

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE*

(See other in-
structions on
reverse side)Form approved
Budget Bureau No. 42-R355.5.

5. LEASE DESIGNATION AND SERIAL NO.

SF-078109

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

Gallegos Canyon Unit

8. FARM OR LEASE NAME

9. WELL NO.

#309

10. FIELD AND POOL, OR WILDCAT

Pinon Fruitland Extension

11. SEC., T., R., M., OR BLOCK AND SURVEY
OR AREA

Sec. 9-T28N-R12W

12. COUNTY OR
PARISH

San Juan

13. STATE

New Mexico

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

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 _____

2. NAME OF OPERATOR

Energy Reserves Group, Inc.

3. ADDRESS OF OPERATOR

P.O. Box 3280 - Casper, Wyoming 82602

4. LOCATION OF WELL (Report location clearly and in accordance with any State regulations)

At surface 1,120' FSL & 1,780' FWL (SE/SW) RECEIVED DIST. 3

At top prod. interval reported below

At total depth

14. PERMIT NO. DATE ISSUED

15. DATE SPUDDED 3-9-81 16. DATE T.D. REACHED -3-11-81 17. DATE COMPL. (Ready to prod.) 5-25-81 18. ELEVATIONS (DF, REB, RT, GR, ETC.)* 5,472 G.L.; 5,474' K.B. 19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD 1,500' 21. PLUG, BACK T.D., MD & TVD 1,449' 22. IF MULTIPLE COMPL., HOW MANY* NA 23. INTERVALS DRILLED BY 0-TD 24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* 1,036'-74' Fruitland 25. WAS DIRECTIONAL SURVEY MADE NO

26. TYPE ELECTRIC AND OTHER LOGS RUN Induction; Comp Neutron- Form Density 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" O.D.	17#	126'	9-7/8"	60 sx 'B' w/2% CaCl ₂	-0-
				& 1/4# Flocele/sx	
4-1/2" O.D.	10.5#	1,493'	6-1/4"	See Back of Page	-0-

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
		None			2-3/8"	1,098'	

31. PERFORATION RECORD (Interval, size and number)

1,036'-38'; 1,052'-54'; 1,064'-74'
w/1 JSPF (17 perfs)

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

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
1,036'-1,074'	Spotted acid & BD w/850 gal 7-1/2% MCA.
	Frac'd w/25,000 gal 70% Quality Foam w/40,000# 10-20 sand.

33.* PRODUCTION

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

DATE OF TEST 5-27-81 HOURS TESTED 24 CHOKE SIZE 3/8" PROD'N. FOR TEST PERIOD OIL—BBL. 0 GAS—MCF. 578 WATER—BBL. 0 GAS-OIL RATIO NA

FLOW. TUBING PRESS. 170 psi CASING PRESSURE SI 430 psi CALCULATED 24-HOUR RATE OIL—BBL. 0 GAS—MCF. 578 WATER—BBL. 0 OIL GRAVITY-API (CORR.) 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 DESCRIPTION ATTACHED

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

ACCEPTED FOR RECORD

SIGNED

P. Wagner

TITLE

Production Engineer - RMD

DATE

JUL 6-23-81

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

BY FARMINGTON DISTRICT

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			38. GEOLOGIC MARKERS			
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	MEAS. DEPTH	TRUE VERT. DEPTH
			Sample Description Attached Cont'd from front page: 4-1/2" cementing - Cemented w/160 sx of 50-50 Pozmix w/2% Gel & 1/4# Cello-flake/sx & 0.5% D-65. Squeeze'd - 7" x 4-1/2" annulus w/75 sx Pozmix w/2% Gel & 2% CaCl₂	Log Tops		
				Ojo Alamo	36' (Est)	
				Kirtland	136'	
				Fruitland	934'	
				Pictured Cliffs	1,346'	
				Driller T.D.	1,500'	
				Logger T.D.	1,496'	

