/sme pyrite ctngs
10% Sh: 4d-brn, grn, gry, blky, sme slty, sme sndy, sme sl. bent, soft
Trace Pyrite

350-60
60% Ss: clr, org, wht, vf-vy crs-g, poorly srtd, sbang-sbrnd, few sl calc, most loose, sme hvy clyfll, sme gd por, N-S
40% Sh: AA
Trace Pyrite
Trace Clyst: why, plty, sl. carb, v. soft

360-70
30% Ss: clr, wht, m-v.crs-g, sbrnd-sbang, most loose, sme sl. clyflld, sme carb, sme sl. calc, sl. to go. por, N-S
70% Sh: lt gry-rd brn-brn, blky, clyey, sme wxy, most firm
Trace Pyrite

70-80	100% Ss: AA w/sme pyrite incls.
80-90	80% Ss: AA 10% Sh: AA 10% Clyst: buff, blky, v. soft, sl. swlng Trace Pyrite
90-400	70% Ss: clr, wht, org, m-crs-g, sbrnd-sbang, all loose, pyrite incls, sme mafic incls, god por, N-S 20% Sh: AA 10% Pyrite
400-10	40% Ss: AA 60% Sh: lt-med-gry, blky, mafic incls, sme cly incls, sme chrty, firm-soft
10-20	30% Ss: clr, wht, org, m-v.crs-g, sbrnd-sbang, all loose, good por, N-S 70% Sh: AA w/sme rd-brn, slty Trace Clyst: AA
20-30	20% Ss: AA 80% Sh: brn, lt. gry-rd brn, blky, sme slty, sme sndy, most firm, sl. carb
430-40	20% Ss: AA, sme w/hvy clyfll and shly 8-% Sh: AA, sme grn, bent, v. few pyrite incls.
40-50	50% Ss: AA 50% Sh: AA Trace Clyst: wht, blky, sl. carb, v. soft, swllng
450-60	40% Ss: clr, m-crs-g, sbang, fair srtng, loose, gd por, N-S 50% Sh: gry, blky, sl. carb, sl. cly incls, firm 10% Clyst: buff, org, yel, blky, soft
60-70	20% Ss: AA 40% Sh: AA 40% Clyst: AA Trace Pyrite
70-80	90% Sh: lt-med gry, blky, most wxy, firm 10% clyst: AA Trace Ss: AA
80-90	10% Ss: AA 90% Sh: AA, w/sme plty
90-500	100% Sh: gry-rd brn, blky, sl. slty, firm

500-10
10% Ss: wht, vf-f-g, sbrnd, well srtd, hvy clyfll, vy. sl. carb, cly incls, friable, sme hard, tite, N-S
80% Sh: grn-gry, blky, sme slty, most bent, cly incls, pyritic ctngs, sl. carb, firm
10% Clyst: buff, brn, mottled, blky, soft, sl swllng

510-20
70% Ss: wht, grn, vf-m-g, sbrnd, prl srtd, sl. to vy. clyflld, sl. carb, glauc, few loose, sme vy sl. calc, firm, tite, N-S
30% Sh: AA
Trace Pyrite

20-30
20% Ss: AA, most loose
80% Sh: grn-lt-dk-gry-dk brn, blky, most slty, carb, sme sndy, bent, sme swllng, most soft

30-40
20% Ss: wht, f-g, sbrnd, shly and swllng, sl. carb, soft, tite, N-S
70% Sh: AA
10% Clyst: brn, blky, v. soft, swllng

40-50
40% Ss: AA
60% Sh: AA

550-60
10% Ss: AA
90% Sh: grn-med gry, blky, sndy, bent, cly incls, sl. carb, firm

60-70
10% Ss: wht, f-m-g, sbrnd, mod. clyfll, ark, vy. sl. carb, soft, sme shly, tite, N-S
90% Sh: AA
Trace Clyst: buff, blky, clyey, v. soft

70-80
100% Sh: AA
Trace Clyst: AA

80-90
No Sample

590-600
10% Ss: wht, f-g, sbrnd, w/srtd, hvy clyfll, sl. carb, vy sl. ark, calc, hard, tite, N-S
90% Sh: AA w/sme pyrite incls and ctngs, sme wxy
Trace Pyrite

600-10
AA but no pyrite
Trace Clyst: wht, AA

10-20
20% Ss: sht, lt grn, f-m-g, sbrnd, sl. to mod. clyfll, carb, sme sl. bent, calc, vy. sl. glauc, hard, poss. sl. por, N-S
80% Sh: grn-med gry-brn, blky, most slty, most bent, carb, sme wxy, firm
Trace Pyrite

