Form 9-330
(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.: NM-03153

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: O.H. Randel

9. WELL NO.: 7-E

10. FIELD AND POOL, OR WILDCAT: Basin Dakota

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 15-T26N-R11W

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 requirements*)*
At surface 1,570' FSL & 1,680' FWL (NE/SW)
At top prod. interval reported below
At total depth

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
1-23-81	1-31-81	3-18-81	G.L. 6,317'; K.B. 6,323'	----------

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
6,245' K.B.	6,208' K.B.	NA	→	0-6,245'	----------

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
Dakota 6,198' - 6,209' K.B.

25. WAS DIRECTIONAL SURVEY MADE: NO

26. TYPE ELECTRIC AND OTHER LOGS RUN
Dual Induction Focused Log; Compensated Neutron-Densilog

27. WAS WELL CORED: NO

RECEIVED
APR 3 1981
OIL CON. COM.
DIST. 3

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

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8"	24#	761' KB	12-1/4"	550 sx "B" + 2% $CaCl_2$	-0-
4-1/2"	10.5#	6,245' KB	7-7/8"	See Back Page	-0-

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8"	6,210' K.B.	None

31. PERFORATION RECORD (*Interval, size and number*)
6,198'-6,209' w/1 JSPF (12 perfs)

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

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
6,198'-6,209'	Brokedown w/750 gal 7½% acid + 15 ball sealers. Frac'd w/ 65,000 gal 70% Quality Foam w/62,500# 20-40 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	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
3-18-81	24	3/8"		0	500	0	NA

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
150 psi	375 psi		0	500	0	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

RECEIVED
U.S. GEOLOGICAL SURVEY

ACCEPTED FOR RECORD
APR 2 1981
FARMINGTON DISTRICT
BY

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

SIGNED D.C. Shaw TITLE Production Engr - RMD DATE 3-26-81

*(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.
			SAMPLE DESCRIPTION ATTACHED Cementing 4-1/2"- 1st Stage - 190 sx of 50-50 Pozmix w/1/4# Flocele/sx; followed by 210 sx "B" w/10% Salt & 1/4# Flocele/sx. 2nd Stage - 400 sx of Lite w/10# Gilsonite/sx followed by 655 sx 50-50 Pozmix w/12-1/2# Gilsonite/sx. Stage collar @ 4,425'.

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
LOG TOPS		
Ojo Alamo	580'	
Kirtland	685'	
Fruitland	1,398'	
Pictured Cliffs	1,674'	
Lewis	1,934'	
Chacra	2,094'	
Cliffhouse	2,506'	
Menefee	3,220'	
Point Lookout	4,112'	
Mancos	4,334'	
Gallup	5,173'	
Greenhorn	6,040'	
Graneros	6,102'	
Dakota	6,154'	
T.D. Logger	6,238'	
T.D. Driller	6,237'	

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

GPO 680-378

LOCATION

1570'FSL & 1680'FWL, Section 15-T26N-R11W, NMPM

ELEVATION

GL6311', DF6323', KB6324'

CONTRACTOR

Bayless Drilling Company, Rig 5
Toolpusher: Mr. Guy Easley

SPUD AND COMPLETION DATA

Spud date: 1-23-81
Drillout date: 1-24-81
Date TD reached: 1-30-81 @6:00 A.M.
TD Logger: 6238', TD Driller 6237'

CASING

Surface: 8 5/8" @ 760' w/550 sxs.
Production: 4 1/2"

ELECTRICAL SURVEYS

Dresser Atlas: DIL & CNL-FDC from 760' to 6238'

