

Chapter WL (Well Data)

WELL DATA AND WELL PLOTS

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ABSTRACT

Geological, petrophysical, and geochemical data have been extracted from publicly available well files for 41 wells located west and north of the Arctic National Wildlife Refuge. Available in plot, tabular, and digital form are: depth of formation boundaries, biostratigraphic paleodepths, well logs, core descriptions, porosity and other core measurements, summaries of drill stem tests, total organic carbon, Rock-Eval parameters, vitrinite reflectance, mud weight, bottom-hole temperatures and hydrocarbon shows.

INTRODUCTION

In assessing the oil and gas potential of an area, estimates of formation properties – porosity, water saturation, formation thickness, and reservoir thickness – are required. Estimates of these properties are best obtained from wells penetrating the area being assessed; however no wells have been drilled within the Arctic National Wildlife Refuge (ANWR). Instead, these properties have been obtained from wells located adjacent to the ANWR. The locations and depths of 41 wells adjacent to the ANWR are listed in [Table WL1](#). Locations are shown on [Fig. AO3](#).

Publicly available data were acquired for existing wells adjacent to the ANWR. The compilation and editing procedures are described in the following paragraphs, as well as the availability of the resulting digital data and plot files.

SOURCES AND TYPES OF DATA

Sources of data. Data for 33 onshore wells were acquired from the Alaska Oil and Gas Conservation Commission (AOGCC). Data for 8 offshore wells (designated OCS in column 4 of [Table WL1](#)), were acquired from Minerals Management Service (MMS). Some types of data were taken from USGS files and from reports on file at the State of Alaska Geologic Materials Center (GMC).

Types and sources of data are listed by well in [Table WL2](#). An entry simply denotes the existence of data; it does not necessarily mean that the data were used for assessment purposes or even plotted. For example, the existence of dipmeter data in publicly available files is noted in column 10 of [Table WL2](#), even though the dipmeter data were not used or entered. Likewise,

lithology is available in most wells from mud logs, but only a few were entered into the well log data base for plotting.

Related data sets are described in the report on physical properties. These data sets include: tabulations of porosity data, grain density data, and capillary pressure measurements. Next, the origin of specific data types is discussed.

Formation tops and thicknesses. The depths of formation tops were taken from Bird (1982, 1996), or from well history information (see Sources of data). The boundaries were then inspected on a series of well-log sections which permitted correlation among all wells and formations. The tops were adjusted where inconsistencies between wells were observed. The stratigraphic relationships of the tops chosen for entry are shown in **Table WL3**. Some of the criteria for adjustment are described in the report titled Formation Properties. A few tops not previously picked were added. The measured depth of each formation top is given in **Table WL4**; the true vertical depth below sea level is given in **Table WL5**. The elevation of the Kelly Bushing, used as footage reference for log and core data, is also given in **Table WL5**. Formation thicknesses, computed by taking differences between formation tops given in **Table WL5**, are compiled in **Table WL6**. The Quaternary Gubik Formation is not listed, instead the top of the Sagavanirktok Formation is listed as commencing at surface.

Well deviation and total depth. Wells substantially deviated from vertical are listed in column 7 of **Table WL2**. The amount of deviation is given as the difference between total depth below sea level minus the measured distance along hole referenced to sea level. If a well is truly vertical, then this difference is zero. Total depth from drillers records and the depth of the lowest useful well log are given in the last four columns of **Table WL5**. In most cases the deepest logging depth is somewhat shallower than or else is within 10 feet of driller's total depth. However, the Challenge Island 1 well was lost before the last logging run could be undertaken, thus the deepest logging depth is 10,353 feet whereas the total depth is 13,587 feet.

Depth conventions. Three depth tracks are plotted: measured depth referenced from Kelly bushing (MD), measured depth minus Kelly bushing elevation above sea level (MD-KB), and true vertical depth below sea level (TVDSS). If the well is not deviated, then MD-KB and TVDSS are equivalent.

Log editing. Well log traces displayed in **Plates WL1** through **WL39** were checked against the original blueline paper copies. Discrepancies were corrected to make the digital logs compatible with the blueline logs. Log segments adversely affected by casing were deleted. Some extreme spikes were removed. Segments recorded prior to tool pickup were also removed. Trace names were made compatible with the name on the blueline so that trade names are given. Missing and erroneous segments were redigitized. Logs were not shifted in depth.

Some neutron logs were collected on a sandstone porosity scale, others on a limestone porosity scale. For presentation on the well plots, neutron porosity values are presented on a limestone scale in the Lisburne Group and in the Katakturuk Formation. Elsewhere the values are on a sandstone scale.

Sequences. The depths of sequences described by Houseknecht and Schenk (**Chap. BS**) are depicted on Plates for five wells on seismic lines: Alaska State J-1, Beli Unit 1, Canning River Unit B-1, E De K Leffingwell, and W. Staines State 2.

Lithology. Continuous lithology interpretations by Ken Bird of the USGS were available and were plotted on Plates for four wells: Beli Unit 1, Canning River Unit A-1, Fin Creek Unit 1, and Kemik Unit 1. Continuous lithology from the mud log was entered and plotted for two wells: Alaska State J-1 and Point Thomson Unit 3. Lithology assignments from sidewall cores were available and were plotted for most wells where sidewall cores were taken (Table WL2); these data are plotted with varying offset so that the word “shale” is displaced further right than the word “sandstone”, allowing a quick visual impression of grain size variations. Detailed descriptions of core, where available, were excerpted from the public well files and entered alongside short bars in the depth column denoting the cored intervals. Brief descriptions of lithology and grain size from core in Kavik Unit 2 and Kavik Unit 3 wells by C. Schenk of the USGS were also posted.

Biostratigraphy. Biostratigraphic summary and paleodepth ranges were determined after a review of data by Poag (**Chap. BI**) from sources listed in Table WL2.

Mud weight. Mud weight, used as an indicator of downhole pressure conditions, was extracted from the mud logs. In a few wells, pressure

estimates were also entered in the drillers reports and these were also entered.

Drill stem tests. Results of drill stem and production tests were extracted from the well histories. See “Summaries of Drill Stem Tests” in this report.

Bottom-hole temperature data. Bottom-hole temperatures were extracted from the well logs. If several temperatures were given at the same bottom-hole depth, then the temperature was taken from the last logging run. In addition, corrections to bottom-hole temperatures were computed for selected wells ([Table WL10](#)).

Hydrocarbon shows. Hydrocarbon show data were taken from several sources as indicated at the bottom of [Table WL2](#).

Vitrinite reflectance. Vitrinite reflectance data were extracted from data files compiled by M. Johnsson et al. (1992). Data for a few wells were obtained from reports on file at the State of Alaska Geologic Materials Center.

Geochemical data. Total organic carbon (TOC), and peaks S1, S2, and S3 from Rock-Eval analyses were available from USGS files or from public well files ([Table WL2](#)). Hydrogen index was then computed as $HI = S2/TOC$ and production index was computed as $PI = S1/(S1+S2)$.

Computation of two-way travel time. A two-way travel time was computed from the sonic travel time log, DT. The DT log was copied into another channel, labelled as DTsplice, and gaps were filled by interpolating linearly across intervals with missing data. The depth interval between the top of DTsplice (same as top of DT) was filled with values up to mean sea level (TVDSS=0); this interval lies in the permafrost zone where estimates of DT were difficult to obtain and vary a great deal from well to well ([Table WL8](#)). The travel times from the two Canning River wells are not representative of permafrost because they lie in a thawed zone close to the Canning River.

In some wells, a value of DTsplice = 160 microseconds/foot was used in the permafrost. In others, a value taken from check shots was used. Once DTsplice was filled with values from mean sea level to total depth, the trace was summed. The summation is effectively an integration of sonic travel

time (slowness) with depth. The summation was then converted from microseconds to milliseconds by multiplying by 0.001. If the log digitization interval was 0.5 feet, the summation represents the two-way travel time. If the log digitization interval was 1.0 feet, the summation represents the one-way travel time and was multiplied by two to obtain the two-way travel time.

A different procedure was used in Alaska State J-1. A prominent reflector on the seismic record occurring at 1520 ms (two-way travel time) was tied to the logs at a depth of 5715 feet TVDSS. The DTsplice log was then summed downwards and upwards from this point. The average value of DT in the permafrost was then determined to be 163 microseconds per foot, using the criterion that the two-way travel time equals zero at TVDSS = 0.

A check shot survey was available from the West Staines (18-9-23) well and was used to estimate the sonic travel time in both West Staines (18-9-23) and West Staines 2. A value of 82.6 microseconds/foot was used from 905 to 1905 feet subsea and a value of 73 from 0 to 905 feet subsea. Below 1905 feet, the sonic log was used. The values obtained from the check shot survey are compared with values obtained from well logs in Table WL9.

AVAILABILITY OF DATA

Well plots. The well plots (Plates WL1-WL39) display most of the well data considered during the course of the assessment. Plots are available for 39 of the 41 wells listed in Tables WL1; plots were not done for the Shaviovik and Kuvlum 1 wells. See column one of [Table WL7](#) for Plate numbers. The plots provided the visual basis for refining formation tops, computing net sand, and selecting logs for porosity estimation. For each well, stratigraphy, ages, well logs, core descriptions, drill stem test results, mud weight, vitrinite reflectance, and geochemical parameters are graphed as a function of depth. Each data type is identified in the explanatory notes located on each well plot. Measurement units are provided where appropriate. The well plots are scaled at 6000:1 (500 feet per inch) for the entire well depth. Many well plots contain one or more expanded sections at 1200:1 (100 feet per inch) over those depth intervals with high information content. The well plots are available in hpgl digital format, with plot names listed in Table WL7. Plotting a paper version of these plates requires a wide-bed digital color plotter which can accommodate paper widths of 36 inches.

It is advantageous to examine logs from all wells for a particular formation. Sets of logs from all wells penetrating a given formation were made up for four formations: Thomson/Kemik, Ivishak, Lisburne, and the pre-Mississippian rocks. These special plots are designated **Plates WL40-WL43**.

Digital data files. Data which were entered are made available as individual files on this CDROM. Table WL7 lists the data files. Each data file name is eight characters in length, consisting of a four-character well name (column 3 of Table WL7) and a four-character data-type name (column headers in Table WL7). All such data files, whether numeric or text, have a measured depth (or a depth range in the case of interval data) associated with each data item. In addition, a spreadsheet called "FormTops" contains the data of Tables WL4-WL6.

SUMMARIES OF DRILL STEM TESTS

The following descriptions of drill stem tests have been excerpted verbatim from the public well files. They are ordered by formation, oldest to youngest. A glossary of abbreviations and acronyms appears at the end of the summaries.

Basement Complex

Alaska Island 1 14997-15022 Flow test thru perms, 24.5 hr test period, 2.0 to 2.8 MMCFD with wellhead pressures of 1600 to 2400 psig, 102 bbl condensate.

Alaska State A-1 12997-13182 DST#1 open hole. Rec. 8000' water cushion and 85 bbl salt water (40,500 ppm Cl). 18 min. flow period. IHP 10363, FHP 10359, ISIP 10111, est BHP 10140 psi.

Alaska State F-1 13940-14316 (dolomite and siltstone) DST#1 in open hole. Rec. 1092 MCF gas and 61 bbl condensate over 8.5 hr test period, for rates of 152 bbl condensate/day (35 deg API) and 2975 MCFD. ISIP 10156, FSIP 10161 psi.

Alaska State F-1 13794-13884 (Thomson and Basement). DST#2 thru perms. Rec. 16920 MCF gas and 939 bbl condensate over 93 hr test period, for rates of 4235 MCFD and 284 bbl condensate/day (34.8 deg API). ISIP 10119, FSIP 10120 psi.

Canning River Unit A-1 8263-8874 DST#3 open hole, open 40 min, shut in 90 min, rec. 134 bbl fresh water, no shows. ISIP 3947, FSIP 3947 psi.

Mikkelsen Bay State 1 16572-16596 DST attempted, no test.

Point Thomson Unit 4 14956-14976 (straddles bottom of Thomson and top of Basement) DST thru perfs. 20 min initial flow, 41 min shut in, reopened for final flow, diesel cushion surfaced in 1.5 hr, formation fluid surfaced in 4.3 hr. During 3.5 hr flow period the well flowed water at average rate of 306 bbl per day.

West Staines 18-9-23 13004-13202 (Pebble Shale and part of Basement) DST#3 open hole. Rec. less than 10 bbl gas cut mud with trace of oil. Tool plugging.

West Staines 18-9-23 13004-13202 (Pebble Shale and part of Basement) DST#4 open hole. Rec. small amount of gas cut mud. Tool plugging.

West Staines 18-9-23 13004-13229 (Pebble Shale and part of Basement) DST#5 open hole. Rec. 4 bbl slightly gas cut mud. FSIP 3648 psi.

Kekiktuk Conglomerate

W. Mikkelsen State 1 14340-14627 Flow test #1 thru four perforated intervals. 15 hr test, well dead, no fluid rec.

Lisburne Group

Canning River Unit B-1 10198-10550 DST#5 open hole, open 3 min, shut in 30 min, open 72 min, shut in 60 min, rec. 140' mud. ISIP 314, FSIP 314, IHP 5217, FHP 5217 psi.

Canning River Unit B-1 10540-10803 DST#6 open 3 min, shut in 30 min, open 120 min, shut in 60 min, rec. 540' mud and 1682' water. ISIP 4661, FSIP 4517, IHP 5093, FHP 5069 psi.

Kavik 1 7680-7959 DST#1 open hole. Rec. 1030' water cushion and 6233' brackish slightly gas cut water, no oil. Pre-flow 7 min, shut in 1 hr, open 2 hr, shut in 1 hr. ISIP 3263, FSIP 3275, IHP 4359, FHP 4282 psi.

Kavik 1 6150-6220 DST#2 thru perms. Rec. 1000' water cushion and 435' drilling mud, top slightly gas cut. ISIP 3629/3440, IHP 3667, FHP 3667 psi.

Kavik 1 6150-6220 DST#3(retest) thru perms. Rec. 500' water cushion and 135' slightly gas cut mud. Good initial blow, died in 2 hr.

Kavik 1 5560-5640 DST#4 thru perms. Acid wash. Rec. 500' water cushion and 50' slightly gas cut mud. Charts show partial plugging.

Kavik 1 5560-5640 DST#5 thru perms. Rec. 500' water cushion and 40' slightly gas cut mud. Charts show partial plugging. FSIP 1102 psi, BHT 139F.

West Kavik 1 14551-14952 DST#1 open hole. 16 min initial flow, 46 min shut in, 1 hr flow, 2 hr shut in. Rec. 3000' water cushion and 140' mud. ISIP 2056, FSIP 2082, IHP 6815, FHP 6789 psi.

West Kavik 1 14551-16613 DST#3 open hole. 2500' water cushion. 15 min initial flow, 45 min shut in, 9 hr flow. Rec. 21 bbl slight mud cut water, 55 bbl drilling mud, 4 bbl slightly gas cut mud, 16 bbl heavy gas cut mud. ISIP 6316, FSIP 6191, IHP 8434, FHP 8168 psi.

Kemik Unit 2 8334-8878 DST#2. 600' mud cushion. Rec. 92 bbl gas cut formation water. ISIP 3752, FSIP 3331 psi.

Mikkelsen Bay State 1 11751-11807 (Kemik and upper part of Lisburne) DST#1 open hole. 2 hr flow, 4 hr shut in. Rec. 20 gal. mud. Bottom hole shut in pressure 100 psi.

Mikkelsen Bay State 1 11671-11807 (Kemik and upper part of Lisburne) DST#2 open hole. 2 hr flow, 6 hr shut in. Rec. 1.6 bbl mud, some gas. Bottom hole shut in pressure 690 psi.

Mikkelsen Bay State 1 11870-12800 DST#3 open hole. 6 hr flow, 14 hr shut in. Rec. 10 bbl mud, 9 bbl muddy water, 25 bbl oil, 29 bbl watery oil,

61 bbl salt water, 10 bbl water cut mud. Bottom hole shut in pressure 5650 psi.

Mikkelsen Bay State 1 11870-12200 DST#4 open hole. 36 hr flow, 27 hr shut in. Flow gas, mud and oil to surface, rec. 8 bbl oil-cut rat-hole mud and 172 bbl salt water. Bottom hole shut in pressure 5650 psi.

W. Mikkelsen State 1 11492-11732 DST in open hole. 7 hr test, rec. gas-cut water, no fluid to surface.

W. Mikkelsen State 1 11974-12035 Flow test #2 thru perfs. After acid job, 22 hr test, rec. acid water & diesel.

W. Mikkelsen State 1 11410-11465 Flow test #3 thru perfs. After acid job, 11 hr test, rec. 219 bbl water.

W. Mikkelsen State 1 11308-11372 Flow test #4 thru perfs. After acid job, 23 hr test, rec. 416 bbl water with oil film. FSIP 5315 psi.

Ledge Sandstone

Beli Unit 1 11160-12108 (Sag River, Shublik, Fire Creek, and Ledge) DST#1 open hole. Rec. 43 bbl rat-hole mud, good blow thruout test, no surface pressure, ISIP 4470, FSIP 4129 psi.

Canning River Unit A-1 4899-5099 DST#1, tool plugged. DST#2 open hole, open 2 hr, shut in 2 hr, rec. 75 bbl fresh water, no shows. ISIP 2309 psi.

Canning River Unit B-1 8796-9348 DST#3 packer failed.

Canning River Unit B-1 8839-9348 (Ledge, and upper part of Kavik) DST#4 open hole, open 60 min, shut in 30 min, rec. 284' mud. Sampler contained 11.8 cu ft methane. ISIP 652, IHP 5649, FHP 5505 psi.

Fin Creek Unit 1 14837-14862 DST#1 thru perfs. 1 hr initial flow, 2 hr shut in, 1 hr flow, 2 hr final shut in. Rec. 15 bbl slightly gas cut mud + 3000' water cushion. Weak initial blow diminishing to steady very weak blow in 5 min. Gauge at 14,117 feet: ISIP 3693, FSIP 3403, IHP 9787, FHP 9746 psi.

Kavik 1 5020-5100 DST#7(retest) thru perms. No water cushion, flowed gas to flare pit for 3.4 hr. Measured flow rate on 32/64 choke 0.585 MMCFD at 381 psi surface pressure. FSIP 2441, IHP 3006, FHP 2969 psi, BHT 139F.

Kavik 1 5020-5100, 4940-4980, and 4748-4900 DST#8 thru perms. 500' water cushion. ISIP 2422, FSIP after 6 hr 2422, FHP 2868, IHP 2904 psi. Est. absolute open flow 44 MMCFD.

Kavik Unit 2 6206-6370 DST#1 open hole. 5 min initial flow, 1 hr shut in, 2.5 hr flow, 2.5 hr shut in. Strong blow thruout test, no gas or fluid to surface. Rec. 48 bbl water, 22 bbl mud, and 2000' diesel cushion. ISIP 2780, FSIP 2780, IHP 3220, FHP 3208 psi, BHT 142F.

Kavik Unit 3 5524-5850 (test spans lower half of Ledge and 100' of Kavik) DST#1 open hole. 2000' diesel cushion. 10 min initial flow with good to strong blow, 1.5 hr shut in, 10.5 hr flow, 7.8 hr shut in. Calculated absolute open flow 170 MMCFD. ISIP 2475, FSIP 2470, IHP 2717, FHP 2865 psi.

Fire Creek Siltstone

Beli Unit 1 11160-12108 (Sag River, Shublik, Fire Creek, and Ledge) DST#1 open hole. Rec. 43 bbl rat-hole mud, good blow thruout test, no surface pressure, ISIP 4470, FSIP 4129 psi.

Kemik Unit 2 6120-6420 (test extends over most of Shublik and upper part of Fire Creek). DST#1. 3000' diesel cushion. Rec. formation water with some gas. ISIP 2492 psi.

Shublik Formation

Beli Unit 1 11160-12108 (Sag River, Shublik, Fire Creek, and Ledge) DST#1 open hole. Rec. 43 bbl rat-hole mud, good blow thruout test, no surface pressure, ISIP 4470, FSIP 4129 psi.

Canning River Unit A-1 4320-4490 DST#4 open hole, open 130 min, shut in 30 min, rec. 218' mud, no shows. ISIP 578, FSIP 689 psi.

Fin Creek Unit 1 14185-14202 DST#2 test tool partially plugged. DST#3(R) test appeared inconclusive. DST#4(R) thru perfs. 1 hr initial flow, 2 hr shut in, 1 hr flow, 2 hr final shut in. Weak initial blow, dead in 45 min; dead throughout second open period. Gauge at 14,148 feet: ISIP 2145, FSIP 1903, IHP 8362, FHP 8322 psi.

Kavik Unit 3 4990-5070 (Shublik) & 4935-4955 (Sag River). DST#2 thru perfs. 5 min initial flow with good strong blow, 1 hr shut in, 9.5 hr flow, 9 hr shut in. Calculated maximum open flow 7.4 MMCFD. ISIP 2389, FSIP 2421, IHP 2551, FHP 2641 psi.

Kemik Unit 1 8624-8825 DST#1 and DST#1A open hole, packer failed.

Kemik Unit 1 8679-8719 DST#2 open hole. 2200' water cushion. Rec. 210' slightly gas cut mud, no other liquids.

Kemik Unit 1 8679-8719 Estimate 12 MMCFD dry gas from choke data

Kemik Unit 1 8780-8800 Packer test #1 on tubing thru perfs. 2000' water cushion. 5 min initial flow, 2.1 hr shut in, 4.4 hr flow, 2.8 hr shut in. Gas to surface in 2 min, water cushion to surface in 19 min, open tester for flow for 155 min at rates of 2.05-2.14 MMCFD.

Kemik Unit 1 8664-8800 Packer test #2 on tubing thru perfs. 2000' water cushion. 5 min initial flow with immediate strong blow, close tester, get gas to surface in 10 min while tester is closed. Open tester for flow period, water cushion to surface in 7 min, flow gas for 6 hr at 10.14 MMCFD.

Kemik Unit 2 6120-6420 (test extends over most of Shublik and upper part of Fire Creek). DST#1. 3000' diesel cushion. Rec. formation water with some gas. ISIP 2492 psi.

Sag River Sandstone

Beli Unit 1 11160-12108 (Sag River, Shublik, Fire Creek, and Ledge). DST#1 open hole. Rec. 43 bbl rat-hole mud, good blow thruout test, no surface pressure, ISIP 4470, FSIP 4129 psi.

Fin Creek Unit 1 14127-14149 DST#5 thru perfs. 1 hr initial flow, 2 hr shut in, 0.5 hr flow, 2 hr final shut in. Weak initial blow dead in 26 min;

second open period, no blow. Rec. 0.5 bbl GCM and 2000' of water cushion. Gauge at 14,088 feet: ISIP 2145, FSIP 1376, IHP 8402, FHP 8362 psi.

Kavik 1 4252-4292 Packer test on tubing thru perfs. Flowed gas for 10.8 hr at rates of 2.3 to 8.4 MMCFD thru 4 choke sizes. Est. absolute open flow 10.5 MMCFD. Static BHP after 24 hr was 2391 psi.

Kavik Unit 3 4990-5070 & 4935-4955 DST#2 thru perfs. 5 min initial flow with good strong blow, 1 hr shut in, 9.5 hr flow, 9 hr shut in. Calculated maximum open flow 7.4 MMCFD. ISIP 2389, FSIP 2421, IHP 2551, FHP 2641 psi.

Kemik Sandstone

Fin Creek Unit 1 10372-10402 & 10443-10458 DST#6 misrun, DST #7 misrun, DST #8 thru perfs. 1 hr initial flow, 2 hr shut in, 1 hr flow, 2 hr final shut in. Rec. 43 bbl of fluid, GCM. Gas to surface after 1.5 hr of second shut in period; rate too small to measure. Gauge at 9125 feet: ISIP 2306, FSIP 2145, IHP 5457, FHP 5417 psi.

Mikkelsen Bay State 1 11751-11807 (Kemik and upper part of Lisburne) DST#1 open hole. 2 hr flow, 4 hr shut in. Rec. 20 gal. mud. Bottom hole shut in pressure 100 psi.

Mikkelsen Bay State 1 11671-11807 (Kemik and upper part of Lisburne) DST#2 open hole. 2 hr flow, 6 hr shut in. Rec. 1.6 bbl mud, some gas. Bottom hole shut in pressure 690 psi.

Thomson sand

Alaska State C-1 13426-13560 DST#2 thru perfs. 6 hr stabilized flow test. After acidizing, flowed 874 bbls condensate/day (37 deg API) and 3400 MCFD over a 28-minute test period. ISIP 9575, FSIP 9973 psi.

Alaska State C-1 13630-13654 Production Test #3 thru perfs, flow tested well for 47.5 hrs. On a 3-hr stabilized test flowed at a rate of 558 bbl water/day.

Alaska State C-1 13666-13706 DST#1 thru perfs. A 4-hr stabilized flow test produced water at 803 bbl/day on 1/2" choke with 205 psi wellhead pressure. ISIP 9498, FSIP 9757 psi.

Alaska State F-1 13794-13884 (Thomson and Basement). DST#2 thru perfs. Rec. 16920 MCF gas and 939 bbl condensate over 93 hr test period, for rates of 4235 MCFD and 284 bbl condensate/day (34.8 deg API). ISIP 10119, FSIP 10120 psi.

Point Thomson Unit 1 12963-13050 Potential test # 1 thru perfs. 12900' water cushion. Rec. at rate of 2283 bopd (18 deg API) oil and 13307 MCFD gas. FSIP 10160 psi (est.).

Point Thomson Unit 1 12834-12874 Production test #2 thru perfs. A 4 hr stabilized test flowed gas at rate of 3860 MCFD and 45 deg API condensate at 170 bbl/day. ISIP 10118, FSIP 10007 psi.

Point Thomson Unit 2 13020-13110 DST#1, #2, #3 no test, DST#4 thru perfs. 65 bbl diesel cushion. In 9.8 hr, total fluid recovery was 1.5 bbl. No show of hydrocarbons.

Point Thomson Unit 3 13908-13925 DST#1 thru perfs. Rec. less than 1 bbl oil. ISIP 9878, FSIP 9993 psi.

Point Thomson Unit 3 13872-13885 Production thru perfs. At rate of 6348 MCFD gas and 476 bbl/day 38 deg API condensate. ISIP 10358, FSIP 10236 psi.