20-30	20% Ss: AA, w/sme pyrite ctngs 70% Sh: AA, sme laminated 10% Pyrite
30-40	20% Ss: wht, f-m-g, sbrnd, fair srtng, sme clean, sme heavy clyfll, sme shly and swllng, carb, sme friable, sme soft, poss. sl. por. N-S 80% Sh: AA
40-50	30% Ss: AA 70% Sh: AA
650-60	100% Sh: lt-dk-gry, grn, lt. brn, blky-plty, carb, sme wxy, sme cherty, sme bent, firm Trace Ss: AA
660-70	100% Sh: AA Trace Pyrite
70-80	10% Ss: wht, f-g, sbrnd, sl srtd, mod. clyflld, vy. sl. carb., friable, sl. por, N-S 90% Sh: lt gry, brn, dk gry, blky, most slty, sme cherty, sl. carb, firm
80-90	10% Ss: AA w/sme shly and swllng 90% Sh: AA, sme wxy
90-700	AA
700-10	10% Ss: AA 80% Sh: AA 10% Pyrite
10-20	100% Sh: lt gry-dk gry-grn, rd brn, sme slty, blky, sme bent, sme slty, v. sl. carb, sme wxy, firm-soft Trace SS: AA Trace Pyrite
20-30	100% Sh: AA w/sme glauc
30-40	90% Sh: AA 10% Clyst: wht, blky, sl. carb, v. soft, swllng, scattered quartz grains
40-50	100% Sh: gry, grn, blky, sl. carb, sme cly incls., firm Trace Calcite: wht, crs-xln, sbang, translucent, loose

750-60 100% Sh: gry-grn, dk brn, blky, sme slty, sme bent, vy. sl. carb, firm
Trace Ss: wht, m-g, sbrnd, w/srtd, mod clyfll, sl. carb, sl. glauc, sl. ark, firm, sl. por, N-S
Trace Coal: blk, vit, clyey, blky, hard

60-70 20% Ss: AA, sme w/hvy clyfll, sme pyrite incls.
80% Sh: AA, sme lt brn, sme wxy
Trace Clyst: AA

70-80 AA

80-90 Sh: 100% Ss: lt gry-dk gry-gn-brn, blky-plty, sme bent, sme chrty, sme wxy, firm
Trace Calcite: AA

90-800 AA

800-10 100% Sh: AA, sme rd-brn, some soft
Trace Calcite: AA

10-20 100% Sh: AA
Trace Ss: wht, m-g, sbang, wl srtd, mod clyfll, poss. sl. por, N-S

20-30 100% sh: lt gry-dk gry-brn-grn, blky-plty, sl. carb, sme bent, sme chrty, sme slty, firm-soft
Trace Ss: wht, vf-g, sbrnd, v. clyflld and shly and swlng, soft, tite, N-S

830-40 10% Ss: AA w/sme v. clyflld but not swllng, sl. carb
90% Sh: AA

840-50 AA

850-60 20% Ss: wht, f-m-g, sbrnd, sl to vy clyflld, v. sl. carb, few cly incls, hard, most tite, N-S
80% Sh: AA

60-70 100% Sh: gry, grn, buff, blky, sme chrty, sme bent, vy few cly incls, most slty, sme wxy, most firm

70-80 No Sample

880-90 100% Sh: AA

90-900 90% Sh: AA
10% Clyst: wht, buff, blky, v. soft, vy. sl. carb, swllng
Trace Pyrite

900-10
20% Ss: wht, f-m-g, sbrnd, fair srtng, sl. to [illegible] clyfll, sl. carb, vy. sl. glauc, vy. sl. [illegible] v. calc, har, sl. por, N-S
80% Sh: grn, lt-med gry, carb, sme bent, blky, sme vy. slty, sme cherty, sme wxy, most firm
Trace Pyrite

10-20
10% Ss: AA w/sme m-g and loose, sme shly and swlng
90% Sh: AA

920-30
20% Ss: wht, lt. grn, m-g, well srtd, sbrnd, mos[illegible]oose, sme mod clyfll, ark, glauc, carb, calc, har[illegible] sl. to gd por, N-S
80% Sh: AA, sme w/pyrite ctngs
Trace Pyrite

