UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DETAILED DESCRIPTIONS OF THE UPPER CRETACEOUS SUSSEX SANDSTONE IN FIVE COREHOLES, POWDER RIVER BASIN, WYOMING

Debra K. Higley[1]

OPEN-FILE REPORT 88-420

[1] USGS, DENVER, CO 80226

1988

These core descriptions of the Sussex sandstone in five Powder River Basin, Wyoming coreholes are intended to show vertical stratigraphic relationships and trace fossil assemblages at these locations.

The Sussex sandstone of the Upper Cretaceous Cody Shale is composed of marine shelf sandstones and siltstones. Oil is produced primarily from the ripple-laminated and planar and trough cross-bedded offshore bar sandstones which are present near the top of some Powder River basin Sussex core and outcrop sections.

Condensing the core descriptions required abreviating many words; examples are SA and SR for sub-angular and sub-rounded, VLT and MED-GY MS for very-light and medium-gray mudstone. Where space was available on the forms the terms were not shortened. A source for trace fossil descriptions is A. Seilacher (1978), Use of trace fossils for recognizing depositional environments; in Trace fossil concepts; SEPM Short Course no. 5, pp. 175-201.

The core is stored at the U.S. Geological Survey core library in Lakewood, Colorado under the core number listed at the top of the description forms. Well names and locations and text locations of the five described coreholes are:

EXPLANATION

MEASUREMENTS ARE IN FEET (') OR DECIMAL FEET AND INCHES (") THE COLUMN MARKED "ENERGY" ON THE DESCRIPTIONS REFERS TO RELATIVE VERTICAL CHANGES IN DEPOSITIONAL ENERGY CONDITIONS BASED ON BEDFORMS AND BIOLOGIC ACTIVITY, BOTH FOR SMALL AND FOR LARGE CORE SECTIONS.

LIST OF ABREVIATIONS

ROCK UNITS

SA = SUBANGULAR SS GRAINS, SR = SUBROUNDED SS GRAINS,
R = ROUNDED SS GRAINS,
FW = FAIRLY WELL (SORTED), P-F = POOR TO FAIR (SORTED),
W = WELL (SORTED),
MED-GY = MEDIUM GRAY, VLT, LT-BRN = VERY LIGHT, LIGHT BROWN,
VF = VERY-FINE (GRAINED SANDSTONE), F = FINE (SANDSTONE),
M = MEDIUM (SANDSTONE), C = COARSE (SANDSTONE),
SS = SANDSTONE, SLT = SILTSTONE, MS = MUDSTONE, CLY = CLAY,
D = MUDSTONE DRAPE, BLEBS = AMORPHOUS ROUNDED SANDSTONE OR SILTSTONE LENSES

GENERAL

ABUN = ABUNDANT, DIA = DIAMETER, FX = FRACTURED,
$CaCO_3$, CARBONATE = CALCIUM CARBONATE, EST = ESTIMATED,
MOD = MODERATE, OSTN = OIL STAINED, TH = THICK,
X-BEDDED = CROSS-BEDDED

SYMBOL DESCRIPTION

MAJOR BOUNDARY DIVISIONS BETWEEN DESCRIBED CORE

DETAILED DESCRIPTIONS WITHIN MAJOR BOUNDARIES SHORT DASHED LINE.

CORE MISSING

UPWARD, DOWNWARD (AS IN DECREASING DOWNWARD)

MUDSTONE

MUDDY SANDSTONE, SILTSTONE

SANDSTONE

TROUGH CROSS-BEDDING

PLANAR TABULAR CROSS-BEDDING

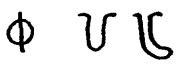
RIPPLE LAMINATION

CLAY CLASTS, CHERT CLASTS

BIOTURBATION

HORIZONTAL BURROWS

TEICHICHNUS

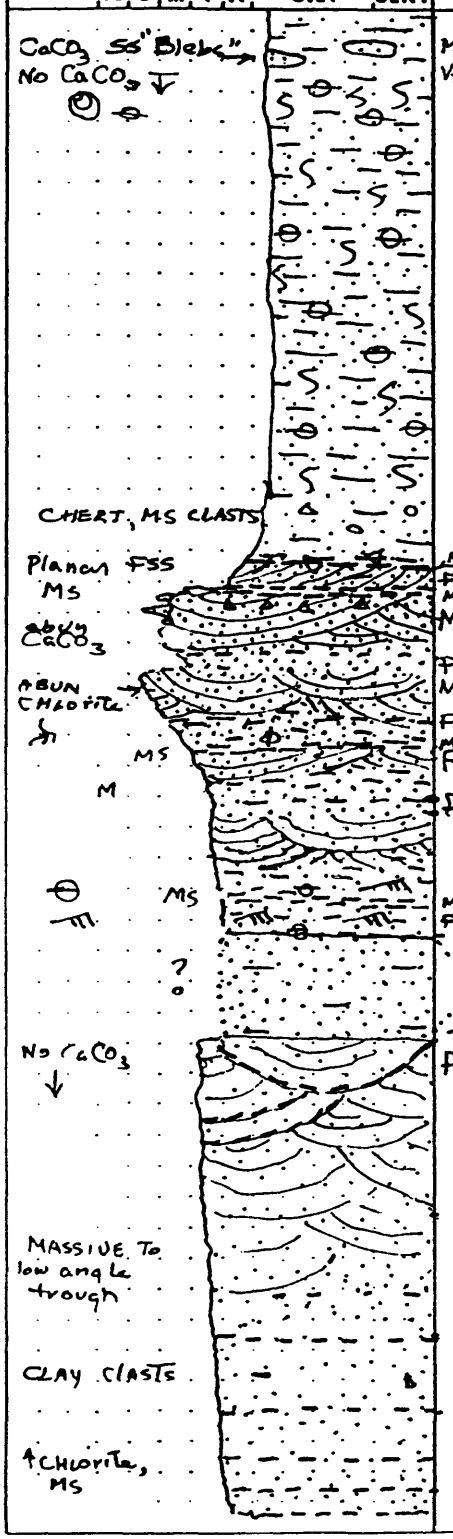


VERTICAL BURROWS

CHONDRITES

8002 TO 8011.9 FT

#1 EMPIRE-FEDERAL "C", SW NW SEC. 29, T45N, R73W, CAMPBELL CO, WYO.
WOODS PETROLEUM CORP., 4,895' KB ELEV., 8,002-8,048' CORE DEPTHS



8002-8005.7' (3.7') EXTENSIVELY BIOTURBATED MED TO DK-GY MS-VFSS. MOD AMT CHLORITE GRAINS. BURROWS HORIZONTAL AND 0.05" DIA (PLANOLITES) AND 0.15"-0.35" DIA BACKFILL (TEICHICHNUS). NO VERTICAL BURROWS. CARBONATE CEMENT PRESENT IN VLT-GY VFSS BLEBS NEAR BASE; ALSO 0.2" CHERT AND 0.03" DIA MS CLASTS. CONTACT WITH UNDERLYING FSS IS GRADATIONAL OVER LOWER 0.5' OF UNIT.

8005.7-05.8' (0.1') COARSENING UPWARD PLANAR BEDDED F SORTED SR GY OSTN FSS WITH MOD AMTS CHLORITE. V MINOR CARBONATE PORE FILLING. LOWER CONTACT NON-EROSIONAL ON BURROWED MS DRAPE.

8005.8-06.1' (0.3') COARSENING ↑ TROUGH X-BEDDED LT-GY OSTN F TO MSS WITH ROUNDED MS AND CHERT CLASTS. ABUNDANT CHLORITE. CARBONATE INCREASES ↓. INTERNAL AND LOWER CONTACTS EROSIONAL.

8006.1-06.3' SECTION PROB. MISSPLACED-CaCO3 CEMENTED VLT-GY VFSS. CHONDRITES

8006.3-07.1' COARSENING ↑ 5-10° DIPPING TROUGH BEDDED F SORTED F-MSS WITH ABUN CHLORITE, ROUNDED CLY CLASTS AT TOP. ABUN CARBONATE. CHONDRITES BURROWS (?) IN LAMINAR MS SECTIONS.

8007.1-08.1' 0.3-1.2" LT-GY FSS. GRADES UPWARD FROM PARALLEL AND RIPPLE-LAMINATED AND MS-DRAPED FSS TO LOW ANGLE TROUGH BEDDED FSS. MS WITH PLANOLITES BURROWS NEAR BASE OF SS.

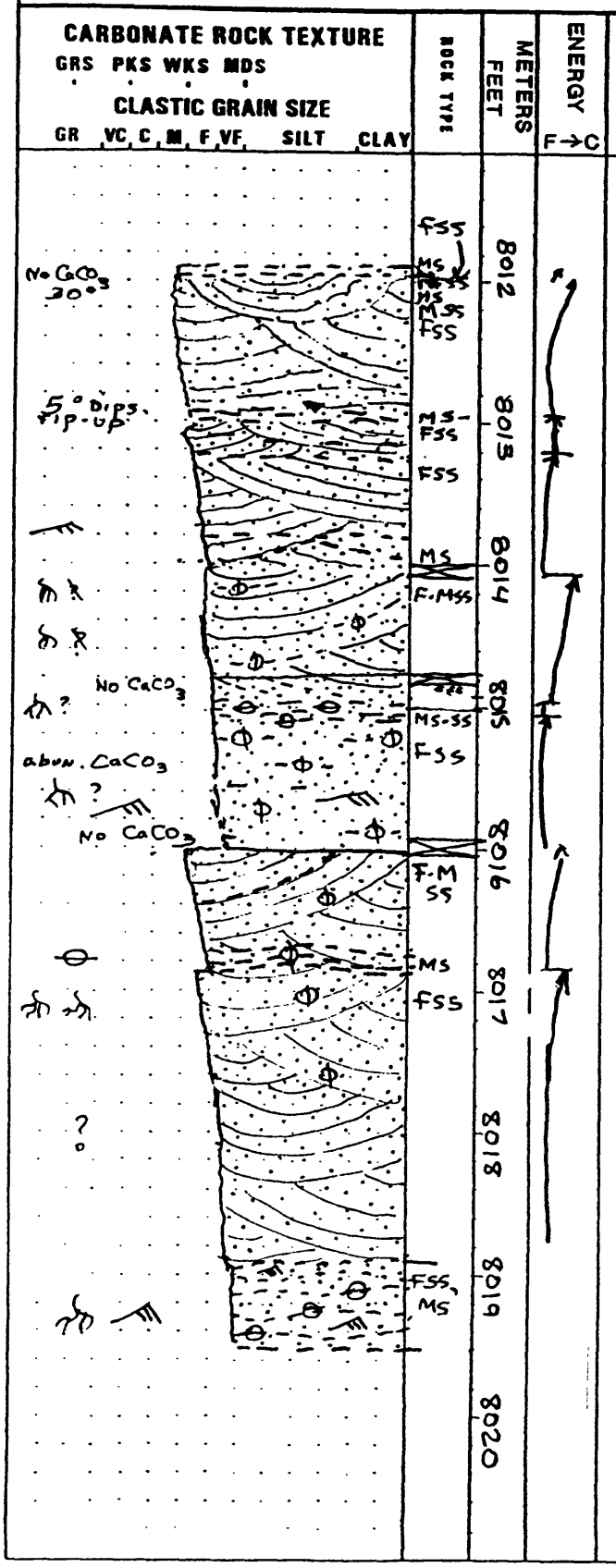
8008.7-11.9' MASSIVE SS TO 5-20° DIP TROUGH X-BEDDED FW SORTED SR-SA MED-GY FSS. NO CaCO3, ABUN CHLORITE. MS DRAPES ON SCOURS AND BEDDING PLANES, NO BIOTURBATION.

CORE MISSING — 8006.1' CORE MISSING AT BASE, EST 0.3-1'

8008.1-8008.7' 0.6' MISSING

8009.1-8011.9' EST 1.7' MISSING

#1 EMPIRE-FEDERAL "C", SW NW SEC. 29, T45N, R73W, CAMPBELL CO, WYO.
WOODS PETROLEUM CORP., 4,895' KB ELEV., 8,002-8,048' CORE DEPTHS



DESCRIPTION

8011.9-8014' (2.1' EST) OSTN BRN-GY F-MSS. MOD AMT CHLORITE, NO CaCO3. 30° DIP TROUGH X-BEDS AT TOP; ANGLE, ENERGY INCREASE UPWARD. MINOR FLASER BEDDING; MED-GY MS LAMINAE AND CLASTS ON BEDDING PLANES.

8013.1-13.25' 1-5° DIP TROUGH BEDDING IN FSS WITH MS FLASER AND RIP-UP.

8013.25-14' (EST) LOW ANGLE TROUGH X-BEDDED FSS, MINOR RIPPLE LAMINAE.

8014-8014.8' (EST) AS 8011.9-8013.1' ABOVE. LT-GY CLY-CEMENTED FSS, NO OSTN. INTERNAL SCOUR CONTACTS. MOTTLED SS; POSSIBLY CHONDRITES.

8014.8-16' (EST) SS-FILLED 0.02-0.03" DIA HORIZ BURROWS OR POSSIBLY CHONDRITES IN BIOTURB MS.

8016-18.9' (EST) AS 8011.9-13.1' ABOVE. MINOR TO MOD CHONDRITES, DECREASING UPWARD. LOW ANGLE SS TROUGHS, SCOUR CONTACTS. MS DRAPES, RIP-UP, AND CHLORITE GRAINS ON BEDDING PLANES.

8016.9-18.9' CORE MISSING - WELL LOG CHARACTER SUGGESTS COARSENING UPWARD SS AS ABOVE.

8018.4-19.5' (EST) SCOUR-FILL AND RIPPLE-LAMINATED FSS WITH MODERATE CHONDRITES. INTERNAL WAVY, NON-EROSIONAL CONTACTS. MS DRAPES

CORE MISSING — UP TO 3-6" OF CORE MISSING FOR EACH FOOT OF CORE.

8017-8018.9' EST 1.3' MISSING

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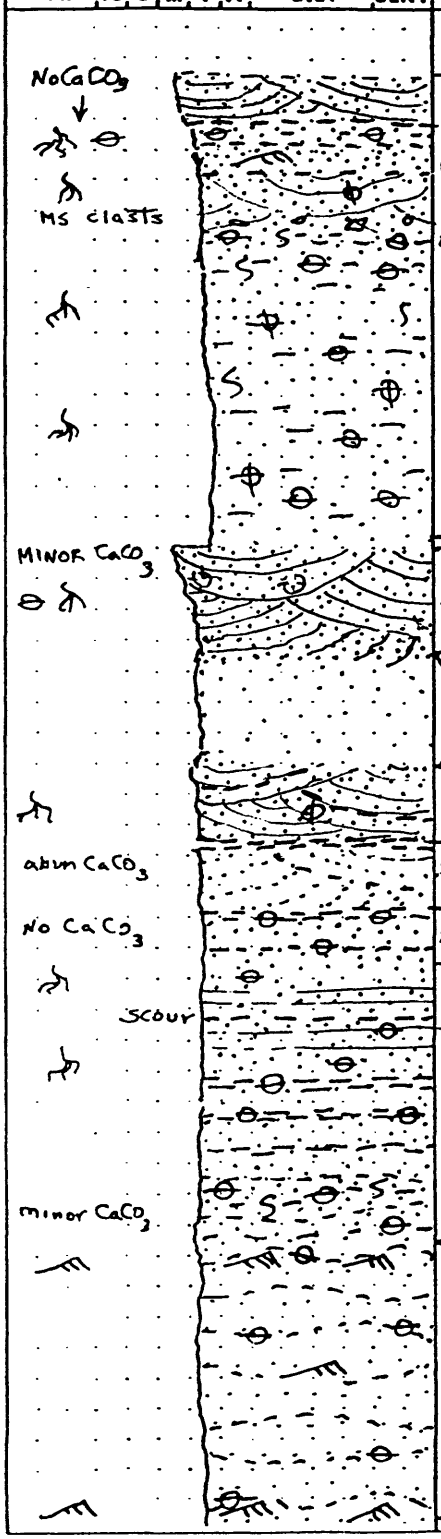
WOODS PETROLEUM CORP., 4,895' KB ELEV., 8,002-8,048' CORE DEPTHS



DESCRIPTION

8019.5-24.55' (5.05') F SORTED LT TO MED-GY FSS WITH HORIZ BIOTURBATED MS DRAPES. MASSIVE TO 2-15° DIP TROUGH X-BEDDED SS, COARSENS UPWARD, BIOTURBATION DECREASES UPWARD. MOTTLING IN SOME SS SECTIONS MAY BE DIAGENETIC OR CHONDRITES.