Point Thomson Unit 4 14956-14976 (straddles bottom of Thomson and top of Basement) DST thru perfs. 20 min initial flow, 41 min shut in, reopened for final flow, diesel cushion surfaced in 1.5 hr, formation fluid surfaced in 4.3 hr. During 3.5 hr flow period the well flowed water at average rate of 306 bbl per day.

Point Thomson Unit 4 14802-14812 and 14822-14882 DST thru perfs. 10 min initial flow, 1.5 hr shut in, opened for final flow. Diesel cushion surfaced in 4 hr, formation fluid surfaced in 7.5 hr. On a 3 hr flow test, the well flowed water at rate of 250 bbl/day.

Point Thomson Unit 4 14807-14812 and 14822-14877 DST thru perfs. Nitrogen cushion. On a 27 hr flow test, fluid did not reach surface. Shut in for 25.1 hr and reversed out 54 bbl of water.

Pebble Shale unit

West Staines 18-9-23 13004-13202 (Pebble Shale and part of Basement). DST#3 open hole. Rec. less than 10 bbl gas cut mud with trace of oil. Tool plugging.

West Staines 18-9-23 13004-13202 (Pebble Shale and part of Basement). DST#4 open hole. Rec. small amount of gas cut mud. Tool plugging.

West Staines 18-9-23 13004-13229 (Pebble Shale and part of Basement). DST#5 open hole. Rec. 4 bbl slightly gas cut mud. FSIP 3648 psi.

Hue Shale

West Staines 18-9-23 12780-12795 DST#6 thru perfs. Rec. 4.6 bbl gas cut mud with trace of oil.

West Staines 18-9-23 12780-12795 DST#7 thru perfs. Rec. 10 bbl gas cut mud. FSIP 5514 psi.

West Staines 18-9-23 12512-12795 DST#8 thru 5 perforated intervals. 11 hr flow, 16.5 hr shut in. Flow gas to surface. Rec. 14 bbl mud, 26 bbl oil and gas cut water cushion, and 26 bbl gas and oil cut mud. FSIP 8853.

Canning Formation, including "lower tongue (LT)"

Badami 1 10760-11190 DST#1 open hole. 1st flow 12 hr duration, rec. 1000 bbl oil, unknown MCF gas, 200 bbl load water. Calc. rates of 2670 bopd (28 deg API), 1100 MCFD, no water. 2nd flow 6 hr duration, rec. 990 bbl oil, 600 MCF gas, FSIP 5865 psi. Calc. rates of 4100 bopd (28 deg API), 2500 MCFD, no water.

Badami 1 10760-10883 DST#2 open hole. 15 hr test. Calculated rates of 1720 bopd (27 deg API), 405 MCFD gas, no water. ISIP 6240, FSIP 6175 psi.

Badami 2 10494-11082 DST in open hole. Ran water cushion. Multiple flow periods. Flowed oil and gas to surface separator. Rec. 294 bbl oil over 18.9 hr period. Rec. gas at average rate of 110 MCFD. Gauge at 10537 feet: ISIP 6120, FSIP 5907 psi. Est permeability of 6.4 md.

Beli Unit 1 9055-9103 DST#2 thru perms. No water cushion. Rec. 2600' GCM with pockets gas, calc. flow of 210 MCFD. Trace greenish oil. ISIP 3821, FSIP 3748, IHP 4843, FHP 4809 psi, BHT 175F.

Beli Unit 1 8420-8435 DST#3 thru perms, no water cushion. Rec. 6825' GCM. Estimate 50 MCFD. ISIP 2626, FSIP 3721, IHP 4577, FHP 4522 psi, BHT 155F.

Canning River Unit B-1 5400-5464 DST#1 packer failed. 5425-5464 DST#2 packer failed.

West Kavik 1 9690-9790 DST# 4 thru perms. 22 min initial flow with medium to strong blow, 66 min shut in, 31 hr flow. Gas to surface with strong blow, no pressure at the floor or separator, no oil to surface. Water cushion of 1034'. ISIP 1577, FSIP 4967; shut in pressures still building, IHP 5268 psi.

West Kavik 1 8770-8970 DST#5 thru perms. 29 min initial flow, 1.5 hr shut in, 12 hr flow, 1.5 hr shut in. No gas or fluid to surface. Rec. 440' gas cut water and mud with 20% oil. ISIP 2137, FSIP 892, IHP 4295, FHP 4295 psi.

Mikkelsen Bay State 1 10673-10678 DST#5 thru perms. 1 hr flow, 2 hr shut in. Rec. 6 bbl muddy water, 900' gas. Bottom hole shut in pressure 5225 psi.

Mikkelsen Bay State 1 10468-10673 DST #6 thru perms. 11 hr flow, 23 hr shut in. Flow gas, 30.5 deg API oil, and water. Rec. 24 bbl oil and 104 bbl water. Bottom hole shut in pressure 5100 psi.

Mikkelsen Bay State 1 10468-10550 DST#7 thru perfs. 24.5 hr flow, 24 hr shut in. Flow gas, 30 deg API oil, and water. Rec. 45 bbl oil and 76 bbl water. Bottom hole shut in pressure 4950 psi.

East Mikkelsen Bay State 1 11552-11564 DST#1 thru perfs. Tool open 5.2 hr. Rec. 39 bbl of 24.1 gravity oil. ISIP 7191, FSIP 7161 psi.

Point Thomson Unit 1 11392-11421 Production test #3 thru perfs. A 5.5 hr stabilized test flowed gas at rate of 2250 MCFD and 132 bbl 44 deg API condensate. FSIP 9203 psi.

Point Thomson Unit 2 11580-11678 Test thru tubing thru perfs. Well opened to flow, died after rec.10.5 bbl fluid. Acidize, reperformate, and acidize. A 6 hr stabilized test flowed 21 deg API gravity oil at a rate of 248 BPD (GOR 500 cu ft/bbl).

Point Thomson Unit 4 13478-13542 DST thru perfs with nitrogen cushion. 11 min initial flow, 1.3 hr shut in, 11.5 hr final flow. Formation fluid did not surface. Downhole shut-in device malfunctioned. Reversed out 10 bbl of oil and gas cut mud (75% mud, 25% oil).

West Staines 18-9-23 10582-10613 DST#1 open hole. Rec. 3 bbl gas and oil cut mud and 0.75 gal clean oil. FSIP 5252 psi.

West Staines 18-9-23 11690-11707 DST#2 open hole. Rec. 3 bbl clean 27 deg API oil. FSIP 7741 psi.

West Staines 18-9-23 11763-11782 DST#9 thru perfs. Gas to surface, rec. 1.5 bbl oil and gas, 12 bbl gas cut mud and water.

West Staines 18-9-23 11650-11675 DST#10 thru perfs. 2 hr flow, 7.6 hr shut in. Gas to surface, rec. 17.5 bbl oil plus 7.5 bbl oil and mud. FSIP 7600 psi.

West Staines 18-9-23 11650-11715 DST#11 thru perfs. 9 hr flow, 30 hr shut in. Flow gas and oil, reversed 16 bbl oil plus 15 bbl gas cut mud. FSIP 7575 psi.

West Staines 18-9-23 10570-10590 DST#12 thru perfs. Rec. 21 bbl gas cut mud with trace oil. Perfs. plugging.

West Staines 18-9-23 10570-10590 DST#13 thru perfs. Reperforated the interval. 1.5 hr flow, 7 hr shut in. Rec. 21.5 bbl gas cut mud with trace oil. Perfs. plugging. FSIP 3550 psi.

West Staines 18-9-23 9998-10020 DST #14 thru perfs. 30 min flow, 2.75 hr shut in. Rec. 100 cc oil, 300 cc water, 1800 cc gas cut mud in sampler. FSIP 2150 psi.

W. Mikkelsen State 1 9940-10050 Flow test #5 thru perfs. After acid job, two 26-hr tests, rec. 26 deg API oil at 302 bopd on 1/2" choke. FSIP 4414 psi.

W. Mikkelsen Unit 2 10454-10514 Nitrogen cushion, bled down in 0.5 hr from 2290 psi to atmospheric. Rec. 14 bbl heavy oil and mud.

W. Mikkelsen Unit 2 10328-10383 Nitrogen cushion. Bled down in 1 hr from 2500 psi to atmospheric. Sampled heavy oil and mud by wireline. Acidized, flowed back acid, gas, 139 bbl diesel, acid water, and heavy oil. Left open for 8.5 hr. Shut in, built to 1100 psi in 11.5 hr.

Staines Tongue of Sagavanirktok Formation

Mikkelsen Bay State 1 7712-7721 DST #8 thru perfs. 6 hr flow, 9 hr shut in. Rec. 20 bbl salt water. Bottom hole shut in pressure 3350 psi.

Mikkelsen Tongue of Canning Formation

Alaska State A-1 12565-12635 DST#2 thru perfs. Rec. 6000' water cushion, 411 bbl oil (22.8 deg API), and 384 MCF gas (GOR 934:1). 10.25 hr. flow period; IHP 10410, FHP 10199, ISIP 9791, FSIP 9779, est. BHP 9850.

Alaska State A-1 12565-12635 Test#3 production thru perfs. Rec 12565' diesel cushion, 1175 bbl of 23.1 deg API oil , and 1015 MCF gas (GOR 864:1). 11.25 hr. flow period. Est. BHP 9850 psi.

Alaska State F -1 12890-12930 DST #3 thru perfs. Rec. 183 MCF gas over 58 hr test period, for rate of 64 MCFD. ISIP 9306 psi.

Alaska State F -1 12544-12590 DST#4 thru perfs. Rec. 178 bbl water over 25 hr test period, for rate of 210 bbl water/day. ISIP 7870, FSIP 7785 psi.

Alaska State F -1 12008-12027 and 12052-12080 DST#5C thru perfs. Rec. 83 bbl 22 deg API oil and 70 MCF gas, for rate of 137 bopd (GOR 1040). ISIP 8278, FSIP 8306 psi.

Sagavanirktok Formation, including "lower tongue (LT)" AND "upper tongue (UT)"

Beli Unit 1 6190-6240 DST#4 thru perfs, no water cushion, rec. 4437' GCM, no test.

Beli Unit 1 6180-6240 DST#5 thru perfs, no test.

Beli Unit 1 6150 and 6190-6240 DST#6 thru perfs, no gas or fluid to surface. ISIP 1985, FSIP 2331, IHP 3029, FHP 3031 psi, BHT 105F.

Beli Unit 1 6150 Test #1 thru perfs, rec. 465' GCM. IHP 3117, FHP 3068 psi. Test #2 thru perfs, no water cushion, steady blow, rec. 279' GCM, 186' gas cut water, 93' water.

Beli Unit 1 4640-4913 DST#7 thru perfs, no water cushion. ISIP 1649, FSIP 1631, IHP 2289, FHP 2290 psi.

Hammerhead 1 5442-5490 DST#1 thru perfs. Multiple flow and shut in intervals. Ran nitrogen cushion. Rec. gas to surface in 25 min, too small to measure; oil (20 deg API) to surface in 70 min at 31 bbl/hr. ISIP 2300, FSIP 2313, IHP 2474, FHP 2501 psi.

Hammerhead 1 5300-5315 DST#2 and DST#2B thru perfs. Multiple flow and shut in intervals. Nitrogen cushion. Gas to surface in 3 hr at 182 MCFD; oil to surface in 3.2 hr at 38 bbl/hr. ISIP 2339, FSIP 2338 psi. Extrapolated pressure at 5210 ft ranges from 2319 to 2350 psi.

West Kavik 1 6225-6260 DST#6 thru perfs. 5 min initial flow, 45 min shut in, 10 hr flow, 3 hr shut in. Strong blow for 9 hr decreasing to a moderate blow for last hour. Rec. water cushion, 650' mud, 3556' of muddy to clear water. No oil or gas shows. ISIP 2500, FSIP 2450, IHP 2744, FHP 2720 psi.

West Kavik 1 3110-3170 DST#7 thru perfs. 5 min initial flow, 45 min shut in, 1.5 hr flow with strong blow decreasing to no blow, 1 hr shut in. Rec. 2289' of muddy water. ISIP 1163, FSIP 1163, IHP 1356, FHP 1356 psi.

Point Thomson Unit 2 5864-5886 Packer test thru tubing thru perfs. Well opened for flow and died after 0.5 bbl of fluid was recovered from formation. Fluid level in tubing was swabbed down to 2196' and remained at that level with no fluid entry.

Abbreviations

API	American Petroleum Institute
bbl	barrel
BHP	Bottom-hole pressure
BHT	Bottom-hole temperature from well log headers
BHTcorr	Bottom-hole temperature, corrected for circulation
bopd	barrels of oil per day
C	degrees Centigrade
calc.	calculated
cu.ft.	cubic feet
deg	degree
DST	Drill stem test
est.	estimated
F	degrees Fahrenheit
FHP	Final hydrostatic pressure
fm	formation
FSIP	Final shut-in pressure
FTA(M)	Fission track age and standard deviation in Ma, mean age
FTA(P)	Fission track age and standard deviation in Ma, pooled age
GCM	Gas-cut mud
GOR	Gas-oil ratio
hr	hour
IHP	Initial hydrostatic pressure
ISIP	Initial shut-in pressure
LCU	Lower Cretaceous Unconformity
MCFD	thousand cubic feet per day
MCFG	thousand cubic feet gas
MMCFD	million cubic feet per day
md	millidarcies

min	minutes
perfs	perforations
ppm	part per million
press	pressure
psi	pounds per square inch
psig	pounds per square inch, gauge
Rec	recovered
TD	total depth

CORRECTED BOTTOM-HOLE TEMPERATURES

The following temperatures, taken from well log headers, have been corrected to give an estimate of true formation temperature (Table WL10). Corrections were done by T. Collett of the U.S. Geological Survey using the procedure given by Dowdle and Cobb (1975). Estimates of circulation time and time after cessation of drilling were also taken from the well log headers. Depth to bottom of ice-bearing permafrost is given on first row for each well showing evidence of permafrost.

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Depths of formation tops were provided by K. Bird, C. Schenk, and M. Keller, all of the USGS. C. Spencer of the USGS provided guidance on the summaries of the drill stem tests. T. Collett of the USGS computed corrections to bottom-hole temperatures and estimated depth of bottom of ice-bearing permafrost. L. Magoon of the USGS provided access to much of the Rock-Eval data and also compiled the show data. Two-way travel times computed from sonic logs were tied to seismic information provided by J. Grow of the USGS. J. Murphy of the University of Wyoming provided the fission-track ages.

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Table WL1. Latitude, longitude, and total depth (TD) of wells in areas adjacent to ANWR. API well number is given in first two columns without state of Alaska prefix (50). For example, the API number of Alaska Island 1 is 50-089-20018. Year in which drilling was completed is given in last column. Well Mikkelsen Bay State 1 is sometimes referred to as Mikkelsen Bay State 13-9-19. Wells still held confidential by State of Alaska are not on the list and were not available for this assessment: Exxon Alaska State G-2, Chevron KIC Jago River 1, Mobil Staines River State 1, Phillips North Staines River 1, BP Yukon Gold 1, BP Sourdough 2, Arco Stinson 1. Two other wells have been released but are not on the list: Arco Kuvlum 2 and Arco Kuvlum 3.

<u>Quad</u>	<u>ID</u>	<u>Well Name</u>	<u>Number</u>	<u>Operator</u>	<u>Latitude</u>	<u>Longitude</u>	<u>TD</u>	<u>Year</u>
089	20018	Alaska Island	1	Sohio Petroleum	70.2296611	-146.49954	15222	1982
089	20003	Alaska State	A-1	Exxon Corp.	70.18918	-146.01178	14206	1975
089	20011	Alaska State	C-1	Exxon Corp.	70.13989	-146.24164	13761	1981
089	20015	Alaska State	D-1	Exxon Corp.	70.2025889	-146.2071	13050	1982
089	20019	Alaska State	F-1	Exxon Corp.	70.2272611	-146.36047	14316	1982
179	20007	Alaska State	J-1	Exxon Corp.	69.85811	-146.5687	13652	1984
029	22233	Alpenglow State 1	1	Union Oil of CA	70.1517805	-147.46838	8761	1992
141	00004	Aurora 1	OCS Y-0943	Tenneco Oil	70.1091722	-142.78497	18325	1988
029	22017	Badami	1	Conoco Inc.	70.15062	-147.08503	13595	1990
029	22230	Badami	2	Conoco Inc.	70.19021	-147.16859	11860	1992
141	00005	Belcher 1	OCS Y-0917	Amoco Prod.	70.27532	-141.51291	13150	1989
179	20002	Beli Unit	1	Mobil Oil	69.71077	-146.5355	14632	1973
179	20005	Canning River Unit	A-1	Exxon Corp.	69.60616	-146.33538	8874	1974
179	20006	Canning River Unit	B-1	Exxon Corp.	69.66384	-146.27538	10803	1975
089	20012	Challenge Island	1	Sohio Pet	70.2360703	-146.61785	13587	1981
171	00002	Corona 1	OCS Y-0871	Shell Western	70.3146306	-144.75914	10000	1986
223	20007	Fin Creek Unit	1	McCulloch Oil	69.50013	-147.60016	16119	1972
171	00007	Galahad 1	OCS Y-1092	Amoco Prod.	70.5607444	-144.95993	9238	1991
223	20018	Gyr	1	Arco Alaska	69.65707	-147.27939	8020	1990
171	00001	Hammerhead 1	OCS Y-0849	Union Oil of CA	70.364611	-146.02442	8034	1985
171	00006	Hammerhead 2	OCS Y-0849	Union Oil of CA	70.378275	-146.03123	6460	1986
179	20001	Kavik	1	Pan American	69.63184	-146.56948	9564	1969
179	20003	Kavik Unit	2	Arco O & G	69.63244	-146.65597	7500	1973
179	20004	Kavik Unit	3	Arco O & G	69.63228	-146.53229	5850	1974
223	20002	West Kavik	1	Texaco Inc.	69.77023	-147.1856	16613	1970
223	20006	Kemik Unit	1	Forest Oil	69.440511	-147.26994	16073	1972
223	20013	Kemik Unit	2	BP Alaska Expl.	69.38642	-147.15579	8880	1975
171	00008	Kuvlum 1	OCS Y-0866	Arco Alaska	70.31583	-145.41972	8500	1992
089	20021	E De K Leffingwell	1	Union Oil of CA	70.0177778	-146.51796	14824	1984
029	20055	Mikkelsen Bay State	1	Mobil Oil	70.13519	-147.19743	16596	1970
029	20278	West Mikkelsen State	1	Atlantic Richfield	70.18224	-147.37834	15620	1978
029	20357	West Mikkelsen Unit	2	Arco Alaska	70.221825	-147.19002	11930	1979
089	20002	East Mikkelsen Bay State	1	Humble Oil	70.15202	-146.90301	15205	1971
089	20005	Point Thomson Unit	1	Exxon Corp	70.1741528	-146.33739	13298	1977
089	20006	Point Thomson Unit	2	Exxon Corp	70.1632667	-146.51541	14117	1978
089	20007	Point Thomson Unit	3	Exxon Corp	70.1723489	-146.2528	14125	1979
089	20009	Point Thomson Unit	4	Exxon Corp	70.1779222	-146.60934	15074	1981
223	20001	Shaviovik Unit	1	Colorado O & G	69.54208	-147.52057	7995	1969
089	20004	West Staines State	2	Mobil Oil	70.11053	-146.41637	13171	1975
089	20001	West Staines	18-9-23	Mobil Oil	70.1375528	-146.38816	13329	1970
171	00011	Wild Weasel	OCS Y-1597	Arco Alaska	70.22289	-145.4992	9314	1993

Table WL2. Sources and types of well data for wells adjacent to ANWR. Note: An entry in this table signifies the existence of a data item. An entry does not imply that the data have been entered into the well log data base. [**Biostrat.**: Biostratigraphic report in public well files from Mickey & Haga (BioR), from MMS (BioM), from Bujak Davies Group, (BioC), age summary from well history (BioH). **Vitrinite**: Vitrinite reflectance data (Vr) from Johnsson et al.(1992), from GMC (Vrgmc). **Geochem.**: Geochemical data from USGS Petroleum Geochemical System (PGS). Other geochemical data from MMS or AOGCC (GeoC). **Core**: Cored well with core description (Cor), with porosity-permeability data (Corpp). **Sidewall**: Sidewall core samples description available (SWC); with porosity-perm data (SWCpp). **DrillStem**: Drill Stem Test (DST), Production Test (Prd). -- no information.]

	BioStrat.	Vitrinite	Geochem.	Core	Sidewall	DrillStem
Alaska Island 1	--	Vr	PGS	Cor	--	Prd
Alaska State A-1	BiHMC	--	--	Corpp	--	DST
Alaska State C-1	--	--	--	Corpp	--	DST
Alaska State D-1	--	Vr	PGS	Cor	--	--
Alaska State F-1	--	Vr	PGS	Corpp	--	DST
Alaska State J-1	--	Vrgmc	--	Cor	--	--
Alpenglow State 1	--	--	--	Corpp	--	--
Aurora 1	BioH	Vr	GeoC	Corpp	SWC	
Badami 1	--	Vrgmc	--	Corpp	SWCpp	DST
Badami 2	--	--	--	Corpp	SWCpp	DST
Belcher 1	BioR	Vr	GeoC	--	SWCpp	--
Beli Unit 1	--	Vr	PGS	Cor	--	DST
Canning River Unit A-1	--	Vr	PGS	Corpp	SWC	DST
Canning River Unit B-1	BioR	Vr	PGS	Corpp	SWC	DST
Challenge Island 1	--	Vr	PGS	Cor	--	--
Corona 1	BioM	Vr	GeoC	--	SWCpp	--
Fin Creek Unit 1	--	Vr	GeoC	Cor	--	DST
Galahad 1	BioR	Vrgmc	GeoC	--	SWC	--
Gyr 1	--	Vr	--	Corpp	SWCpp	--
Hammerhead 1	BioM	Vr	GeoC	--	SWCpp	DST
Hammerhead 2	--	Vr	GeoC	--	SWCpp	--
Kavik 1	--	Vr	PGS	Cor	SWC	DST
Kavik Unit 2	--	--	--	Corpp	--	DST
Kavik Unit 3	--	--	--	Corpp	SWC	DST
West Kavik 1	--	Vr	GeoC	--	--	DST
Kemik Unit 1	--	Vr	GeoC	--	--	DST
Kemik Unit 2	--	Vr	GeoC	--	--	DST
Kuvlum 1	BioR	Vr	GeoC	--	SWC	DST
E De K Leffingwell 1	--	Vr	--	Cor	--	--
Mikkelsen Bay State 1	BioH	--	--	--pp	--	DST
W Mikkelsen State 1	--	--	GeoC	Cor	--	DST
W Mikkelsen Unit 2	--	Vr	--	Cor	--	DST
E Mikkelsen Bay State 1	BioH	Vr	PGS	Cor	--	DST
Point Thomson Unit 1	--	Vr	PGS	Corpp	--	Prd
Point Thomson Unit 2	BioR	Vr	PGS	Corpp	--	DSTPrd
Point Thomson Unit 3	--	Vr	PGS	Corpp	--	DST
Point Thomson Unit 4	--	--	--	Cor	--	DSTPrd
Shaviovik Unit 1	--	Vr	GeoC	Cor	--	--
West Staines 18-9-23	BioC	--	--	Corpp	--	DST
West Staines State 2	BioR	Vr	PGS	--	--	--
Wild Weasel	BioR	Vr	--	--	SWC	--

Table WL2, continued. [**Offset**: Vertical offset at total depth = TVDSS - (MD-KB), in feet, where TVDSS is true vertical depth sub-sea, MD is measured depth, KB is Kelly Bushing elevation. This value increases with well deviation. non = no deviation. **2way**: Two-way travel time (TT) computed from sonic log. **M.W.**: Mud Weight, from USGS list (Mmp), mud log (Mml), well history (Mwh). **Dip**: Dipmeter, conductivity traces from 4 arms (Dip4), tadpole plot showing strike and dip (DipTd). **Show**: Oil and gas shows from American Stratigraphic Co. (ShA), from mud log (ShM), and from Amoco strip log (ShS). **Tops**: Stratigraphic tops from Bird (1982, 1986) (Tkb); from well history (Twh). **FTA**: Fission track age (fta).]

	Offset	2way	M.W.	Dip	Show	Tops	FTA
Alaska Island 1	2122	--	Mml		ShA	Tkb	--
Alaska State A-1	non	TT	Mmp	--	ShA	Tkb	--
Alaska State C-1	464	--	Mmp	DipTd	ShA	Tkb	fta
Alaska State D-1	non	--	Mml	--	ShA	Tkb	--
Alaska State F-1	1144	--	Mml	--	ShA	Tkb	--
Alaska State J-1	non	TT	Mml	Dip4	ShM	Tkb	--
Alpenglow State 1	non	--	Mml	--	--	--	--
Aurora 1	24	--	Mml	DipTd	--	--	--
Badami 1	682	--	Mml	DipTd	ShM	Twh	--
Badami 2	491	--	Mml	--	--	Twh	--
Belcher 1	42	--	Mml	DipTd	ShS	--	--
Beli Unit 1	non	TT	Mwh	--	ShA	Tkb	--
Canning River Unit A-1	43	--	--	Dip4	ShA	Tkb	--
Canning River Unit B-1	non	--	Mml	Dip4	ShA	Tkb	--
Challenge Island 1	503	--	Mml	--	ShA	Tkb	--
Corona 1	non	--	Mml	Dip	--	--	--
Fin Creek Unit 1	non	--	Mwh	--	ShA	Tkb	--
Galahad 1	non	--	Mml	--	--	--	--
Gyr 1	16	--	Mml	DipTd	ShM	Tkb	--
Hammer 1	non	--	Mml	--	--	--	--
Hammer 2	non	--	Mml	DipTd	--	--	--
Kavik 1	non	--	Mml	--	ShA	Tkb	fta
Kavik Unit 2	138	--	Mml	DipTd	ShA	Tkb	--
Kavik Unit 3	non	--	Mml	--	ShA	Tkb	--
West Kavik 1	non	--	Mml	--	ShA	Tkb	--
Kemik Unit 1	non	--	Mwh	--	ShA	Tkb	fta
Kemik Unit 2	non	--	Mml	--	ShA	Tkb	fta
Kuvlum 1	non	--	Mml	DipTd	--	--	--
E De K Leffingwell 1	10	TT	Mml	--	--	Tkb	fta
Mikkelsen Bay State 1	non	--	Mmp	--	--	Twh	--
W Mikkelsen State 1	non	--	Mml	--	--	Twh	--
W Mikkelsen Unit 2	10	--	Mml	--	--	Twh	--
E Mikkelsen Bay State 1	-6	--	Mmp	--	ShA	TkbTwh	--
Point Thomson Unit 1	non	--	Mmp	--	ShA	Tkb	--
Point Thomson Unit 2	non	--	Mmp	--	ShA	Tkb	--
Point Thomson Unit 3	1016	--	Mmp	--	ShA	Tkb	--
Point Thomson Unit 4	1880	--	Mmp	--	ShA	Tkb	--
Shaviovik Unit 1	--	--	--		ShA	--	--
West Staines 18-9-23	non	TT	Mmp	--	ShA	Tkb	--
West Staines State 2	non	TT	Mmp	DipTd	ShA	Tkb	--
Wild Weasel	non	--	Mml	DipTd	--	--	--

Table WL3. Group, formation, and member names for which boundaries are denoted on well log plates. Formations and members are described by Nelson and Bird (**Chap. FP**).