FORMATION TOPS

Tertiary	Depth	KB Datum	Thickness
Nacimiento	Surface	6324	580
Ojo Alamo	580	5744	105
Cretaceous			
Kirtland	685	5639	713
Fruitland	1398	4926	276
Pictured Cliffs	1674	4650	260
Lewis	1934	4390	160
Chacra	2094	4230	156
Base Chacra	2250	4074	256
Cliffhouse	2506	3818	714
Menefee	3220	3104	892
Point Lookout	4112	2212	221
Mancos	4334	1990	839
Gallup	5173	1151	297
Lower Mancos	5470	854	198
Sanostee	5668	656	372
Greenhorn	6040	284	62
Graneros	6102	222	52
Dakota	6154	170	43
Dakota Pay	6197	127	41
TD Logger	6238	86	
TD Driller	6237		

DEVIATION RECORD

No.	Degree	Depth
1	1 1/2	266
2	3/4	780
3	1	2322
4	1	4874

BIT RECORD

No.	Make	Size	Type	Depth Out	Footage	Hours Run
1	HTC	12 1/4	X3	780	780	8 3/4
2	HTC	7 7/8	J-22	2261	1481	15 1/4
3	Reed	7 7/8	H551J	4275	2014	39
4	STC	7 7/8	F3	6237	1962	60

Total Rotating Hours: 123

DAILY DRILLING REPORT

1-23-81 to 1-26-81 Not available

1-27-81 Drlg. @ 4411', drlg. 10 3/4 hrs, circ. & survey 1 hr, serv. rig 1/4 hr, TFB 4 hrs, add'l. drlg. 6 hrs, TIH, circ. & wash 1 3/4 hrs.

Deviation: 1° @ 4874'
Mud Properties: wt. 8.6, vis 28

1-28-81 Drlg. @ 4995', drlg. 23 3/4 hrs, rig serv. 1/4 hr.

Mud Properties: wt. 8.8, vis 34, w.l. 9.4, ck 2/32"

1-29-81 Drlg. @ 5594', 23 3/4 hrs, rig serv. 1/4 hr.

Mud Properties: wt. 9, vis 34, w.l. 8, ck 2/32"

1-30-81 Drlg. @ 6143', drlg. 6 hrs, prep. for logging & logging 14 hrs, TIH 4 hrs.

Mud Properties: wt. 9.2, vis 85, w.l. 6, ck 2/32"

SAMPLE DESCRIPTION

800 - 10
60% Ss: wht, f-cg, sbrnd, sme cly fld, clean, sl ark, sl calc, porous, (sme lse), N-S
40% Sh: lt-dk gry, blky, sft, waxy, sme sl swlg
Tr. Pyrite

10 - 20
40% Ss: wht, rd-brn, f-cg, sbrnd, sl-vy cly fld, sme lse, calc, porous, N-S
50% Sh: AA, sme sl slty
10% Clystn: lt gry, wht, blky, sft, swlg

20 - 30
10% Ss: clr, f-mg, sbrnd, all lse
60% Sh: AA
30% Clystn: wht, blky, carb incls, sft, swlg

30 - 40
10% Ss: wht, mg, sbrnd, cly fld, ark, frm, vy sl por, N-S
70% Sh: lt-dk gry, brn, blky, carb incls, garnetiferous, sme slty, sft, sme waxy
20% Clystn: AA

40 - 50
10% Ss: wht, m-cg, cly fld, sme lse, vy sl carb, vy sl por, N-S
80% Sh: AA
10% Clystn: AA

50 - 60
30% Ss: wht, m-cg, sbrnd, sl cly fld, sme lse, sl ark, vy sl carb, sl calc, fri, sl por, N-S
60% Sh: AA, bent, sft
10% Clystn: wht, lt brn, blky-plty, sft, sme swlg

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

70 - 80
30% Ss: wht, fg, sbrnd, vy cly fld, metallic incls, sft, tite, N-S
50% Sh: AA
20% Clystn: AA

80 - 90
20% Ss: wht, f-mg, sbrnd, vy cly fld, shly, sme swlg, vy sft, tite, N-S
60% Sh: lt gry, grn, blky, carb incls, slty, frm-sl sft
20% Clystn: AA

90 - 900
60% Sh: AA
40% Clystn: wht, blky, carb incls, bent., sft, swlg
Tr. Ss: AA

