

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.

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. RESV. ☐	Other ☐
2. NAME OF OPERATOR Energy Reserves Group, Inc.						7. UNIT AGREEMENT NAME Gallegos Canyon Unit	
3. ADDRESS OF OPERATOR P.O. Box 3280 - Casper, Wyoming 82602						9. WELL NO. 314	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface 1,580' FNL & 1,560' FWL (SE/NW) At top prod. interval reported below At total depth						10. FIELD AND POOL, OR WILDCAT West Kutz Pictured Cliffs	
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA Sec. 17-T28N-R12W						12. COUNTY OR PARISH San Juan	
13. STATE New Mexico						14. PERMIT NO. DATE ISSUED JUL 23 1981 OIL CON. COM. DIST. 3	
15. DATE SPUDDED 3-3-81		16. DATE T.D. REACHED 3-6-81		17. DATE COMPL. (Ready to prod.) 7-13-81		18. ELEVATIONS (DP, RKB, RT, GR, ETC.)* 5,648' G.L.; 5,650' K.B.	
19. ELEV. CASINGHEAD -----		20. TOTAL DEPTH, MD & TVD 1,716' K.B.		21. PLUG, BACK T.D., MD & TVD 1,670' K.B.		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)* Pictured Cliffs 1,460'-1,468' K.B.		25. WAS DIRECTIONAL SURVEY MADE NO		26. TYPE ELECTRIC AND OTHER LOGS RUN Induction Electric Log & Compensated Density/Neutron	
27. WAS WELL CORED NO		28. CASING RECORD (Report all strings set in well)					
CASING SIZE		WEIGHT, LB./FT.		DEPTH SET (MD)		HOLE SIZE	
7" OD		17#		125' KB		9-7/8"	
4-1/2" OD		10.5#		1,711' KB		6-1/4"	
CEMENTING RECORD		AMOUNT PULLED					
65 sx 'B' + additives		-0-					
250 sx 50-50 Pozmix + additives		-0-					
29. LINER RECORD				30. TUBING RECORD			
SIZE		TOP (MD)		BOTTOM (MD)		SACKS CEMENT*	
				None			
SCREEN (MD)		SIZE		DEPTH SET (MD)		PACKER SET (MD)	
		2-3/8"		1,485'			
31. PERFORATION RECORD (Interval, size and number) Pictured Cliffs: 1,460'-68' w/1 JSPF (9 perfs) Fruitland: 1,140'-46', 1,164'-66', 1,177'-79' w/1 JSPF (13 perfs)				32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL (MD) 1,460'-1,468' AMOUNT AND KIND OF MATERIAL USED BD w/500 gal 7-1/2% MCA w/add + 10 ball sealers See Back of Page			
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 7-13-81		HOURS TESTED 24		CHOKE SIZE 1/2"		PROD'N. FOR TEST PERIOD OIL—BBL. 0 GAS—MCF. 311 WATER—BBL. 122 GAS-OIL RATIO NA	
FLOW. TUBING PRESS. 85 psi		CASING PRESSURE SI 200 psi		CALCULATED 24-HOUR RATE OIL—BBL. 0 GAS—MCF. 311 WATER—BBL. 122 OIL GRAVITY-API (CORR.) NA		TEST WITNESSED BY T.C. DURHAM	
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) VENTED DURING TEST						35. LIST OF ATTACHMENTS SAMPLE DESCRIPTION	
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.							
SIGNED P. Wagner		TITLE Production Engineer - RMD				DATE 7-14-81	

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

NMCC

BY

JUL 20 1981
ARMINGTON DISTRICT
Dean Elliott

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			Continued from front of page: 1,460'-1,468' - Frac'd w/20,000 gals Quality Foam w/22,500# 10-20 sand. 1,140'-1,179' - BD perfs w/500 gals 7-1/2% MCA + additives & ball sealers. Frac'd w/25,000 gals Quality Foam w/29,200# 10-20 sand. Also sqz'd 100 sx Class "B" plus additives.