Group	Formation	Member
	Sagavanirktok	
	Mikkelsen Tongue of Canning	
	Staines Tongue of Sagavanirktok	
	Canning	
	Hue Shale	
		Gamma Ray Zone
	Pebble shale unit	
	Kuparuk	
	Kemik Sandstone / Thomson sand	
	Kingak Shale	
	Sag River Sandstone	
	Shublik	
Sadlerochit	Ivishak	Fire Creek Siltstone
		Ledge Sandstone
		Kavik
	Echooka	
Lisburne		
Endicott	Kayak Shale	
	Kekiktuk Conglomerate	
Basement		

Table WL5. True vertical depth subsea (TVDSS) of formation tops, unconformities (LCU), thrust plane (Thrust), and various bottom-of-well depths, in feet. The first column, KB, gives the elevation of the Kelly Bushing in feet above mean sea level. In non-deviated wells, TVDSS = MD-KB, but in sixteen deviated wells TVDSS is less than MD-KB. The sixteen deviated wells are listed in the "offset" column of Table WL2. See caption of Table WL4 for abbreviations of formation names. In Aurora 1, the Kemik interval has been designated as Kubaruk Formation (K*).

Well Name	SAGAV	MTCANN	STSAGAV	CANNING	UTSAGAV	UTCANN	LTSAGAV	LTCANN	HUE	GAMMA	PBB2LSH	KEM2IK	KIN2GAK	LCU2	THRUST	PEBBLSH	THOMSON	KEMIK	LCU	KINGAK	SAG RIVER	SHUBLIK	FIRE CRK	LEDGE	KAVIK	ECHOOKA	LISBURNE	KAYAK	KEKIK	BASEMNT	Bottom Depth From well logs -(MD-KB)	Bottom Depth From well logs MD	Bottom Depth From Driller TVDSS	Bottom Depth From driller MD			
Alpenglow State 1	-35	4390	6239	8242																												8698	8762	8697	8761		
Alaska Island 1	-9	6168																	12834												12834	15028	15072	13056	15222		
Alaska State A-1	-10	7659																	12879												12879	14153	14194	14165	14206		
Alaska State C-1	-23	6338	7925	8824					12413	12767						12843	12858		13134												13134	13707	13761	13189	13761		
Alaska State D-1	-7	7267																	12682													12682	13020	13058	13012	13050	
Alaska State F-1	-7	6955							12634	12634									12708												12708	14262	14304	13130	14316		
Alaska State J-1	-454	3578	6629	7506	8277	10050	11835																										13186	13660	13178	13652	
Aurora 1				194					15388							15818		16327		16506													18205	18310	18197	18325	
Badami 1	0	5203	6811	8414					11545	11712							11902		11949									11949	11994			13469	13500	12882	13595		
Badami 2	-3	5313	6736	8156					11288																								11823	11860	11369	11860	
Belcher 1																																	13098	13163	13042	13150	
Beli Unit 1			-1024	628	1173	3948	4381	5328	9197	9553						9703	9758	9798	9798	10093	10158	10312	10464	10968	11243	11370					13558	14610	13580	14632			
Canning River Unit A-1	-895							-775	1135	1574	1894	2138			2183	2183	2343	2388	2388	3345	3405	3533	3778	4139	4564	4738	7017		7259	7935	8860	7909	8874				
Canning River Unit B-1	-669				-596	1094	1794	3056	6734	7089						7264	7319	7354	7354	7689	7749	7906	8083	8589	8868	9004					10092	10788	10107	10803			
Challenge Island 1	-4	6020							12646							12866	12905		12956											12956	10321	10353	13053	13587			
Corona 1	116			1842																													9926	9964	9962	10000	
Fin Creek Unit 1	-768							825	8190							9485	9590	9750	9750	13345	13389	13564	13985	14290	14925						15348	16133	15334	16119			
Galahad 1	166																																9104	9143	9199	9238	
Gyr 1	-645							5070																									7322	8000	7327	8020	
Hammerhead 1	104			6310																													7998	8037	7995	8034	
Hammerhead 2	110																																6427	6466	6421	6460	
Kavik 1	-1352							-1133	922	1657						1882	2092	2122	2122	2862	2932	3067	3272	3754	4057	4187	7410	7947			8182	9550	8196	9564			
Kavik Unit 2	-1051							-920	2545	3142						3336	3573	3608	3608	4543	4628	4765	5002	5405	5705	5955					6410	7480	6292	7500			
Kavik Unit 3	-1475							-1251	1429	2104						2324	2639	2664	2664	3414	3450	3598	3809	4259							4346	5847	4349	5850			
West Kavik 1	-405							7085	11553	11746						11949	12126	12190	12190	12775	12795	12930	13038	13570	13899	14110					15799	16214	16198	16613			
Kemik Unit 1	-1220							-1184	766	1551		2351	2651	2651	3206	2216	3206	3496	3496	7242	7281	7596	8041	8354	9021	9716	14736				14820	16054	14839	16073			
Kemik Unit 2	-1288																			-1282	4723	4804	4978	5478	5674	6508	7033					7576	8883	7573	8880		
Kuvlum 1																																				8434	8500
E De K Leffingwell 1	-170	5061	7652	8834	9078	10023			12912	13415						13569	13586	13803															14505	14615	14817	14612	14824
Mikkelsen Bay State 1	-25	4790	6473	8423					11053	11425						11597	11613	11721									11721	13751	13803	14505	16527	16554	16601	16549	16596		
West Mikkelsen State 1	-25	4820	6357	8449					10477	10969						11151	11169	11259									11259	12741	13569	15563	15530	15581	15569	15620	15620	15620	
West Mikkelsen Unit 2	-13	5348	6800	8192					11171	11360																							11577	11876	11920	11876	11930
East Mikkelsen Bay State 1	-11	5448	7055	8618					11855	12040						12208		12239															11577	11876	11920	11876	11930
Point Thomson Unit 1	-4	6963	8117	8782					12482	12714						12777	12797	13127										12313	13078			13497	15156	15194	15173	15205	
Point Thomson Unit 2	-25	6196	7773	8599					12391	12773						12910	12941	13066														13066	14062	14111	14068	14117	
Point Thomson Unit 3	-6	6884	8193	9095					12335	12552							12624	12889														12889	14095	14131	13073	14125	
Point Thomson Unit 4	-13	6556	7784	8649					12541	12727						12866	12896	13060														13060	15028	15061	13161	15074	
Shaviovik Unit 1								-786																											7198	7995	
West Staines State 2	-75	5755	7700	8495					11890	12818						12975		13060														13060	13065	13160	13076	13171	
West Staines 18-9-23	-47	6037	7887	8617					12382	12782						12933		13062														13062	13276	13339	13266	13329	
Wild Weasel	87			7842																														9075	9140	9249	9314

Table WL7. Directory of data files (x) on this CDROM. [BioS, biostratigraphy; Lith, lithology; PorC, porosity and other measurements on core samples; PorS, porosity and other measurements on sidewall samples; MudW, mud weight; Vitr, vitrinite reflectance; TOC, total organic carbon; Show, hydrocarbon shows; Geoc, geochemistry (includes TOC, vitrinite reflectance, and rock-eval data); Info, text on well plots.] Data file names are combinations of abbreviated well names and data type names. For example, mud weight data from Alpenglow State 1 well is in a file called AlpgMudW. Plate numbers are given in column 1. For example, Plate WL4 contains the well logs and other data for Alaska State C-1.

WL	Full well name	Abbreviate d Well name	Bios	Lith	PorC	PorS	MudW	Vitr	TOC	Show	Geoc	Info
1	Alpenglow State 1	Alpg			X		X					X
2	Alaska Island 1	Aisl					X	X		X		X
3	Alaska State A-1	AkA1	X		X		X			X		X
4	Alaska State C-1	AkC1			X		X			X		X
5	Alaska State D-1	AkD1					X	X		X	X	X
6	Alaska State F-1	AkF1			X	X		X		X	X	X
7	Alaska State J-1	AkJ1					X	X		X		X
8	Aurora 1	Auro	X		X	X	X	X			X	X
9	Badami 1	Bad1			X	X	X			X		X
10	Badami 2	Bad2			X	X	X					X
11	Belcher 1	Belc				X	X	X		X	X	
12	Beli Unit 1	Beli		X			X	X		X	X	X
13	Canning River Unit A-1	CRA1		X	X			X		X	X	X
14	Canning River Unit B-1	CRB1	X		X		X	X		X	X	X
15	Challenge Island 1	Cisl					X	X		X	X	X
16	Corona 1	Coro	X			X	X	X			X	X
17	Fin Creek Unit 1	Fcrk		X			X	X	X	X	X	X
18	Galahad 1	Gala	X				X	X			X	X
19	Gyr 1	Gyr			X	X	X	X		X		X
20	Hammerhead 1	Ham1	X			X	X	X			X	X
21	Hammerhead 2	Ham2				X	X	X			X	X
22	Kavik 1	Kav1					X			X	X	X
23	Kavik Unit 2	Kav2		X	X		X			X		X
24	Kavik Unit 3	Kav3		X	X		X			X		X
25	West Kavik 1	Wkav					X	X	X	X	X	X
26	Kemik Unit 1	Kem1		X				X	X	X	X	X
27	Kemik Unit 2	Kem2					X	X	X	X	X	X
	Kuvlum 1	Kuv1									X	
28	E De K Leffingwell 1	Leff					X	X				X
29	Mikkelsen Bay State 1	Mikk	X		X		X					X
30	West Mikkelsen State 1	WMk1					X		X		X	X
31	West Mikkelsen Unit 2	WMk2					X	X				X
32	East Mikkelsen Bay State 1	Emik	X				X	X		X	X	X
33	Point Thomson Unit 1	PtT1			X		X	X		X	X	X
34	Point Thomson Unit 2	PtT2	X		X		X	X		X	X	X
35	Point Thomson Unit 3	PtT3			X		X	X		X	X	X

WL	Full well name	Abbreviate d Well name	Bios	Lith	PorC	PorS	MudW	Vitr	TOC	Show	Geoc	Info
36	Point Thomson Unit 4 Shaviot Unit 1	PtT4 Shav					X			X		X
37	West Staines State 2	WSt2	X				X	X	X	X	X	X
38	West Staines (18-9-23)	WSt1	X				X		X			X
39	Wild Weasel	Weas	X				X	X				X

Table WL8. Sonic travel time ($\mu\text{s}/\text{ft}$) from five wells. Values from Alaska State J-1, Beli Unit 1, and E De K Leffingwell 1 are representative of permafrost.

Well	Depth Interval (TVDSS, feet)	Average Sonic Travel Time
Alaska State J-1	1350 – 1900	160
Beli Unit 1	-400 – 0	140
Beli Unit 1	0 – 500	110
E De K Leffingwell 1	600-2000	160
Canning River Unit A-1	500 - 1600 MD	85
Canning River Unit B-1	600 - 1800 MD	80

Table WL9. Two-way travel times (ms). Check shot values in column 2 provided by J. Grow. Values based upon well logs are in columns 3 and 4.

TVDSS (feet)	Two-way travel time from check shot in W. Staines (18-9-23) well.	Well logs in W. Staines (18-9-23) well	Well logs in W. Staines 2 well
12980	2600	2673	2572
11880	2400	2438	2362
9905	2034	2107	2039
4005	888	917	874

Table WL10. Bottom-hole temperature from well logs, corrected for drilling effects.

Key to well log types: dual induction: DIL; density: FDC, LDT, and DEN; sonic: BHC, LSS, SONIC, DIPOLE; compensated neutron: CNL; caliper: CALI; dipmeter: DIP, SDT; core run: CORGUN; electrical imaging: FMS.

Other abbreviations: GL, ground level; KB, elevation of Kelly Bushing; circ., circulation; corr., correction.

Log Depth (ft from KB)	Log Depth (ft from GL)	Well log	Time after circ. stopped (hr)	Duration of circ. (hr)	Observed temp (°F)	Corr. temp (°F)*	Notes
Pt Thomson 1		KB-GL= -33.45					
	1955	Permafrost				30.2	
9533	9499.55	DIL	6	4	126	155	
9533	9499.55	FDC	10	4	135	155	
11399	11365.55	BHC	10	10	171	192	
11399	11365.55	FDC	14	10	176	192	
13053	13019.55	DIL	10	7	210	257	?
13053	13019.55	BHC	14	7	220	257	?
Pt Thomson 2		KB-GL=-49.0					
	1962	Permafrost				30.2	
10090	10041	DIL	10	8	137	152	
10090	10041	FDC	16.5	8	142	152	
13377	13328	BHC	11	14	204	226	
13375	13326	FDC	17	14	210	226	
14105	14056	DIL	12	13	219	240	
14105	14056	CNL	21	13	226	240	
Canning River Unit A-1		KB-GL=-30.0					
4545	4515	DIL	2.5	4	119	119	No Corr. Needed
4545	4515	FDC	8.5	4	119	119	No Corr. Needed
4545	4515	CNL	8.5	4	119	119	No Corr. Needed
4545	4515	DIP	11.5	4	119	119	No Corr. Needed
6582	6552	DIL	6	5	142	147	
6582	6552	FDC	18	5	143	147	
8862	8832	DIL	7	5	156	166	
8862	8832	FDC	10	5	158	166	

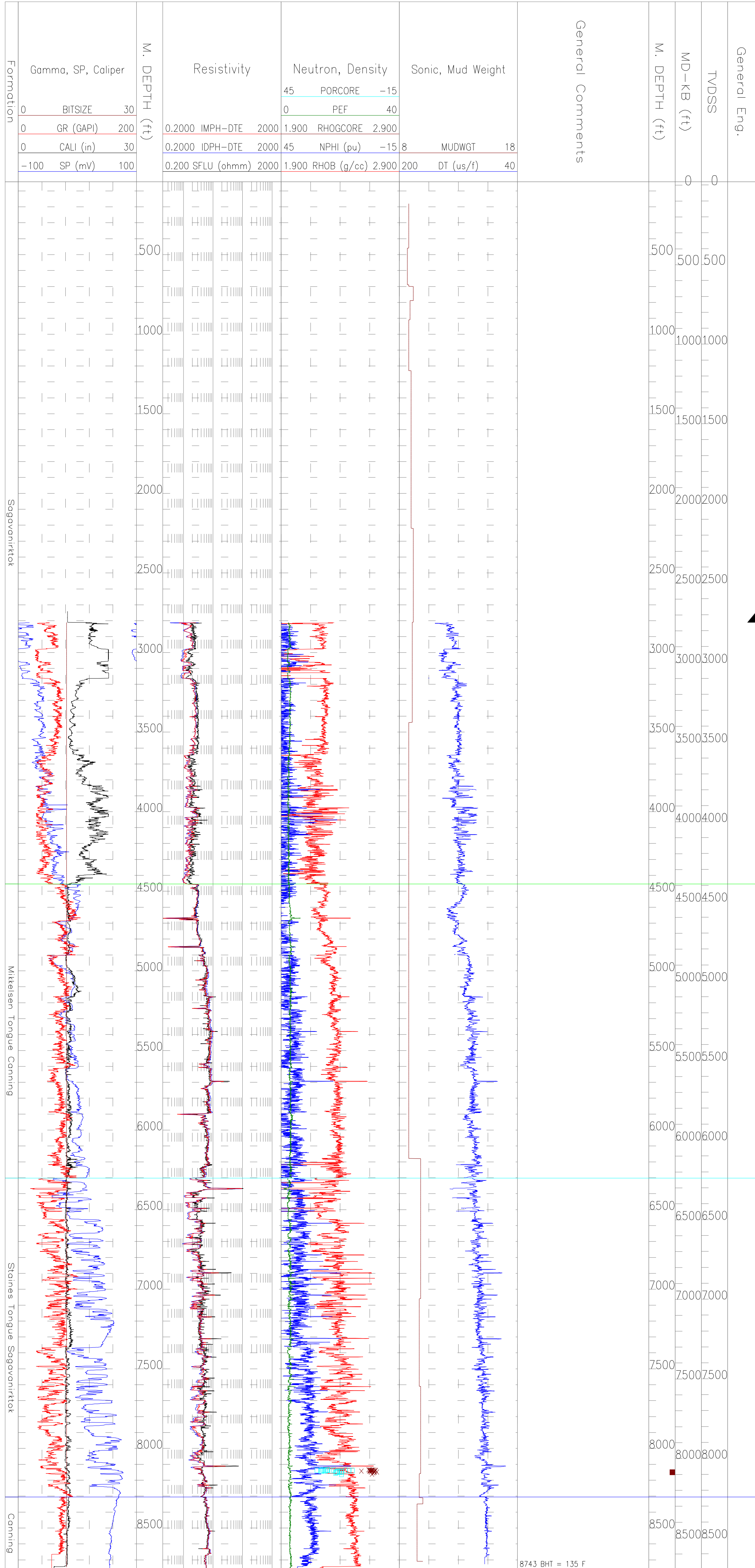
Log Depth (ft from KB)	Log Depth (ft from GL)	Well log	Time after circ. stopped (hr)	Duration of circ. (hr)	Observed temp (°F)	Corr. temp (°F)*	Notes
Canning River Unit B-1		KB-GL= -27.07					
	1805	Permafrost				30.2	
9349	9321.93	DIL	10.5	5	150	182	
9349	9321.93	BHC	15	5	160	182	
10787	10759.93	DIL	5	5	180	198	
10787	10759.93	BHC	14	5	188	198	
10787	10759.93	CNL	15	5	191	198	
10787	10759.93	FDC	16	5	191	198	
Beli Unit 1		KB-GL=-28.0					
	1680	Permafrost				30.2	
2687	2659	DIL	3		65	65	No Corr. Needed
2687	2659	FDC	14		65	65	No Corr. Needed
2687	2659	BHC	27		65	65	No Corr. Needed
11177	11149	DIL	6	10	146	184	
11177	11149	FDC	13	10	158	184	
11177	11149	BHC	24	10	176	184	
14600	14572	DIL	5	13	206	221	
14600	14572	BHC	7	13	208	221	
Kavik 1		KB-GL=-16.0					
	843	Permafrost				30.2	
4169	4153	DIL	7		116		Not Corr.
4169	4153	FDC			116		Not Corr.
4169	4153	BHC	8		116		Not Corr.
6338	6322	DIL	3.5		120		Not Corr.
6338	6322	BHC	28		120		Not Corr.
8996	8980	DIL	6		182		Not Corr.
8996	8980	BHC	12		182		Not Corr.
Alaska State J-1		KB-GL=-29.5					
	2670.5	Permafrost				30.2	
6246	6216.5	DIL	6.3	5	108	111	
6246	6216.5	BHC	10	5	110	111	
6219	6189.5	FDC	17	5	110	111	
6222	6192.5	DIP	23.5	5	108	111	

Log Depth (ft from KB)	Log Depth (ft from GL)	Well log	Time after circ. stopped (hr)	Duration of circ. (hr)	Observed temp (°F)	Corr. temp (°F)*	Notes
Alaska State C-1		KB-GL=-31.0					
	1913	Permafrost				30.2	
11118	11087	DIL	15	10	150	178	
11118	11087	BHC	21.5	10	155	178	
11118	11087	DEN	29	10	162	178	
13100	13069	DEN	8	10	182	205	
13100	13069	BHC	15	10	190	205	
13772	13741	DIL	11	10	220	234	
13772	13741	DEN	16.5	10	224	234	
Kemik Unit 1		KB-GL=-14.0					
7706	7692	DIL	4	5	134	174	
7706	7692	BHC	6	5	145	174	
13048	13034	DIL	8	8	226	264	
13046	13032	BHC	14	8	236	264	
13045	13031	FDC		8	256	264	No Corr. Needed
Fin Creek 1		KB-GL=-17.0					
3007	2990	DIL	7	Circ. ?	95		Not Corr.
6686	6669	DIL	5	5	122		Not Corr.
6685	6668	FDC	Circ. ?	5	126		Not Corr.
9389	9372	DIL	12	Circ. ?	144		Not Corr.
14085	14068	DIL	10	Circ. ?	220		Not Corr.
14256	14239	DIL	6	Circ. ?	228		Not Corr.
West Staines (18-9-23)		KB-GL=-13.9					
	1972	Permafrost				30.2	
12997	12983.1	DIL	6	10	173	218	
12997	12983.1	BHC	9.5	10	184	218	
West Staines 2		KB-GL=-20.0					
	2008	Permafrost				30.2	
11268	11248	DIL	10	8	140	184	
11261	11241	CNL/FDC	22	8	160	184	
Gyr 1		KB-GL=-29.8					
3108	3078.2	DIL/BHC	7	5	89	100	
3108	3078.2	FDC	9.5	5	92	100	
3108	3078.2	CALI	9.5	5	92	100	
3108	3078.2	CORGUN	11.5	5	92	100	
8018	7988.2	DIL/BHC	7	5	149	165	
8018	7988.2	FDC	13	5	153	165	
8018	7988.2	CALI	33	5	157	165	
8018	7988.2	CORGUN	40	5	163	165	

Log Depth (ft from KB)	Log Depth (ft from GL)	Well log	Time after circ. stopped (hr)	Duration of circ. (hr)	Observed temp (°F)	Corr. temp (°F)*	Notes
E Mikkelsen Bay State 1		KB-GL=-27.0					
	1923	Permafrost				30.2	
3255	3228	BHC	3		98		Not Corr.
12347	12320	DIL	6		170		Not Corr.
12634	12607	DIL	6	8	179	184	
12636	12609	BHC	12	8	180	184	
14368	14341	DIL	7.7		192		Not Corr.
15203	15176	BHC	6	8	224	255	
15192	15165	DIL	13	8	238	255	
Alaska State D-1		KB-GL=-30.9					
	1179	Permafrost				30.2	Ocean Affected
4003	3972.1	DIL	6.3	8	108	115	?
4004	3973.1	BHC	15	8	111	115	?
10085	10054.1	BHC	14	12	156		Not Corr.
12905	12874.1	DIL	8		204		Not Corr.
12898	12867.1	BHC	12		204		Not Corr.
13060	13029.1	DIL	6		200		Not Corr.
13056	13025.1	BHC	7		200		Not Corr.
E De K Leffingwell 1		KB-GL=-31.7					
	2218	Permafrost				30.2	
4060	4028.3	BHC/DIL	5.75	5	75		Not Corr.
4060	4028.3	FDC	9.75	5	75		Not Corr.
4049	4017.3	LSS	20	5	75		Not Corr.
12692	12660.3	BHC/DIL	9.5	8	164		Not Corr.
12692	12660.3	FDC	16.5	8	164		Not Corr.
14804	14772.3	BHC/DIL	10.5	10	225	259	
14804	14772.3	FDC	17	10	230	259	
14784	14752.3	LSS	34	10	250	259	
Hammerhead 1		No data avail to evaluate permafrost				KB-GL= -103.7	
7768	7664.3	DIL/LSS	8.25	?	128		Not Corr.
8026	7922.3	LDT	5.5	?	110		Not Corr.
Hammerhead 2		No data avail to evaluate permafrost				KB-GL= -110.0	
6444	6334	FMS	4	8	92	108	
6455	6345	SDT/DIL	6.5	8	96	108	
6455	6345	LDT	13.75	8	101	108	

Log Depth (ft from KB)	Log Depth (ft from GL)	Well log	Time after circ. stopped (hr)	Duration of circ. (hr)	Observed temp (°F)	Corr. temp (°F)*	Notes
Kuvlum 1		No data avail to evaluate permafrost above 1000 ft				KB-GL= -103.0	
3383	3280	DIL	6	5	88	90	
3245	3142	PERF	22.5	5	89	90	
8270	8167	DIPOLE	9	8	128	138	
8254	8151	SONIC	9.5	8	128	138	
8226	8123	LDT	19	8	131	138	
Kuvlum 2		No evidence of permafrost				KB-GL= -101.0	
3902	3801	DIL	10.7	5	61	64	
3894	3793	LDT	16	5	62	64	
10936	10835	DIL	7.25	10	162	171	
10936	10835	LDT	24	10	162	171	
10964	10863	MICRO	27	10	174	171	
Corona 1		No data avail to evaluate permafrost				KB-GL= -117.0	
7963	7846	LDT	7.75	13	126	151	
7963	7846	SONIC	10	13	136	151	
10010	9893	SONIC	9.25	10	164	173	
10010	9893	LDT	14.5	10	166	173	
Galahad 1		KB-GL= -166.0					
4050	3884	DIL	?	?	62		Not Corr.
9200	9034	DIL	11.75	?	143		Not Corr.

PLATE WL1. LOGS, CORE DATA, AND OTHER DATA FROM ALPENGLOW STATE 1



Alpenglw State 1 (Union Oil)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-029-22233
70.1517805 north latitude, 147.46838 west longitude
Kelly Bushing elevation: 64 feet above sea level
Ground elevation: 35 feet
Total depth: 8761 feet
Completion year: 1992
No directional survey: inclination is less than 1 deg except at 8588 MD where inclination is 1.08 degrees.

Drill and test summary: Drilled through intertongued Sagavonirtoq and Canning Formations. No tests.

Cored interval and feet recovered:
1 8134-8167 33 clastic sequence in Staines Tongue of Sagavonirtoq Fm.