SAMPLE DESCRIPTION

120-30 70% Sh: vy. lt gry-grn-gry, blk, vy. carb, sme sl. slty, soft-firm
 20% Clyst: wht, blk, carb incl. v. soft, sme swelling
 10% Chert: clr-yel., vy-crs-g, sbrnd, translucent, loose
 Trace Ss: Clr, m-g, sbrnd, well srted, carb incl. pyritic incl., clean, hard, vy. sl. por, N-S

130-40 AA

140-50 10% Ss: clr-yel, vy-crs-g, sbrnd, all loose, well srted, good por, N-S
 70% Sh: AA w/many slty, sme sndy
 20% Clyst: AA
 Trace Pyrite

150-60 20% Ss: AA
 70% Sh: AA
 10% Clyst: AA

60-70 10% Ss: AA
 70% Sh: lt gry-med gry, blk, many slty, vy carb, metallic incl., sme sl. bent, soft, sme vy sndy
 20% Clyst: lt gry-wht, blk, carb, vy soft

70-80 10% Ss: clr, vy-crs-g, sbrnd-sbang, loose, translucent, good por, N-S
 80% Sh: wht-lt. gry, blk, vy sndy, vy. carb, sme slty, many cly incl., soft
 10% Clyst : AA

180-90 90% Sh: AA
 10% clyst: AA
 Trace Ss: AA

190-200 20% Sh: lt gry-lt brn, blk, vy. carb, sl. slty, soft
 80% Clyst: wht-lt gry, blk, many f-g scattered quartz grns throughout, carb, swelling, vy. soft

200-10 20% Ss: clr-yel, f-crs-g, AA
 60% Sh: AA w/many sndy
 20% Clyst: wht, blk, v. soft, sme sl. swelling

10-20 10% Ss: AA
 90% Sh: grn, lt. gry, lt. brn, blk, vy. carb, sme slty, sme sndy, sme cly incl., vy soft, bent

20-30 50% Sh: AA
 50% Clyst: wht, blk, scattered f-m-g quartz grns, carb, vy. soft, vy. swelling



30-40 AA
Trace Pyrite

240-50 20% Ss: wht-clr, m-crs-vy crs. g-, sbang-sbrnd, carb,
mod. clyfll, cly incls, soft, tite, sme loose,
poss gd. por, N-S
30% Sh: AA
30% Clyst: AA
20% Pyrite

250-60 30% Ss: AA w/many shly
50% Sh: lt. gry-grn-med brn, blk, slty, many sndy,
v. carb, soft, sme bent
20% Clyst: wht-lt. gry, blk, vy. carb, sme w/scattered
quartz grns, vy soft, sme swelling

60-70 40% Ss: AA, many loose
50% Sh: AA
10% Clyst: AA

70-80 30% Ss: clr-wht-yel, m-crs-vy. crs-g, sbang, vy. sl.
clyfll to hvy clyfll, sme shly, many loose, carb,
sme good por, N-S
50% Sh: AA, but most grn, sl. slty, bent, many sndy
10% Clyst: AA
10% Pyrite

80-90 20% Ss: AA
60% Sh: AA
20% Clyst: AA
Trace Pyrite

290-300 80% Ss: clr-wht-yel-orange, m-v. crs-g, sbrnd, most
loose, sme mod clyfll & soft & tite, sme gd por, N-S
20% Sh: grn-lt gry, blk, sme slty, bent, carb, soft
Trace Pyrite

300-10 60% Ss: AA
20% Sh: AA
20% Clyst: wht, blk, scattered qtz grns, carb, vy. soft,
vy swelling

310-20 70% Ss: AA
30% Sh: AA
Trace Clyst: AA
Trace Pyrite

20-30 30% Ss: clr, vy-crs-g, sbrnd, all loose, gd por, N-S
60% Sh: grn-lt. gry-lt. brn-dk brn, blk, sme slty, sme wxy,
vy carb, sme sndy, many bent, soft
10% Clyst: AA