8020.35-20.8' FSS APPEARS TO FINE ↑.

8020.8-23.2' MOD AMT CHONDRITES IN FSS.

8022.6-23.2' LOW ANGLE TROUGH X-BEDDED FSS WITH MOD MOTTLING (CHONDRITES).

8023.3-24' CORE MISSING

8023.9-24.55' (AS 8019.5-20' ABOVE) TROUGH X-BEDDED CLY-CEMENTED F SORTED FSS. MS LAMINAE DECREASE UPWARD.

8024.55-32.3' (EST 1' CORE MISSING) TAN TO LT-GY F SORTED FSS. SPOTTY CaCO3 CEMENT. SS ENERGY INCREASES ↑; TROUGH X-BEDDED AT TOP TO WAVY, RIPPLE-LAMINATED, AND MASSIVE SS BEDDING DOWNWARD. MS LAMINAE MOD TO EXTENSIVELY BIOTURBATED WITH HORIZ BURROWS (CHONDRITES, PLANOLITES).

8025.5-26.1' PARALLEL BEDDED TO MASSIVE FSS, COARSENS UPWARD.

8026.1-29.0' (1.2' CORE MISSING) MED-GY RIPPLE-LAMINATED TO WAVY BEDDED FSS. MS DRAPES ON SS, SCOUR-FILL. MINOR CHONDRITES BIOTURBATION IN MS.

CORE MISSING — 8021.1-8022.9' 0.7' MISSING
8023.3-8024' 0.7' MISSING
8027.1-8028.9' 1.2' MISSING

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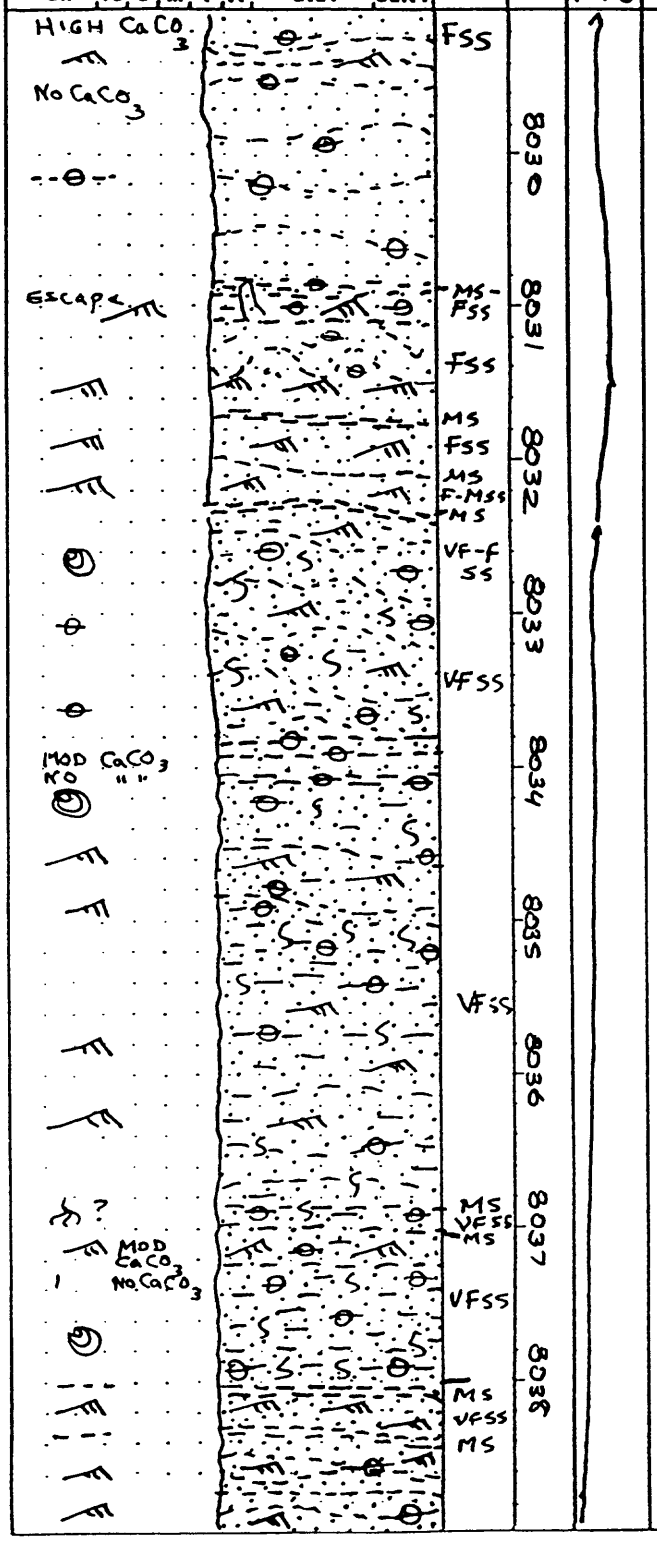
WOODS PETROLEUM CORP., 4,895' KB ELEV., 8,002-8,048' CORE DEPTHS



8024.55-32.3' CONTINUED

8031' (0.3X0.8") PELECYPOD ESCAPE FEATURE IN BIOTURB MS, RIPPLE-LAM FSS.

8031.2-31.5' FSS. MS LAMINAE DISRUPTED BY HORIZ BIOTURB AND POSSIBLE LIQUEFACTION IN SCOUR-FILL FSS.

8031.5' MS DRAPE ON RIPPLE REACTIVATION SURFACE. INDIVIDUAL SETS FINE UPWARD.

8031.5-45.1' EXTENSIVELY BIOTURBATED MED-GY VFSS. SS RIPPLE-LAMINATED, SCOUR CONTACTS. BURROWS HORIZONTAL (PLANOLITES, TEICHICHNUS).

8037-38.1' RIPPLE AND CLIMBING-RIPPLE LAMINATION IN VFSS. MS CONTENT AND BURROWS DECREASE UPWARD.

8038.1' 0.2" THICK MS DRAPE.

8038.1-39' LT-GY VF-FSS, WAVY BEDDED AND RIPPLE LAMINATED. MS BIOTURB.

CORE MISSING — 8029-8030.9' 0.8' CORE MISSING
8031.9-8022.8' 0.7' MISSING
8034.1-8036.9' 1.0' MISSING

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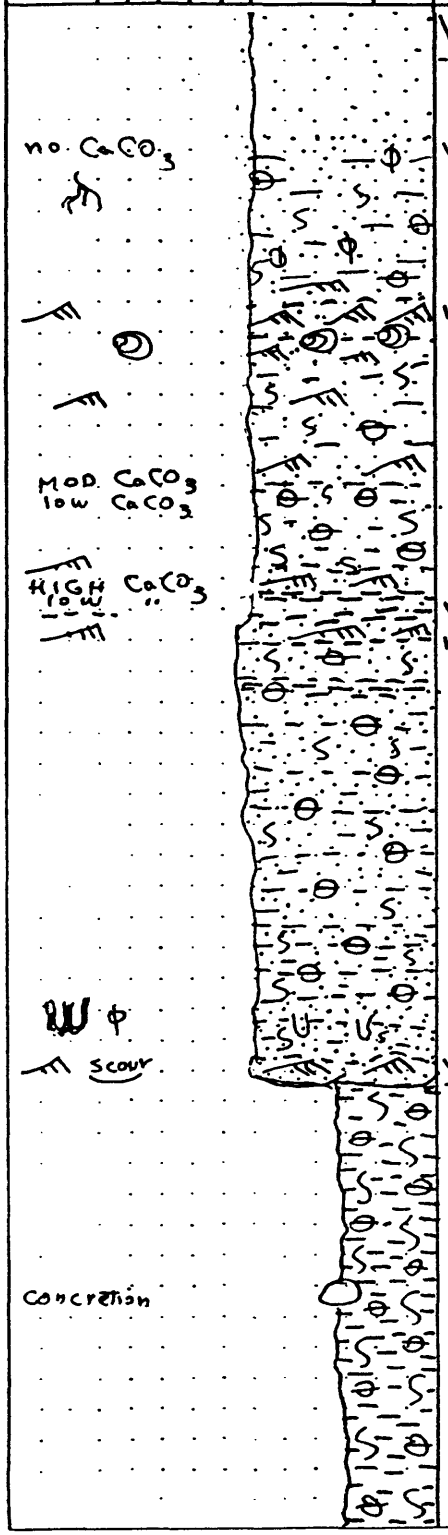


DESCRIPTION

8031.5-45.1' CONTINUED. ENERGY INCREASES UPWARD. LAMINATED MS AND LENSES OF RIPPLE-LAMINATED TO MASSIVE SLT-VFSS.

8040.1-40.9' ALTERNATING THIN RIPPLE-LAMINATED VFSS LENSES WITH MS DRAPES AND HORIZ BURROWED (PLANOLITES, TEICHICHNUS) MS-VFSS)

8041.8-42' ABUNDANT CaCO3 IN RIPPLE-LAMINATED VLT-GY VFSS OVER 0.5" THICK MS DRAPE.

8044.7' VERTICAL 0.25 X 1.2" DIAMETER DOUBLE BURROWS IN VFSS.

8045-45.15' RIPPLE-LAMINATED VLT-GY CaCO3-CEMENTED VFSS. COARSENS UPWARD. LOWER SCOUR CONTACT, UPPER MS CONTACT.

8045.15-48' EXTENSIVELY BIOTURBATED DK-GY MS. PLANOLITES BURROWS. 0.1" THICK SLTST BLEBS.

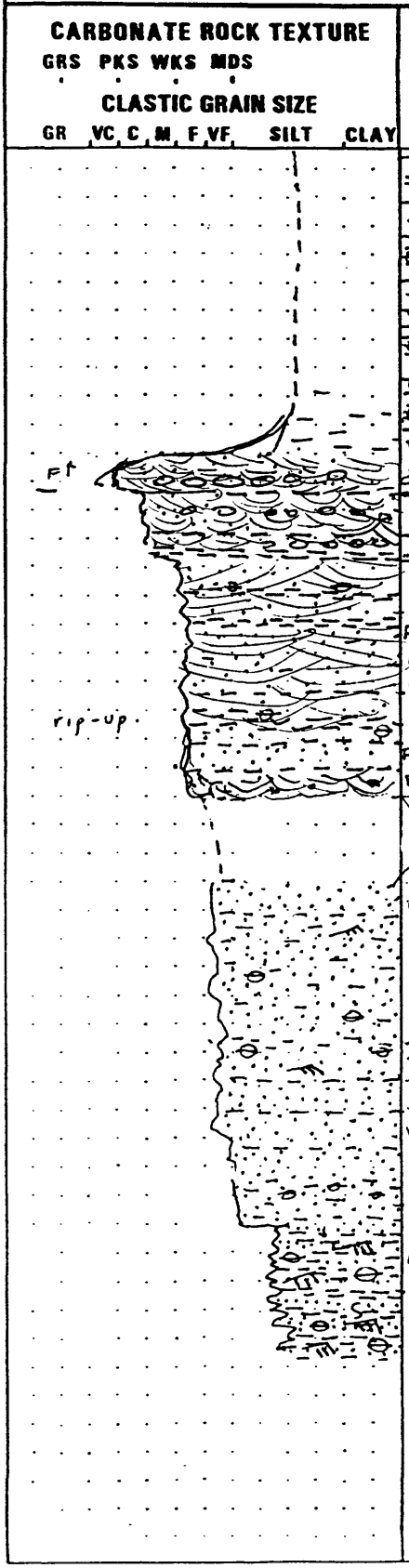
8046.5' 1" DIAMETER CLAY OR SIDERITE CONCRETION

CORE MISSING —

8157 TO 8197FT

GENERALIZED CORE DESCRIPTION WELL LOG DEPTH 7' DEEPER THAN CORE DEPTH

#1 MANDELL FEDERAL SEC. 22, T 44 N, R 73 W CAMPBELL CO, WYO.
WOODS PETROLEUM CORP., 5012' KB ELEV. 8157.9-8197.5' CORE DEPTHS



8157.9-8166' (7.5') MED-GY MS-VFSS, COARSENS DOWNWARD SLIGHTLY WITH A TRANSITIONAL LOWER CONTACT WITH SS. ABUNDANT BIOTURBATION, HORIZONTAL SS-FILLED BURROWS. MED-GY MS BLEBS AND DRAPES.

8166-8169.8' (EST) (3.8') POORLY SORTED LT-GY VF-CSS WITH NUMEROUS FINING UPWARD SEQUENCES IN TROUGH X-BEDDED SCOUR-AND-FILL SANDSTONES. X-BEDS HAVE DIP ANGLES OF 10-30°. ABUNDANT MS AND CLYST RIP-UP CLASTS. NO SS BIOTURBATION. CLY CLASTS ARE TAN, UP TO 6" X 3" X 3", LYING ON TROUGH X-BEDDING, AND DISPLAY MINOR LAMINAR INTERNAL BEDDING. ABUNDANT F-M SIZED GRAINS OF CHLORITE AND/OR GLAUCONITE.

8169.8-8176' (6.2') LT-GY F-P SORTED F-MSS WITH MS DRAPES AND RIP-UP. VERY MINOR MS BIOTURBATION, HORIZONTAL BURROWS. BROAD LOW-ANGLE TROUGH X-BEDDING; MAX 10° DIP ANGLES. 8171' RIPPLE LAMINATED FSS.

8176-8178' (2') MED-GY TO TAN-GY F-MSS. VERY SLIGHT FINING UPWARD. BEDDING MASSIVE, TROUGH X-BEDS AND MS RIP-UP CLASTS AT BASE. MS DRAPES ON TROUGH X-BEDDING PLANES.