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Published reports and papers:
None

Data reports available from State of Alaska Geologic Materials Center:
None

Materials available from State of Alaska Geologic Materials Center:
None

Explanation of curves and symbols (from left to right):

BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts

IMPH-DTE Medium induction phasor resistivity in ohm-m
IDPH-DTE Deep induction phasor resistivity in ohm-m
SFLU Spherically focused resistivity in ohm-m

PORCORE Porosity from core measurements in percent (cyan square)
PEF Photoelectric factor in barns per electron
RHOGCORE Grain density from core measurements in gm/cc (brown x)
NPHI Neutron porosity in percent
RHOB Density in gm/cc

MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

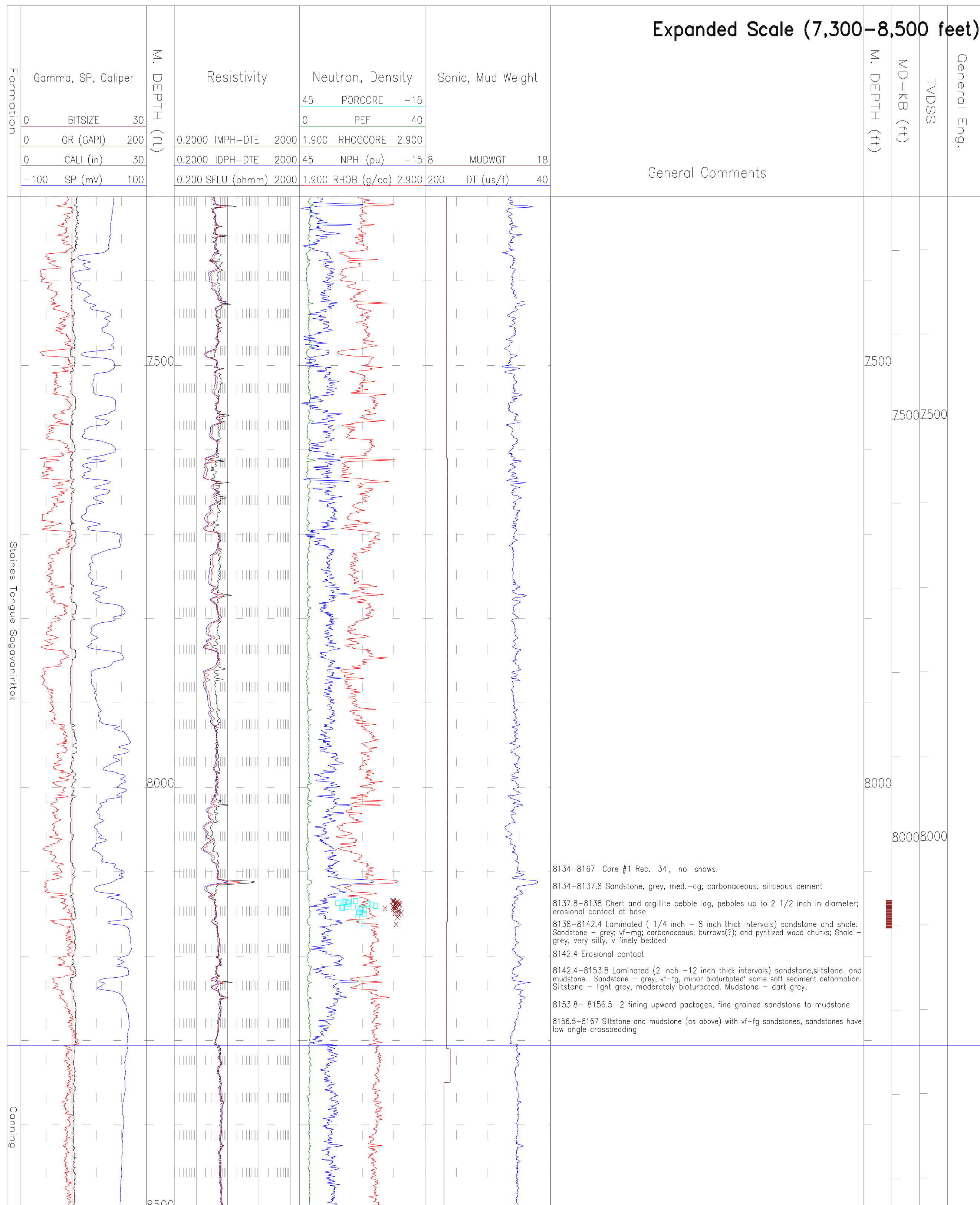
M. DEPTH Measured depth along hole in feet
brown bars Cored intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
boepd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSIP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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Expanded Scale (7,300-8,500 feet)

General Comments

8134-8167 Core #1 Rec. 34, no shows.

8134-8137.8 Sandstone, grey, med.-cp, carbonaceous; siliceous cement

8137.8-8138 Chert and argillite pebble lag, pebbles up to 2 1/2 inch in diameter; erosional contact at base

8138-8142.4 Laminated (1/4 inch - 8 inch thick intervals) sandstone and shale. Sandstone - grey, vf-mg; carbonaceous; burrows(?); and pyritized wood chunts; Shale - grey; very silty, v finely bedded

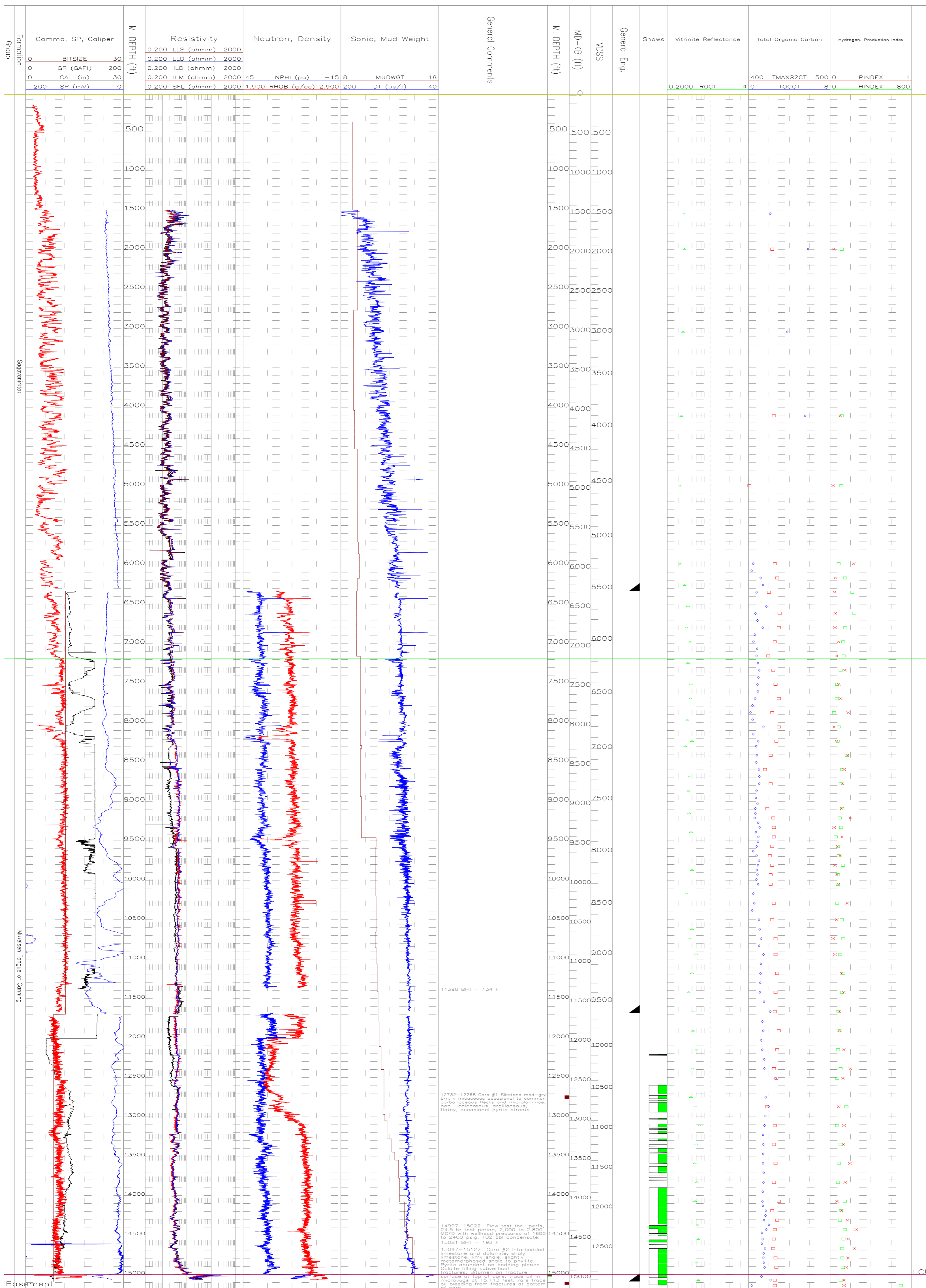
8142.4 Erosional contact

8142.4-8153.8 Laminated (2 inch - 12 inch thick intervals) sandstone, siltstone, and mudstone. Sandstone = grey, vf-fg, minor bioturbated; some soft sediment deformation. Siltstone - light grey, moderately bioturbated. Mudstone - dark grey.

8153.8- 8156.5 2 fining upward packages, fine grained sandstone to mudstone

8156.5-8167 Siltstone and mudstone (as above) with vf-fg sandstones, sandstones have low angle crossbedding

PLATE WL2. LOGS, CORE DATA, AND OTHER DATA FROM ALASKA ISLAND 1



Alaska Island 1 (Sohio)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-89-20018
70.2296611 north latitude, 146.49954 west longitude
Kelly Bushing elevation: 44 feet above sea level
Ground elevation: 7 feet
Total depth: 15,222 feet
True Vertical Depth: 13,006 feet
True Vertical Depth Subsea: 12,961 feet
Completion year: 1982

Drill and Test Summary: Drilled to basement. Tested >40API oil at 175 bopd and 2700 MCFD gas from basement rocks at 14,997-15,022.

Cored intervals and feet recovered:

1	12,732-768	36	Canning Fm (siltstone)
2	15,097-127	30	basement limestone & shale

Well logs and other paper records available from Alaska Oil and Gas Conservation Commission.

Published reports and papers:

U.S. Geol. Survey Bulletin 1778; 1987, K.J. Bird and L.B. Magoon, eds.: Magoon, L.B., and 4 others, Chap. 11, Figure H in Appendix 11.1 and Figure 11.12.

Bonet, S.M., and Scherr, J., 1992, Correlation study of selected exploration wells, p. 101-104 in 1992 Proc. Intl. Conf. On Arctic Margins, OCS Study MMS 94-0040.

Scherr, J., Bonet, S.M., and Basche, B.J., 1991, Correlation study of selected exploration wells from the North Slope and Beaufort Sea, Alaska, Minerals Management Service OCS Report MMS 91-0076, 29 p. and 19 plates.

Data reports from State of Alaska Geologic Materials Center:

26. Geochemical Data (total organic carbon, rock-eval pyrolysis, and vitrinite reflectance) Sohio Alaska Petroleum Co.

Materials available from State of Alaska Geologic Materials Center:

Foraminifera Slides
Kerogen Slides
Palynologic Slides
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):

BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts

LLS Shallow laterolog resistivity in ohm-m
LLD Deep laterolog resistivity in ohm-m
ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
SFL Spherically focused resistivity in ohm-m

NPHI Neutron porosity in percent
RHOB Density in gm/cc

MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

M. DEPTH Measured depth along hole in feet
DRILL STERN and PRODUCTION TEST INTERVALS brown bars
CORED INTERVALS
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

ROCT Vitrinite reflectance, mean value from cuttings in percent

TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent

PINDEX Production index = S1/(S1+S2)
HINDEX Hydrogen index = 100*S2/TOC

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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PLATE WL3. LOGS, CORE DATA, AND OTHER DATA FROM ALASKA STATE A-1

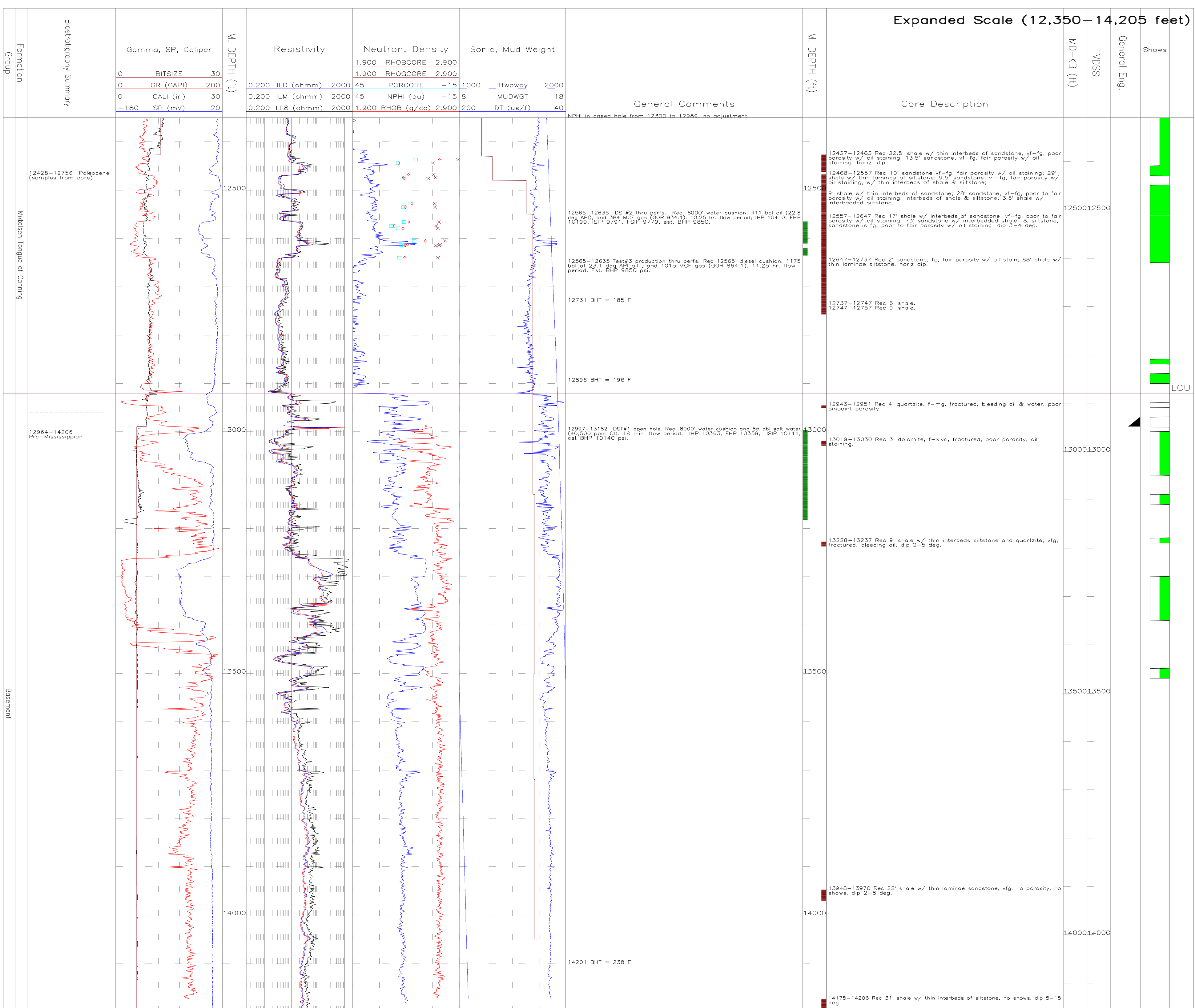
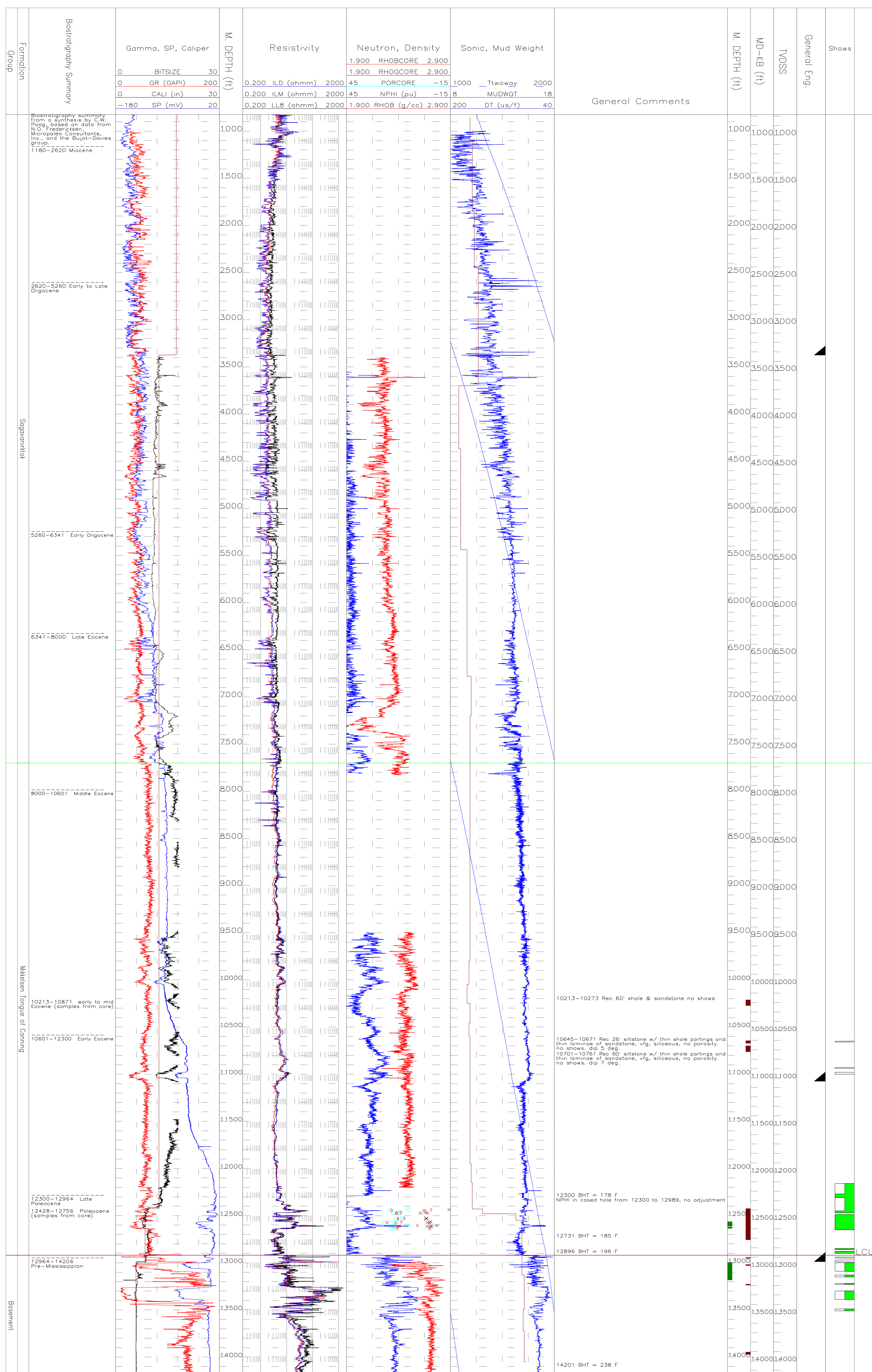


PLATE WL4. LOGS, CORE DATA, AND OTHER DATA FROM ALASKA STATE C-1

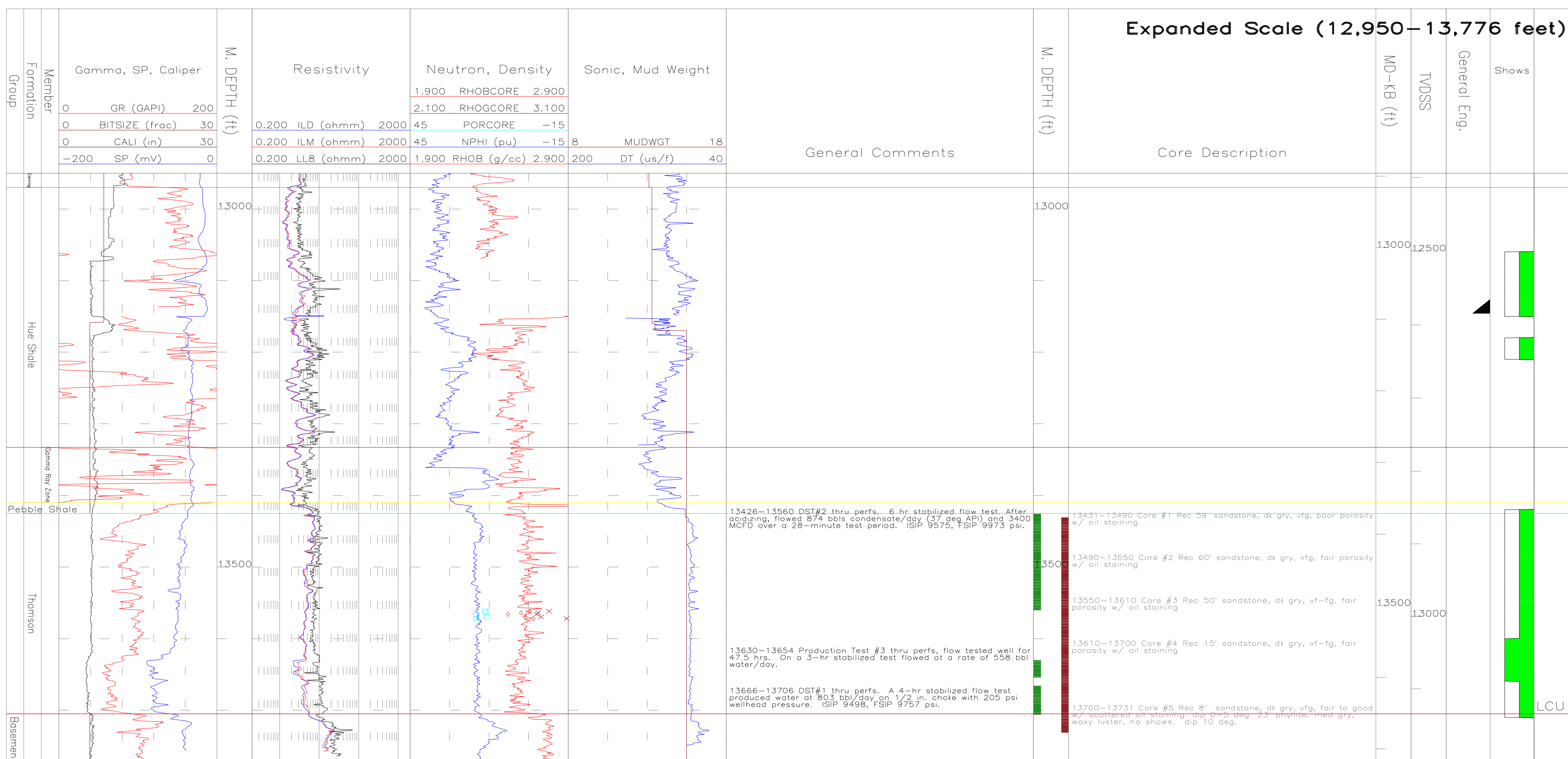
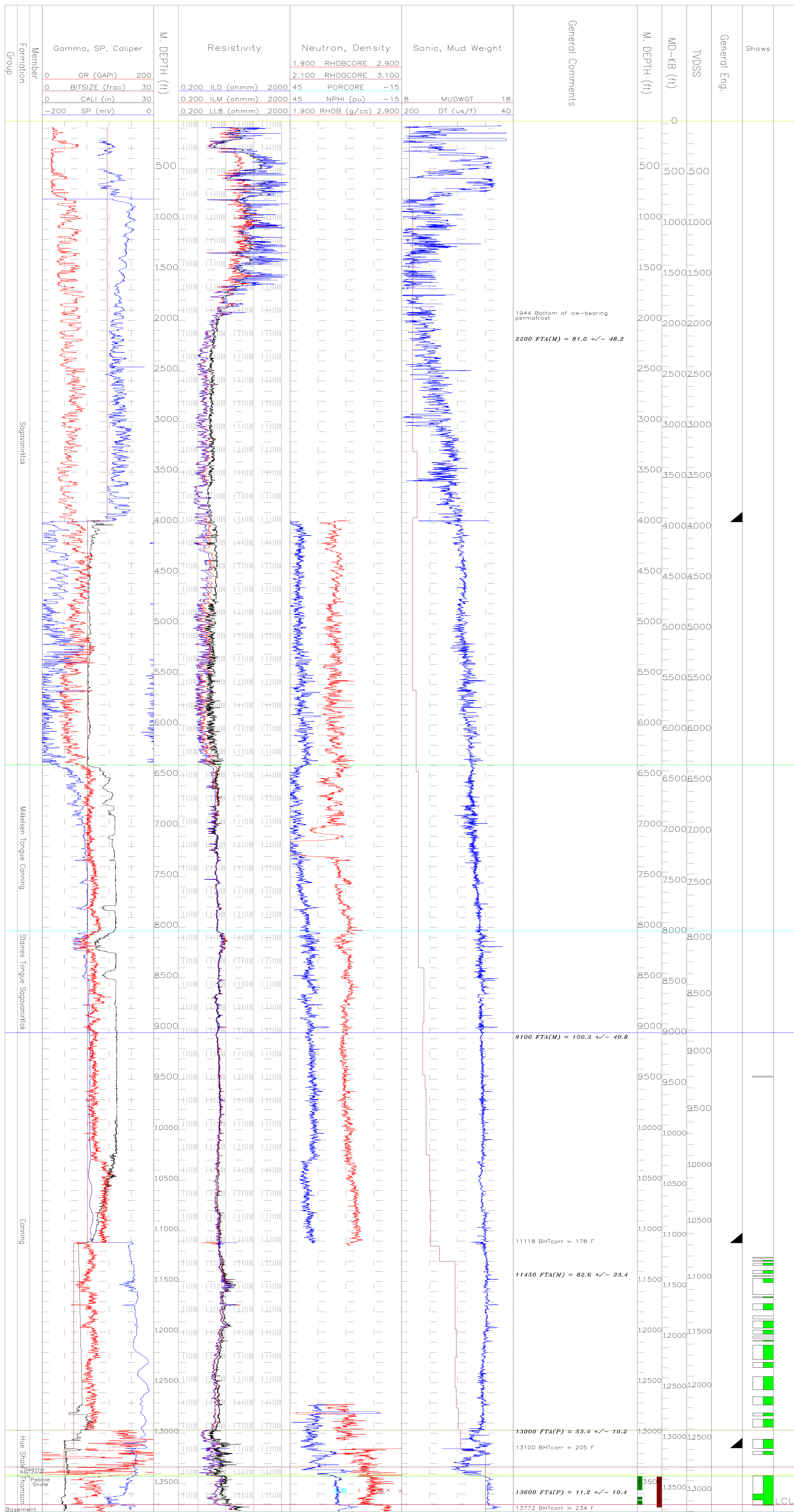
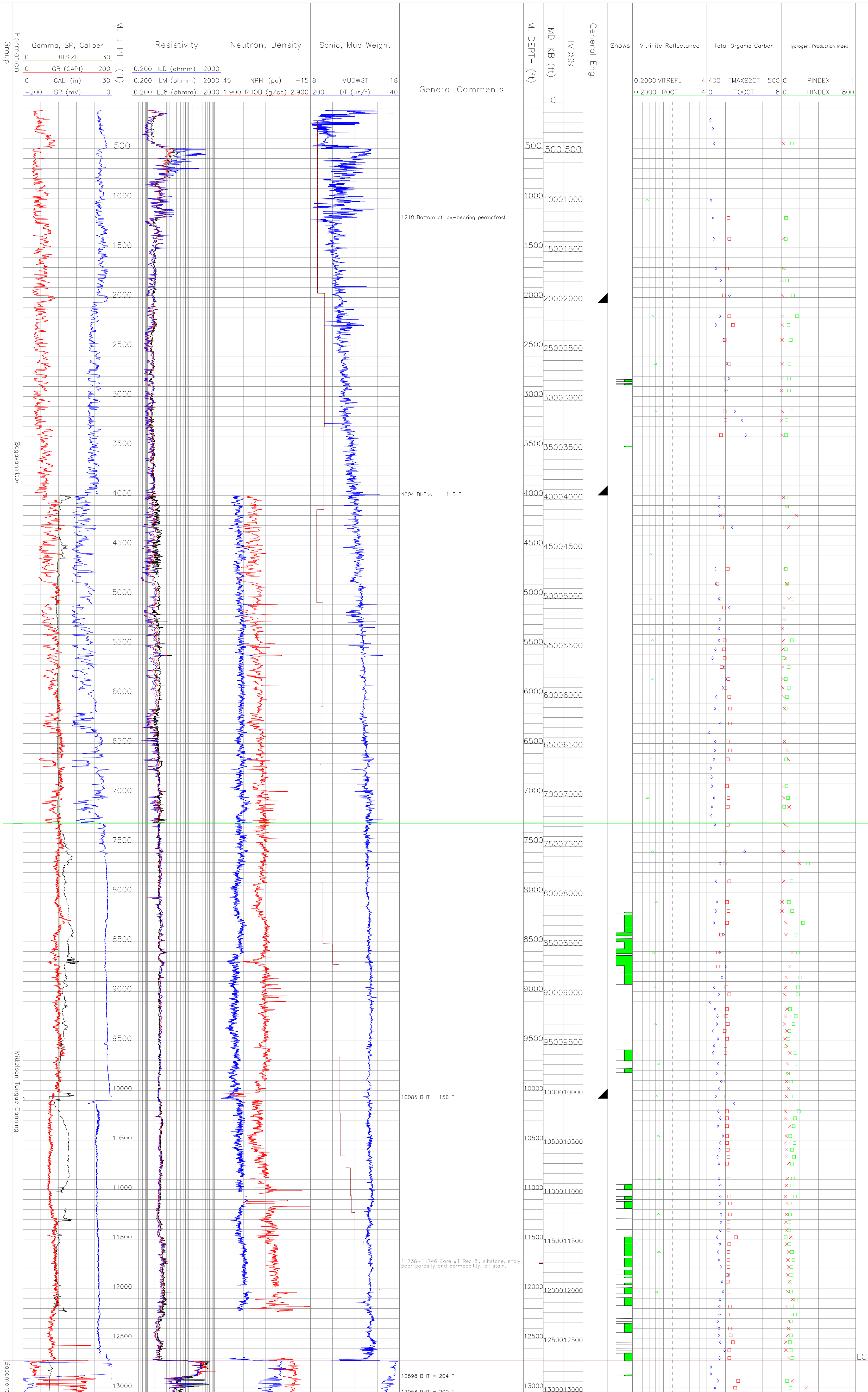