900 - 10
20% Ss: wht, f-mg, sbrnd-sbang, vy cly fld, sme shly & swlg, metallic incls, sme vy sft, sme frm, tite, N-S
70% Sh: lt-dk gry, grn, blky, carb incls, bent., sft
10% Clystn: AA

10 - 20
70% Ss: wht, clr, f-cg, sbrnd, vy cly fld-clean, ark, sme sl por, N-S
30% Sh: AA

20 - 30
70% Ss: AA, but carb
30% Sh: AA, w/carb laminations

30 - 40
40% Ss: AA
50% Sh: lt-dk gry, grn, blky, sme waxy, carb incls, bent, sft
10% Clystn: wht, plty, carb incls, metallic incls, sft, swlg

40 - 50
60% Ss: wht, fg, sbrnd, vy cly fld, sme shly & swlg, sl carb bent, sft, tite, N-S
40% Sh: AA

1300 - 10	10% Ss: wht, vfn-g, sbrnd, wl srtd, cly fld, sl ark, sme sl carb, calc, sl frm, N-S
	80% Sh: lt-dk gry, brn, grn, blky-plty, carb, bent., sme slty, sl calc, sft
	10% Clystn: wht, blky, carb incls, sft, swlg
10 - 20	10% Ss: AA
	70% Sh: AA
	20% Clystn: AA
20 - 30	20% Ss: lt gry, vfn-fg, sbrnd, sl cly fld, ark, carb, glauc calc, frm, sl por, N-S
	50% Sh: AA, pyritic
	30% Clystn: AA
30 - 40	10% Ss: wht, vfn-g, sbrnd, cly fld, sl ark, carb, fri, sl por, N-S
	70% Sh: AA
	10% Clystn: AA
	10% Coal: blk, vit, blky, cly incls, hard
40 - 50	10% Ss: AA
	80% Sh: lt gry, dk gry, brn, grn, blky-plty, carb, bent, sme slty, sft
	10% Clystn: AA
50 - 60	20% Ss: lt gry, wht, vfn-g, vy cly fld, sbrnd, sme ark, sl carb, sft, tite, N-S
	70% Sh: gry, brn, grn, blky, sme waxy, sft, bent, carb, slty
	10% Clystn: AA
60 - 70	20% Ss: AA
	60% Sh: AA
	10% Clystn: AA
	10% Coal: AA
70 - 80	10% Ss: AA
	90% Sh: AA
80 - 90	10% Ss: wht-lt gry, grn, f-mg, sbrnd, cly fld, sl ark, sl carb, glauc, sl frm, vy sl por, N-S
	80% Sh: AA
	10% Coal: blk, vit, blky, cly incls, hard
1390 - 1400	90% Sh: gry, brn, blky-plty, carb, sme vy slty, sft
	10% Chert: clr, vy cg, sbrnd, translucent, lse
	Tr. Pyrite
1400 - 10	10% Ss: wht, vfn-g, sbrnd, vy cly fld, ark, vy sl carb, frm, tite, N-S
	90% Sh: AA
	Tr. Pyrite
10 - 20	100% Sh: AA
	Tr. Coal: AA
20 - 30	10% Ss: lt gry, fg, sbrnd, sl cly fld, sl ark, sft-frm, por
	90% Sh: gry, brn, blky-plty, sft, sme slty
30 - 40	20% Ss: AA
	80% Sh: AA, but also bent.
	Tr. Coal: blk, vit, blky, pyritic, hard
	Tr. Chert: AA

1440 - 50 20% Ss: wht, fg, sbrnd, cly fld, carb, sl ark, sl glauc, hard, calc, sl por, N-S
40% Sh: AA
10% Clystn: AA
30% Coal: blk, vit, blky, hard
Tr. Pyrite

50 - 70 10% Ss: gry, vfn-fg, sbrnd-sbang, cly fld, carb, ark, glauc, calc, frm, vy sl por, N-S
60% Sh: gry, brn, grn, blky, carb, frm-sft, bent
30% Coal: blk, vit, blky, cly incl, hard