38. GEOLOGIC MARKERS

NAME	MEAS. DEPTH	TOP	TRUE VERT. DEPTH
LOG TOPS	Surface		
Nacimiento	101'		
Ojo Alamo	221'		
Kirtland	1,003'		
Fruitland	1,452'		
Pictured Cliffs	1,641'		
Lewis	1,716'		
TD Logger	1,720'		
TD Driller			

SAMPLE DESCRIPTION

150 - 60 80% Ss: clr, cg, sbrnd, hard, lse
20% Chert: wht, lt org, gry, cs-xln, sbang-ang, hrd, lse
Tr. Calcite: wht, cs-xln, hard, lse, vy calc

60 - 70 60% Ss: AA
20% Chert: AA
20% Anhydrite: wht, cs-xln, frm-brittle, lse

70 - 80 70% Ss: AA
20% Chert: AA, w/sme grn, lt yel
10% Anhydrite

80 - 90 80% Ss: AA
10% Chert: AA, w/sme red staining
10% Anhydrite: AA

90 - 200 60% Ss: AA
30% Chert: AA
10% Anhydrite: AA

200 - 10 60% Ss: AA
30% Chert: lt brn, brn, yel, org, cs-xln, ang-sbang, hard, lse
10% Sh: grnsh gry, blk, clyey, carb incl, vy sft
Tr. Coal: blk, vit, ang-blk, frm-brittle

10 - 20 70% Ss: AA
20% Chert: AA
10% Sh: AA

20 - 30 40% Ss: AA
40% Chert: AA
10% Sh: AA
10% Anhyd: AA
Tr. Pyrite: yel, silver, cs-xln, hard, nodular, lse

30 - 40 50% Ss: AA
30% Chert: AA
20% Sh: AA

40 - 60 70% Ss: AA, w/sme vy lt grn, mg, sbrnd, vy cly fld, carb in
20% Chert: AA
10% Sh: AA
Tr. Pyrite: AA

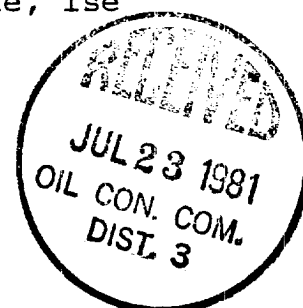
60 - 70 20% Ss: AA, w/sme cg, grn
70% Chert: wht, lt org, brn, opaque & transp, cs-xln, ang, hard, lse
10% Sh: AA

70 - 80 20% Ss: wht, m-cg, sbrnd, vy cly fld, frm-hard, tite
70% Chert: dk brn, lt yel, lt org, transp, cs-xln, ang-sbrnd, lse, hard
10% Sh: grn, dk brn, redh brn, blk, frm

80 - 90 70% Ss: clr, cg, sbrnd, hard, lse
20% Chert: AA
10% Sh: AA
Tr. Pyrite: AA

90 - 300 60% Ss: AA, w/gry, vfn-g, sbrnd, vy cly fld, carb incl, sft
30% Chert: AA, w/mst lt yel
10% Sh: AA
Tr. Pyrite: AA

300 - 10 20% Ss: lt grn, clr, m-cg, sbrnd, sme vy cly fld, frm, sme lse
60% Chert: AA, w/sme red
20% Sh: gry, blk, carb incl, vy sft
Tr. Pyrite: AA