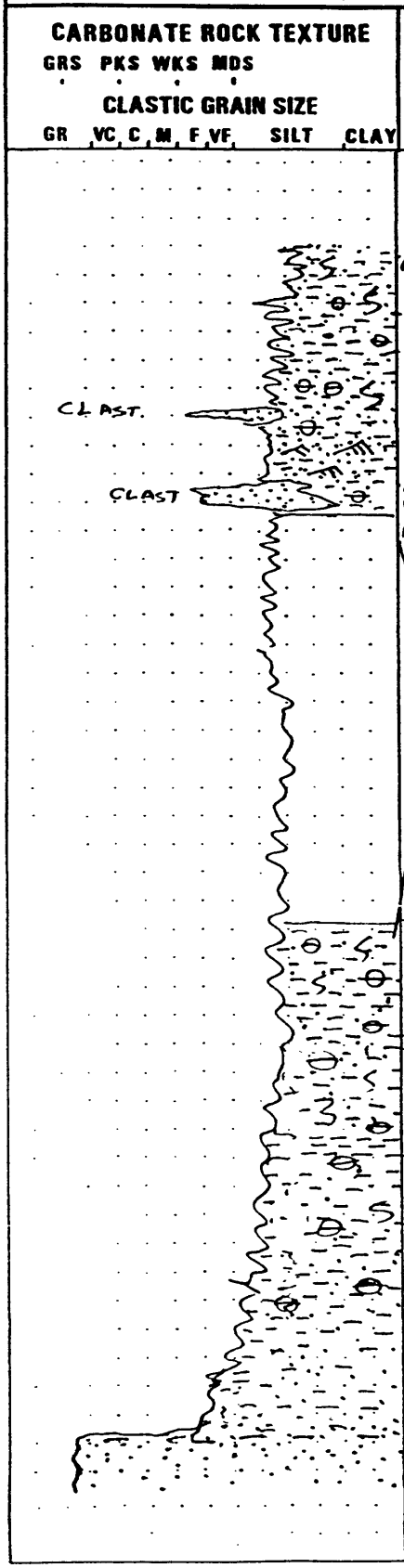
8181.5-8193.5' (12') VF-FSS WITH MINOR MSS GRAINS. MASSIVE TO PLANAR (?) BEDDING WITH RIPPLE LAMINAE. SS FINES DOWNWARD. HORIZONTAL BURROWS (PLANOLITES) IN MS DRAPES.

8193.5-97.5' (4') MED-GY MS-VFSS. MODERATE BIOTURBATION IN HORIZONTAL SS-FILLED BURROWS - PLANOLITES.

MED TO DK-GY MS DRAPES ON LAMINAR AND RIPPLE LAMINATED MED-GY VFSS.

CORE MISSING — 8159.7-8162.6' (2.9')
8178-8181.4' (3.4')

#1 MANDELL FEDERAL SEC. 22, T 44 N, R 73 W CAMPBELL CO, WYO
WOODS PETROLEUM CORP., 5012' KB ELEV. 8157.9-8197.5' CORE DEPTHS



DESCRIPTION

8157.9-8165.7' (7.8') EXTENSIVELY BIOTURBATED MS-MFSS. BURROWS HORIZONTAL 0.1" DIAMETER, LT-GY VFSS FILLED (PLANOLITES).
ORIGINAL BEDDING DESTROYED BY BIOTURBATION. EVIDENCE OF STARVED RIPPLES IN MS DRAPES OVER SS BLEBS.
8159-59.7' RIPPLE LAMINAE DIMENSIONS UP TO 0.3" X 1.5".

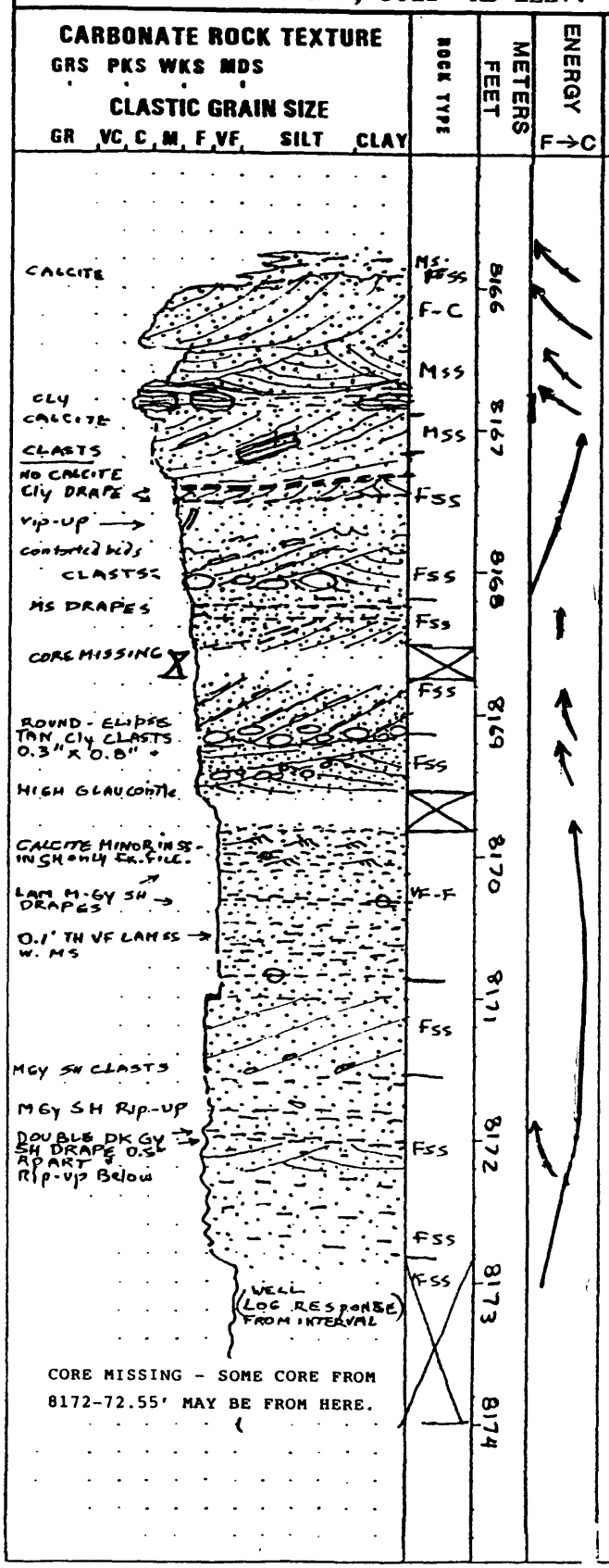
SEDIMENT CONSISTS OF DK-GY MS WITH 20-80% SLT- SR VFSS. QUARTZ SS WITH ABOUT 2% SLT-SIZED CHLORITE GRAINS.

DK-GY ROUNDED CLY CLASTS WITH PYRITE COATING (●), UP TO 0.1" IN DIAMETER. MAY BE FECAL PELLETS.

8165.7-66' MODERATE AMOUNT DK-GY 0.02-0.1" DIA ROUND MS CLASTS. CONTACT WITH UNDERLYING VF-CSS IS IRREGULAR AND TRANSITIONAL. GRAIN SIZE AND CHLORITE CONTENT INCREASE DOWNWARD. BIOTURBATION DECREASES DOWNWARD.

CORE MISSING —

#1 MANDELL FEDERAL SEC. 22, T 44 N, R 73 W CAMPBELL CO, WYO
WOODS PETROLEUM CORP., 5012' KB ELEV. 8157.9-8197.5' CORE DEPTHS



DESCRIPTION

8166-66.4' P SORTED LT-GY SR VF-CSS. FINING UPWARD LOW-ANGLE TROUGH X-BEDS. ABUNDANT CHLORITE, CARBONATE CEMENT. MOD AMOUNT MS-PYRITE PELLETS

8166.4-66.7' FW SORTED LT-GY SR MSS. SMALL SCALE TROUGH X-BEDS, EROSIONAL INTERNAL AND BED BOUNDARY CONTACTS.

8166.7-66.9' P SORTED PARALLEL BEDDED VLT-GY CLY-CSS. CLY CEMENT, CARBONATE ONLY IN FX AND IN PORE FILLING IN CLASTS. CLY CLASTS TAN, LAMINAR, 1" X + 3". NON-EROSIONAL BASE.

8166.9-67.2' VLT-GY P SORTED VF-CSS. TIGHT, CARBONATE CEMENT. 15° PLANAR -TABULAR DIPS, EROSIONAL CONTACTS.

8167.2-68.25'P SORTED SR F-CSS; CONTORTED TO DESTROYED LOW ANGLE TROUGH X-BEDDING. F-MSS WITH CHLORITE (GLAUCONITE?) STRINGERS AND CLY CLASTS, DRAPES, AND RIP-UP. NO CALCITE, MINOR MS ON BEDDING PLANES.

8168.25-68.5' AS ABOVE, F SORTED FSS, 40° ANGLE TROUGH X SETS, MS DRAPES.

8168.5-69.15' PARALLEL TO VERY-LOW ANGLE TROUGH X-BEDDED LT-MED GY F SORTED VF-MSS WITH CHLORITE, .05-0.1" TAN CLY CLASTS ON BEDDING PLANES.

8169.15-69.3' LT-GY F SORTED FSS WITH ABUNDANT CHLORITE. LOW ANGLE (15°) TROUGH X-BEDS, TAN CLY CLASTS ON BEDDING PLANES, EROSIONAL CONTACTS.

8169.85-70.8' LT-GY F-VFSS WITH ABUNDANT MS DRAPES, FLASER. SS LAMINAR TO RIPPLE-LAMINATED. RIPPLE DIMENSIONS 0.7" BY 0.2". DK GY MS LAMINAE HAVE MINOR HORIZONTAL SS-FILLED BURROWS - PLANOLITES 0.1".

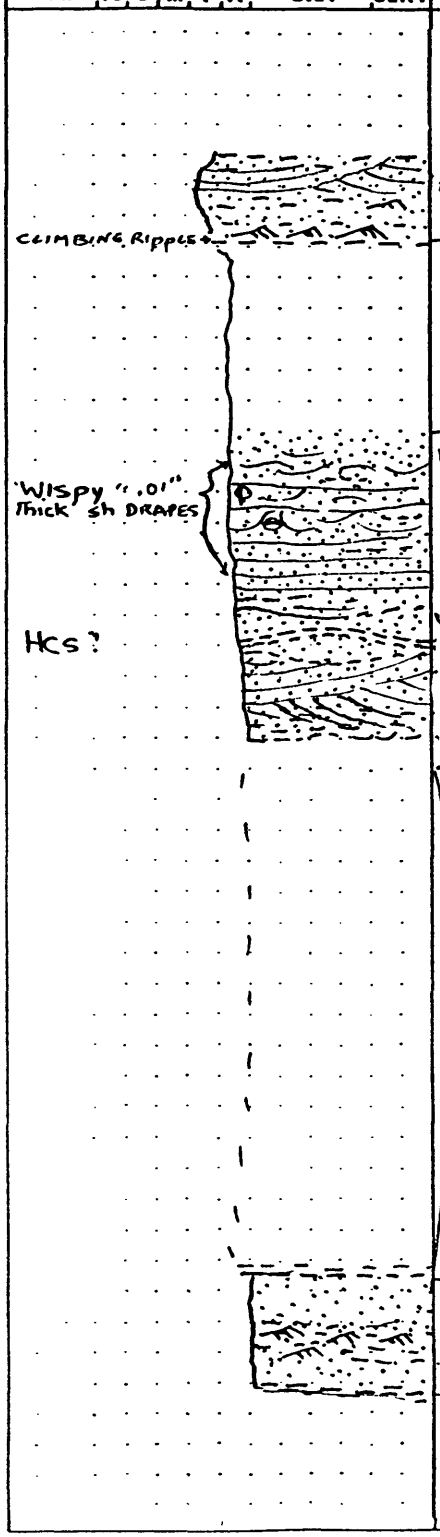
8170.8-8171.55' LT-GY FW SORTED SA FSS. CARBONATE ONLY IN MOTTLED AREAS AND FX FILL. SS PLANAR BEDDED WITH 18° DIPS. MINOR CHLORITE. INDIVIDUAL BEDS FINE UPWARD, NON-EROSIONAL CONTACTS, TIGHT. MS CLASTS AT BASE.

8171.55-72.75' PART OF SECTION MISSING. F SORTED VF-FSS WITH MINOR CHLORITE AND CARBONATE. MINOR TO ABUN THIN MS DRAPES AND MS RIP-UP.

8172.3-72.55' LOW ANGLE (10°) TROUGH X-BEDDED FSS

CORE MISSING — 8168-8169' 0.25'
8169.7-69.85' 0.15'
8171.5-8174' 1.3'
8174.0-77' 1.1'

#1 MANDELL FEDERAL SEC. 22, T 44 N, R 73 W CAMPBELL CO, WYO
WOODS PETROLEUM CORP., 5012' KB ELEV. 8157.9-8197.5' CORE DEPTHS



DESCRIPTION

8174-74.55' F SORTED SR-SA FSS. ABUNDANT CHLORITE, MINOR BIOTURBATION. POORLY DEFINED LOW ANGLE (10°) TROUGH X-BEDS. MS DRAPES AND RIP-UP CLASTS ON BED PLANES. 8174.3- 74.55' OSCILLATION CLIMBING RIPPLE, OVERLIES MS DRAPE AT 8174.55'.

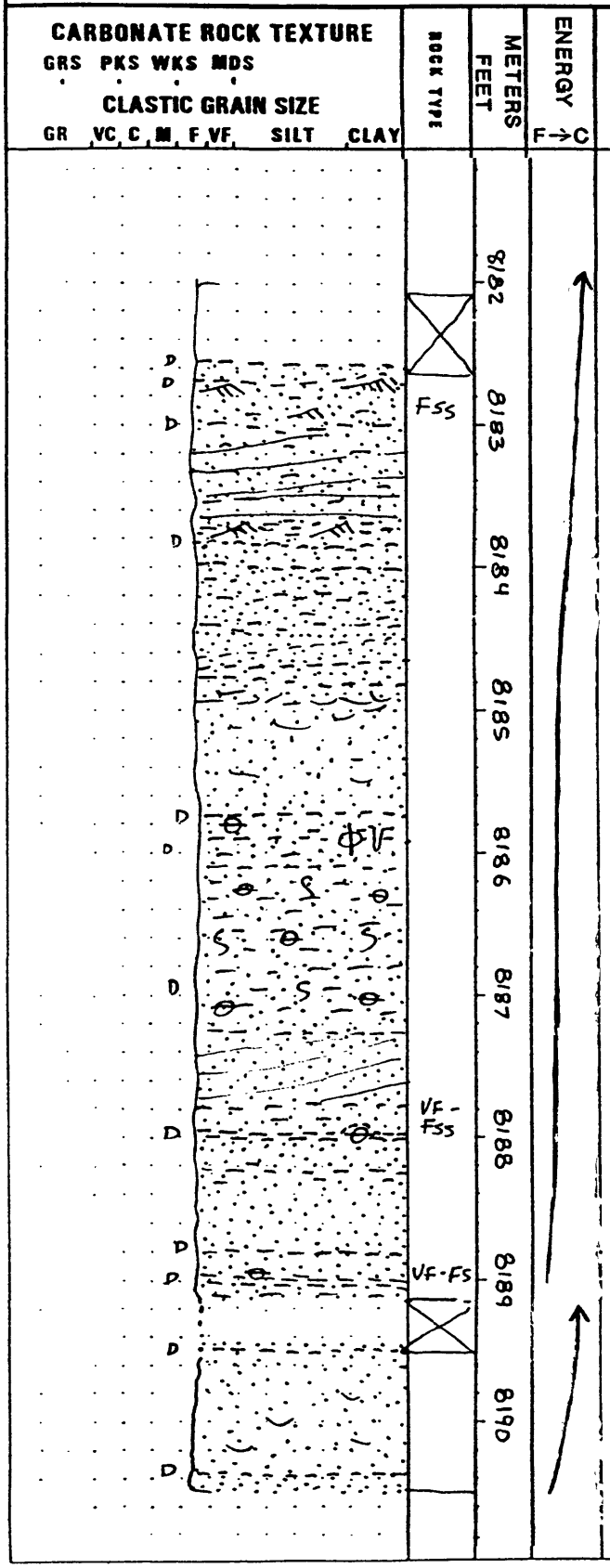
8175.75-77.9' LT-GY VFSS, LOW ANGLE (5-20°) TROUGH X-BEDS, POORLY DEFINED. ONLY MINOR CARBONATE, IN MOTTLED AREAS AND IN FRACTURE FILL. MED-GY MS DRAPES AND CLASTS ON BEDDING PLANES.
8177.3' MED-GY MS DRAPES ON HUMMOCKY EROSIONAL BASE.
8177.4-77.9' VFSS, 5-15° DIPS ON TROUGH X-BEDS. MINOR SHALE RIP-UPS. BASE APPEARS TO BE NON-EROSIONAL.