330-40	20% Ss: AA 40% Sh: AA w/many sndy 40% Clyst: AA
40-50	20% Ss: AA w/sme clean & friable, <u>N-S</u> 80% Sh: AA
350-60	AA
60-70	20% Ss: clr-lt. gry, f-vy crs - g, sbrnd, most loose, sme w/mod. clyfll, carb, ark, sme gd por, <u>N-S</u> 80% Sh: lt. gry-dk gry-med brn, blk-y-plty, vy. carb, most vy. slty, sme sl. chrty, firm-soft
70-80	30% Ss: AA also sme w/hvy clyfll, firm, <u>N-S</u> 50% Sh: AA 20% Clyst: wht, blk-y, scrttd qtz grns, sl. carb, vy. soft, vy swllng
80-90	20% Ss: lt gry-clr, f-m-crs-vy crs-g, sbrnd-sbang, few loose, most mod to hvy clyfll, sme shly, carb, ark, soft, tite, <u>N-S</u> 80% Sh: AA, w/sme wxy
390-400	AA
400-410	100% Sh: med gry-lt gry-lt brn-med brn, blk-y, most slty, sme carb incls, sme cly incls, few wxy, firm Trace Ss: AA
10-20	100% Sh: AA, also sme rd-brn, sme sndy
20-30	10% Ss: wht, f-g, sbrnd, well srted, sl. to mod clyfll, sme shly, carb, ark, soft, tite, <u>N-S</u> 90% Sh: AA
30-40	20% Ss: AA 80% Sh: AA
440-50	100% Sh: AA Trace Ss: AA
450-60	10% Ss: wht-lt. gry, f-m-g, sbrnd, fair srtng, sl. to mod clyfll, firm-soft, poss. sl. por, <u>N-S</u> 60% Sh: AA w/sme pyrite incls 30% Clyst: AA
60-70	70% Sh: grn-gry-brn, blk-y, most slty, vy. carb, soft-firm 30% Clyst: lt. gry, wht, blk-y, carb, scrttd qtz grns, vy. soft, vy. swllng

20% Ss: AA

40% Cyst: AA

40-50

20% Ss: AA w/sme clean & friable, N-S

80% Sh: AA

350-60

AA

60-70

20% Ss: clr-lt. gry, f-vy crs - g, sbrnd, most loose,
sme w/mod. clyfill, carb, ark, sme gd por, N-S

80% Sh: lt. gry-dk gry-med brn, blk-y-plty, vy. carb,
most vy. slty, sme sl. chrty, firm-soft

70-80

30% Ss: AA also sme w/hvy clyfll, firm, N-S

50% Sh: AA

20% Clyst: wht, blk, scatted qtz grns, sl. carb, vy. soft,
vy swelling

80-90

20% Ss: lt gry-clr, f-m-crs-vy crs-g, sbrnd-sbang, few loose, most mod to hvy clyfll, sme shly, carb, ark, soft, tite, N-S

80% Sh: AA, w/sme wxy

390-400

AA

400-410

100% Sh: med gry-lt gry-lt brn-med brn, blk, most slty,
sme carb incls, sme cly incls, few wxy, firm

Trace Ss: AA

10-20

100% Sh: AA, also sme rd-brn, sme sndy

20-30

10% Ss: wht, f-g, sbrnd, well srted, sl. to mod clyfll, sme shly, carb, ark, soft, tite, N-S

90% Sh: AA

30-40

20% SS: AA

80% Sh: AA

440-50

100% Sh: AA

Trace Ss: AA

450-60

10% Ss: wht-lt. gry, f-m-g, sbrnd, fair srtng, sl. to mod
clyfll, firm-soft, poss. sl. por, N-S

60% Sh: AA w/sme pyrite incls

30% Clyst: AA

60-70

70% Sh: grn-gry-brn, blk, most slty, vy. carb, soft-firm

30% Clyst: lt. gry, wht, blk, carb, scatted qtz grns, vy.
soft, vy. swelling

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80-90 10% Ss: AA
80% Sh: AA, w/many sndy, sme hard
10% Clyst: AA