70 - 80 10% Ss: wht, vfn-g, sbrnd, vy sl cly fld, ark, carb, hard, sl por, N-S
80% Sh: AA
10% Coal: AA

80 - 90 20% Ss: wht, f-mg, sbrnd, vy cly fld, ark, glauc, carb, sft, tite, N-S
50% Sh: AA
30% Coal: AA

1490 - 1500 20% Ss: AA
60% Sh: brn, gry, carb incls, carb ptngs, blky-plty, sft
20% Clystn: wht, plty, carb incls, sft, swlg

1600 - 10 70% Ss: wht, vfn-fg, sbrnd, sme vy cly fld & shly, sme sl cly fld, ark, sl glauc, vy sl carb, sft-frm, sme sl por, N-S
30% Sh: gry, brn, grn, plty, carb, bent, sft

10 - 30 70% Ss: AA
20% Sh: AA
10% Coal: blk, vit, blky, hard, w/cly incls

30 - 40 50% Ss: wht, gry, fg, cly fld, shly, ark, carb, sft-frm, calc, sme sl por, N-S
10% Sh: AA, sme blky
40% Coal: AA

40 - 50 20% Ss: wht, gry, f-mg, sl glauc, cly fld, ark, sme carb, frm, sl por, N-S
10% Sh: AA
70% Coal: AA

50 - 60 20% Ss: wht, clr, mg, cly fld, wl srtd, ark, fri, sme lse frm, N-S
10% Sltstn: brn, vy carb, sl calc, sft
10% Sh: AA
60% Coal: AA

60 - 70 20% Ss: wht, f-mg, sbrnd, cly fld, glauc, hard, carb, sme sl por, N-S
20% Sh: gry, grn, blky, carb, sft, bent.
60% Coal: AA, sme vy cly fld

70 - 80 20% Ss: AA
60% Sh:AA
20% Coal: blk, vit, blky, hard

80 - 90 40% Ss: wht, fg, sbrnd, cly fld & shly, swlg, ark, carb, vy sft, tite, N-S
50% Sh: AA
10% Coal: AA

1690 - 1700 50% Ss: AA
50% Sh: AA

1700 - 10 90% Ss: AA, sl calc
10% Sh: AA

10 - 20 90% Ss: AA
10% Sh: AA
Tr. Coal: AA, and Tr. Chert: clr, vy cg, sbrnd, transl, lse

20 - 40 100% Ss: wht, vfn-g, sbrnd, wl srtd, ark, carb, glauc, bent, vy cly fld & shly & swlg, sft, tite, N-S

40 - 50 70% Ss: AA, sl por, N-S
30% Sh: brn, lt gry, blky, carb, sme slty, sft

50 - 60 50% Ss: AA
50% Sh: AA
Tr. Coal: AA

60 - 70 40% Ss: wht-gry, f-mg, sbrnd, cly fld, sme shly & swlg, ark, sl carb, sl glauc, most sl frm, vy sl por, N-S
60% Sh: brn, gry, blky-plty, carb, sme slty, vy sft
Tr. Chert: AA

70 - 80 40% Ss: AA
50% Sh: AA
10% Clystn: wht, plty, carb, vy sft, swlg

80 - 90 40% Ss: AA
60% Sh: AA, sme grn & bent

1790 - 1800 50% Ss: AA
40% Sh: AA
10% Clystn: AA

2500 - 10 60% Ss: gry, wht, vfn-fg, sbrnd, cly fld, sl ark, carb, hard, tite, N-S
40% Sh: brn, lt gry, most plty, carb, sme slty, sft
Tr. Clystn: wht, blky, carb, vy sft, swlg

10 - 20 30% Ss: AA
70% Sh: AA, sme grn & bent, also sme blky

20 - 40 40% Ss: AA, wl srtd
60% Sh: AA

40 - 50 50% Ss: AA, sme pyritic incls
40% Sh: AA, sme wxy
10% Clystn: AA
Tr. Coal: blk, vit, blky, hard