PLATE WL5. LOGS, CORE DATA, AND OTHER DATA FROM ALASKA STATE D-1



Alaska State D-1 (Exxon)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-089-20015
70.2025889 north latitude, 146.2071 west longitude
Kelly Bushing elevation: 38 feet above sea level
Ground elevation: 13 feet
Total depth: 13,050 feet
Completion year: 1982
No directional survey.

Drill and Test Summary: Drilled to basement. No hydrocarbons recovered.

Cored intervals and feet recovered:
1 11,738-746 8 Canning Fm (siltstone)

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Published reports and papers:

U.S. Geol. Survey Bulletin 1778; 1987, K.J. Bird and L.B. Magoon, eds.:
Plate I, Well correlation sections showing selected data, northeastern Alaska: gamma-ray, resistivity, stratigraphy, and well tests.
Bird, K.J. and 3 others, Chap. 7, Figure 7.3.
Magoon, L.B., and 4 others, Chap. 11; Figure G in Appendix 11.1 and Figure 11.12.

Banet, S.M., and Scherr, J., 1992, Correlation study of selected exploration wells...p. 101-104 in 1992 Proc. Intl. Conf. On Arctic Margins, OCS Study MMS 94-0040.

Scherr, J., Banet, S.M., and Basile, B.J., 1991, Correlation study of selected exploration wells form the North Slope and Beaufort Sea, Alaska, Minerals Management Service OCS Report MMS 91-0076, 29 p. and 19 plates.

Data reports available from State of Alaska Geologic Materials Center:

25. Geochemical Analysis (Total Organic Carbon, Rock-Eval Pyrolysis, Kerogen Type, Vitrinite Reflectance)

Materials available from State of Alaska Geologic Materials Center:

Foraminifera Slides
Kerogen Slides
Palyneologic Slides
Petrographic Thin Sections of Ditch Samples

Explanation of curves and symbols (from left to right):

BITSIZE Bit size in inches
GR Gamma ray in API units
CALLI Caliper in inches
SP Spontaneous potential in millivolts

ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
LL8 Laterolog-8 resistivity in ohm-m

NPHI Neutron porosity in percent
RHOB Density in gm/cc

MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

M. DEPTH Measured depth along hole in feet
brown bars Cored intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

VITREFL Vitrinite reflectance, mean value in percent
ROCT Vitrinite reflectance, mean value from cuttings in percent

TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent

PINDEX Production index = S1/(S1+S2)
HINDEX Hydrogen index = 100*S2/TOC

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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PLATE WL6. LOGS, CORE DATA, AND OTHER DATA FROM ALASKA STATE F-1

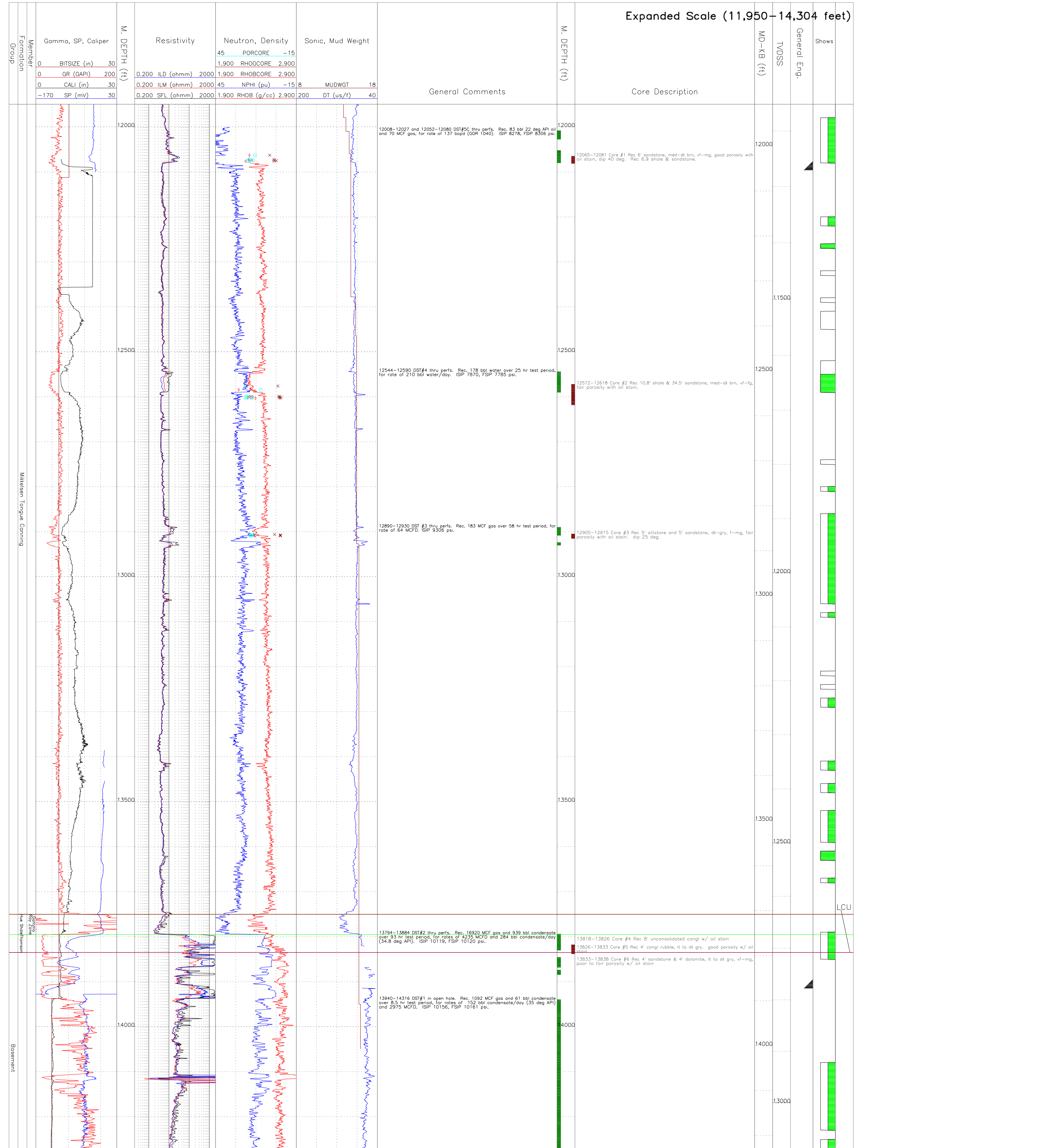
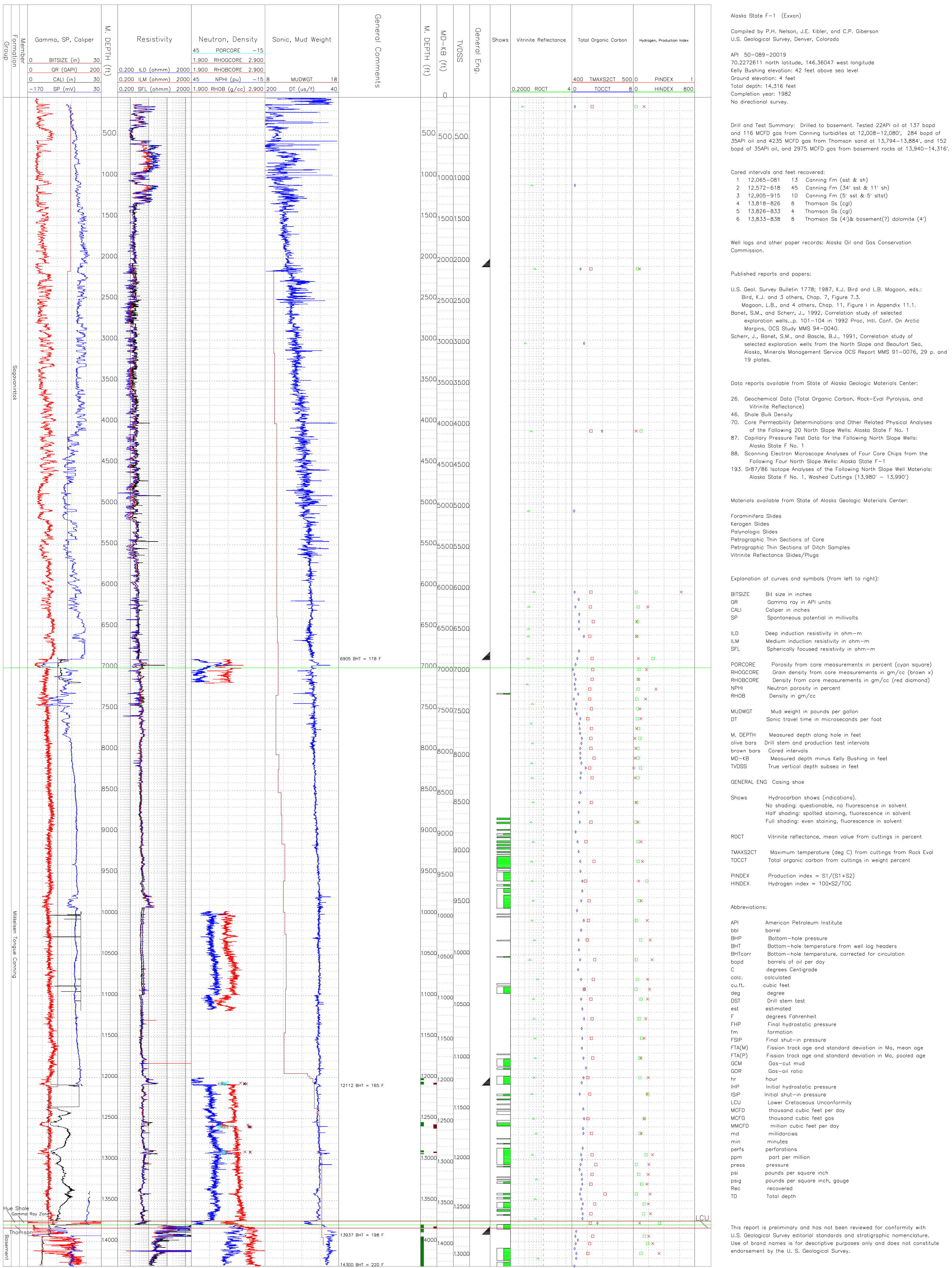
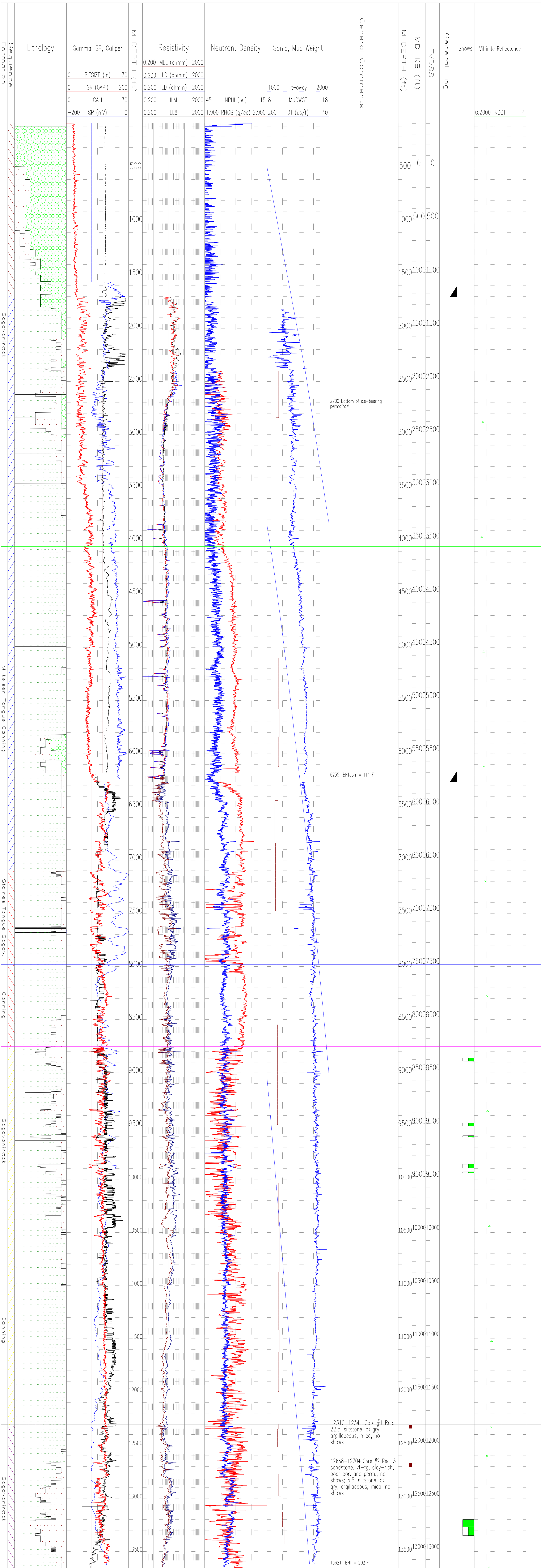


PLATE WL7. LOGS, CORE DATA, AND OTHER DATA FROM ALASKA STATE J-1



Alaska State J-1 (Exxon)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-179-20007
69.85811 north latitude, 146.5687 west longitude
Kelly Bushing elevation: 474 feet above sea level
Ground elevation: 444 feet
Total Depth: 13,652 feet
Inclination survey shows less than 2 degrees inclination from surface to total depth.
No directional survey.
Completion Date: 1984

Drill and Test Summary: Drilled through intertongued Sagaviniitok and Canning Formations. No tests.

Cored intervals and feet recovered:
1 12310-12341 22.5 siltstone in Sagaviniitok Formation
2 12668-12704 9.5 3' sandstone, 6.5' siltstone in Sagaviniitok Fm.

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Data report available from State of Alaska Geologic Materials Center:
246. Vitrinite Reflectance (Maceral) Data From Cuttings (2,790'- 13,652') and from Core (12,310'-12,332') Alaska State J No. 1 Well.

Materials available from State of Alaska Geologic Materials Center:
Core or Cuttings
Foraminifera Slides
Kerogen Slides
Palynologic Slides
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):

LITHOLOGY From mud log

SEQUENCES
A (green), B (brown), C (blue), D (red), E (yellow), F&G (purple)

BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts

MLL Medium laterolog resistivity in ohm-m
LLD Deep laterolog resistivity in ohm-m
ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
LL8 Laterolog-8 resistivity in ohm-m

NPHI Neutron porosity in percent
RHOB Density in gm/cc

Twoway Two-way travel time in milliseconds (top interval, 0-1000 ms; second interval 1000-2000 ms; etc)
DT Sonic travel time in microseconds per foot
MUDWGT Mud weight in pounds per gallon

M. DEPTH Measured depth along hole in feet
brown bars Cored intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

ROCT Vitrinite reflectance, mean value in percent

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
boepd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSIP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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LITHOLOGY PATTERNS

- Clay, claystone
- Siltstone
- Shale
- Carbonaceous shale
- Coal
- Sandstone
- Conglomerate
- Chert
- Shaly limestone
- Limy shale
- Limestone
- Dolomite
- Tuff
- Argillite

12310-12341 Core #1 Rec. 22.5' siltstone, dk gry, argillaceous, mica, no shows

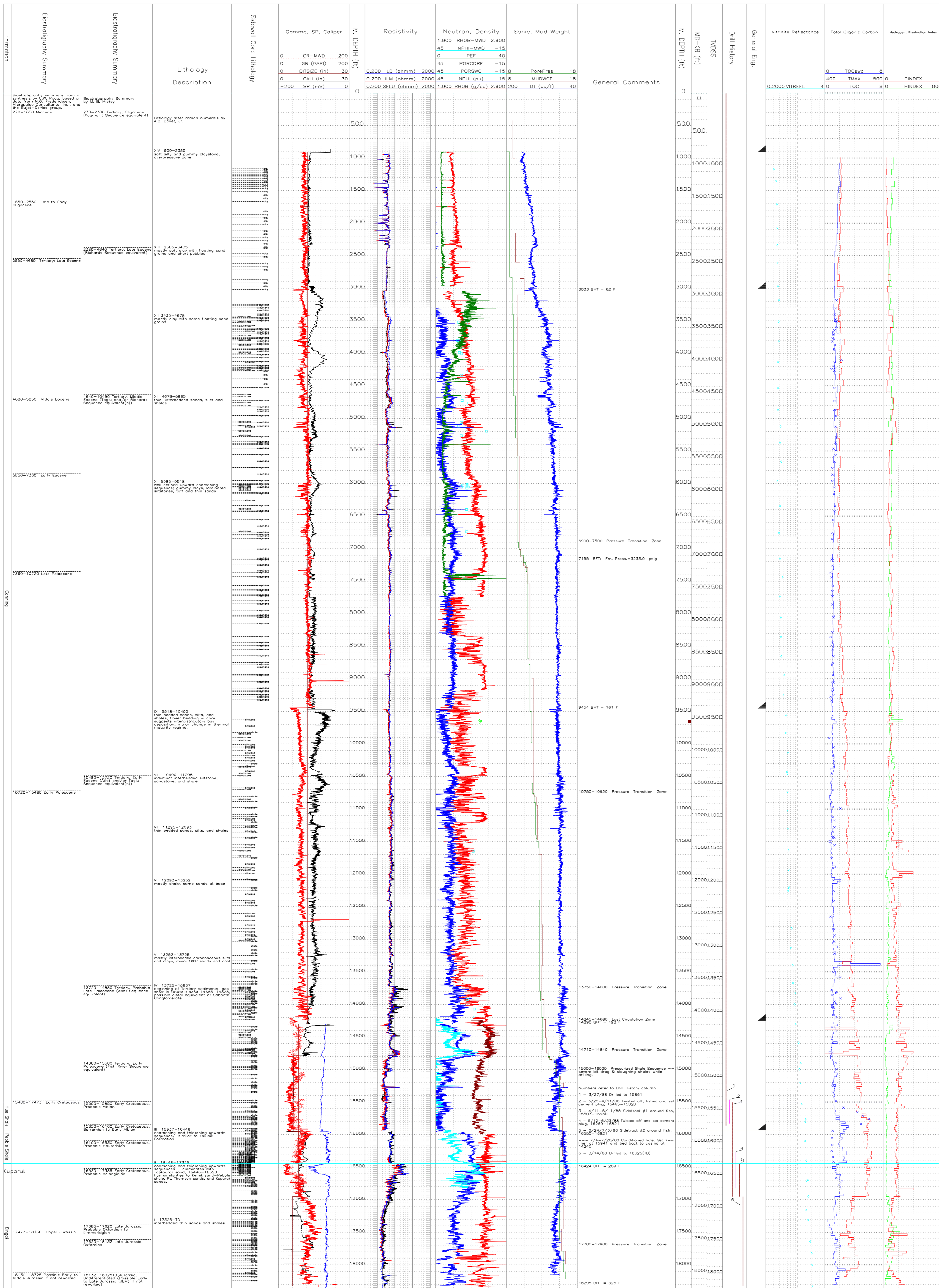
12668-12704 Core #2 Rec. 3' sandstone, vf-lg, clay-rich, poor por. and perm., no shows; 6.5' siltstone, dk gry, argillaceous, mica, no shows

2700 Bottom of ice-bearing permafrost

6235 BHTcorr = 111 F

13621 BHT = 202 F

PLATE WL8. LOGS, CORE DATA, AND OTHER DATA FROM AURORA 1



Aurora 1 (Tenneco) (OCS Y-0943)

Compiled by P.H. Nelson, J.E. Kifer, and C.P. Oberson
U.S. Geological Survey, Denver, Colorado

API 55-141-0004
70.1091722 north latitude, 142.78497 west longitude
Kelly Bushing elevation: 106 feet above sea level
Ground elevation: -68 feet
Total depth: 18,325 feet
True Vertical Depth: 18,303 feet
True Vertical Depth Subsea: 18,129 feet
Completion year: 1988

Drill and Test Summary: Bottomed in Jurassic. No hydrocarbons recovered.

Cored interval and feet recovered:
1 8,634-74 37.6 Tertiary shale

Well logs and other paper records: Minerals Management Service.

Published reports and papers:
Baret, A.C.Jr., 1992, Geology and geochemical analysis of Aurora well, offshore of Alaska 1002 Area, p. 95-100 in 1992 Proc. Int. Conf. On Arctic Margins, OCS Study MMS 94-0040.
Baret, A.C.Jr., 1992, Log Analysis of Aurora 890-#1, OCS Y-0943 Well, Offshore of the Arctic National Wildlife Refuge 1002 Area, Northeast Alaska, BLM-Alaska Technical Report 15, 37 p., plus 3 plates.
Baret, A.C.Jr., 1992, A Geochemical Profile and Burial History of Aurora 890 #1 OCS Y-0943 Well Offshore of the Alaska 1002 Area, Northeast Alaska, BLM-Alaska Technical Report 16, 51 p., and 3 plates.
Mowatt, T.C., A.C. Baret, Jr., J.W. Reader, and J.A. Davis, 1994, Aurora 089 No. 1 OCS Y-0943 Well Offshore Northeast Alaska: Petrography-Petrology, BLM-Alaska Open File Report 56, 40 p., plus plates.
Pou, L.E., Chromanski, D.R., Turner, R.F., and T.O. Platt, 1994, Geological, geochemical, and operational summary, Aurora well, OCS Y-0943-1, Beaufort Sea, Alaska, OCS Report MMS 94-0001, 71 p., plus plates.

Data reports available from State of Alaska Geologic Materials Center:
190. Winnie Reflectance Data of Cuttings (1,080-18,325) and Core (8,634-8,637.82) from the Tenneco Oil Company OCS Y-0943-1 (Aurora) Well.
209. Source Rock Potential and Geochemical Characterization of the Tenneco Oil Company OCS Y-0943-1 (Aurora No. 1) Well as Determined from Unwashed Cuttings (8,940 - 14,190).