30-40
20% Ss: AA
60% Sh: AA, also buff
10% Calcite: clr, v-crs-xln, sbang, translucent, loose
10% Pyrite

40-50
No Sample

950-60
30% Ss: wht, f-m-g, sbrnd, sme loose, sl. to [illegible] clyflld, carb, sl. ark, calc, pyrite incls, friable, sme sl. por, N-S
70% Sh: grn, gry, rd-brn, blky, carb, sme bent and chrty, sme clyey, most firm, some soft
Trace Pyrite and Marcasite

60-70
30% Ss: AA
70% Sh: AA

70-80
30% Ss: AA
70% Sh: AA, but sme plty

80-90
AA

90-1000
20% Ss: AA
80% Sh: AA
Trace Pyrite

1000-1010
20% Ss: wht, f-g, sbrnd, wl srtd, mod to hvy. clyfll, sme shly and swllng, friable-soft, poss. sl. por, N-S
80% Sh: AA

1010-20
20% Ss: wht, clr, f-crs-g, sbrnd, AA, sme loose
80% Sh: lt. gry, grn, brn, blky, vy sl. carb, sme slty, sme sndy, sme bent, hard-firm
Trace pyrite

20-30
70% Ss: wht, clr, yel, f-crs-g, sbrnd, most loose, sme hvy clyfll, sme shly and swllng, sme gd por, N-S
30% Sh: lt-med-gry, blky-plty, soft

30-40
70% Ss: AA
30% Sh: AA w/sme grn, chrty, bent, hard, vy sl. carb

40-50
50% Ss: wht, m-g, sbrnd, v. sl. clyflld to v. clyflld, carb, glauc, poss. sl. por, N-S
30% Sh: AA
20% Pyrite

1050-60
40% Ss: AA
40% Sh: gry, grn, brn, blky-plty, sl. carb, sme slty, sme wxy, most bent, hard-firm
20% Pyrite

60-70
20% Ss: wht, f-m-g, sbrnd-sbang, mod to hvy clyfll, sl. ark, sl. carb, calc, most soft, tite, N-S
80% Sh: AA

1070-80
20% Ss: AA
80% Sh: gry, buff, plty, v. sl. carb, v. few cly incls, most wxy
Trace Pyrite

1080-90
10% Ss: wht, brn, vf-m-g, sbrnd, mod clyfll, sl. carb, most soft and tite, w/grain of stained, hard Ss which had dull brn-gld fluor. w/vy wk. yel. cut
90% Sh: AA

90-1100
10% Sh: AA
Trace Ss: AA, but none stained, no show

1100-10
10% Ss: wht, f-b, sbrnd, sl srtd, sl. to mod clyfll, calc, vy. sl. ark, vy. sl. carb, friable-hard, sl. por, N-S
80% Sh: lt-dk gry, brn, grn, blky, carb, sme sndy, sme wxy, most firm, sme hard
10% Clyst: brn, buff, blky, carb, v. soft

10-20
20% Ss: AA
70% Sh: AA
10% Chert: clr, yel, crs-v. crs- g, sbrnd, translucent, loose
Trace Calcite

1120-30
30% Ss: wht, clr, vf-m-g, sbrnd, sl. ark. vy. sl. glauc, vy. sl. to mod clyfll, vy sl carb, vy calc, friable, sl. por, N-S
60% Sh: AA w/sme lam
10% Clyst: AA
Trace Pyrite
Trace Calcite

30-40
10% Ss: AA
80% Sh: gry, brn, blky-plty, sme cly incls, sl. carb, firm
10% Clyst: AA

40-50
100% Sh: AA

1150-70
No Sample

1170-80
90% Sh: lt. gry, lt. brn, blky, v. sl. carb, blky, sme vy. slty, soft-firm
10% Clyst: buff, blky, sme wxy, soft

80-90
30% Ss: wht, vf-g, sbrnd, wl/srtd, s. carb, sl. ark, mod. clyfll, vy calc, most hard, sl. por, N-S
50% Sh: AA, sme wxy
20% Clyst: AA
Tract Chert: AA

90-1200
10% Ss: AA
60% Sh: AA
20% Clyst: AA
10% Chert: clr, crs-g, sbrnd-sbang, loose

1200-10
10% Ss: wht, vf-g, sbrnd, vy. sl. carb, mod to hvy clyfll, vy. calc, friable, poss. sl. por. N-S
80% Sh: AA
10% Clyst: AA