310 - 20 30% Ss: AA
 50% Chert: lt yel, lt org, dk brn, red, cs-xln, ang-sbrnd,
 hard, lse
 20% Sh: AA
 Tr. Pyrite: AA
 20 - 30 50% Ss: AA
 30% Chert: AA
 20% Sh: AA
 Tr. Pyrite: AA
 30 - 40 60% Ss: AA
 20% Chert: AA
 20% Sh: AA
 Tr. Pyrite: AA and Tr.Coal: blk, vit, blk, frm
 40 - 50 10% Ss: AA
 50% Chert: AA
 40% Sh: grn, grnsh gry, blk, clyey, vy sft
 50 - 60 40% Ss: clr, cg, sbrnd, vy cly fld, sme sft, sme lse
 10% Chert: AA
 50% Sh: AA, w/sme brnsh gry, sl slty, frm-sft
 60 - 70 40% Ss: grn, clr, m-cg, sbrnd, vy cly fld, sft-frm,
 bentonitic, tite
 50% Sh: AA
 10% Chert: AA
 70 - 80 20% Ss: AA
 80% Sh: grn, grysh grn, blk-plty, frm-sft
 80 - 90 60% Ss: wht, clr, grn, m-cg, sbrnd, vy cly fld, frm-sft, tit
 30% Sh: AA, w/sme carb incl
 10% Chert: AA
 90 - 400 60% Ss: AA
 30% Sh: AA
 10% Chert: AA
 400 - 30 80% Ss: grn, clr, vfn-cg, sbrnd, most vy cly fld, glauc
 incl, carb incl, vy sft, tite
 20% Chert: crm, lt yel, ang-sbrnd, hard, lse
 Tr. Sh: grnsh gry, blk, sft
 30 - 40 60% Ss: AA
 20% Chert: AA
 20% Sh: AA, w/sme sm carb frags.
 40 - 50 40% Ss: lt grn-grn, fg, sbrnd, vy cly fld, carb & glauc
 incl, sft, tite
 40% Sh: grn, gry, blk, carb incl, sft
 20% Chert: AA
 Tr. Pyrite: yel, metallic, cs-xln, hard, lse
 50 - 60 40% Ss: AA, w/sme sl calc
 40% Sh: grn, dk gry, blk, carb incl, sme sl slty, sft
 20% Chert: lt yel, crm, clear, crypto-xln, ang-sbrnd, hard,
 lse
 60 - 70 20% Ss: AA
 60% Sh: AA
 20% Chert: AA
 70 - 80 30% Ss: AA
 50% Sh: AA
 20% Chert: AA
 Tr. Pyrite: AA
 80 - 90 20% Ss: AA
 60% Sh: AA, w/mstly grnsh gry
 20% Chert: AA
 90 - 500 10% Ss: AA
 70% Sh: AA, w/mstly grnsh gry
 20% Chert: AA

500 - 20 80% Ss: blu grn, grnsh gry, vfn-fg, sbrnd, mod-vy cly fld,
 glauc & shly incls, frm-sft, tite
 10% Sh: AA
 10% Chert: AA
 20 - 30 60% Ss: blu grn, gry, vfn-mg, sbrnd, mst mod-vy cly fld,
 glauc & carb, frm-sft, tite
 30% Sh: grnsh gry, grysh grn, blkyl-pty, carb incl, sft
 10% Chert: clr, org, crypto-xln, sbang-sbrnd, hard, lse
 30 - 40 50% Ss: AA
 30% Sh: AA
 20% Chert: AA
 Tr. Pyrite: yel, metallic, nod, hard
 40 - 50 40% Ss: AA, w/mst vy cly fld
 40% Sh: AA
 20% Chert: AA
 50 - 60 40% Ss: lt blu grn, fg, sbrnd, vy cly fld, carb & amber,
 incl, sft, tite
 60% Sh: grn, blkyl, sft
 60 - 70 60% Ss: AA, w/glauc
 40% Sh: AA, w/sme qtz xls
 70 - 80 60% Ss: AA
 20% Sh: AA, w/dk brn, carb frags
 20% Chert: clr, crypto-xln, sbrnd-sbang, hard, lse
 80 - 600 70% Ss: AA
 10% Sh: AA, w/dk brn
 20% Chert: AA
 600 - 10 50% Ss: lt grn, fg, sbrnd, wl srtd, glauc & carb incls,
 cly fld, sft
 20% Sh: grnsh gry, gry, pty, carb incl, sft
 30% Chert: AA
 10 - 30 40% Ss: AA
 30% Sh: AA
 30% Chert: AA
 30 - 40 60% Ss: grn, gry, wht, f-mg, sbrnd, glauc & carb incl,
 cly fld, frm-sft, tite
 30% Sh: AA
 10% Chert: AA
 40 - 50 50% Ss: gry, clr, wht, f-mg, sbrnd, amber & glauc, mod
 cly fld, sft
 20% Sh: AA
 30% Chert: AA
 50 - 80 70% Ss: lt grn, f-mg, sbrnd, glauc & amber incl, cly fld,
 sft, tite
 20% Sh: grnsh gry, pty-blkyl, small carb frags, sft
 10% Chert: clr, crypto-xln, ang-sbrnd, hard, lse
 80 - 90 40% Ss: AA
 50% Sh: AA
 10% Chert: AA
 90 - 700 30% Ss: AA
 60% Sh: AA
 10% Chert: AA
 700 - 10 40% Ss: grn, wht, vfn-mg, sbrnd, cly fld, frm-sft, tite
 50% Sh: grn, blkyl-pty, carb frags, sft
 10% Chert: AA
 Tr. Pyrite: yel, metallic, nod, hard
 10 - 30 40% Ss: AA
 50% Sh: AA
 10% Chert: AA