PROBABLY VF-FSS (FROM BOREHOLE ELECTRIC-LOG RESPONSE)

8181.4-8182.1' LT-GY FW SORTED TIGHT VF-FSS. 8184.1' DK-GY LAMINAR MS DRAPE ON OSCILLATION RIPPLE LAMINAE.
8181.5-81.65' MASSIVE LT-GY VFSS.
8181.65-81.8' MS DRAPES ON RIPPLE-LAMINATED VFSS. 0.1" DIAMETER HORIZONTAL SS-FILLED BURROWS IN 0.1" THICK MS DRAPES, MINOR BIOTURBATION.
8182.1' 0.2" THICK LAM. GY MS DRAPE.

CORE MISSING — 8174-77' 1.1'
8178-81.4' 3.4'
8182-82.75' 0.55'

#1 MANDELL FEDERAL SEC. 22, T 44 N, R 73 W CAMPBELL CO, WYO
WOODS PETROLEUM CORP., 5012' KB ELEV. 8157.9-8197.5' CORE DEPTHS



DESCRIPTION

8182.7-8189.2' LT-GY FW SORTED SA-SR VF-FSS. MASSIVE TO PLANAR BEDDED. ABSENT TO MODERATE BIOTURBATION; ALL BIOTURBATION PRESENT IS IN (0.01-0.1" THICK) MED-GY MS DRAPES. ALSO PRESENT BELOW MS DRAPES ARE OSCILLATION RIPPLES IN FSS. NO CARBONATE NOTED, MODERATE AMOUNT OF CHLORITE.

8182.7' MS DRAPE ON 0.1' THICK CLIMBING RIPPLE IN FSS.

8183-84.7' FSS MASSIVE TO LOW ANGLE SUB-PARALLEL BEDDED.

8185.0' 0.4" THICK WISPY BROKEN MS DRAPE ON MASSIVE FSS.

8187.3-87.7' LOW ANGLE (15°) PLANAR X-BEDDED FSS. NO MS DRAPES, POSSIBLE SMALL-SCALE CLIMBING RIPPLES. EROSIONAL SS CONTACTS.

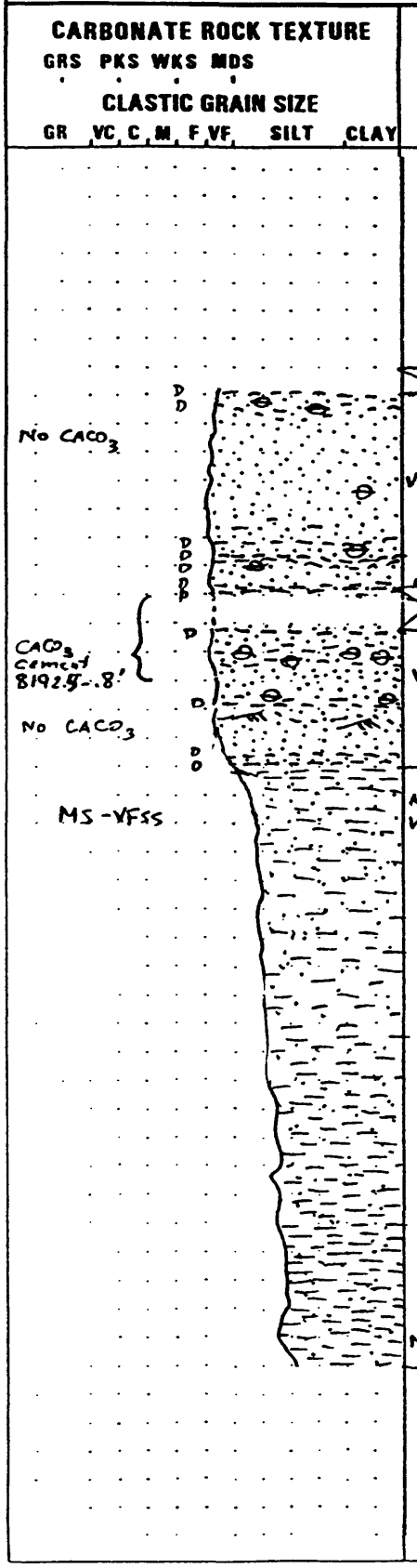
8187.7-89.2' LT-GY VF-FSS, MASSIVE, MINOR FLAT PARALLEL BEDDED. MINOR BIOTURBATION IN 0.01-0.1" THICK MS.

8189.2-90.6' VLT-GY F-VFSS. FW SORTED WITH CARBONATE CEMENT. SS IS MASSIVE WITH MINOR 0.01" THICK MS DRAPES AT 8189.6 AND 8190.4'.

CORE MISSING — 8182.1-82.7' 0.6'
8183.2-83.9' 0.2'
8184.5-84.8' 0.2'
8186.4-87.0' 0.2' 8190.1-90.8' 0.3'

8190.6 TO 8197.6 FT

#1 MANDELL FEDERAL SEC. 22, T 44 N, R 73 W CAMPBELL CO, WYO
WOODS PETROLEUM CORP., 5012' KB ELEV. 8157.9-8197.5' CORE DEPTHS



DESCRIPTION

8190.8-8192.3' LT-GY SA FW SORTED VFSS. MASSIVE TO SUB-PARALLEL BEDDED. MOD AMOUNT OF CHLORITE.
MED-GY MS DRAPES (0.01-0.2") WITH MINOR HORIZONTAL BURROWS (PLANOLITES) 0.02-0.05" DIAMETER.
8191.5-91.9' MS DRAPES OVER HUMMOCKY RIPPLE-LAMINATED SS.

8192.5-93.4' FW SORTED VLT-GY VFSS. MASSIVE TO SUB-PARALLEL BEDDED. 8192.5-92.8' CARBONATE CEMENT. HORIZONTAL BURROWS. OSCILLATION RIPPLES 8193'.

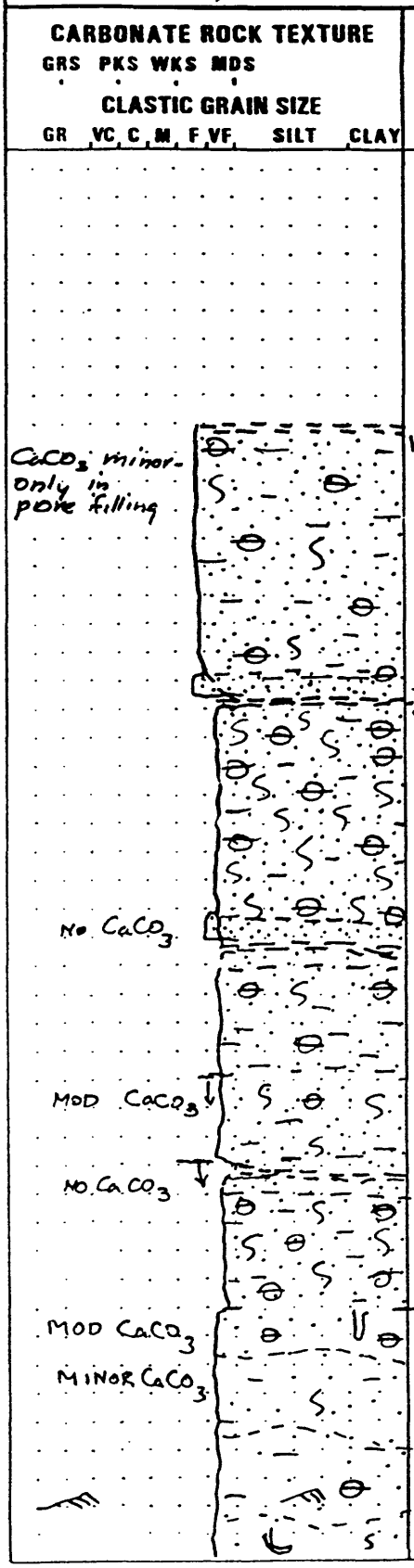
8193.4-97.6' MED-GY MS-VFSS. ENERGY DECREASES DOWNWARD WITH GRADUAL DOWNWARD INCREASE IN MS CONTENT AND BIOTURBATION.
LT-GY VFSS IS MOSTLY LAMINAR WITH 0.05'0.4" THICK DK-GY MS DRAPES. HORIZONTAL SS-FILLED MAINLY PLANOLITES BURROWS ARE 0.05-0.4" DIAMETER. SS BIOTURBATION IS MINOR TO MODERATE.
8191.1-91.15' TAN CLY CEMENT IN VFSS

8194.2-94.3' TAN CLY CEMENT IN VFSS

8194.3-95.1' OSCILLATION RIPPLE LAMINAE. UP TO 0.3" X 1.9".

CORE MISSING — 8192.2-92.5' 0.3'

#1 RED UNIT S. 26, T 48 N, R 79 W, WOODS PETROLEUM CO.
JOHNSON CO., WYOMING DEPTH 9029-9089 ft. 4,525 KB



DESCRIPTION

9029-9035.2' MED-GY VF-FSS WITH MED-GY BIOTURBATED MS AND 0.01-.1" THICK MS LAMINAE. MODERATE AMOUNTS CHLORITE. SECTION EXTENSIVELY BIOTURBATED WITH HORIZONTAL 0.02-0.1" DIAMETER SS-FILLED BURROWS. ONLY THE GREATER THAN 0.05" THICK MUD DRAPES ARE PRESERVED.

ORIGINAL SS STRUCTURE DESTROYED - SANDS ARE LENTICULAR TO TABULAR WITH NON-EROSIONAL CONTACTS.

9031' TWO 0.15" THICK MS DRAPES WITH 0.05" DIAMETER HORIZONTAL SS-FILLED BURROWS. MS IS OVERLAIN BY A 1" THICK MASSIVE LT-GY FSS.

9032.7' ONE 0.3" THICK BIOTURBATED DK-GY MS DRAPE OVERLAIN BY A 3" THICK MASSIVE LT-GY FSS WITH OVERLYING 0.1" MS DRAPE.

9033.6-34.0' LT-GY VT-F SS WITH MODERATE BIOTURBATION AND CARBONATE.

9034.3' 0.25" THICK DK-GY LAMINAR MS. NO BIOTURBATION.

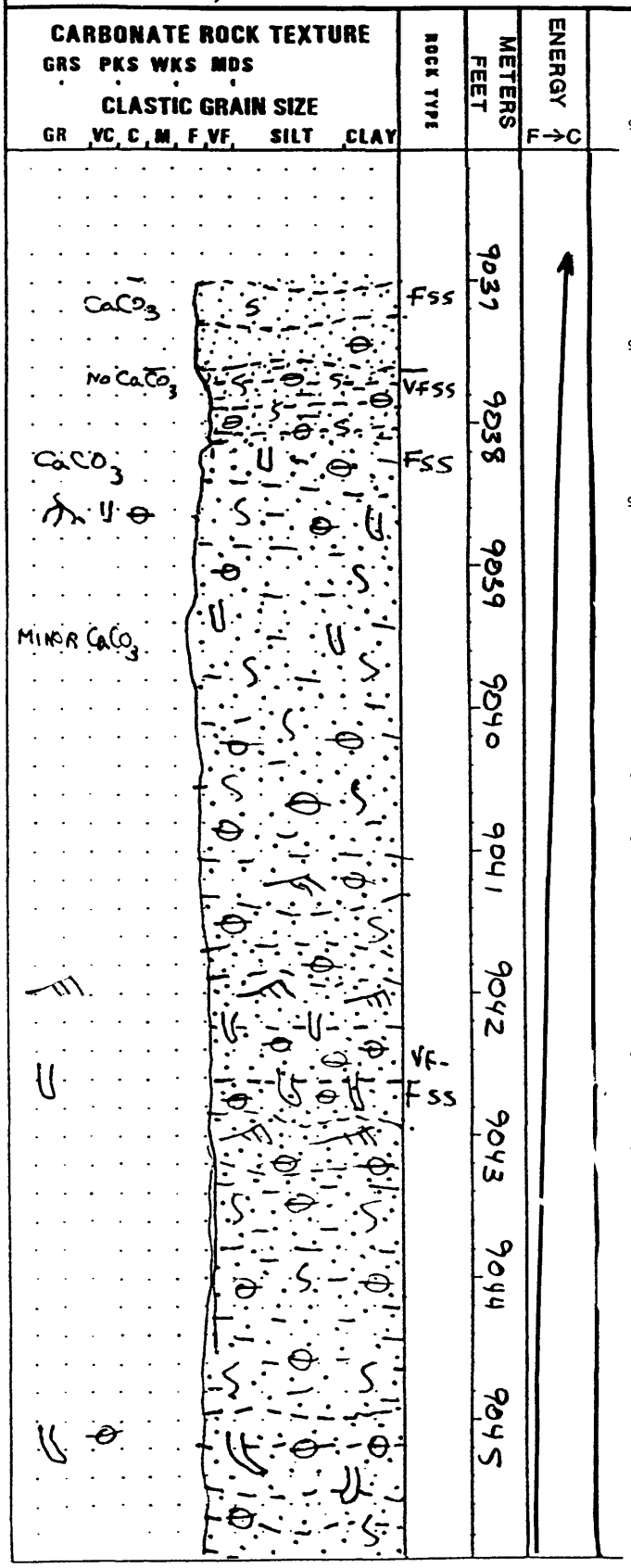
9034.5-35.2' MED-GY VF-FSS WITH EXTENSIVE BIOTURATION. CONTAINS DK-GY MS LAMINAE. BURROWS ARE HORIZONTAL AND 0.1" DIAMETER.

9035.2-37' LT GY FSS. BIOTURBATION AND MS CONTENT LESS THAN ABOVE SECTION. BIOTURBATION MINOR TO MODERATE WITH 0.1 TO 0.3" DIAMETER SS-FILLED HORIZONTAL BURROWS AND VERTICAL TO U-SHAPED 0.1 TO 0.4" BURROWS.

BEDDING CONTACTS ARE CURVED, NON-EROSIONAL.

CORE MISSING -- 9034.2-9036.9' 0.5' CORE MISSING

#1 RED UNIT S. 26, T 48 N, R 79 W, WOODS PETROLEUM CO.
JOHNSON CO., WYOMING DEPTH 9029-9089 ft. 4,525 KB



CORE MISSING —

DESCRIPTION

9037-9037.6' CARBONATE CEMENTED FW SORTED VF-FSS. MINOR SS-FILLED 0.05" DIAMETER HORIZONTAL BURROWS AND 0.02-0.05" THICK LAMINAR MS DRAPES. SS-MS CONTACTS ARE CURVED AND SLIGHTLY EROSIONAL. NO INTERNAL SS BEDDING SEEN. LOWER SS CONTACT GRADATIONAL.

9037.6-38.1' EXTENSIVELY BIOTURBATED VF-FSS, MED-GY MS DRAPES. BURROWS ARE SS-FILLED, HORIZONTAL, 0.02-0.2" IN DIAMETER AND TEICHICHNUS BACKFILL BURROWS ARE 0.2-0.35" DIAMETER.

9038.1-41.05' FW SORTED LT-GY F SS. MOD CHONDRITES BIOTURBATION RESULTS IN MOTTLED APPEARANCE. 0.02-0.05" THICK MED-GY MS LAMINAE HAVE 0.05" DIA. SS-FILLED BURROWS. VF-FSS IS CARBONATE CEMENTED WITH 0.02" HORIZONTAL AND 0.02" X 0.4" VERTICAL TO SUB-VERTICAL BURROWS. VERTICAL BURROWS DON'T CUT MS LAMINAE.