1210-20
10% Ss: AA, sme clean, N-S
80% Sh: lt. gry-dk brn-buff, blky, sme carb incls and lams, sme pyrite incls, sme wxy, hard, sme soft, sme slty
10% Chert: clr, v-crs-g, AA

20-30
20% Ss: AA, sme hard
80% Sh: AA, sme rd-brn
Trace Pyrite

30-40
40% Ss: wht, vf-m-g, sbrnd-sbang, vy. sl. clyfll to mod clyfll, ark, vy. sl. glauc, sl. carb, vy. calc, hard, sl. por, N-S
40% Sh: AA
20% Chert: clr, yel, crs-vy crs-g, sbrnd, translucent, loose
Trace Pyrite

40-50
40% Ss: AA, sme sl. clean
50% Sh: AA
10% Chert: AA
Trace Coal: blk, vit, blky, pyrite ctngs

1250-60 40% Ss: wht, vf-f-g, sbrnd, clean to sl. clyflld, sl. carb, soft, sl. por, N-S
60% Sh: dk brn, gry, clky, sl. carb, sme sl. swllng, Pyritic ctngs, most hard-firm

1260-70 30% Ss: AA
60% Sh: AA
10% Coal: blk, vit, blky, hard

1270-80 40% Ss: wht, clr, vf-m-g, sbrnd-sbang, sme clean, sme sl clyfll, sl. carb, vy. calc, ark, firable, sme gd por, N-S
50% Sh: AA
10% Coal: AA

80-90 80% Ss: AA, sme mod clyfll, sme vy carb
20% Sh: AA
Trace Pyrite

90-1300 80% Ss: wht, f-m-g, sbrnd, mod to hvy clyfll, carb, ark, vy calc, sl. ark, sme sl. shly, firm, poss. sl. por, N-S
20% Sh: Gry- brn, blky, firm

1300-10 80% Ss: AA, sme vy. sl. glauc
20% Sh: AA, sme rd-brn

10-20 70% Ss: AA
20% Sh: AA
10% Chert: AA
Trace Pyrite
Trace Coal

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

1330-40 70% Ss: wht, vf-f-g, sbrnd, mod clyfll, carb, calc, friable, sl. por, N-S
30% Sh: gry, brn, blky-plty, v. sl. carb, firm

40-50 60% Ss: AA
40% Sh: AA

1350-60 70% Ss: AA
30% Sh: AA

60-70 60% Ss: wht, m-g, sbrnd, carb, calc, mod to hvy clyfll, friable-soft, N-S
40% Sh: AA

70-80 AA

80-90
50% Ss: AA
50% Sh: AA

90-1400
60% Ss: AA
40% Sh: AA

1400-10
40% Ss: wht, vf-f-g, sbrnd, mod. clyfll, sl. carb, sl. glauc, v. calc, hard, sl. por, N-S
60% Sh: AA
Trace Coal: blk, vit, plty-blky, hard

10-20
40% Ss: AA
50% Sh: gry, brn, blky, plty, pyrite ctngs, sme wxy, firm
10% Coal: AA

1420-30
40% Ss: AA
40% Sh: AA
20% Coal: AA

30-40
50% Ss: wht, f-m-g, sbrnd, fair srtng, hvy clyfll, sme shly, carb, calc, soft, tite, N-S
30% Sh: AA
20% Coal: AA

40-50
30% Ss: AA
70% Sh: AA
Trace Chert: clr, crs-g, sbrnd, loose

1450-60
40% Ss: AA w/sme mod to sl. clyfll, glauc
40% Sh: AA
20% Coal: blk, vit-earthy, blky

60-70
30% Ss: wht, yel, f-m-g, sbrnd, v. sl. to mod clyfll, carb, sl. ark, soft, tite, N-S
60% Sh: AA
10% Coal: AA
Trace Pyrite

70-80 AA

80-90
30% Ss: AA
60% Sh: gry, brn, blky, carb, sme slty, sme wxy, firm
10% Coal : AA

90-1500
30% Ss: wht, clr, f-g, sl srtd, sl. to mod clyfll, carb, v. calc, friable, sl. por., N-S
60% Sh: AA
10% Coal: AA