Materials available from State of Alaska Geologic Materials Center:
Foraminifera Slides
Kerogen Slides
Petrologic Slides
Petrographic Thin Sections of Drill Samples

Explanation of curves and symbols (from left to right):
GR-MWD Gamma ray from MWD tool in API units
GR Gamma ray in API units
BITSIZE Bit size in inches
CALI Colour in inches
SP Spontaneous potential in millivolts
ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
SFLU Spherically focused resistivity in ohm-m
RHOB-MWD Density from MWD tool in gm/cc
NPHI-MWD Neutron porosity from MWD tool in percent
PEF Photoelectric factor in barns per electron
PORCORE Porosity from core measurements in percent (green diamond)
PORBWC Porosity from sidewall core measurements in percent (cyan square)
NPHI Neutron porosity in percent
RHOB Density in gm/cc
PorePres Pore pressure from drillers log in pounds per gallon
MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot
M. DEPTH Measured depth along hole in feet
Cored interval Cored interval
MD-48 Measured depth minus Kelly Bushing in feet
TVDBS True vertical depth subsea in feet

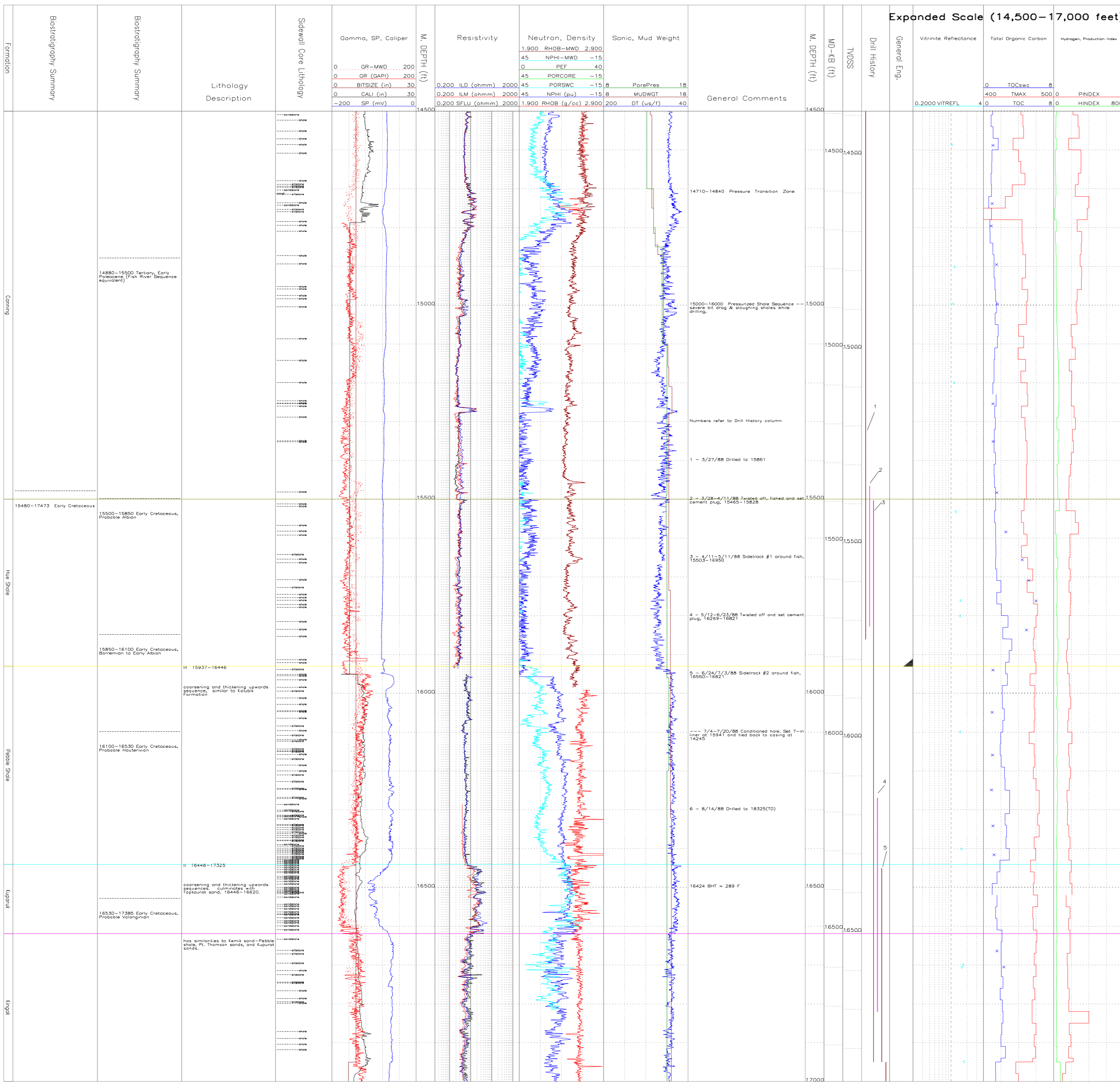
GENERAL END Casing shoe

VITREFL Winnie reflectance, mean value in percent
TMAX Maximum temperature (deg C) from Rock Eval
TOC Total organic carbon in weight percent (blue line)
TOCaw Total organic carbon in weight percent (blue v)

INDEX Production index = SI/(SI+82)
HINDEX Hydrogen index = 100*SI/TOC

Abbreviations:
API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTCOR Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degree Centigrade
calc calculated
cu-ft cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
formation formation
FSIP Final shut-in pressure
FTA(M) Fixation track age and standard deviation in Ma, posted age
FTA(P) Fixation track age and standard deviation in Ma, posted age
GSM Gas-oil ratio
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
IHP Initial shut-in pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MFCF million cubic feet per day
mmd millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psf pounds per square inch
psig pounds per square inch, gauge
rec recovered
TD Total depth

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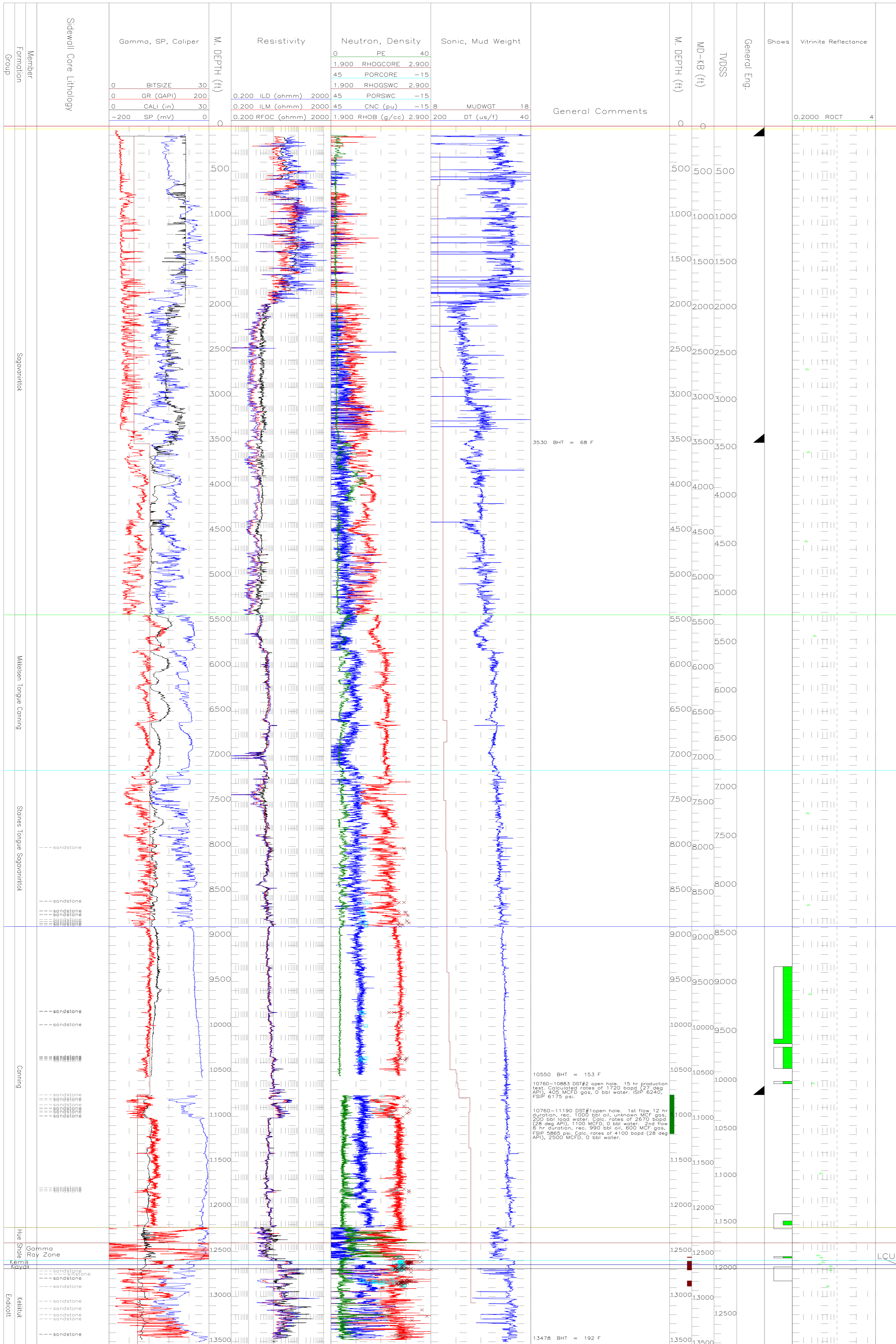
Expanded Scale (14,500-17,000 feet)

14710-14850 Pressure Transition Zone
16230-16300 Presumed Shore Sequence -
17700-17900 Pressure Transition Zone

Numbers refer to Drill history column
1 - 3/27/88 Drilled to 15861
2 - 2/18/88 (LWD) Drilled off, failed and set cement plug (14282-14285)
3 - 5/13/88 (LWD) Drilled off and set cement plug (14282-14285)
4 - 5/13/88 (LWD) Drilled off and set cement plug (14282-14285)
5 - 7/1/88 (LWD) Drilled off and set cement plug (14282-14285)
6 - 8/7/88 Drilled to 18325(10)

16230 BHT = 289 F

PLATE WL9. LOGS, CORE DATA, AND OTHER DATA FROM BADAMI 1



Expanded Scale (12,400-13,550 feet)

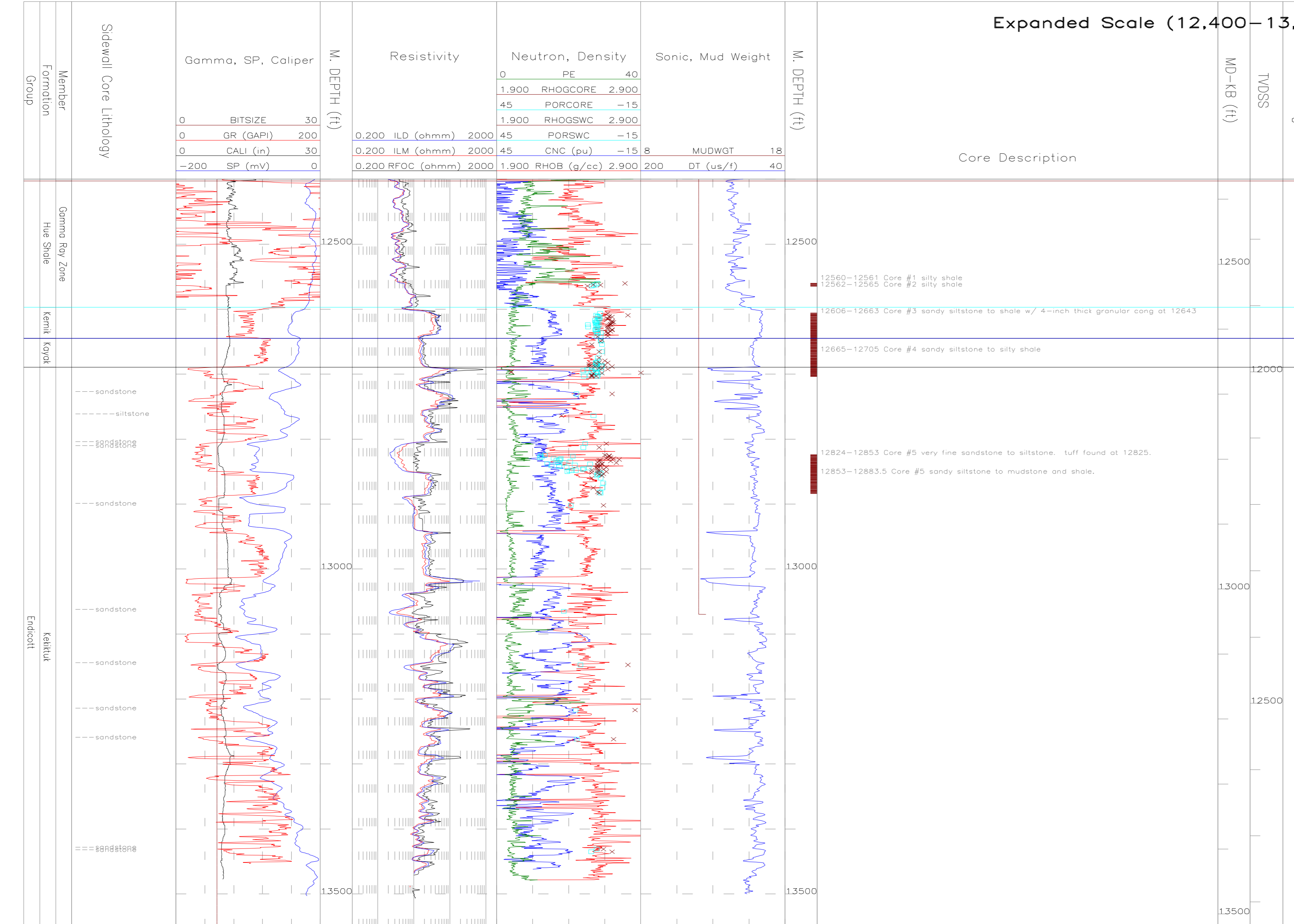
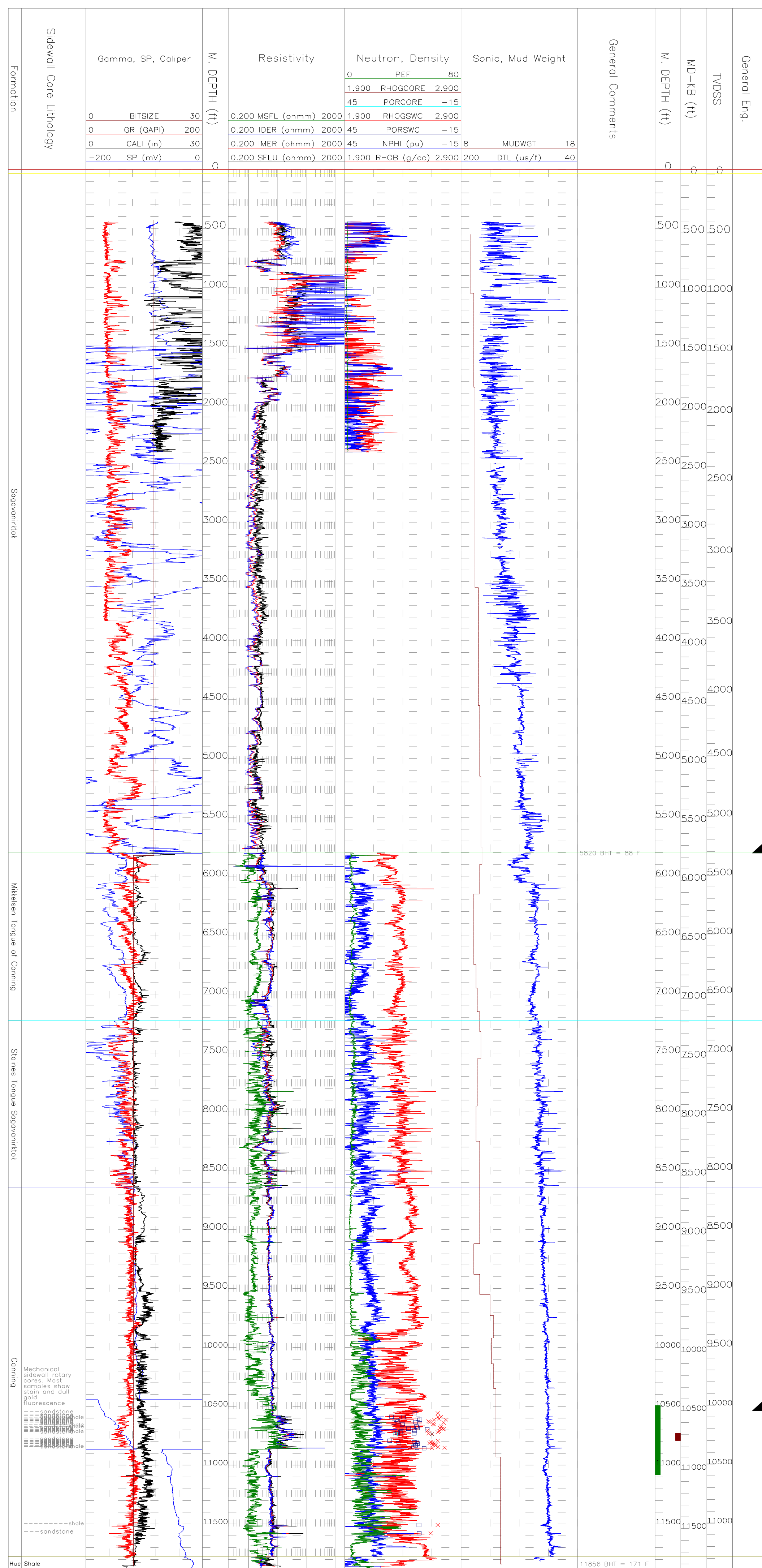


PLATE WL10. LOGS, CORE DATA, AND OTHER DATA FROM BADAMI 2

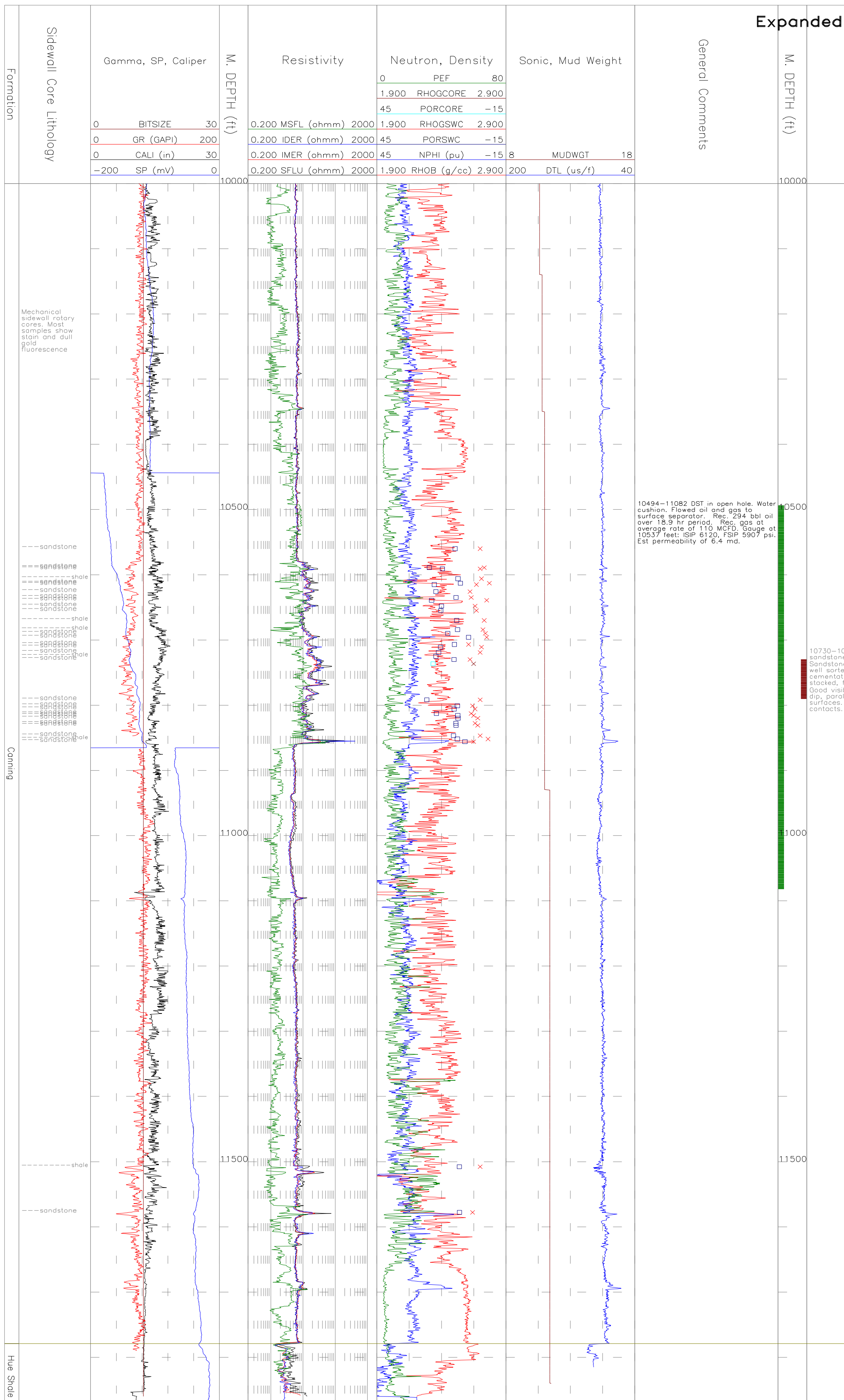


General Eng.
TVDSS
MD-KB (ft)
M. DEPTH (ft)

Expanded Scale (10,000-11881 feet)

Core Description:
10494-11082 DST in open hole. Water column. Flowed oil and gas to surface separator. Rec. 294 bbl oil over 18.5 hr period. Rec. 696 cu average rate of 110 MCFD. Results at 10537 feet: SP 6120, FSP 5907, IHP, EST permeability of 0.4 md.

10730-10790 Core #1 interbedded to very thinly laminated sandstones, siltstones, and shales. Sandstone: dk gray to black, v-fg, subrounded, poor to well-sorted, friable to firm, occasional tabular, zoned, very finely laminated to massive, in stacked, fining upward sequences. Siltstone: dk gray to black, v-fg, subrounded to massive, in bed visible partings in massive samples. Generally low dip, parallel bedding with occasional ripples and scour surfaces. Oil streaks throughout with no apparent contacts.



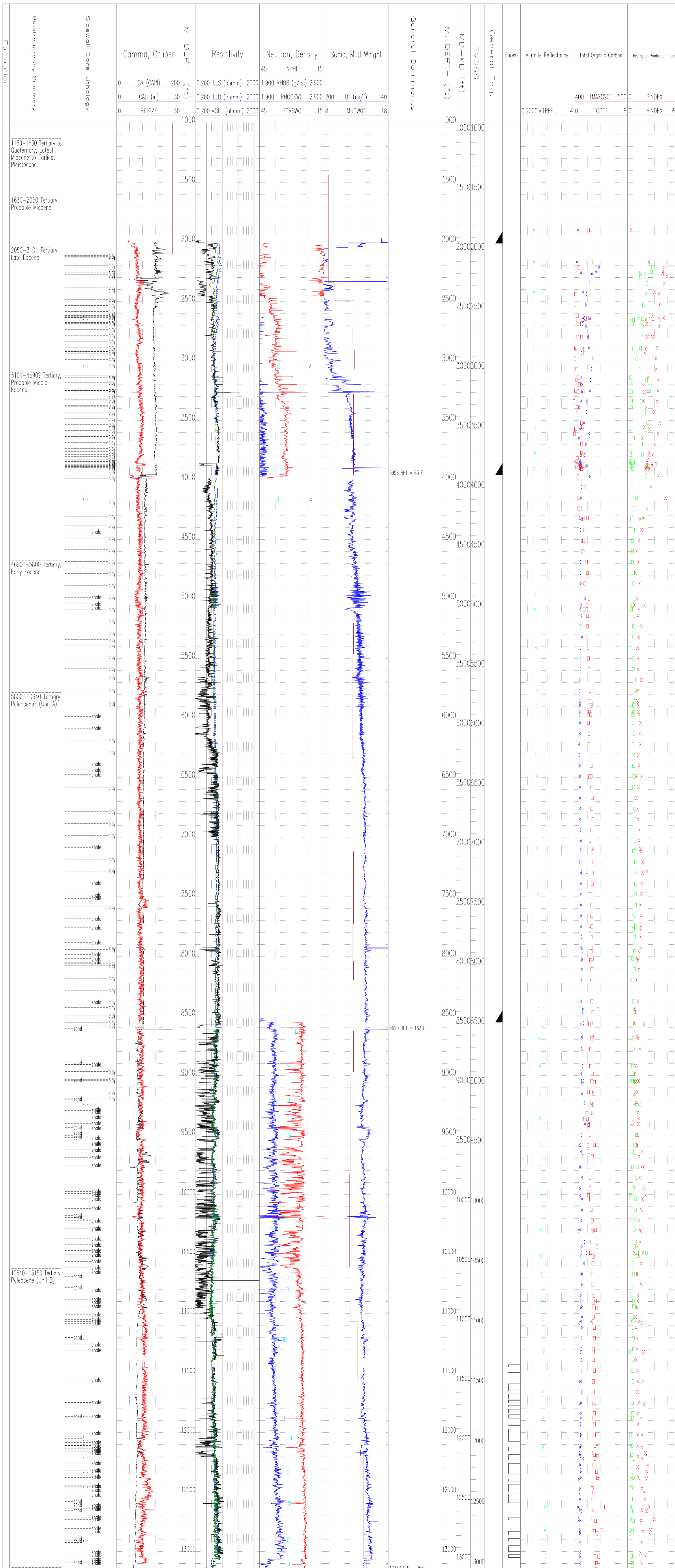
General Eng.
TVDSS
MD-KB (ft)
M. DEPTH (ft)

Expanded Scale (10,000-11881 feet)

Core Description:
10494-11082 DST in open hole. Water column. Flowed oil and gas to surface separator. Rec. 294 bbl oil over 18.5 hr period. Rec. 696 cu average rate of 110 MCFD. Results at 10537 feet: SP 6120, FSP 5907, IHP, EST permeability of 0.4 md.