590-600 100% Sh: gry-lt brn-dk brn, blk, most sndy, sme slty, carb,
sme cly incls, hard-firm

600-610 AA

610-620 10% Ss: wht, f-m-g, sbrnd, fair srtng, mod clyfll, sme shly,
sl. carb, hard-friable, poss. sl. por, N-S
90% Sh: AA
Trace Coal: blk, vit, blk, pyrite ctng

620-30 10% Ss: AA
80% Sh: AA
10% Clyst: buff, blk, carb, v. soft, swelling

30-40 10% Ss: wht-yel, f-m-g, sbrnd, well srted, vy. sl. to sl.
clyfll, sl. carb, hard, tite, N-S
90% Sh: AA

40-50 20% Ss: AA
80% Sh: AA
Trace Pyrite

650-60 100% Sh: lt-med-gry-med-dk-brn, blk, most slty, sme sndy,
sme carb lams, vy carb, cly incls, firm
Trace Ss: yel, f-g, well srted, sbrnd, sl. carb, sl. clyfll,
hard, vy. sl. porous, N-S

60-70 20% Ss: wht-yel, f-m-g, sbrnd, well srted, vy. sl. to mod
clyfll, carb, sl. ark, v. sl glauc, hard-firm, sme sl.
por, N-S
80% Sh: dk brn-lt blk-brn-lt. gry, blk, vy. carb,
sme slty, sme wxy, few sndy, firm

70-80 AA
Trace Pyrite

80-90 40% Ss: AA
60% Sh: AA

90-700 20% Ss: clr-wht, m-g, sbrnd, well srted, clean to sl. clyfll,
vy. sl. carb, sl. calc, hard, sl. por, N-S
70% Sh: AA
10% Pyrite

700-10 50% Ss: wht-lt. gry, f-m-g, sbang-sbrnd, sl. to mod clyfll,
 sl. carb, sl. calc, sl. ark, friable, sme fair por, N-S
 50% Sh: AA
 Trace Pyrite

10-20 40% Ss: AA
 60% Sh: lt gry-dk gry-brn, blkyl-pty, few slty, carb, firm
 Trace Pyrite

20-30 100% Sh: AA w/vy few sndy
 Trace Ss: AA

30-40 100% Sh: lt gry-buff-dk brn, blkyl-pty, most sndy & hard,
 sl. carb, many cly incls, sme firm
 Trace Pyrite

40-50 AA

750-60 10% Ss: wht, f-g, sbrnd, well srted, mod clyfll, vy sl. carb,
 soft, tite, N-S
 60% Sh: AA
 30% Clyst: wht, blkyl, w/scattered qtz grns, v. soft, swelling

60-70 30% Ss: AA
 40% Sh: AA
 30% Slyst: AA
 Trace Pyrite

770-80 10% Ss: AA, many shly
 40% Sh: AA
 50% Clyst: AA
 Trace Pyrite

80-90 20% Ss: wht, f-m-g, sbrnd, fair srtng, sl. to hvy clyfll, sme
 shly, vy sl. carb, sme calc, most soft-friable, tite, N-S
 30% Sh: lt gry-brn-dk gry, blkyl, firm
 50% Clyst: AA

790-800 No Sample

800-10 10% Ss: AA
 90% Sh: AA, many carb incls.