730 - 40 40% Ss: grn, fg, sbrnd, glauc & amber, vy cly fld, frm, tite
60% Sh: AA
Tr. Chert: red, opaque, ang, hard, lse

40 - 50 30% Ss: AA
60% Sh: AA
10% Chert: wht, crypto-xln, hard, lse

50 - 70 30% Ss: lt grn, wht, f-mg, sbrnd, shly, vy small carb frags
cly fld, frm, tite
60% Sh: grn, gry, blkly-plty, carb incl, sl sndy, frm
10% Chert: crm, clr, sbang-sbrnd, lse, hard

70 - 90 30% Ss: AA
60% Sh: AA
10% Chert: orange, wht, crypto-xln, sbang-sbrnd, hard, lse

90 - 800 40% Ss: blu grn, vy lt grn, fg, sbrnd, amber & glauc,
cly fld, frm, tite
60% Sh: AA, w/decreasing sandiness
Tr. Chert: AA and Tr. Pyrite: AA

800 - 10 20% Ss: AA
70% Sh: AA
10% Chert: AA

10 - 20 20% Ss: blu grn, lt grn, f-mg, sbrnd, glauc incl, sl-mod
cly fld, frm-sft, tite
70% Sh: dk gry, grnsh gry, blkly, sl sndy, carb incl, sft
10% Chert: AA

20 - 30 50% Ss: AA
40% Sh: AA
10% Pyrite: yel, metallic, nod, drusy, hard, lse
Tr. Chert: AA

30 - 50 30% Ss: AA
50% Sh: AA
10% Chert: AA
10% Pyrite: AA

50 - 80 30% Ss: grn, fg, sbrnd, amber & carb incl, cly fld, sft, tit
70% Sh: dk grnsh gry, blkly-plty, occ carb incl, sft
Tr. Calcite: wht, transl, cs-xln, sbang, lse, hard, vy calc

80 - 900 20% Ss: AA, w/wht and disseminated pyrite grns
80% Sh: AA

900 - 10 40% Ss: wht, lt grn, fg, sbrnd, glauc incl, cly fld,
vy calc, sft
50% Sh: grnsh gry, plty-blky, carb incl, sft
10% Pyrite: yel, metallic, drusy hard,
Tr. Coal: blk, dull, blkly, earthy, sft, w/dissiminated
pyrite grns

10 - 20 30% Ss: AA
60% Sh: AA
10% Chert: org, lt brn, crypto-xln, sbang-sbrnd, hard, lse

20 - 50 10% Ss: AA
90% Sh: AA, w/sme dk grnsh gry
Tr. Chert: AA, w/sme clr, sbrnd, lse, hard

50 - 60 30% Ss: wht, vy lt grn, fg, sbrnd, carb incl, dissem. pyrite
grns, mod cly fld, frm, vy calc
70% Sh: grnsh gry, blkly-plty, carb incl, sl slty, frm

60 - 70 30% Ss: AA, mstly vy lt grn
60% Sh: AA, w/sme red (oxidized) staining
10% Chert: wht, clr, crm, crypto-xln, sbang-sbrnd, hard, lse
Tr. Coal: blk, vit, blkly, sft

70 - 1000 30% Ss: AA, w/sme gry
60% Sh: AA
10% Chert: AA, w/sme angular

1000 - 10 10% Ss: lt grn, fg, sbrnd-sbang, amber & carb incl, vy cly fld, sft, tite, vy calc
90% Sh: grnsh gry, plty-blky, sme sl slty-sndy, carb incl, sft

10 - 20 20% Ss: AA
70% Sh: AA
10% Coal: blk, dull, earthy, sft

20 - 30 20% Ss: AA
80% Sh: grnsh gry, dk gry, plty-blky, carb incl, sft

30 - 40 20% Ss: AA
70% Sh: AA
10% Chert: AA

40 - 50 10% Ss: AA
90% Sh: AA

50 - 60 20% Ss: wht, gry, blu grn, fg, sbrnd, carb incl, sl cly fld vy calc, frm, poss sl por, N-S
70% Sh: grnsh gry, dk grnsh gry, plty-blky, sme sl slty, sf
10% Chert: clr, wht, lt org, crypto-xln, ang, hard, lse