50 - 60 70% Ss: gry, vfn-fg, sbrnd, cly fld, sl ark, carb, frm, tite, N-S
30% Sh: brn, gry, grn, plty-blky, carb incls, pyritic, bent, sft

60 - 80 70% Ss: AA, w/sme wht, mg, sme calc, fri, sl por, N-S
30% Sh: AA, sme slty
Tr. Coal: AA

80 - 90 70% Ss: gry, mg, sbrnd, wl srtd, cly fld, sl carb, sme vy sl ark, sme glauc, sl calc, sl por, N-S
20% Sh: AA
10% Clystn: AA

2590 - 2600 80% Ss: AA
20% Sh: AA

3150 - 60 30% Ss: wht, fg, sbrnd-sbang, wl srtd, sl cly fld, ark, sl carb, sme vy sl glauc, sl por, N-S
60% Sh: gry, brn, grn, blky-plty, carb, bent, sft
10% Clystn: wht, plty, carb, sft, swlg

60 - 80 20% Ss: gry, f-mg, sbrnd, cly fld, sl ark, carb, hard, tite, N-S
60% Sh: AA
20% Clystn: AA
Tr. Calcite & Tr. Pyrite

3180 - 90 10% Ss: wht, vfn-g, sbrnd, vy cly fld, sl glauc, frm, tite, N-S
70% Sh: AA
20% Clystn: AA
Tr. Chert: AA

3190 - 3200 N.S.

3200 - 10 80% Sh: gry, grn, blky-plty, carb, sme slty, sme bent, metallic incls, sft
20% Clystn: wht, plty, carb, vy sft, swlg
Tr. Ss: AA

10 - 20 10% Ss: wht, lt gry, fg, sbrnd, wl srtd, cly fld, sl ark, sl carb, glauc, sft, tite, N-S
60% Sh: AA
30% Clystn: AA

20 - 30 70% Sh: AA, sme vy slty
30% Clystn: AA
Tr. Ss: AA, also pyritic

30 - 40 10% Ss: gry, wht, f-mg, sbrnd, cly fld, ark, sl carb, sft, tite, N-S
60% Sh: AA
30% Clystn: AA

40 - 50 40% Sh: AA, sme wxy
20% Clystn: AA
40% Coal: blk, sme vit, sme dull, blky, hard
Tr. Ss: AA

50 - 60 N.S.

60 - 70 10% Ss: AA, w/sme shly, fg
60% Sh: brn, dk gry, grn, blky-plty, carb, bent, sl calc, sft
20% Clystn: AA
10% Coal: blk, vit, blky, cly incls, hard

70 - 80 10% Ss: AA
60% Sh: AA
30% Clystn: AA
Tr. Coal: AA

80 - 90 20% Ss: AA, w/glauc, calc, sl frm, tite, N-S
50% Sh: AA, but all plty, carb, sl pyritic, calc, sft-frm
20% Clystn: AA
10% Coal: AA

3290 - 3300 10% Ss: AA
60% Sh: AA
20% Clystn: AA
10% Coal: AA

4100 - 10 50% Ss: wht, gry, vfn-g, sbrnd, cly fld, ark, glauc, sl ca calc, sl por, N-S
30% Sh: AA
10% Clystn: wht, blky, carb, vy sft, swlg
10% Coal: blk, vit, blky, hard

10 - 30 50% Ss: AA, hard, tite, N-S
40% Sh: gry, brn, blky-plty, carb, cly incls, sft, sme grn bent, sme slty
10% Clystn: AA
Tr. Coal: AA