10-20 100% Sh: lt-med gry, blkyl, sl. carb, sme fissile & pty,
 sme cly incls, sme slty, few sndy, firm

20-30 AA

30-40 20% Ss: wht, m-g, sbrnd, well srted, mod clyfll, sl. carb,
 soft-friable, poss. sl. por, N-S
 80% Sh: AA

90-1000 20% Ss: AA but sme w/sl. clyfll, firm, sl. por., N-S
80% Sh: lt gry-med gry-med brn-dk brn, plty-blky,
carb, sme lam, firm

1000-1030 No Samples

1030-40 10% Ss: wht, m-g, sbrnd, well srted, mod to hvy clyfll, calc,
carb, many shly, soft-friable, poss. vy. sl. por, N-S
90% Sh: lt. gry-med gry- lt. brn-dk brn, blky, vy carb,
sme slty, sme sndy, firm

1040-50 10% Ss: AA, N-S
90% Sh: AA w/vy few pyrite ctngs

1050-1080 30% Ss: wht, f-m-g, sbang-sbrnd, fair srtng, v. sl. to
mod. clyfll, carb, sl. ark, calc, sme sl. shly, friable-
soft, sl. por, N-S
70% Sh: AA, sme wxy
Trace Pyrite

1080-90 30% Ss: AA
60% Sh: Gry-dk brn, blky-plty, sme sndy, vy carb, firm
10% Pyrite

1090-1100 40% Ss: wht, m-g, sbrnd, well srted, mod clyfll, carb,
sl. ark, calc, hard-friable, sl. por, N-s
60% Sh: AA
Trace Pyrite

1100-10 40% Ss: AA
60% Sh: AA
Trace Pyrite

10-20 50% Ss: wht, m-crs-g, sbang-sbrnd, well srted, carb, ark,
calc, vy. sl. to mod. clyfll, friable, sl. por, N-S
40% Sh: AA
10% Coal: blk, vit, blky, sme pyrite ctng, vy. hard

20-30 40% Ss: AA, sme w/pyrite ctng
60% Sh: AA
Trace Pyrite

30-40 30% Ss: AA
50% Sh: lt-med-gry-med brn, blky, carb, sme sl. slty, soft-firm
10% Slystn: AA
10% Coal: blk, vit-earthy, blky, hard
Trace Pyrite

40-50 50% Ss: wht, vf-f-m-g, sbrnd, poorly srted, carb, mod-hvy
clyfll, sl. ark, calc, hard-soft, tite, N-S
50% Sh: AA

1150-60 30% Ss: AA but sme w/vy sl. clyfll
 60% Sh: AA
 10% Coal: blk, earthy, clky
 Trace Calcite: clr, vy-crs-crs-xln, sbang, transl, loose

1160-70 AA
 Trace Pyrite

70-80 20% Ss: wht, f-m-g, sbrnd, fair srtng, mod clyfll, sme shly,
 carb, vy. calc, soft, tite, N-S
 80% Sh: lt-med-gry, lt-dk brn-blk, plty-blky, vy. carb,
 sme slty, few lam, firm-soft

80-90 30% Ss: AA
 70% Sh: AA

90-1200 50% Ss: AA
 50% Sh: AA

1200-10 30% Ss: wht, vf-f-g, sbrnd, well srted, vy. sl. clyfll, vy. sl.
 carb, calc, friable-soft, sl. por, N-S
 70% Sh: AA
 Trace Coal: AA
 Trace Pyrite

10-20 20% Ss: wht, f-crs-g, sbang, clean to mod. clyfll, sme shly,
 carb, calc, firm-soft, sme fair por, N-S
 70% Sh: AA
 10% Coal: AA but w/sme pyrite ctngs
 Trace Pyrite

20-30 30% Ss: AA but m-crs-g
 70% Sh: AA
 Trace Coal: blk, earthy, clky, hard

1230-40 20% Ss: AA
 60% Sh: lt gry-dk gry-med brn-buff, blky, carb, sme wxy, soft
 10% Clyst: wht, blky, vy soft, swelling
 10% Pyrite

40-50 AA

1250-60 30% Ss: wht-lt gry, vf-m-g, fair srtng, sbrnd, vy. sl. to
 mod clyfll, calc, carb, ark, firm-soft, poss. sl. por,
 N-S
 70% Sh: lt gry-med brn-blk, blky, vy carb, sme sl. slty, firm
 Trace Pyrite