10730-10790 Core #1 interbedded to very thinly laminated sandstones, siltstones, and shales. Sandstone: dk gray to black, v-fg, subrounded, poor to well-sorted, friable to firm, occasional tabular, zoned, very finely laminated to massive, in stacked, fining upward sequences. Siltstone: dk gray to black, v-fg, subrounded to massive, in bed visible partings in massive samples. Generally low dip, parallel bedding with occasional ripples and scour surfaces. Oil streaks throughout with no apparent contacts.

PLATE WL11. LOGS, CORE DATA, AND OTHER DATA FROM BELCHER 1



Belcher 1 (Amoco) (OCS Y-0917)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-141-00005
70.27532 north latitude, 141.51291 west longitude
Kelly Bushing elevation: 66 feet above sea level
Ground elevation: -170 feet
Total depth: 13,150 feet
True Vertical Depth: 13,108 feet
True Vertical Depth Subsea: 13,042 feet
Completion year: 1989

Drill and Test Summary: Bottomed in Tertiary. No hydrocarbons recovered.

Cored intervals and feet recovered:
no cores

Well logs and other paper records: Minerals Management Service

Published reports and papers:
none

Data reports available from State of Alaska Geologic Materials Center:

182. Vitrinite Reflectance Data Of Cuttings (8080'-13150') From The Amoco Production Company Ocs Y-0917-1 (Belcher No.1) Well.

Materials available from State of Alaska Geologic Materials Center:

Foraminifera Slides
Palynologic Slides
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):

GR Gamma ray in API units
CALI Caliper in inches
BITSIZE Bit size in inches

MSFL Microspherically focused resistivity in ohm-m
LLS Shallow laterolog resistivity in ohm-m
LLD Deep laterolog resistivity in ohm-m

NPHI Neutron porosity in percent
RHOGSMC Grain density in gm/cc from sidewall cores (brown x)
PORSWC Porosity in percent from sidewall cores (cyan square)
RHOB Density in gm/cc

MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

M. DEPTH Measured depth along hole in feet
MD-KB Measured depth minus Kelly Bushing in feet
TVSSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

VITREFL Vitrinite reflectance, mean value from cuttings in percent

TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent

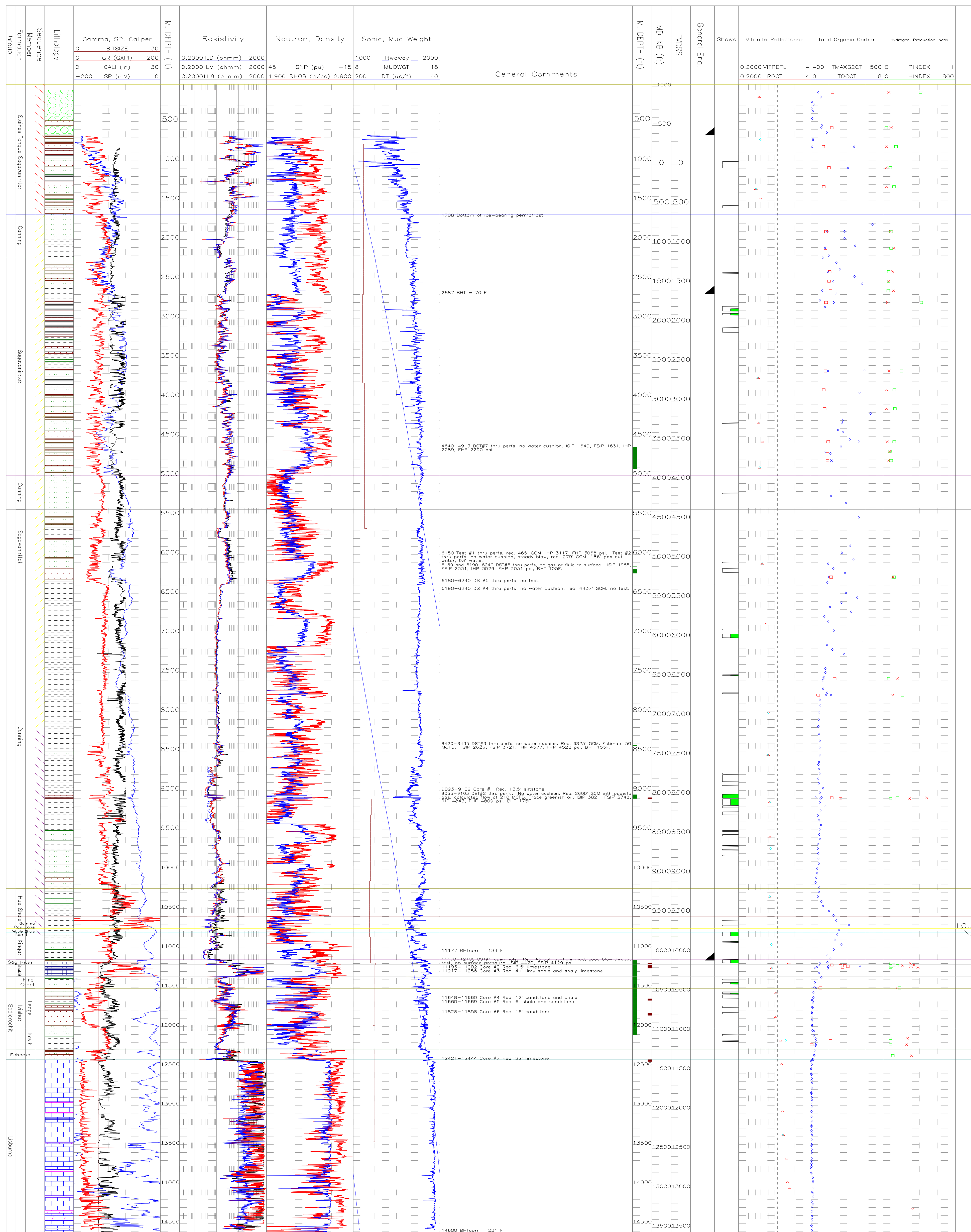
PINDEX Production index = S1/(S1+S2)
HINDEX Hydrogen index = 100*S2/TOC

Abbreviations:

- API American Petroleum Institute
- bbi barrel
- BHP Bottom-hole pressure
- BHT Bottom-hole temperature from well log headers
- BHTcorr Bottom-hole temperature, corrected for circulation
- bopd barrels of oil per day
- C degrees Centigrade
- calc. calculated
- cu.ft. cubic feet
- deg degree
- DST Drill stem test
- est estimated
- F degrees Fahrenheit
- FHP Final hydrostatic pressure
- fm formation
- FSIP Final shut-in pressure
- FTA(M) Fission track age and standard deviation in Ma, mean age
- FTA(P) Fission track age and standard deviation in Ma, pooled age
- GCM Gas-cut mud
- GOR Gas-oil ratio
- hr hour
- IHP Initial hydrostatic pressure
- ISIP Initial shut-in pressure
- LCU Lower Cretaceous Unconformity
- MCFD thousand cubic feet per day
- MCFG thousand cubic feet gas
- MMCFD million cubic feet per day
- md millidarcies
- min minutes
- perfs perforations
- ppm part per million
- press pressure
- psi pounds per square inch
- psig pounds per square inch, gauge
- Rec recovered
- TD Total depth

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PLATE WL12. LOGS, CORE DATA, AND OTHER DATA FROM BELI UNIT 1



Beli Unit 1 (Mobi)
Compiled by P.H. Nelson, J.E. Kibler, and C.P. Oiberson
U.S. Geological Survey, Denver, Colorado

API 50-179-20002
69.71077 north latitude, 146.5335 west longitude
Kelly Bushing elevation: 1022 feet above sea level
Ground elevation: 1024 feet
Total depth: 14,632 feet
Completion year: 1973
No directional survey.

Drill and Test Summary: Flowed 50 MCFD and 210 MCFD gas from Canning turbidites at 8,420-8,435' and 9,055-9,103', respectively.

Corad intervals and feet recovered:
1 9,093-109 14 Canning Fm., includes ~ 4' of sst
2 11,193-202 6.5 Shublik Fm.
3 11,217-258 41 Shublik Fm.
4 11,648-660 12 Ivishak Ss.
5 11,660-669 6 Ivishak Ss.
6 11,828-856 16 Ivishak Ss.
7 12,421-444 22 Lisburne Gp.

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Published reports and papers:
U.S. Geol. Survey Bulletin 1778; 1987, K.J. Bird and L.B. Magoon, eds.: Plate I, Well correlation sections showing selected data, northeastern Alaska gamma-ray resistivity, stratigraphy, and well tests.
Bird, K.J. and Molenaar, C.M., Stratigraphy, Chap. 5, Figure 5.12, Bird, K.J. and 3 others, Chap. 7, Figure 7.7.
Magoon, L.B., and 4 others, Chap. 11, Figure K in Appendix 11.1 and Lopatin diagram in Figure 11.14.

Data Reports available from State of Alaska Geologic Materials Center:
25. Geochemical Analysis (Total Organic Carbon, Rock-Eval Pyrolysis, Kerogen Type, Vitrinite Reflectance)
46. Shale Bulk Density Analysis
53c. Scanning Electron Micrographs of Selected Samples from Paleozoic Through Tertiary Sandstones, North Slope, Alaska
155. Gas Chromatograms from the Following North Slope Wells: Mobil Oil Corp. Beli Unit No. 1 (1194-11655' of Core)
159. Geochemical Characterization by Thermal Desorption, Liquid Chromatography, Gas Chromatography, Isotope-Mass-Spec and Gas Chromatography-Mass-Spectrometry of Extracts from the Following North Slope Wells: Mobil Oil Corp. Beli Unit No. 1 (5590-5680') (8400-8670'), (9010-9180'), (10810-10840'), & (10900-10940') of Cuttings
196. X-Ray Diffraction Patterns of Clay from the Following Wells: Mobil Oil Corporation Beli Unit No. 1, Cuttings (1,210' - 2,680') and Core (9,105' - 11,665')

Materials available from State of Alaska Geologic Materials Center:
Clay Mineral Slides
Foraminifera Slides
Kerogen Slides
Polythene Slides
Petrographic Thin Sections of Core
Petrographic Thin Sections of Ditch Samples
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):
SEQUENCES
A (green), B (brown), C (blue), D (red), E (yellow), F&G (purple)

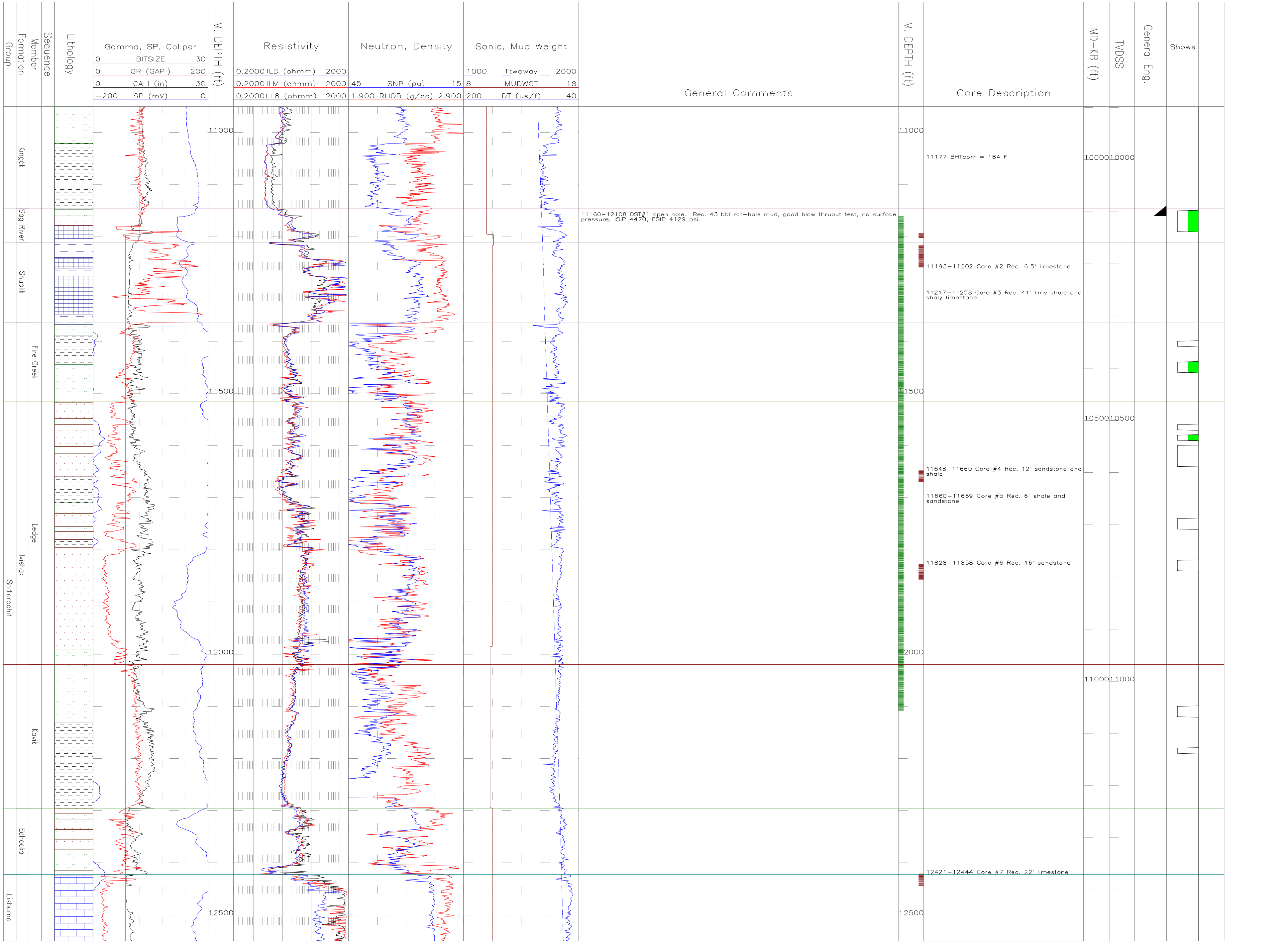
BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts
ILM Medium induction resistivity in ohm-m
ILD Deep induction resistivity in ohm-m
ILS Laterolog-S resistivity in ohm-m
SNP Sidewall epithermal neutron porosity in percent
RHOB Density in gm/cc
Twayway Two-way travel time in milliseconds (top interval, 0-1000 ms; second interval 1000-2000 ms; etc)
MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot
M. DEPTH Measured depth along hole in feet
olive bars Drill stem and production test intervals
brown bars Cored intervals
MD-EB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet
GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

VITREFL Vitrinite reflectance, mean value in percent
ROCT Vitrinite reflectance, mean value from cuttings in percent
TMAXSCT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent
PINDEX Production index = S1/(S1+S2)
HINDEX Hydrogen index = 100*S2/TOC

Abbreviations
API American Petroleum Institute
bsl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bpps barrels per day
C degree Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
form formation
FSP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(F) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISP Initial shut-in pressure
LCU Lower Cretaceous unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
ppg pounds per gallon, gauge
Rec recovered
TD Total depth

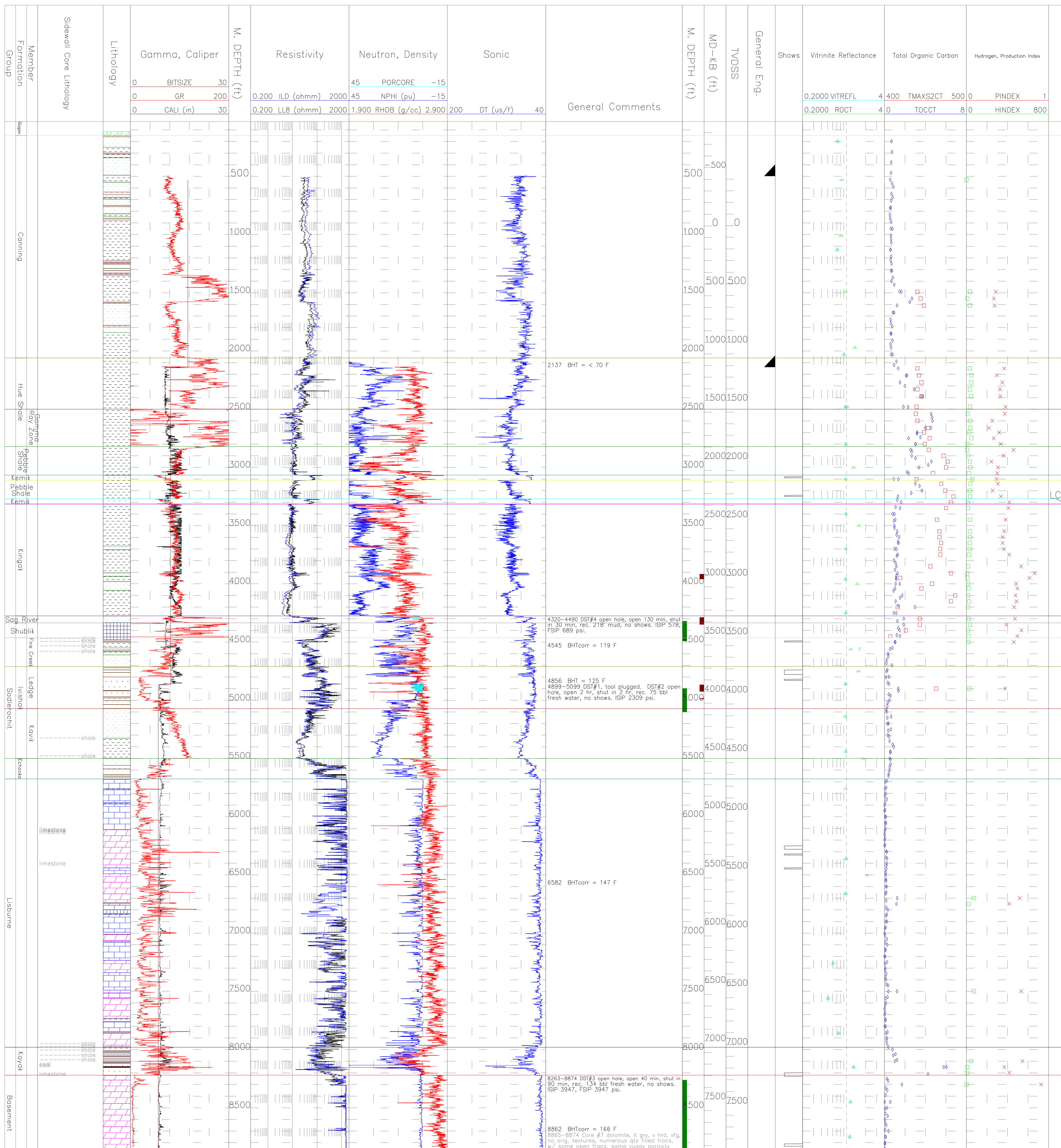
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LITHOLOGY PATTERNS

- Clay, claystone
- Siltstone
- Shale
- Carbonaceous shale
- Coal
- Sandstone
- Conglomerate
- Chert
- Shaly limestone
- Limy shale
- Limestone
- Dolomite
- Tuff
- Argillite

PLATE WL13. LOGS, CORE DATA, AND OTHER DATA FROM CANNING RIVER A-1



Canning River A-1 (Exxon)
Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-179-20005
69,60816 north latitude, 146,33538 west longitude
Kelly Bushing elevation: 925.0 feet above sea level
Ground elevation: 895 feet
Total depth: 8874 feet
Completion year: 1974
No directional survey in file.

Drill and Test Summary: Drilled to basement. Flowed fresh water from basement carbonates at calculated rate of 4800 bpd

Cored intervals and feet recovered:

1	3,917-923	5	Kingak Sh
2	3,923-358	54	Kingak Sh
3	4,289-349	55	Sag River
4	4,868-879	9	Sadlerochit ss
5	4,879-924	39	Sadlerochit ss
6	4,985-988.5	1.5	Sadlerochit ss
7	8,865-874	9	Katukturk Dolomite (basement)

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Published reports and papers:
U.S. Geol. Survey Bulletin 1778: 1987, K.J. Bird and L.B. Magoon, eds.: Plate I, Well correlation sections showing selected data, northeastern Alaska: gamma-ray, resistivity, stratigraphy, and well tests.
Bird, K.J. and Molenaar, C.M., Stratigraphy, Chap 5, Figure 5.12.
Bird, K.J. and 3 others, Chap. 7, Figure 7.7.
Magoon, L.B., and 4 others, Chap. 11, Figure L in Appendix 11.1

Data reports available from State of Alaska Geologic Materials Center:
9. Report on Rock-Eval Data for Eight North Slope Wells(05/13/82)
10. Report on Total Organic Carbon and Vitrinite Reflectance For Eight North Slope Wells (05/10/82)
53c. Scanning Electron Micrographs of Selected Samples from Paleozoic Through Tertiary Sandstones, North Slope, AK
163. Gas Chromatograms from the Following 7 North Slope Wells: Exxon Corp. Canning Riv. Unit Blk. A No. 1, Between 3923' and 3958' of Core
193. S³⁷/S³⁸ Isotope Analyses of the Following North Slope Well Materials: Exxon Corporation Canning River Unit Blk. A No. 1, Washed Cuttings (8,350' - 8,360', and 8,550' - 8,560'), and Core Chips (8,861' - 8,867', and 8,871' - 8,872)';

Materials available from State of Alaska Geologic Materials Center:
Foraminifera Slides
Kerogen Slides
Palylogenic Slides
Petrographic Thin Sections of Core
Petrographic Thin Sections of Ditch Samples
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):

BITSIZE	Bit size in inches
GR	Gamma ray in API units
CALI	Caliper in inches
ILD	Deep induction resistivity in ohm-m
LLB	Lateral-log-B resistivity in ohm-m
PORCORE	Porosity from core measurements in percent (cyan square)
NPHI	Neutron porosity in percent
RHOB	Density in gm/cc
DT	Sonic travel time in microseconds per foot
M. DEPTH	Measured depth along hole in feet
olive bars	Drill stem and production test intervals
brown bars	Cored intervals
MD-KB	Measured depth minus Kelly Bushing in feet
TVDSS	True vertical depth subsea in feet

GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

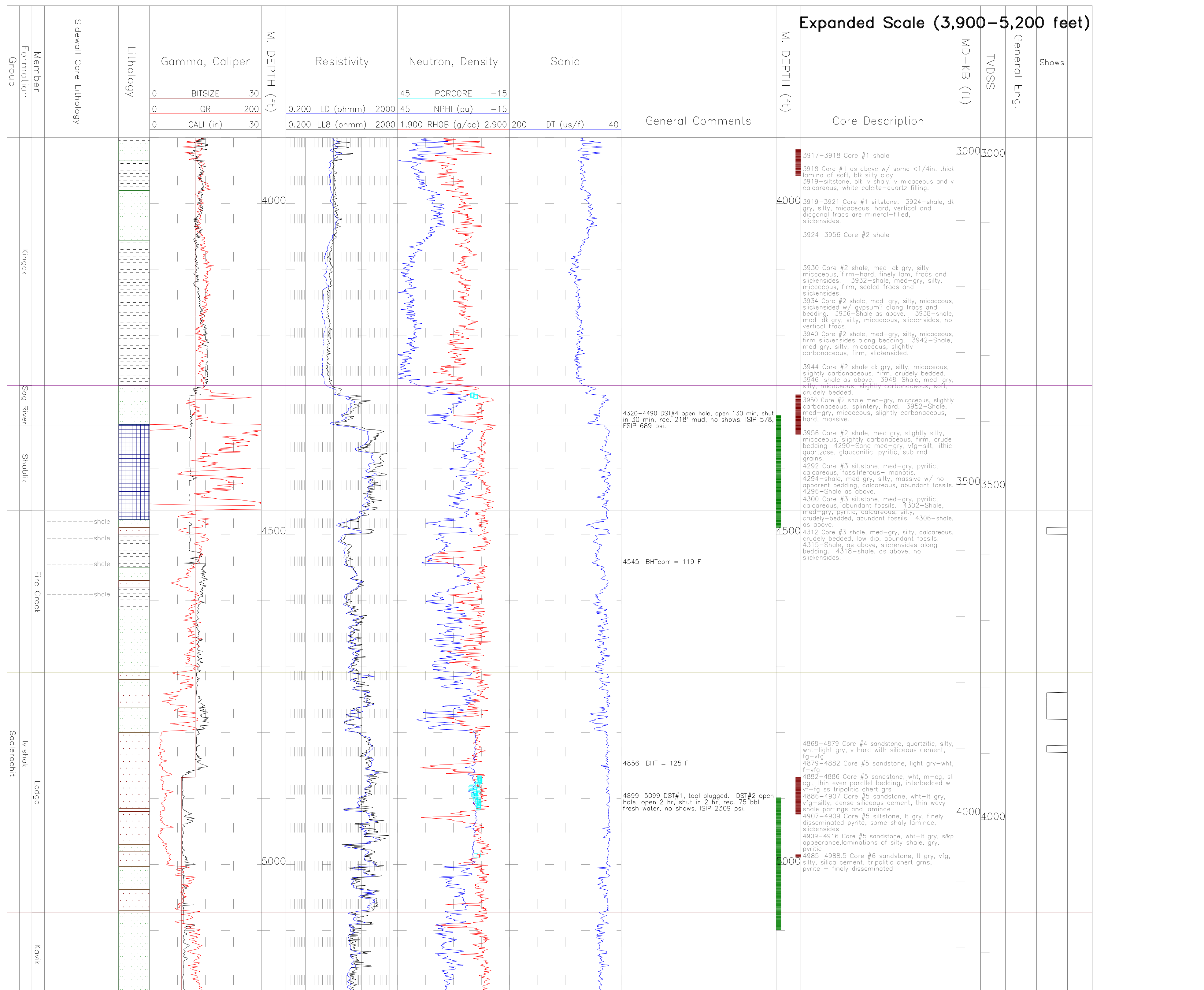
VITREFL Vitrinite reflectance, mean value in percent
ROCT Vitrinite reflectance, mean value from cuttings in percent

TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval
TOCT Total organic carbon from cuttings in weight percent