60 - 80 10% Ss: AA
70% Sh: AA, w/carb incl
20% Chert: AA
Tr. Calcite: wht, cg, sbrnd, vy calc, hard

80 - 90 20% Ss: lt grn, gry, fg, sbrnd, amber & glauc incl, sl cly fld, vy sft, vy calc
70% Sh: AA
10% Chert: AA
Tr. Coal: blk, vit, blky, sft

90 - 1100 10% Ss: lt gry, AA, w/carb incl
80% Sh: grnsh gry, dk gry, plty-blky, carb incl, sft
10% Chert: AA, w/mstly clr

1100 - 40 20% Ss: AA, w/dissem. pyrite grns, frm-sft
70% Sh: AA
10% Chert: wht, clr, lt org, ang-sbrnd, sme carb incl, hard, lse

40 - 50 10% Ss: AA, w/sme blu grn, fg, frm
90% Sh: AA, w/mstly dk gry
Tr. Chert: AA

50 - 60 20% Ss: wht, lt grn, vfn-fg, sbrnd, carb incl, glauc, sl-mod cly fld, vy calc, frm, N-S
60% Sh: grnsh gry, dk gry, plty-blky, sme carb incl, sft
20% Chert: wht, clr, red, crypto-xln, ang-sbang, hard, lse

60 - 70 30% Ss: AA
50% Sh: AA
10% Chert: AA, w/o red
10% Clystn: crm, plty, carb frags, amber, sft

70 - 90 40% Ss: AA
30% Sh: AA
20% Chert: AA
10% Calcite: wht, plty-blky, cs-xln, vy calc, fract. fill
Tr. Pyrite: yel, met, drusy, hard

90 - 1200 50% Ss: AA
30% Sh: AA, w/numerous carb incl
20% Chert: AA, w/lt yel and crm
Tr. Calcite: AA

1200 - 10 40% Ss: wht, fg, sbrnd, amber & glauc incl, vy cly fld, frm, vy calc, tite
60% Sh: lt grn, dk gry, plty, carb incl, sft

10 - 20 40% Ss: AA
50% Sh: AA
10% Chert: wht, clr, yel, crypto-xln, sbrnd, hard, lse
Tr. Limestone: crm, dense, vfn-g, blk, vy calc, hard

20 - 30 50% Ss: AA, w/sme vfn-g, incr. amts. of carbon
50% Sh: AA, w/carb stringers
Tr. Chert: AA

30 - 40 40% Ss: AA
40% Sh: AA
10% Ls: AA
10% Coal: blk, vit, blk, frm

40 - 50 30% Ss: AA
40% Sh: AA
30% Coal: AA

50 - 60 40% Ss: gry, wht, f-mg, sbrnd, carb incl, mod cly fld, vy sft, vycalc
40% Sh: gry, grnsh gry, blk-plty, sme carb incl, vy sft
20% Chert: clr, wht, crm, crypto-xln, sbang-sbrnd, hard, lse

60 - 70 30% Ss: AA
60% Sh: AA
10% Chert: AA, w/o crm

70 - 80 40% Ss: AA, w/mst fg
50% Sh: AA
10% Chert: AA
Tr. Ls: AA

80 - 90 50% Ss: gry, lt grn, fg, sbrnd, amber & carb incl, cly fld, sft, vy calc
40% Sh: gry, blk, sme carb frags and stringers, sft
10% Chert: clr, wht, crm, crypto-xln, ang-sbang, hard, lse

90 - 1300 20% Ss: AA
70% Sh: AA
10% Chert: AA

1300 - 20 10% Ss: gry-grn, fg, sbrnd, carb incl, some mica, cly fld, sft, calc
80% Sh: grnsh gry, dk gry, blk, sft
10% Chert: wht, crm, clr, crypto-xln, ang-sbang, lse, hard

20 - 40 30% Ss: AA, w/sme wht, mg, vy cly fld, vy calc
60% Sh: AA
10% Chert: wht, brn, red, clr, crypto-xln, sbang-sbrnd, hard, lse

40 - 50 50% Ss: grn, gry, fg, sbrnd, glauc & carb incl, vy cly fld, sft, vy calc
40% Sh: AA
10% Chert: AA