9040.5-9041.05' ABUNDANT CHONDRITES 0.1" DIAMETER BURROWS

9041.05-9046' MED TO LT-GY VF-F SS. MS CONTENT INCREASES DOWNWARD. MODERATE BIOTURBATION. WHERE PRESENT SS IS TABULAR TO RIPPLE LAMINATED. CONTACTS WITH MED-GY MS DRAPES ARE CURVED, NON-EROSIONAL. RAPID CHANGES IN BURROW CHARACTER ARE DETAILED BELOW.

9042.2-42.3' PRESERVED RIPPLE LAMINAE WITH MS DRAPES IN HORIZONTALLY BURROWED FACIES.

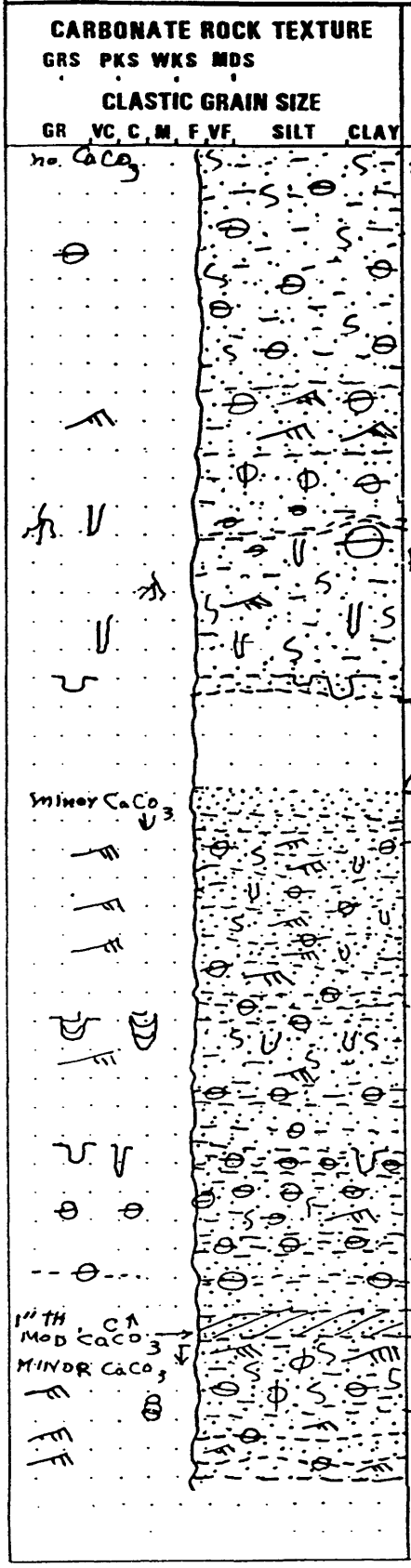
9042.55-42.75' SKOLITHOS AND POSSIBLY ARENICOLITES- VERTICAL BURROWS 0.2" X 1.8" CROSS-CUT MS DRAPES. EXTENSIVE 0.2-0.3" DIAMETER HORIZONTAL BURROWS.

9043.1-43.5' RIPPLE LAMINATED FW SORTED FSS. MODERATE HORIZONTAL BURROWING AND BIOTURBATION. CURVED NON-EROSIONAL CONTACTS WITH MS.

9043.5-ABOUT 9045' EXTENSIVELY BIOTURBATED MED-GY VF-FSS. MS CONTENT INCREASES DOWNWARD. BEDDING TABULAR WHERE NOT DESTROYED. 0.02-0.05" DIAMETER HORIZONTAL BURROWS ARE FILLED WITH LT AND MED-GY VFSS.

9045-9046.1' MODERATELY BIOTURBATED VF-FSS CONTAINING PLANOLITES AND ARENICOLITES. SS-MS CONTACTS ARE CURVED.

#1 RED UNIT S. 26, T 48 N, R 79 W, WOODS PETROLEUM CO.
JOHNSON CO., WYOMING DEPTH 9029-9089 ft. 4,525 KB



DESCRIPTION

9046.1-9056' LT TO MED-GY FW FSS WITH MODERATE TO EXTENSIVE BIOTURBATION. BEDDING RANGES FROM DESTROYED TO LENTICULAR. OSCILLATION RIPPLE-LAMINATED. BEDDING CONTACTS WHERE PRESENT ARE CURVED, NON-EROSIONAL AT MS DRAPES. MS DRAPES ARE UP TO 0.1" THICK; MOST ARE ABOUT 0.02" THICK.

9046.1-47.6' EXTENSIVELY BIOTURBATED MED-GY FSS. TABULAR BEDDING ALMOST DESTROYED BY 0.05-0.15" DIAMETER HORIZONTAL SS-FILLED BURROWS.

9047.6-49.85 MOD BIOTURBATED LT TO MED-GY FSS WITH BIOTURBATED MS DRAPES AND LAMINAE. SS BEDDING TABULAR TO RIPPLE LAMINATED. BURROWS: SKOLITHOS, CHONDRITES, ARENICOLITES, AND 0.5" X 0.75" VERTICAL BURROWS (BERGAUERIA?).

9049.8' BERGAUERIA (?) SS-FILLED IN MS-FSS.

9050.8-53.8' LT TO MED-GY FW SORTED FSS WITH 0.01-0.04" THICK HORIZ-BURROWED MS DRAPES. SS CONTACTS ARE CURVED AND NON-EROSIONAL WITH VERTICAL AND BACK-FILL BURROWS CUTTING ACROSS MS CONTACTS. MODERATE MS BIOTURBATION BY PLANOLITES AND 0.3 X ABOUT 1" VERTICAL BURROWS, MINOR SKOLITHOS. ORIGINAL SST BEDDING RIPPLE-LAMINATED TO TABULAR AND LENTICULAR

9052.7-53.8' DOWNWARD DECREASE IN ENERGY WITH INCREASING BIOTURBATION AND DECREASE IN VERTICAL BURROWS. 0.05-0.15" THICK HORIZONTALLY BURROWED MED-GY LAMINAR MS.

SS HAS POSSIBLE BERGAUERIA AND DIPLOCRITERION.

9053.8' POSSIBLE WATER ESCAPE STRUCTURE.

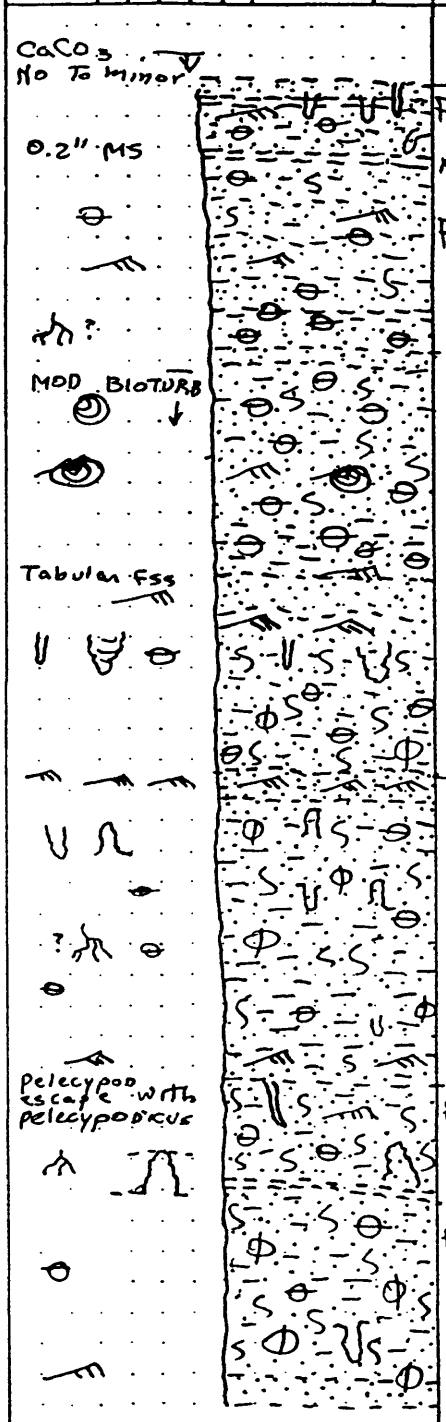
9054.85-55.4' ONLY MINOR BIOTURBATION IN MS DRAPES. RIPPLE-LAMINATED FSS LENSES 1" THICK. CURVED MS CONTACTS.

CORE MISSING -- 9049.2-50.8' 0.95' CORE MISSING - PROBABLY FROM 9049.85-50.8'.

#1 RED UNIT S. 26, T 48 N, R 79 W, WOODS PETROLEUM CO.
JOHNSON CO., WYOMING DEPTH 9029-9089 ft. 4,525 KB

CARBONATE ROCK TEXTURE
GRS PKS WKS MDS
CLASTIC GRAIN SIZE
GR VC C M F VF SILT CLAY

ROCK TYPE | METERS FEET | ENERGY F→C



DESCRIPTION

9055.4-62.1' SAME AS ABOVE FSS BUT MS CONTENT AND BIOTURBATION INCREASE DOWNWARD. MS DRAPES BECOME THINNER, MORE NUMEROUS, AND WITH INCREASED, POSSIBLY PLANOLITES, BIOTURBATION. BIOTURBATED ZONES ALTERNATE WITH 0.5 TO 2" THICK TABULAR-MASSIVE TO RIPPLE LAMINATED FSS WITH MINOR TO MODERATE VERTICAL BURROWS AND CHONDRITES.

9055.4' SKOLITHOS

9055.7' DIPLOCRITERION (?) 0.25" DIA.

9056.0' DIPLOCRITERION

9058' (EST) HORIZONTAL BACKFILL BURROWS 0.4" DIAMETER - TEICHICHNUS.

9058.9-59.15' TABULAR MASSIVE LT-GY FSS - FINES UPWARD SLIGHTLY. UPPER MS CONTACT IS RIPPLE LAMINATED.

9059.21' 2.1 X 0.3" OSCILLATION RIPPLE.

9059.3-60.1' SKOLITHOS, BURROWED, PELECYPOD ESCAPE 0.4 X 1.2" IN EXTENSIVELY BIOTURBATED MS-FSS.

9060.1-60.25' RIPPLE LAMINATED FSS WITH MS DRAPES. ESTIMATED 0.16 X 2" RIPPLES.

9060.25-62.1' MODERATE TO EXTENSIVE BIOTURBATION WITH CHONDRITES AND PELECYPOD ESCAPE IN MED-GY VF-FSS WITH MS. BROKEN MS LAMINAE IN PLACES GIVE CORE A WISPY APPEARANCE.

9062.1-64.2' EXTENSIVELY BIOTURBATED MED-GY FSS. CHONDRITES, PELECYPOD ESCAPE BURROW (?), MINOR SKOLITHOS.

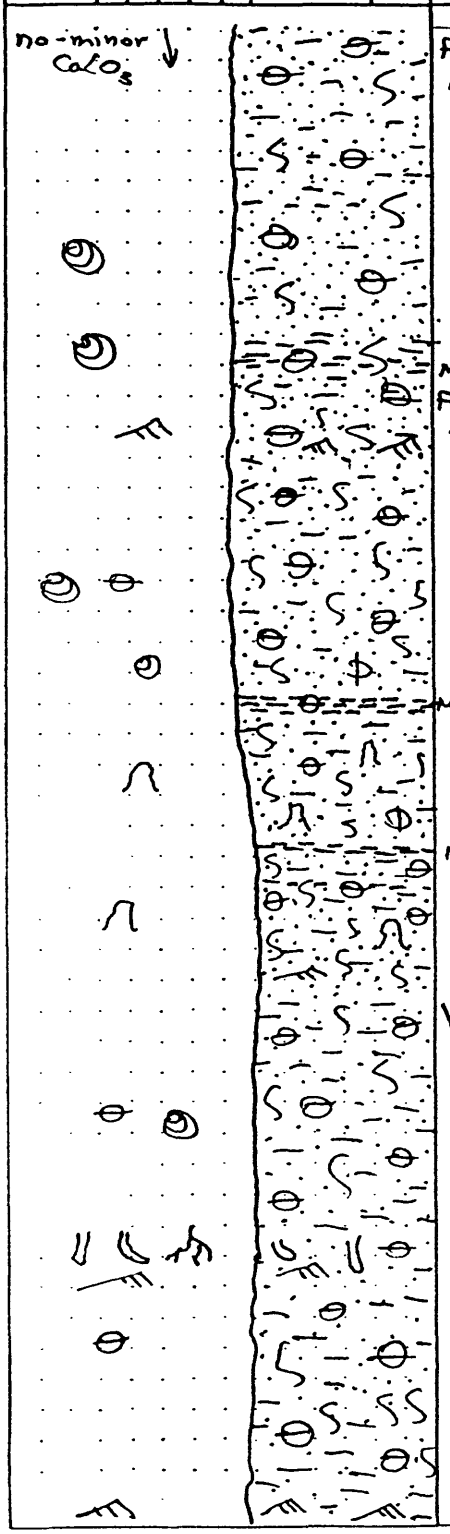
WHERE SS STRUCTURE IS PRESENT - IT IS RIPPLE LAMINATED IN ABOUT 0.1-0.4" THICK LENSES.

CORE MISSING — ABOUT 2-4" OF CORE MISSING FROM BETWEEN MOST FOOTAGE INTERVALS.

9064.2 TO 9074 FT

#1 RED UNIT S. 26, T 48 N, R 79 W, WOODS PETROLEUM CO.
JOHNSON CO., WYOMING DEPTH 9029-9089 ft. 4,525 KB

CARBONATE ROCK TEXTURE
GRS PKS WKS MDS
CLASTIC GRAIN SIZE
GR VC C M F VF SILT CLAY



ROCK TYPE

METERS / FEET: 9065, 9066, 9067, 9068, 9069, 9070, 9071, 9072, 9073

ENERGY F→C

DESCRIPTION

9064.2-70.5' SAME AS ABOVE. DOWNWARD DECREASE IN ENERGY; ↓ INCREASING BIOTURBATION, MS CONTENT, AND BORIZONTAL BURROWS, ↓ DECREASING VERTICAL BURROWS AND ESCAPE FEATURES. HORIZONTAL BURROWS: PLANOLITES AND TEICHICHNUS.
SS STRUCTURE DESTROYED - MINOR EVIDENCE OF RIPPLE LAMINATION.

9066.7' 0.2" THICK MS DRAPE - TEICHICHNUS BURROWED.

9066.9' 5" THICK FSS, OSCILLATION RIPPLE-LAMINATED.

9067.4-67.5' RIPPLE-LAMINATED FSS

9067.5-68.2' BIOTURBATED ESCAPE STRUCTURES IN HORIZ. BURROWED MS-FSS

9068.6-69.1' 0.5' THICK HORIZONTALLY BURROWED LAMINAR DK-GY MS

9070.5-74.6' AS ABOVE. MED-GY MS-VFSS. CONTINUED DOWNWARD DECREASE IN ENERGY. INCREASED MS, HORIZONTAL BURROWS. WHERE SS IS PRESENT IT IS RIPPLE LAMINATED.

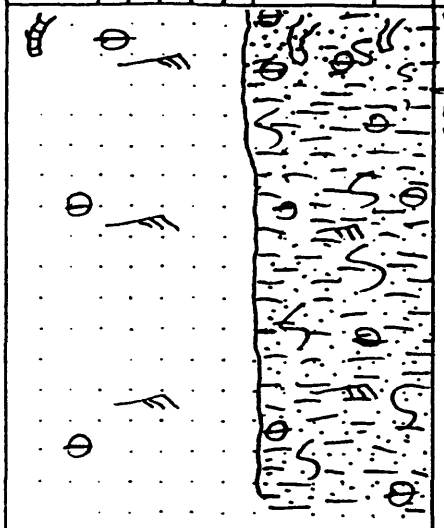
9072.1-72.55' ABUNDANT CHONDRITES

9072.4' 0.9 X 0.2" VERTICAL BURROWS (ARENICOLITES) OR PELECYPOD ESCAPE FEATURES.