60-70 30% Ss: AA w/sme shly, sme pyrite incl's
 70% Sh: AA

70-80 30% Ss: wht, f-m-g, sbrnd, mod to hvy clyfll, sme shly,
 calc, carb, ark, sl. glauc, soft, tite, N-S
 60% Sh: AA
 10% Clyst: wht, blk, v. soft, swelling
 Trace Pyrite

80-90 20% Ss: AA
 60% Sh: AA
 10% Clystn: AA
 10% Pyrite

90-1300 20% Ss: AA but sl. to mod clyfll
 70% Sh: AA
 10% Clystn: AA
 Trace Calcite: wht, v-crs-xln, sbang, translucent, loose
 Trace Coal: blk, earthy, cly incls, blk

1300-10 30% Ss: AA
 70% Sh: AA
 Trace Pyrite

10-20 30% Ss: wht, m-g, sbrnd, well srted, mod to hvy clyfll, carb,
 ark, glauc, calc, soft, tite, N-S
 60% Sh: AA w/few pyrite incls.
 10% Coal: blk, blk, vit, hard

20-30 20% Ss: AA, sme shly
 40% Sh: AA
 10% Clyst: AA
 30% Coal: AA

30-40 20% Ss: AA
 50% Sh; brn-gry, blk-plty, sme fissile, sme lam, vy carb,
 most slty, soft
 20% Clyst: wht-lt brn, blk, carb, vy. soft, sme swelling
 10% Coal :AA

40-50 10% Ss: wht, m-g, sbrnd, well srted, heavy clyfll, sme shly,
 carb, calc, soft, tite, N-S
 50% Sh: AA
 10% clyst: AA
 30% Coal: AA

1350-60 30% Ss: AA but sme clean
 60% Sh: AA
 10% Coal: AA

60-70 40% Ss: wht, f-crs-g, sbrnd, sme clean, others w/mod clyfll, sl. carb, sl. ark, vy. calc, hard-soft, sme sl. por, lt. blu fluor w/vy wk cut
 60% Sh: AA
 Trace Coal: AA

70-80 60% Ss: AA but more w/hvy clyfll, show as above
 30% Sh: AA
 10% Coal: AA

80-90 70% Ss: wht, m-g, sbrnd, well srted, vy. sl. clyfll to hvy clyfll, carb, ark, calc, glauc, hard-soft, poss. sl. por, lt blu fluor w/vy wk cut
 20% Sh: med brn-med gry, plty-blky, many laminated, sme slty, sme sl. swelling, firm
 10% Coal: blk, vit-earthly, blky, hard
 Trace Pyrite

90-1400 40% Ss: AA w/increasing clyfll N-S
 60% Sh: AA

1400-10 60% Ss: wht, f-m-g, sbrnd, fair srtng, vy. sl. to hvy clyfll, glauc, ark, vy. calc, hard-soft, tite, N-S
 40% Sh: lt. gry-brn-buff, plty, carb, sme lam, soft
 Trace Pyrite

10-20 AA

20-30 50% Ss: AA w/afew shly
 50% Sh: AA
 Trace Pyrite

30-40 50% Ss: AA
 30% Sh: AA
 20% Coal: blk, vit-earthly, blky, hard

40-50 40% Ss: wht, m-crs-g, sbrnd, fair srtng, few clean, most mod to hvy clyfll, carb, vy. calc, sl. ark, vy. sl. glauc, sme shly, hard-soft, sl. por, N-S
 50% Sh: AA, sme sl. swelling
 10% Coal: AA

1450-60 30% Ss: AA
 60% Sh: AA, sme slty
 10% Coal: AA

60-70 50% Ss: wht, vf-f-m-crs-g, sbang-sbrnd, clean to mod clyfll, vy. carb, vy. calc, glauc, ark, hard, tite, N-S
 40% Sh: AA
 10% Clyst: wht, blky-plty, carb, v. soft
 Trace Pyrite