50 - 70 40% Ss: AA
40% Sh: AA
20% Chert: AA

70 - 80 30% Ss: AA, vy calc
50% Sh: AA, w/mstly dk gry
20% Chert: AA

80 - 90 50% Ss: AA, vy calc
20% Sh: AA
30% Chert: AA

90 - 1400 30% Ss: AA, vy calc
50% Sh: AA
20% Chert: AA

1400 - 10 60% Ss: gry, fg, sbrnd, glauc & carb incl, cly fld, frm
 calc, tite
 20% Sh: grnsh gry, dk gry, blk-y-plty, carb frags, sft, lt
 brn, plty, vfn-g, sandy
 10 - 30 20% Chert: clr, wht, lt brn, crypto-xln, ang-sbrnd, hard, lse
 30% Ss: AA
 50% Sh: AA
 20% Chert: AA
 Tr. Coal: blk, vit, blk-y-splintery, sft
 30 - 40 30% Ss: AA
 50% Sh: AA
 20% Chert: AA
 40 - 50 20% Ss: AA
 20% Sh: AA
 50% Coal: blk, vit, ang-blky, frm
 10% Chert: AA
 50 - 60 10% Ss: gry, wht, fg, sbrnd, carb incl, cly fld, frm,
 mod calc, tite
 70% Sh: grnsh gry, dk gry, blk-y-plty, sl slty, sft
 20% Coal: AA
 60 - 80 20% Ss: AA
 50% Sh: AA
 20% Chert: AA
 10% Coal: AA
 80 - 1500 40% Ss: AA
 30% Sh: AA
 20% Chert: AA
 10% Coal: blk, dull, earthy, blk-y, sft
 1500 - 10 40% Ss: AA, w/sme frm-brittle
 40% Sh: grnsh gry, dk brn, blk-y, lignitic, frm
 10% Chert: AA
 10% Coal: AA
 10 - 20 60% Ss: AA
 20% Sh: AA
 10% Coal: blk, dull, earthy, frm
 10% Chert: AA
 20 - 30 40% Ss: AA, w/grn, fg, sl cly fld
 30% Sh: AA
 10% Chert: AA
 10% Ls: tan, dense, blk-y, hard, vy calc
 10% Coal: AA
 30 - 40 30% Ss: wht, fg, sbrnd, sl ark, glauc incl, frm, non-calc
 40% Sh: gry grn, dk brn, blk-y, frm
 30% Chert: AA
 Tr. Chert: AA
 40 - 50 30% Ss: AA
 40% Sh: AA
 20% Chert: AA
 10% Coal: AA
 50 - 60 40% Ss: wht, tan, fg, sbrnd, sl ark, carb, glauc & feldspar
 incl, sl-mod cly fld, frm, vy calc
 40% Sh: AA
 10% Chert: AA
 10% Ls: tan, dense, blk-y, vy calc

1560 - 70	50% Ss: AA
	40% Sh: AA
	10% Chert: AA
70 - 80	40% Ss: AA , w/o ark and feldspar
	40% Sh: AA, w/sme sl slty
	10% Coal: AA
	10% Chert: AA
	Tr. Ls: AA
80 - 90	50% Ss: AA
	40% Sh: AA
	10% Chert: AA
	Tr. Coal: AA
90 - 1610	20% Ss: AA
	60% Sh: AA
	20% Chert: AA
	Tr% Ls: AA
1610 - 20	30% Ss: AA
	50% Sh: AA
	20% Chert: AA
20 - 30	40% Ss: wht, gry, fg, sbrnd, glauc & carb incl, vy cly fld, frm, tite
	50% Sh: gry, brn, blk, carb incl, frm
	10% Chert: AA
30 - 50	60% Ss: AA
	20% Sh: AA
	20% Chert: AA
50 - 80	30% Ss: gry, grn, fg, sbrnd, glauc & carb incl, mod-vy cly fld
	50% Sh: AA
	20% Chert: AA
80 - 90	10% Ss: AA
	80% Sh: gry, dk grn, blk, carb incl, sl s lty, frm
	10% Chert: AA
90 - 1700	100% Sh: gry, grn, blk, carb incl, vy slty
1700 - 20	10% Ss: AA
	80% Sh: AA
	10% Chert: AA