CORE MISSING --

1-4" OF CORE MISSING FROM BETWEEN MOST FOOTAGES

#1 RED UNIT S. 26, T 48 N, R 79 W, WOODS PETROLEUM CO.
JOHNSON CO., WYOMING DEPTH 9029-9089 ft. 4,525 KB



DESCRIPTION

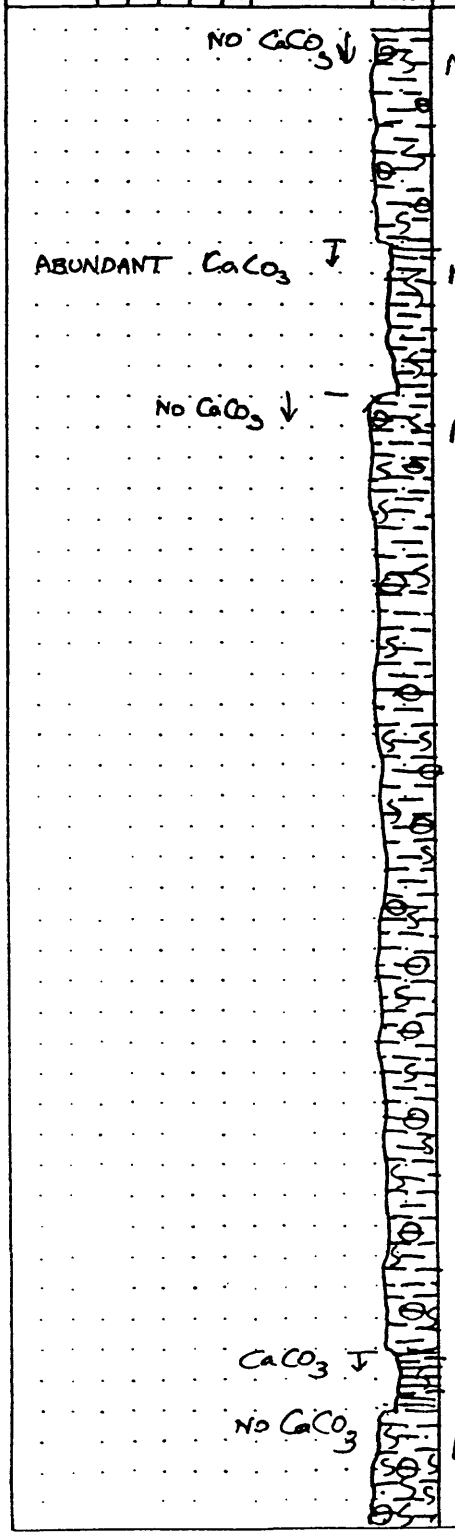
9074.2-74.4' 0.3 X 1.4" BACKFILL BURROW OR ESCAPE. MS AND FSS FILLED.

9074.6-9077.2' DK-GY MS-VFSS. ENERGY DECREASES DOWNWARD. MINOR TO MODERATE PLANOLITES BIOTURBATION, NO VERTICAL BURROWS.

LAMINATED MS AND VFSS. MINOR RIPPLE LAMINATION IN SS. GRADATIONAL CONTACTS WITH UNDERLYING MS.

CORE MISSING --

#1 RED UNIT S. 26, T 48 N, R 79 W, WOODS PETROLEUM CO.
JOHNSON CO., WYOMING DEPTH 9029-9089 ft. 4,525 KB



DESCRIPTION

9077.2-89' DK-GY MS-SLTST. EXTENSIVELY BIOTURBATED WITH 0.05" AND SMALLER HORIZONTAL BURROWS.

9078.8-79.6' MASSIVE MED-GY CLYST-MS WITH ABUNDANT CARBONATE CEMENT. MOTTLED WITH NO VISIBLE INTERNAL STRUCTURE (POSSIBLE DIAGENETIC EFFECT). CONTACTS WITH UNDERLYING MS SHARP, IRREGULAR.

9079.6-85.8' AS ABOVE BIOTURBATED MS-SLTST

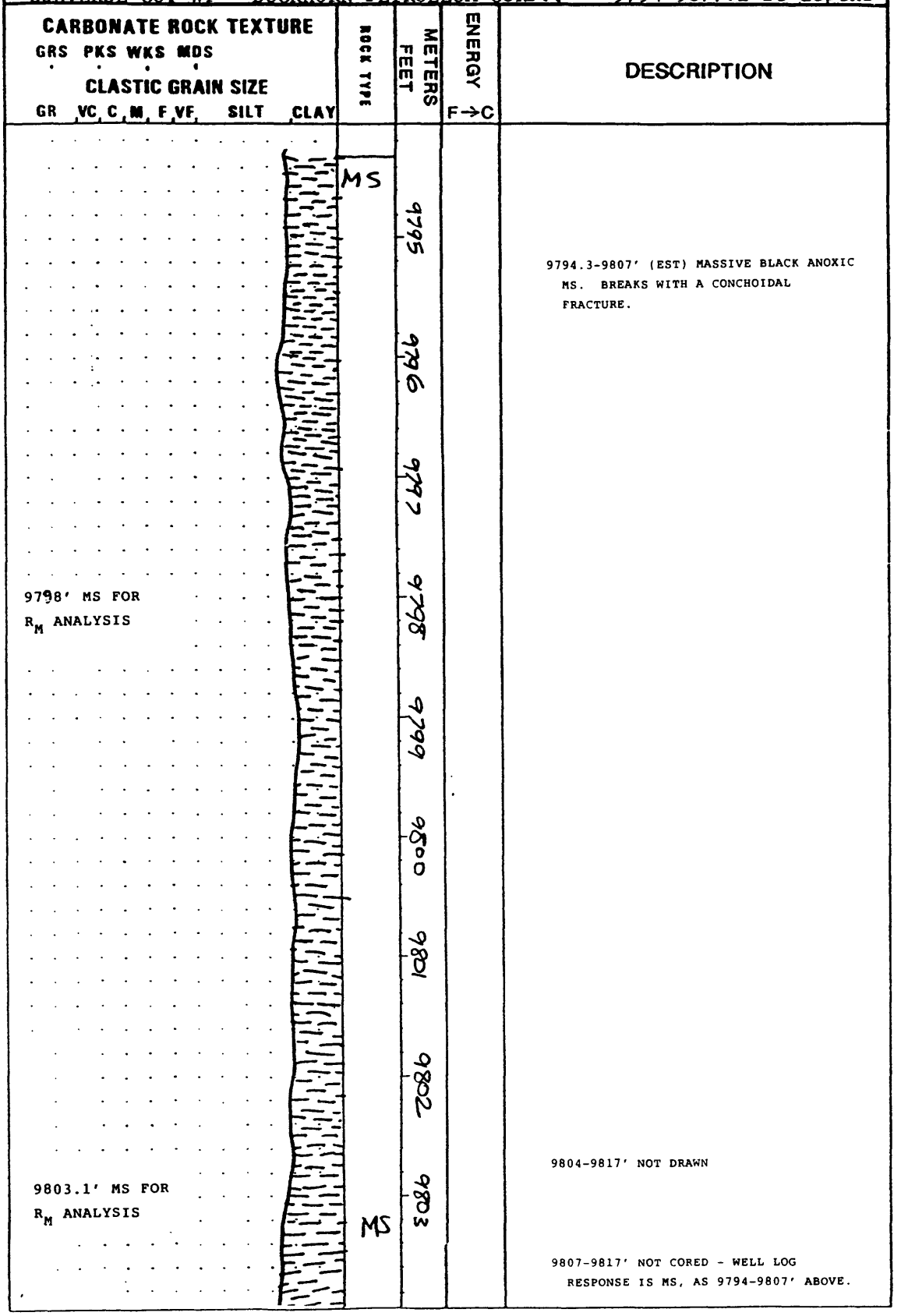
9085.8-86.2' MASSIVE MED-GY CLYST-MS WITH ABUNDANT CARBONATE CEMENT. NO INTERNAL STRUCTURE. CONTACTS WITH BOUNDING MS SHARP, IRREGULAR.

9086.2-89' AS BIOTURBATED MS-SLTST ABOVE

CORE MISSING --

9794 TO 9807 FT

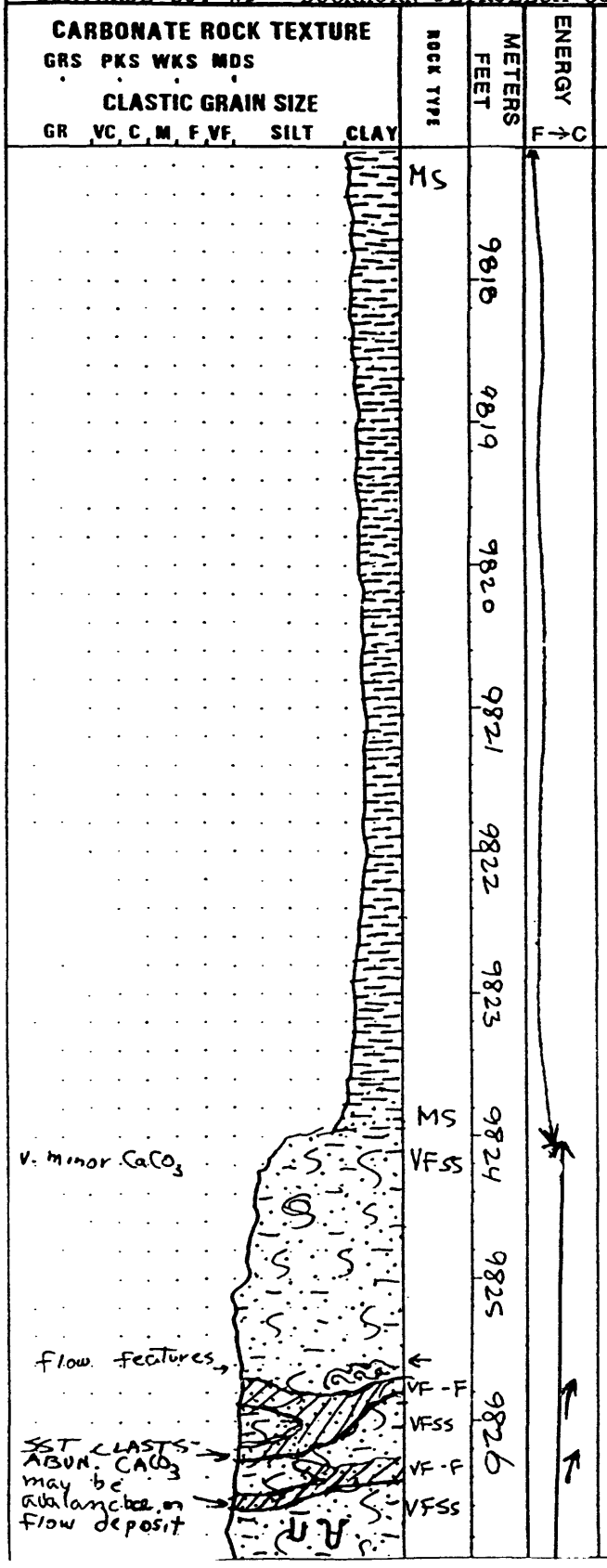
15-30 SCOTT FEDERAL SW SE SEC. 30, T 36 N, R 71 W 5,077 ft kb
CONVERSE CO. WY BUCKHORN PETROLEUM CORP., 9794-9877.1 ft depths



CORE MISSING - 9807 - 9817' NOT CORED.

9817 TO 9827 FT

15-30 SCOTT FEDERAL SW SE SEC. 30, T 36 N, R 71 W 5,077 ft kb
CONVERSE CO. WY BUCKHORN PETROLEUM CORP., 9794-9877.1 ft depths



DESCRIPTION

9817-9824' MASSIVE TO TABULAR, PARALLEL BEDDED DK-GY MS. NO BIOTURBATION. LOWER CONTACT WITH MS-VFSS IS GRADATIONAL, NON-EROSIONAL.

9824-9827' (3') MED-GY BIOTURBATED VFSS WITH ABUNDANT MS. TOTALLY REWORKED; NO BURROWS OR SST STRUCTURES REMAIN. MINOR CHLORITE AND POSSIBLY GLAUCONITE; SUB-ANGULAR VF GRAINS. FW SORTED SS WITH ABUNDANT CLY. MINOR PORE FILLING CARBONATE. MINOR PYRITIZED 0.03" DIAMETER ROUNDED DK-GY MS PELLETS - FECAL PELLETS OR POSSIBLY DEAD OIL.

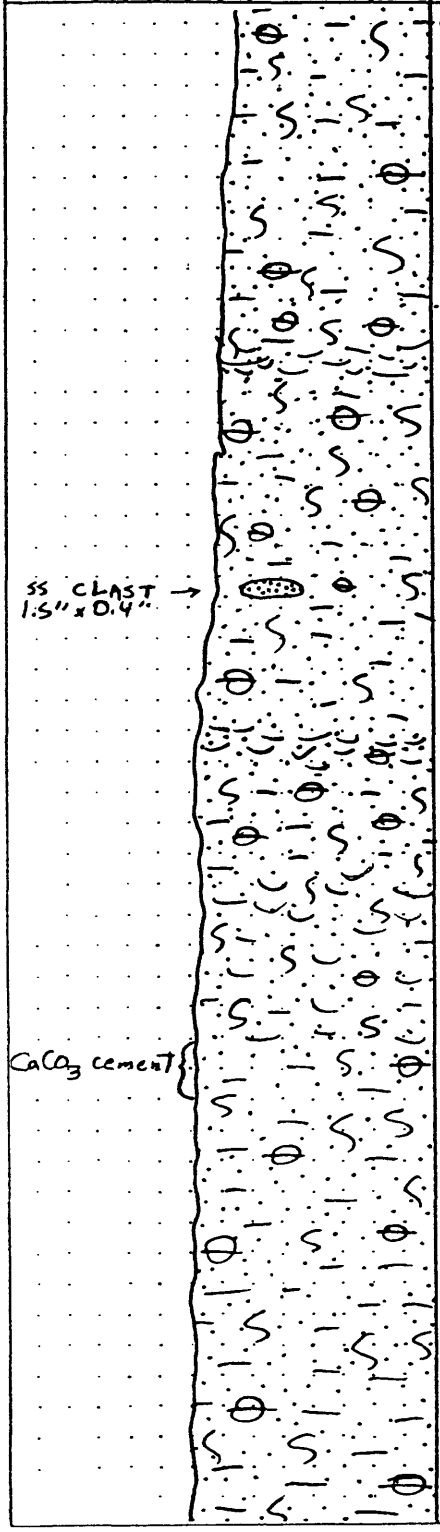
9825.8-26.2' (0.4') CARBONATE CEMENTED CLEAN LT-GY VFSS. SS LENS DIMENSIONS ARE ABOUT 1" X 4". MAY BE REMNANTS OF BAR EDGE AVALANCHE. NO SS BIOTURBATION, PLANAR-LAMINAR BEDDING WITH SOME FLOWAGE FEATURES. SS COARSENS UPWARD, NON-EROSIONAL CONTACTS.