4130 - 40	30% Ss: wht, gry, fg, sbrnd, wl srtd, vy cly fld, carb, sl ark, sft, tite, N-S
	70% Sh: brn, gry, blky, carb, sme vy slty, sme frm
	Tr. Coal: AA and Tr. Chert: clr, vy cg, sbrnd, transl, lse
40 - 60	40% Ss: color AA, f-mg, sbrnd-sbang, cly fld, ark, carb, sme glauc, fri, sl por, N-S
	40% Sh: AA
	20% Coal: blk, sme vit, sme dull, blky, cly incls, hard
60 - 70	30% Ss: AA
	60% Sh: AA, also grn, bent, wxy
	10% Coal: blk, vit, blky, hard
70 - 80	10% Ss: wht, mg, sbrnd, wl srtd, cly fld, ark, carb, fri, sl por, N-S
	80% Sh: brn, gry, blky-plty, carb, sme slty, sft
	10% Coal: AA
80 - 90	20% Ss: AA
	80% Sh: AA, sme bent
	Tr. Pyrite
4190 - 4200	40% Ss: AA, N-S
	60% Sh: AA
	Tr. Pyrite and Tr. Coal: AA
4200 - 10	40% Ss: wht-gry, f-mg, sbrnd, cly fld, sl ark, carb, sme sl glauc, hard, sme sl por, N-S
	50% Sh: brn, gry, grn, plty, carb, bent, sft, calc
	10% Clystn: AA
	Tr. Pyrite & Tr. Calcite
10 - 20	10% Ss: AA
	80% Sh: AA
	10% Clystn: AA
	Tr. Coal:AA
20 - 30	80% Sh: AA, sme vy slty
	10% Clystn: AA
	10% Coal: blk, vit, blky, cly incls, hard
30 - 40	80% Sh: AA, sme wxy
	20% Clystn: AA
40 - 50	10% Ss: AA
	80% Sh: AA
	10% Clystn: AA
	Tr. Pyrite
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5200 - 30	10% Ss: wht-brn, fg, sbrnd, shly, frm, vy calc, poss sl porosity, N-S
	90% Sh: dk gry-brn, calc, carb, frm
30 - 60	100% Sh: dk gry, clayey, sft, slty
60 - 80	90% Sh: AA
	10% Clystn: lt gry, sft
5280 - 5310	80% Sh: AA
	20% Clystn: AA
10 - 40	10% Ss: wht, f-mg, sbrnd, shly & cly fld in part, prob. tite, N-S
	90% Sh: AA
40 - 60	100% Sh: dk gry-gry-brn, slty, clayey, frm-sft, sl calc
5360 - 5400	20% Sltstn: gry-brn, shly, calc, sl carb, hard, tite
	80% Sh: AA
5400 - 20	100% Sh: AA
	Tr. Calcite xls

5420 - 50 10% Ss: gry, fg, sbrnd-sbang, sl ark, sl carb, shly in part sl porous, N-S
90% Sh: AA

5450 - 5500 90% Sh: gry, blky, calc, frm, slty in part
10% Clystn: lt gry, sft

6050 - 70 100% Sh: dk gry-gry, plty, carb, slty, frm, calc

70 - 90 100% Sh: AA, with no carb, and vy calc

6090 - 6120 90% Sh: AA
10% Calcite: clr, crs-xln

20 - 60 100% Sh: dk gry, splintery, calc, slty

60 - 90 80% Sh: AA
20% Sltstn: gry, brn, vy cly fld, carb, hard, sl yel fluor w/vy wk cut

6190 - 6200 90% Sh: AA
10% Sltstn: AA w/show AA

6200 - 10 100% Sh: AA

10 - 20 50% Ss: lt gry, mg, wl srtd, sbrnd, sl ark, mod cly fld, clean, frm, sl por, yel fluor w/fair cut
50% Sh: gry, blky, sndy, carb, calc

20 - 30 60% Ss: lt gry, mg, wl srtd, sbrnd, vy cly fld, hard, calc, ark, tite, faint yel fluor w/vy wk cut
40% Sh: AA

30 - 38 40% Ss: lt gry, fg, wl srtd, sbrnd, sl cly fld, frm, calc, ark, sl por, yel fluor w/fair cut
60% Sh: AA

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45" circ. spl. 10% Ss: AA
90% Sh: dk gry, splintery, sl pyritic, sndy, calc