1500-10	30% Ss: wht, lt, gry, vf-m-g, sbrnd-sbang, sl. to hvy clyfll, sl. carb, sl. ark, firm-soft, poss sl. por., N-S 60% Sh: AA w/sme pyrite ctngs 10% Pyrite
10-20	30% Ss: AA 60% Sh: gry, brn, grn, plty, sl. carb, sme slty, sme bent, soft 10% Clyst: buff, carb, blky, v. soft, swllng
20-30	AA
30-40	20% Ss: wht, m-g, sbrnd, hvy clyfll, carb, soft, tite, N-S 70% Sh: gry, brn, blky-plty, sme slty, sme wxy 10% Clyst: AA
40-50	50% Ss: wht, m-g, sbrnd-sbang, well srtd, vy. sl. to mod. clyfll, carb, sl. glauc, v. calc, hard, poss sl. por, N-S 40% Sh: AA 10% Coal: blk, vit, blky, sme cly incls.
1550-60	20% Ss: AA 60% Sh: gry, lt-dk brn, plty, sme sndy, sme slty, most soft, sme swllng 20% Coal: AA
60-70	AA
70-80	30% Ss: wht, m-g, sbrnd, vy. sl. clyflld, vy. ark, carb, v. calc, sl glauc, most hard, sme friable, fair por, N-S 60% Sh: AA 10% Clyst: buff, lt. gry, blky, ptng, v. soft, swllng Trace Coal: AA
1580-90	50% Ss: AA 40% Sh: brn, lt. gry, blky, sme swllng, ptng, carb, sme slty, sme wxy, most soft 10% Coal: AA
1590-1600	40% Ss: wht, f-m-g, sbrnd, sl. to mod. clyfll, ark, vy. calc, vy. sl. glauc, carb, friable, fair por, N-S 50% Sh: AA 10% Coal: AA

1600-10
40% Ss: wht, lt. gry, f-m-g, sl. more clyfll than above, AA in other characteristics
30% Sh: lt. gry, brn, sme sl. slty, carb, sme wxy, soft
20% Clyst: buff, blky, fissile, carb, vy. soft, swllng
10% Coal: blk, vit, many cly incls, blky

10-20
40% Ss: wht, m-g,sbrnd, well srtd, sme sl. clyflld, most hvy clyfll, carb, ark, vy. calc, most soft, sme friable, poss. sl. por, N-S
20% Sh: AA
40% Clyst: AA

20-30
40% Ss: AA
10% Sh: AA
40% Clyst: buff, brn, blky, fissile, carb, vy. soft, swllng
10% Pyrite:

30-40
40% Ss: wht, f-m-g, sbrnd, sl. to mod clyfll, carb, ark, vy sl glauc, vy calc, hard-soft, sl. por., N-S
40% Sh: AA
20% Clyst: AA
Trace Pyrite

1640-50
50% Ss: AA
30% Sh: AA
20% Clyst: AA

1550-60
50% Ss: AA w/sme cly incls
40% Sh: brn, lt. gry, grn, plty-plky, sme slty, firm-soft
10% Clyst: AA

60-70
50% Ss: AA
40% Sh: AA
10% Clyst: AA
Trace Pyrite
Trace Coal

70-80
60% Ss: AA
40% Sh: AA

80-90
40% Ss: Wht, lt. gry, sf-m-g, sbrnd (sme rnd),mod clyfll, carb, ark, sl. glauc, vy. calc, hard, sl. por, N-S
20% Sh: AA
30% Clyst: AA
10% Coal: blk, earthy, cly incls, blky

90-1700
AA

1700-10
50% Ss: AA
30% Sh: brn, lt. gry, plty, sme slty, sme fissile, soft
10% Clyst: AA
10% Coal: AA

1710-20
40% Ss: AA
40% Sh: AA
20% Clyst: AA

20-30
20% Ss: wht, vf-f-g, sbrnd, mod clyfll, carb, ark, vy calc, hard, poss. sl. por. N-S
80% Sh: lt gry, brn, blky, carb, sme slty, firm

30-40
30% Ss: AA
70% Sh: AA, sme sndy

40-50
40% Ss: AA, also lt. gry, sme stained
60% Sh: AA
Trace Pyrite

1750-60
50% Ss: wht, lt. gry, vf-g, sbrnd, mod to hvy clyflld, sl. carb, soft, most tite, N-S
50% Sh: AA

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

70-80
20% Ss: AA
80% Sh: lt gry, grn, rd-brn, blky, firm, sme sndy

80-90
20% Ss: wht, f-g, sbrnd, w/srtd, hvy clyfll, sme shly, calc, vy ark, sl. carb, soft, tite, N-S
80% Sh: AA

Drillers TD - 1800'