9826.7' TWO VERTICAL BURROWS, 0.15 X 0.8". SS-FILLED. SKOLITHOS

9825.5' CORE PLUG FOR CLAY

CORE MISSING -- 9024-24.9' 9" CORE MISSING

15-30 SCOTT FEDERAL SW SE SEC. 30, T 36 N, R 71 W 5,077 ft kb
CONVERSE CO. WY BUCKHORN PETROLEUM CORP., 9794-9877.1 ft depths



DESCRIPTION

9827-37' (10') SAME AS ABOVE; MED-GY VFSS WITH ABUNDANT CLY. NO CARBONATE. GLAUCONITE AND CHLORITE CONTENT GREATER THAN ABOVE. EXTENSIVELY BIOTURBATED WITH SMALL, VFSS-FILLED HORIZONTAL BURROWS (0.05 X 0.1" DIMENSIONS) AND SOME CARBONATE-WALLED HORIZONTAL BURROWS.

9829.3-29.7' (0.4') MINOR PRESERVATION OF THIN MS LAMINAE GIVE CORE WISPY APPEARANCE.

9831.9-32.4' (EST) BROKEN MS LAMINAE IN LT-GY VFSS. WISPY APPEARANCE.

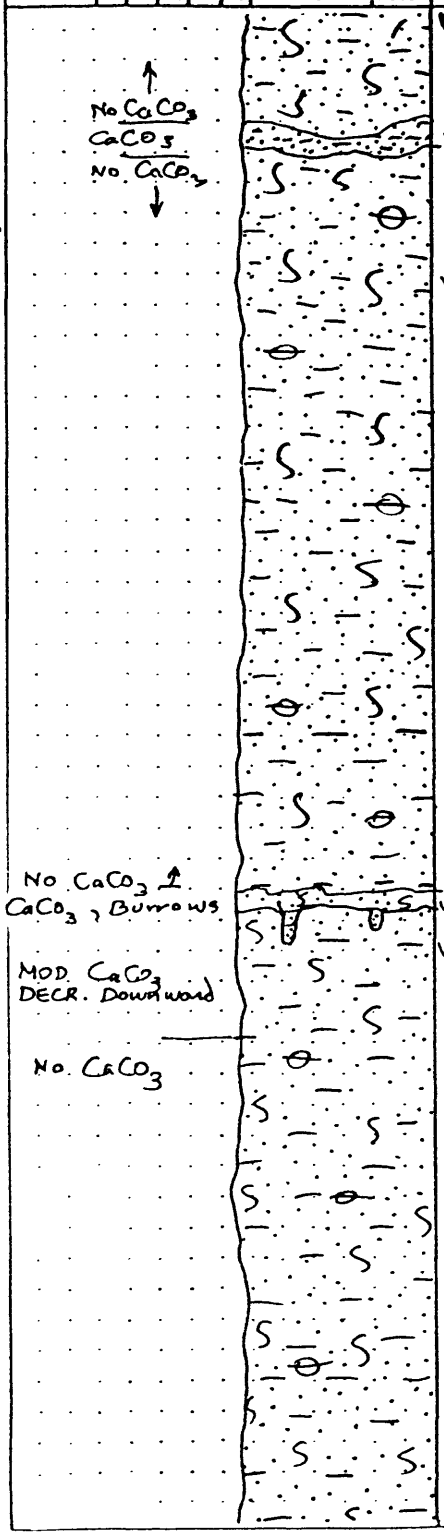
9832.7-33.9' (1.2') AS ABOVE.

9833.05-34.2' (1.15') MED-GY SLT-VFSS. MASSIVE WITH MODERATE BIOTURBATION, CARBONATE CEMENT, AND CLY CEMENT. NO BURROWS SEEN.
SS HAS VERTICAL 0.03 X 2" CARBONATE-FILLED FRACTURES. SS HAS ABUNDANT CHLORITE, GLAUCONITE.

9834.2-37' AS ABOVE 9827-29'

CORE MISSING --

15-30 SCOTT FEDERAL SW SE SEC. 30, T 36 N, R 71 W 5,077 ft kb
CONVERSE CO. WY BUCKHORN PETROLEUM CORP., 9794-9877.1 ft depths



9838.2' PLUG FOR CLAY. BRNISH BIOT VFSS WITH MS, NO CARBONATE

DESCRIPTION

9837-47' (10') AS ABOVE. MED-GY VFSS. EXTENSIVELY BIOTURBATED. WHERE PRESENT BURROWS ARE HORIZ, SS-FILLED. MINOR TO ABSENT CARBONATE.

9837.8-38.2' CARBONATE-CEMENTED VLT-GY VFSS, BIOTURBATED. CARBONATE MAY BE DIAGENETIC FEATURE.

9838.2-42.8' AS ABOVE 9837-47'

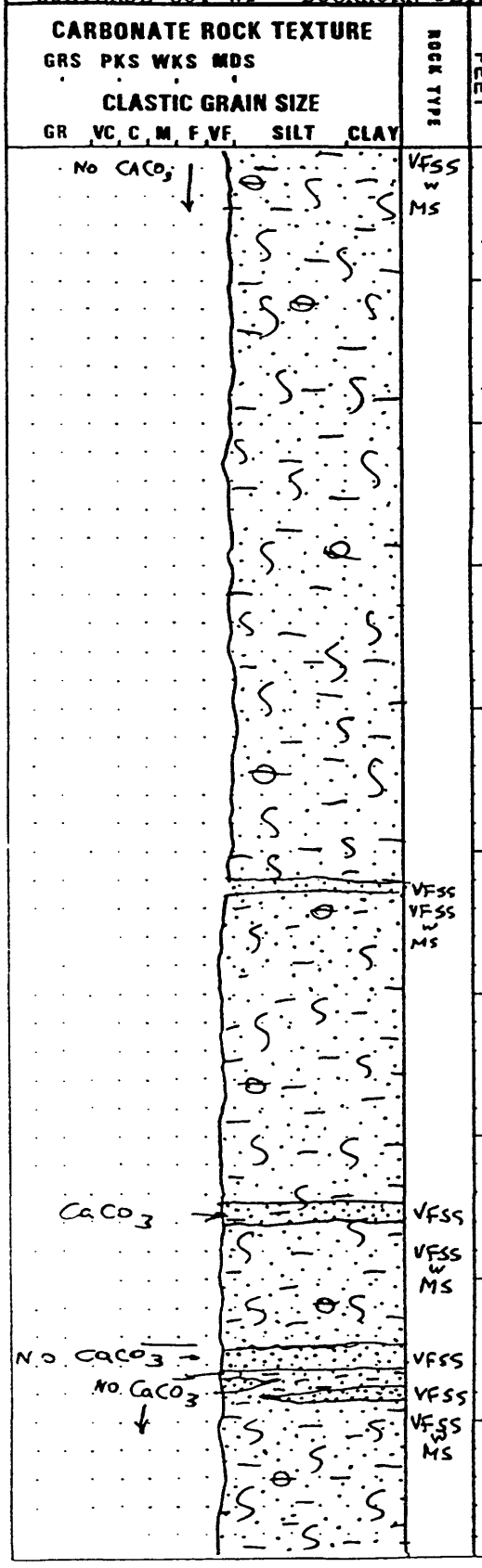
9842.8'-42.9' LT-GY VFSS STRINGER. TOTALLY BIOTURBATED. LOWER CONTACT HAS 0.2 X 3" VERTICAL SKOLITHOS BURROWS FILLED WITH LT-GY VFSS.

9842.9-43.7' AS 9838.2-42' ABOVE, EXCEPT FOR MODERATE (DECREASING DOWNWARD) CARBONATE IN VLT-GY VFSS BLEBS AND STRINGERS.

9843.7-47' AS ABOVE, ABSENT TO VERY MINOR PORE-FILLING CARBONATE IN VFSS BLEBS. EXTENSIVE BIOTURBATION. BURROWS ARE HORIZONTAL - PLANOLITES.

CORE MISSING --

15-30 SCOTT FEDERAL SW SE SEC. 30, T 36 N, R 71 W 5,077 ft kb
CONVERSE CO. WY BUCKHORN PETROLEUM CORP., 9794-9877.1 ft depths



DESCRIPTION

9847-57' (10') AS ABOVE.
CLY-CEMENTED MED-GY VFSS WITH MS. EXTENSIVE BIOTURBATION; BURROWS ARE MINOR, HORIZONTAL - PLANOLITES.

9852.2-52.3' (0.1') LT-GY VFSS BLEBS, NO CARBONATE.

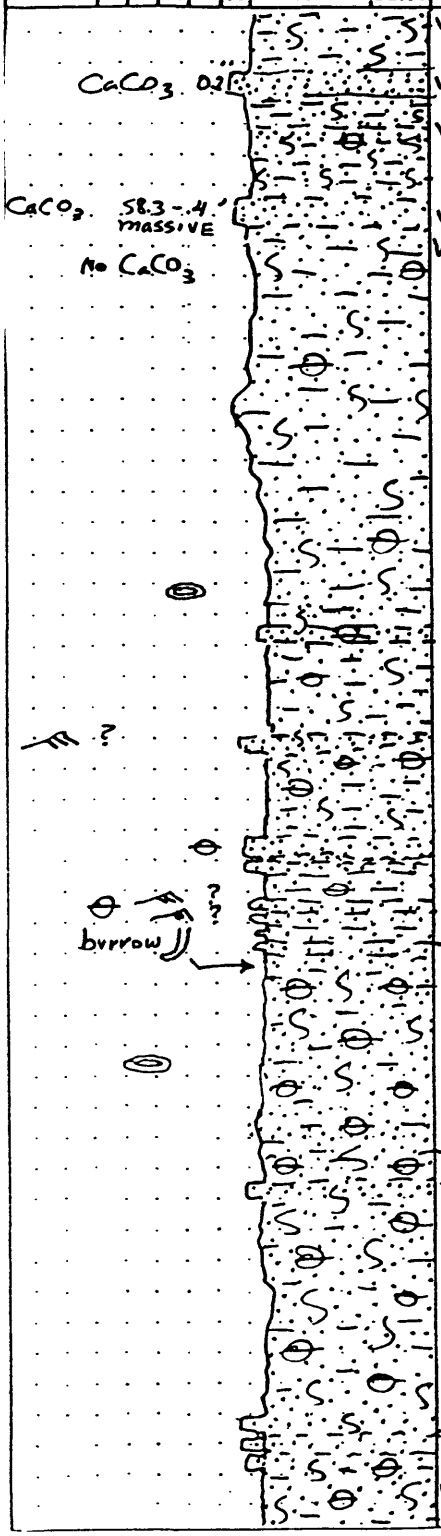
9854.5-54.6' (0.1') TABULAR CARBONATE-CEMENTED FW SORTED VFSS. NO INTERNAL BEDDING OR BURROWS. CONTACTS SLIGHTLY IRREGULAR, NON-EROSIONAL.

9855.35-55.4', 9855.7-55.8' LT-GY VFSS AS ABOVE BUT ABSENT TO MINOR CARBONATE IN SST LENSES AND BLEBS.

9855.8-57' AS BIOTURBATED VFSS ABOVE (9847-52').

CORE MISSING --

15-30 SCOTT FEDERAL SW SE SEC. 30, T 36 N, R 71 W 5,077 ft kb
CONVERSE CO. WY BUCKHORN PETROLEUM CORP., 9794-9877.1 ft depths



9857-67' AS BIOTURBATED VFSS WITH MS ABOVE. SLIGHT DOWNWARD DECREASE IN BIOTURBATION; MORE OF THE HORIZONTAL BURROWS ARE PRESERVED, INCREASED PRESERVATION OF MS LAMINAE RESULTS IN WISPY APPEARANCE. THIN 0.4-0.9" THICK CARBONATE CEMENTED TIGHT LT-GY VFSS STRINGERS. VFSS INTERNAL STRUCTURE PRESERVED TO MODERATELY PRESERVED; LAMINAR TO (OSCILLATION?) RIPPLE LAMINATED.

9860.75' CARBONATE-WALLED HORIZONTAL BURROWS 0.1" DIAMETER

9861.1-61.15' MASSIVE BIOTURBATED LT-GY VFSS. MINOR CARBONATE CEMENT.
9861.8-61.82' BIOTURBATED LT-GY VFSS LENS. RIPPLE LAMINATED

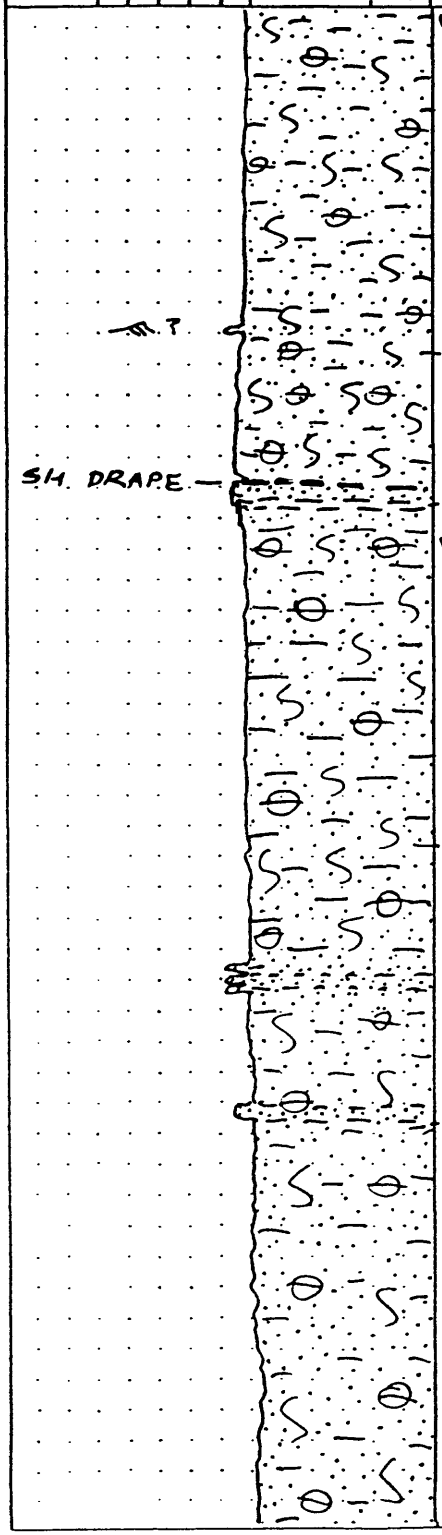
9862.5-63.55' (1.05') THIN 0.2 TO 1" THICK SS STRINGERS AND LENSES IN BIOTURBATED MED-GY TO TAN-GY VFSS-MS. VFSS ARE CLY TO CARBONATE CEMENTED. POSSIBLE RIPPLE LAMINATION.
9863.55-67' AS BIOTURBATED VFSS-MS ABOVE. ABUNDANT HORIZONTAL BURROWS 0.02-0.1" DIAMETER, SS-FILLED

9864.75-64.8' SS STRINGER AS 9863' ABOVE.

9866.25-66.3', 9866.4-66.46', 9866.5-66.52'. SS STRINGERS AND LENSES AS ABOVE. INTERNAL STRUCTURE DESTROYED, MAY HAVE BEEN RIPPLE LAMINATED. LOWER CONTACT DEPOSITIONAL ON RIPPLES.

CORE MISSING -- 9862.1-62.5' 0.3' CORE MISSING

15-30 SCOTT FEDERAL SW SE SEC. 30, T 36 N, R 71 W 5,077 ft kb
CONVERSE CO. WY BUCKHORN PETROLEUM CORP., 9794-9877.1 ft depths



DESCRIPTION

9867-77' AS ABOVE. MED-GY VFSS-MS. EXTENSIVELY BIOTURBATED WITH HORIZONTAL 0.02-0.08" DIAMETER BURROWS. OTHER STRUCTURES LISTED BELOW AND TO LEFT. THIN CLY AND CARBONATE CEMENTED LT-GY VFSS STRINGERS AND LENSES ARE MAINLY RIPPLE LAMINATED.

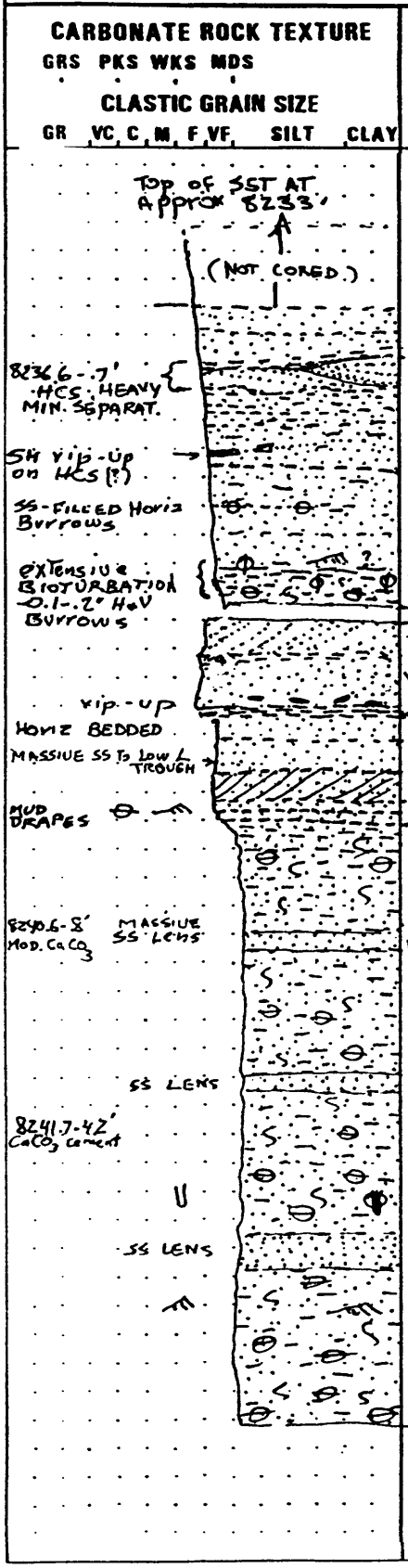
9870.2' 0.05" THICK DK-GY MS DRAPE OVER MASSIVE 0.4" CARBONATE CEMENTED LT-GY VFSS.

9873.35-73.45' RIPPLE LAMINATED LT-GY VFSS STRINGERS. LAMINAE DISRUPTED BY COMPACTION AND BIOTURBATION.

9874.2-74.25' MASSIVE LT-GY VFSS.

CORE MISSING --

1-11 UCROSS STATE, T52N, R81W, Sec. 11, JOHNSON CO., WYO.
MARATHON OIL CO., 4,332' KB ELEV. 8,236-8,270' CORE DEPTHS SUSSEX



8236.2-38.2' (2') VLT-GY F SORTED CLEAN SA FSS. TIGHT, ABUN CaCO3. ABUN 0.01 -0.02" THICK MS DRAPES. BEDDING IS HORIZONTAL TO SUB-PARALLEL LOW ANGLE (UP TO 10°) ON INCLINED MS DRAPES. CONTACTS NON-EROSIONAL ON MS. MINOR MS RIP-UP CLASTS. MOD CHLORITE AND GLAUCONITE. BIOTURBATION PRESENT ONLY AT BASE OF UNIT; 0.2" DIAMETER HORIZ BURROWS IN MS-LAMINATED FSS.

8238.4-38.65' LT-GY PLANAR-TABULAR FSS. 40° BEDDING DIPS, NO CARBONATE, CLEAN, LOW CLY CONTENT. UNIT FINES UPWARD.

8238.65-39' 10° DIPPING TROUGH X-BEDDED CLEAN FSS. F SORTING, SCOUR CONTACTS, MS RIP-UP CLASTS AT BASE. MS DRAPES AT TOP AND BASE. SS RIPPLES NEAR BASE.

8239-39.8' (0.8') SR-SA FW SORTED LT-GY FSS. MASSIVE TO 20° PLANAR-TABULAR BEDDING. NO CaCO3. TIGHT SS WITH KAOLINITE, MOD. GLAUCONITE AND CHLORITE. MINOR 0.05-0.2" MS DRAPES

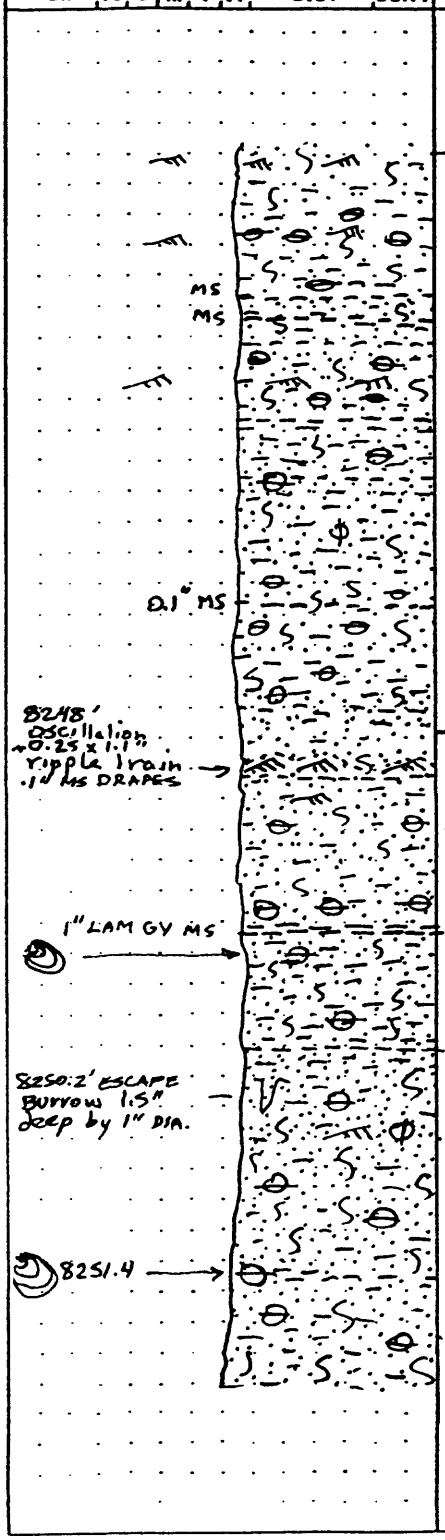
8239.8-44.0' (4.2') FW SORTED SR LT TO MED-GY VFSS WITH ABUNDANT BIOTURBATION AND THIN 0.01"-0.1" MS DRAPES. ORIGINAL BEDDING DESTROYED; RELICT HORIZONTAL TO SUB-HORIZONTAL BEDDING. BIOTURBATION HORIZONTAL WITH MINOR SS-FILLED VERTICAL (SKOLITHOS-TYPE) BURROWS IN MS DRAPES.

BEDDING CONTACTS NON-EROSIONAL. THIN 0.1-0.2" THICK CLEAN MASSIVE SS LENSES. MS LOADING AND COMPACTION FEATURES. ENERGY INCREASES UPWARD.

8243.2' POSSIBLE RIPPLE LAMINAE.

CORE MISSING — 8237.2'-33' 0.33'
8239-39.8' 0.15'

1-11 UCROSS STATE, T52N, R81W, Sec. 11, JOHNSON CO., WYO.
MARATHON OIL CO., 4,332' KB ELEV. 8,236-8,270' CORE DEPTHS SUSSEX



8244-52' (8') AS ABOVE. MODERATE TO EXTENSIVE BIOTURBATION.

8244-44.1', 8244.4-44.5', 8245.6-45.7' POSSIBLE OSCILLATION RIPPLE LAMINAE IN LT-GY VFSS. WAVELENGTH ABOUT 1", AMPLITUDE ABOUT 0.12".

8244-47.8' (3.8') LT TO MED-GY VFSS WITH 0.01-0.2" TH DK-GY MS DRAPES. 0.1-1" THICK VFSS BEDS, MASSIVE TO LAMINATED, NON-EROSIONAL CONTACTS. EXTENSIVE BIOTURBATION. SMALL HORIZONTAL SS-FILLED BURROWS.

8247.8-52.9' (5.1') AS 8244-47.8 ABOVE EXCEPT LESS BIOTURBATED AND SOME (OSCILLATION?) RIPPLE LAMINATION. HORIZONTAL BURROWS OF SAME SCALE AS ABOVE, APPEARANCE OF VERTICAL AND BACKFILL BURROWS.

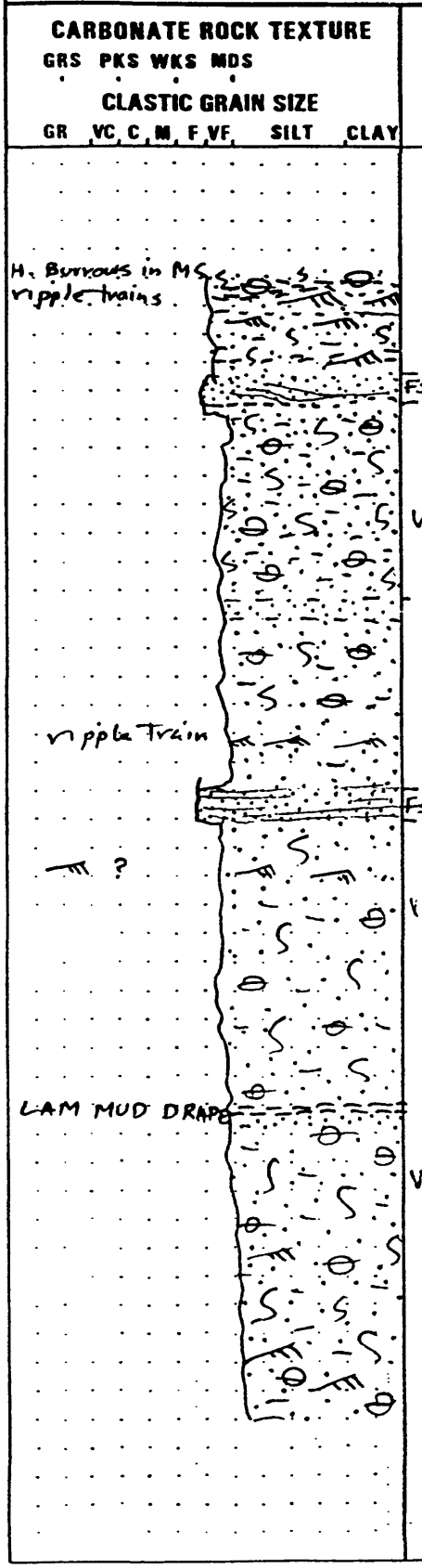
8249.2-52.9' MS AND BIOTURBATION INCREASE, MOST RIPPLE LAMINAE DESTROYED.

8250.6-50.7' (0.9") RIPPLE LAMINATED CLEAN VFSS.

8249.3 AND 8251.4' BACKFILL BURROW IN MUDDY VFSS

CORE MISSING —

1-11 UCROSS STATE, T52N, R81W, Sec. 11, JOHNSON CO., WYO.
MARATHON OIL CO., 4,332' KB ELEV. 8,236-8,270' CORE DEPTHS SUSSEX



DESCRIPTION

8252-8268.1' (16.1') AS ABOVE

8252.2-52.4' RIPPLE LAMINATED VFSS WITH MS DRAPES.

8253-54.3' EXTENSIVELY BIOTURBATED WITH 0.1-0.3" THICK VFSS STRINGERS AND 0.05-0.1" DIA. HORIZONTAL BURROWS.

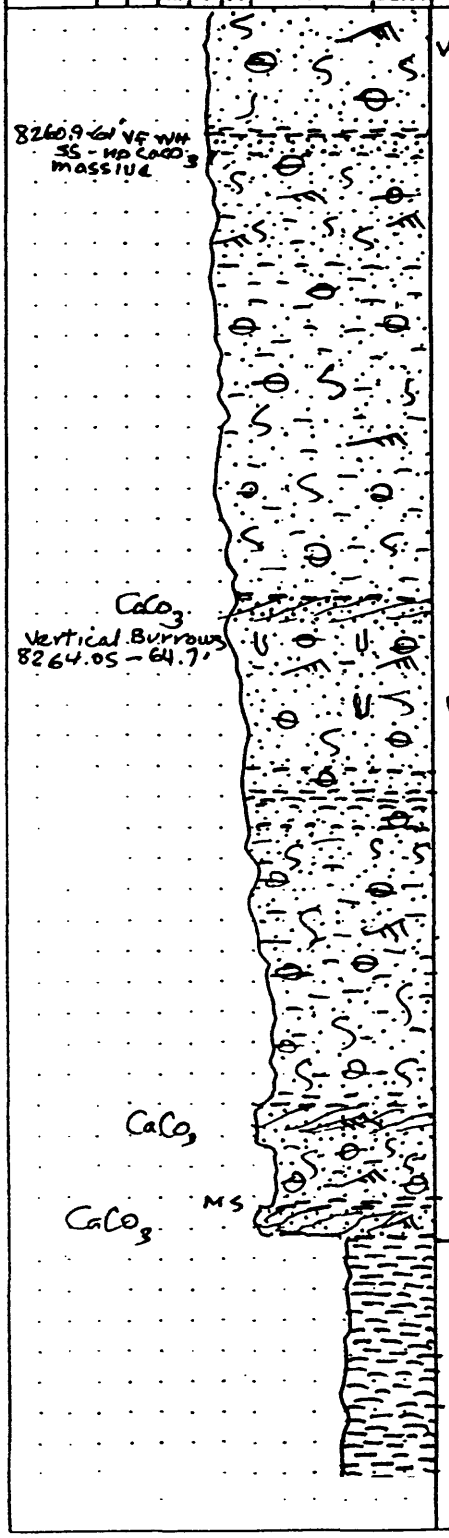
8255.6-55.8' F SORTED SR VLT-GY VF-FSS. TIGHT; ABUNDANT CARBONATE. NON-EROSIONAL CONTACTS. LAMINAR 1° DIPPING BEDDING WITH HEAVY MINERAL SEPARATION. MOD. AMOUNTS CHLORITE.

8256.3' THIN, DISCONTINUOUS RIPPLE TRAINS IN EXTENSIVELY BIOTURBATED VFSS. PLANOLITES BURROWS.

8256.3-8260' EXTENSIVELY BIOTURBATED VFSS WITH THIN MS DRAPES.

CORE MISSING — 8253-8254' 0.5' MISSING

1-11 UCROSS STATE, T52N, R81W, Sec. 11, JOHNSON CO., WYO.
MARATHON OIL CO., 4,332' KB ELEV. 8,236-8,270' CORE DEPTHS SUSSEX

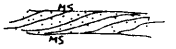


8260-8268.1' (8.1') AS ABOVE OSCILLATION RIPPLE-LAMINATED AND BIOTURBATED MED-GY VFSS. PLANAR-TANGENTIAL SS BEDDING, PRESERVED BY OVERLYING MS DRAPE; BARRIER TO BURROWING.

SANDSTONES THICKER THAN ABOUT 0.75" AND CLEAN (LOW MS CONTENT) HAVE CARBONATE CEMENT.

8263.9-64.05' PLANAR-TANGENTIAL BEDDED VFSS ON BIOTURBATED MS-VFSS. NON-EROSIONAL CONTACTS.

8268-68.12' PLANAR-TANGENTIAL BEDDED LT-GY VFSS BOUNDED BY MS DRAPES.



8268.1-8272' (3.9') LAMINATED TO MASSIVE DK-GY MS.

CORE MISSING —