PIINDEX Production index = S1/(S1+S2)
HINDEX Hydrogen index = 100*S2/TOC

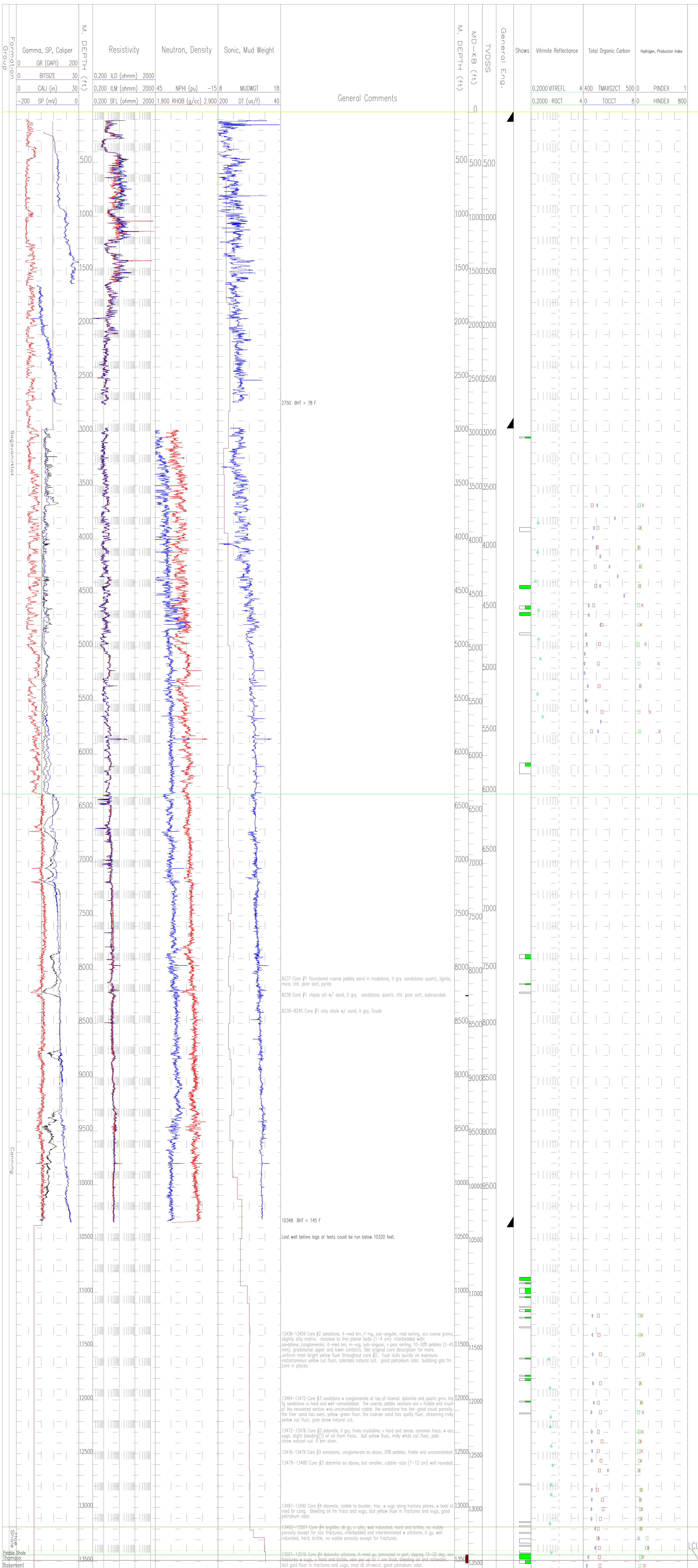
Abbreviations:

API	American Petroleum Institute
barrel	barrel
bbl	barrel
BHP	Bottom-hole pressure
BHT	Bottom-hole temperature from well log headers
BHTcorr	Bottom-hole temperature, corrected for circulation
bopd	barrels of oil per day
C	degrees Centigrade
calc.	calculated
cu.ft.	cubic feet
deg	degree
DST	Drill stem test
est	estimated
F	degrees Fahrenheit
FHP	Final hydrostatic pressure
fm	formation
FSP	Final shut-in pressure
FTA(M)	Fission tract age and standard deviation in Ma, mean age
FTA(P)	Fission tract age and standard deviation in Ma, pooled age
GCM	Gas-cut mud
GOR	Gas-oil ratio
hr	hour
IHP	Initial hydrostatic pressure
ISP	Initial shut-in pressure
LCU	Lower Cretaceous Unconformity
MCFD	thousand cubic feet per day
MCFD	thousand cubic feet per day
MCMCFD	million cubic feet per day
md	millidarcies
min	minutes
perfs	perforations
ppm	part per million
press	pressure
psi	pounds per square inch
psig	pounds per square inch, gauge
Rec	recovered
TD	Total depth



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PLATE WL15. LOGS, CORE DATA, AND OTHER DATA FROM CHALLENGE ISLAND 1



Challenge Island 1 (Sohio)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-089-20012
70.2360703 north latitude, 146.61785 west longitude
Kelly Bushing elevation: 32 feet above sea level
Ground elevation: 4 feet
Total depth: 13,587 feet
True vertical depth: 13,087 feet
Completion year: 1981

Drill and Test Summary: Drilled to basement. Numerous hydrocarbon shows encountered. Lost well before any could be tested.

Cored intervals and feet recovered:

1	8,237-46	7	Canning Fm
2	13,438-464	21	Thomson Ss
3	13,464-487	16	Thomson Ss
4	13,487-516	29	Thomson Ss (5), basement argillite 8' & dolomite 15'

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Published reports and papers:

U.S. Geol. Survey Bulletin 1778; 1987, K.J. Bird and L.B. Magoon, eds.: Magoon, L.B., and 4 others, Chap. 11, Figure F in Appendix 11.1 and Figure 11.12.

Bonet, S.M., and Scherr, J., 1992, Correlation study of selected exploration wells...p. 101-104 in 1992 Proc. Intl. Conf. On Arctic Margins, OCS Study MMS 94-0040.

Scherr, J., Bonet, S.M., and Basile, B.J., 1991, Correlation study of selected exploration wells from the North Slope and Beaufort Sea, Alaska, Minerals Management Service OCS Report MMS 91-0076, 29 p. and 19 plates.

Data reports from State of Alaska Geologic Materials Center:

18. Geochemical Analysis (Total Organic Carbon, Rock-Eval, Vitrinite Reflectance)

46. Shale Bulk Density Analysis

53c. Scanning Electron Micrographs of Selected Samples from Paleozoic Through Tertiary Sandstones, North Slope, AK.

Materials available from State of Alaska Geologic Materials Center:

Foraminifera Slides
Kerogen Slides
Petrographic Thin Sections of Core
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):

GR Gamma ray in API units
BITSIZE Bit size in inches
CALI Caliper in inches
SP Spontaneous potential in millivolts

ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
SFL Spherically focused resistivity in ohm-m

NPHI Neutron porosity in percent
RHOB Density in gm/cc

MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

M. DEPTH Measured depth along hole in feet
brown bars Cored intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

VTREFL Vitrinite reflectance, mean value in percent
ROCT Vitrinite reflectance, mean value from cuttings in percent

TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent

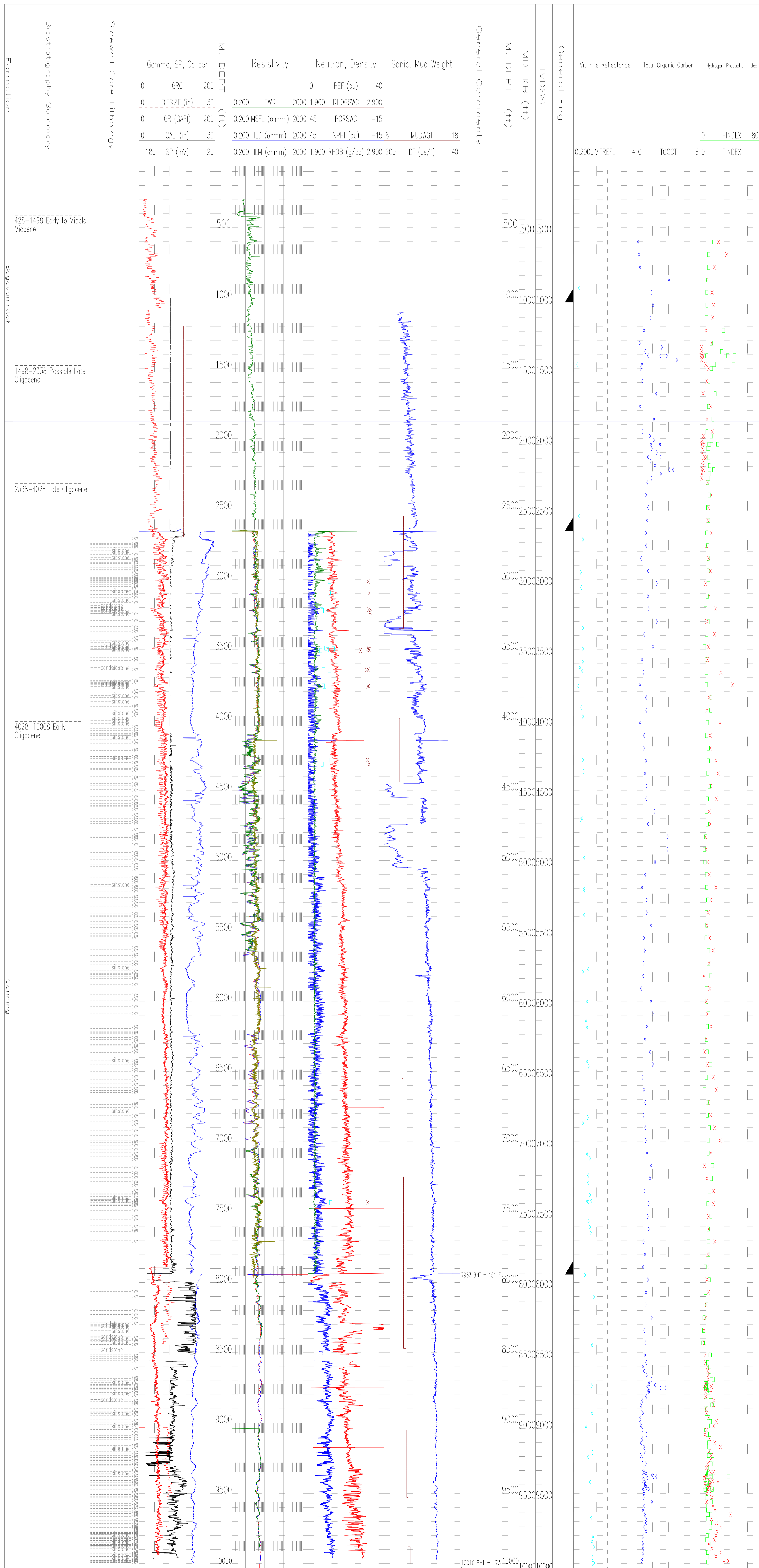
PINDEX Production index = S1/(S1+S2)
HINDEX Hydrogen index = 100*S2/TOC

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSIP Final shut-in pressure
FIA(M) Fission track age and standard deviation in Ma, mean age
FIA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
ppfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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PLATE WL16. LOGS, CORE DATA, AND OTHER DATA FROM CORONA 1



Corona 1 (Shell Western) (OCS Y-0871-1)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 55-171-00002
70.3146306 north latitude, 144.75914 west longitude
Kelly Bushing elevation: 38 feet above sea level
Ground elevation: -116 feet
Total depth: 10,000 feet
True vertical depth: 9997 feet
Completion year: 1986

Drill and Test Summary: Bottomed in Tertiary. No hydrocarbons recovered.

no cores

Well logs and other paper records: Minerals Management Service.

Published reports and papers:
Scherr, J., Banet, S.M., and Boscle, B.J., 1991, Correlation study of selected exploration wells from the North Slope and Beaufort Sea, Alaska, Minerals Management Service OCS Report MMS 91-0076, 29 p. and 19 plates.

Data reports available from State of Alaska Geologic Materials Center:
119. Vitrinite Reflectance Data of Cuttings from the Shell Western E & P Inc. Ocs Y-0871-1
125. Total Organic Carbon, Rock-Eval Pyrolysis, and Vitrinite Reflectance Data of Cuttings from the Shell Western E & P Inc. Ocs Y-0871-1 (Corona) Well, with a Supplement Containing Misc. Chemical and Physical Data for the Well

Materials available from State of Alaska Geologic Materials Center:
Foraminifera Slides
Kerogen Slides
Palynologic Slides
Petrographic Thin Sections of Ditch Samples

Explanation of curves and symbols (from left to right):

GRC Gamma ray in API units
BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts

EWR Electromagnetic wave resistivity from MWD tool in ohm-m
MSFL Microspherically focused resistivity in ohm-m
ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m

PEF Photoelectric factor in barns per electron
RHOGSWC Grain density from sidewall core measurements in gm/cc (brown x)
PORSWC Porosity from sidewall core measurements in percent (cyan square)
NPHI Neutron porosity in percent
RHOB Density in gm/cc

MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

M. DEPTH Measured depth along hole in feet
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

VITREFL Vitrinite reflectance, mean value in percent

TOCCT Total organic carbon from cuttings in weight percent

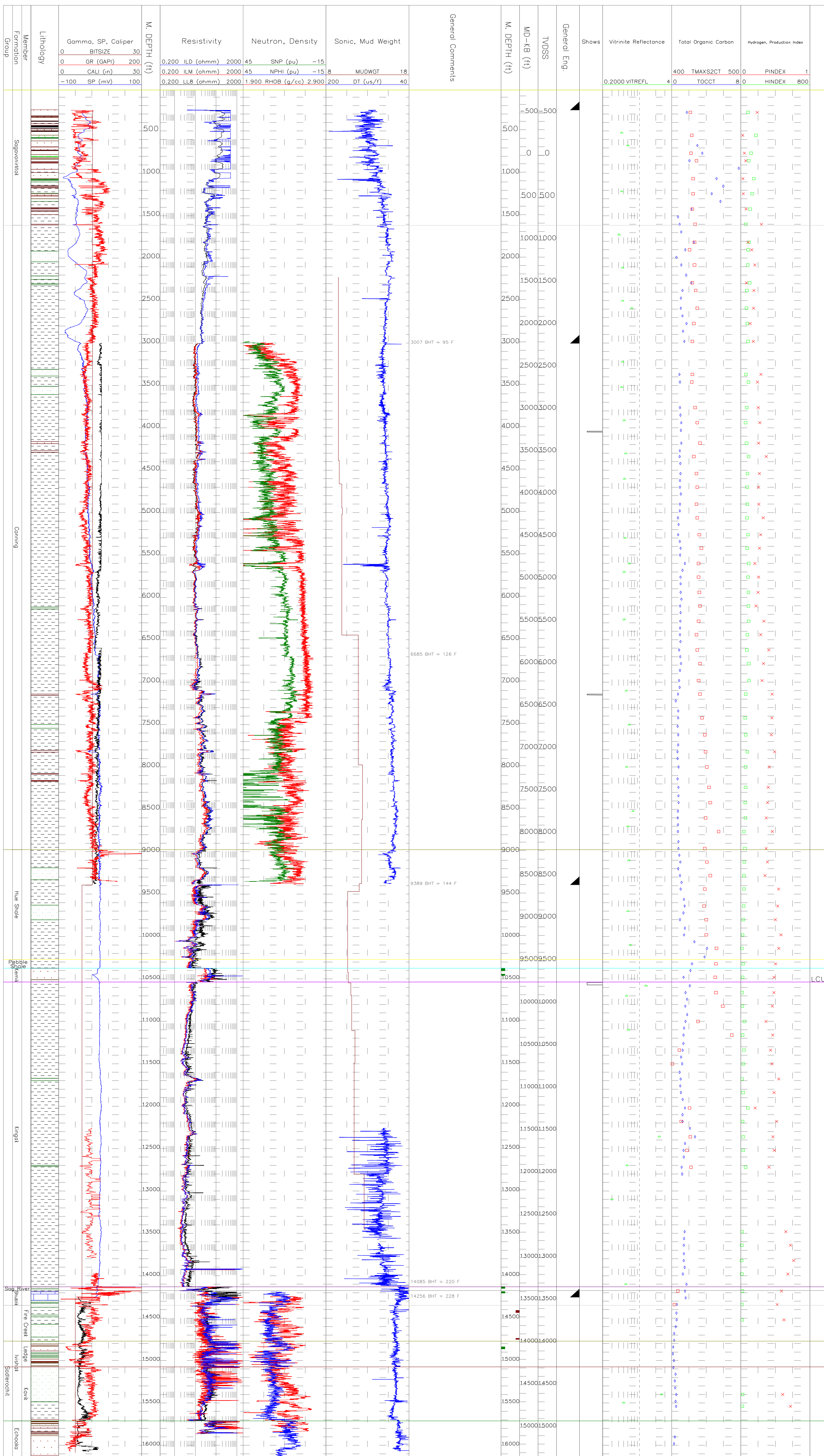
PINDEX Production index = $S1/(S1+S2)$
HINDEX Hydrogen index = $100*S2/TOC$

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg. degree
DST Drill stem test
est. estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSIP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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PLATE WL17. LOGS, CORE DATA, AND OTHER DATA FROM FIN CREEK UNIT 1



Fin Creek Unit 1 (McClure)

Compiled by P.H. Nelson, J.E. Kiber, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-223-20007
69.50013 north latitude, 147.60016 west longitude
Kelly Bushing elevation: 785 feet above sea level
Ground elevation: 788 feet
Total depth: 16,119 feet
Completion year: 1972
No directional survey in file.

Drill and Test Summary: Drilled to Permian sandstones. Minor oil and gas shows, too small to measure at 10,372-10,402.

Cored intervals and feet recovered:

1	14,409-434	24	lvshat Ss (all siltstone)
2	14,738-750	10	lvshat Ss (all siltstone)

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Data reports available from State of Alaska Geologic Materials Center:

25. Geochemical Analysis (Total Organic Carbon, Rock-Eval Pyrolysis, Kerogen Type, Vitrinite Reflectance)
183. Geochemical Data for an Oil Show Project That Included the Following 10 North Slope Well Materials: McClure Oil Co. Fin Creek Unit No. 1, Washed Cuttings (7100-7230)
208. HRZ Total Organic Carbon and Rock-Eval Data from Cuttings of the Following Colville Basin and Arctic Foothills Exploratory Wells: McClure Oil Company Fin Creek Unit No. 1 (9,980-10,220)
234. Rock-Eval Data with Hydrocarbon Index of Samples from the Following North Slope Wells: McClure Oil Company Fin Creek Unit No. 1 Cuttings (9,980 - 10,220)

Materials available from State of Alaska Geologic Materials Center:

Foraminifera Slides
Kerogen Slides
Petrologic Slides
Petrographic Thin Sections of Ditch Samples
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):

BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts
ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
LL8 Laterolog-S resistivity in ohm-m
SNP Sidewall epithermal neutron porosity in percent
NPHI Neutron porosity in percent
RHOB Density in gm/cc
MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot
M. DEPTH Measured depth along hole in feet
olive bars Drill stem and production test intervals
brown bars Cored intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet
GENERAL ENG Casing shoe
Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent
VITREFL Vitrinite reflectance, mean value in percent
TMAXSCT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent
PINDEX Production index = S1/(S1+S2)
HNDEX Hydrogen index = 100*S2/TOC

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation barrels of oil per day
C calc.
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSP Final shut-in pressure
FT(M) Fission track age and standard deviation in Ma, mean age
FT(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISP Initial shut-in pressure
LCU Lower Cambrian Unconformity
MCFD thousand cubic feet per day
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
PSG pounds per square inch, gauge
Rec recovered
TD Total depth

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature. Use of brand names is for descriptive purposes only and does not constitute endorsement by the U. S. Geological Survey.

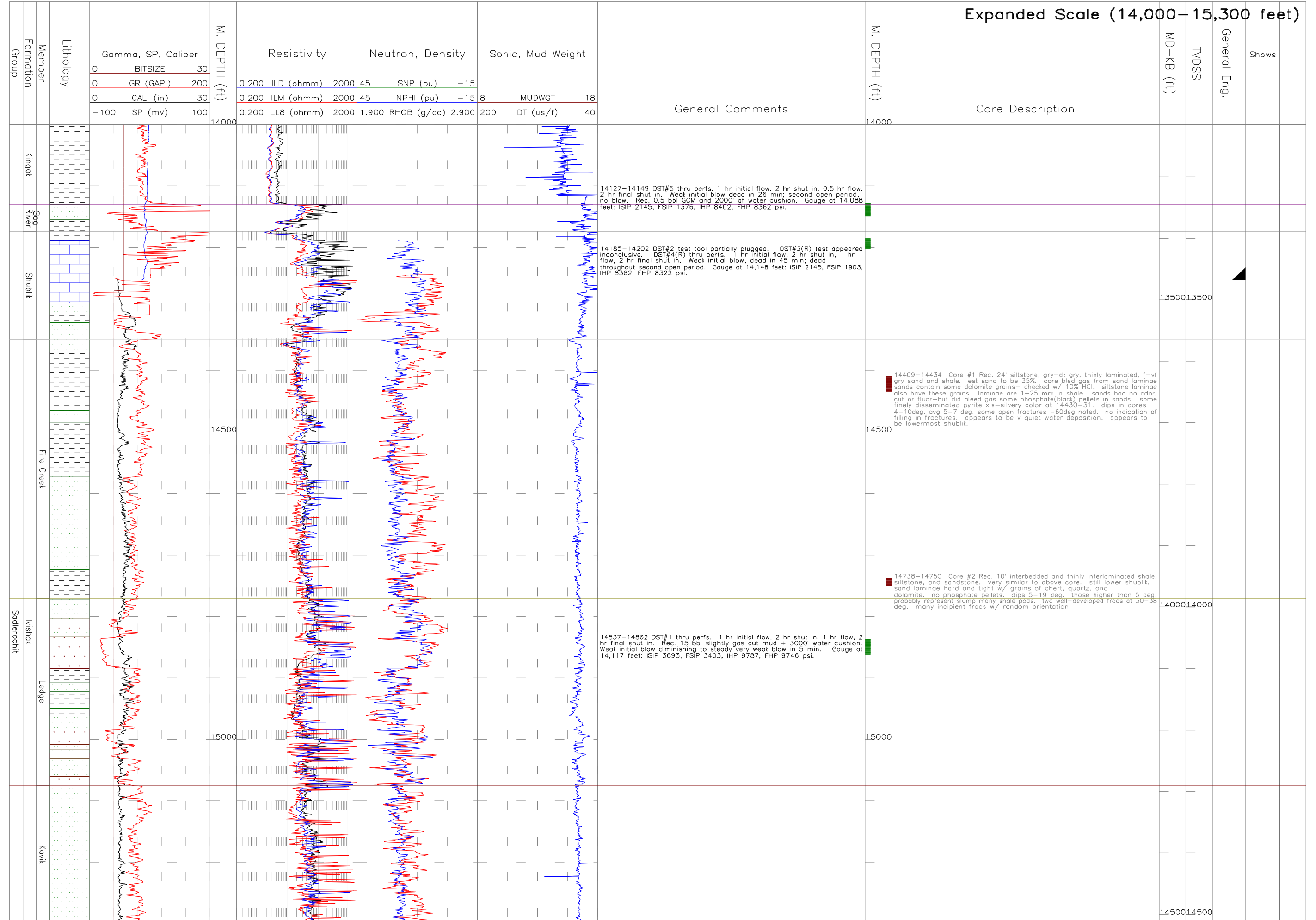
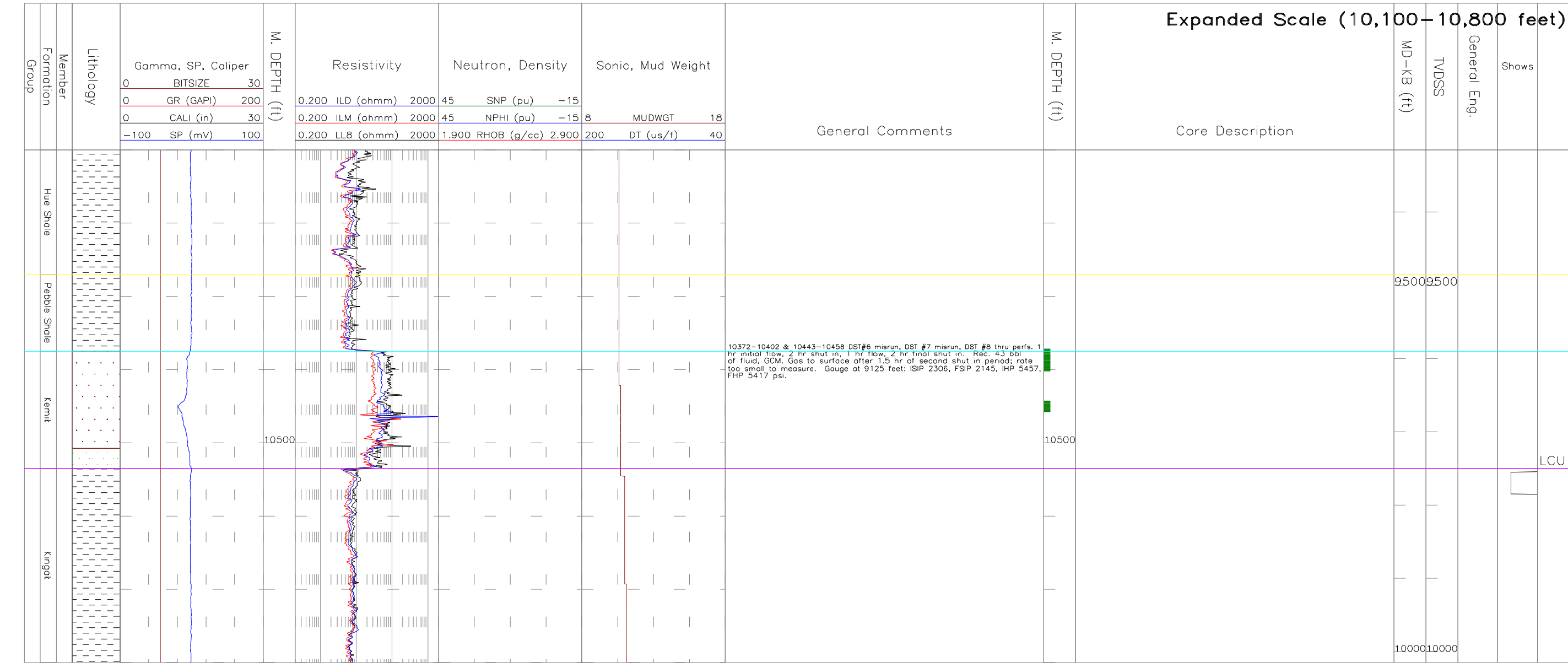
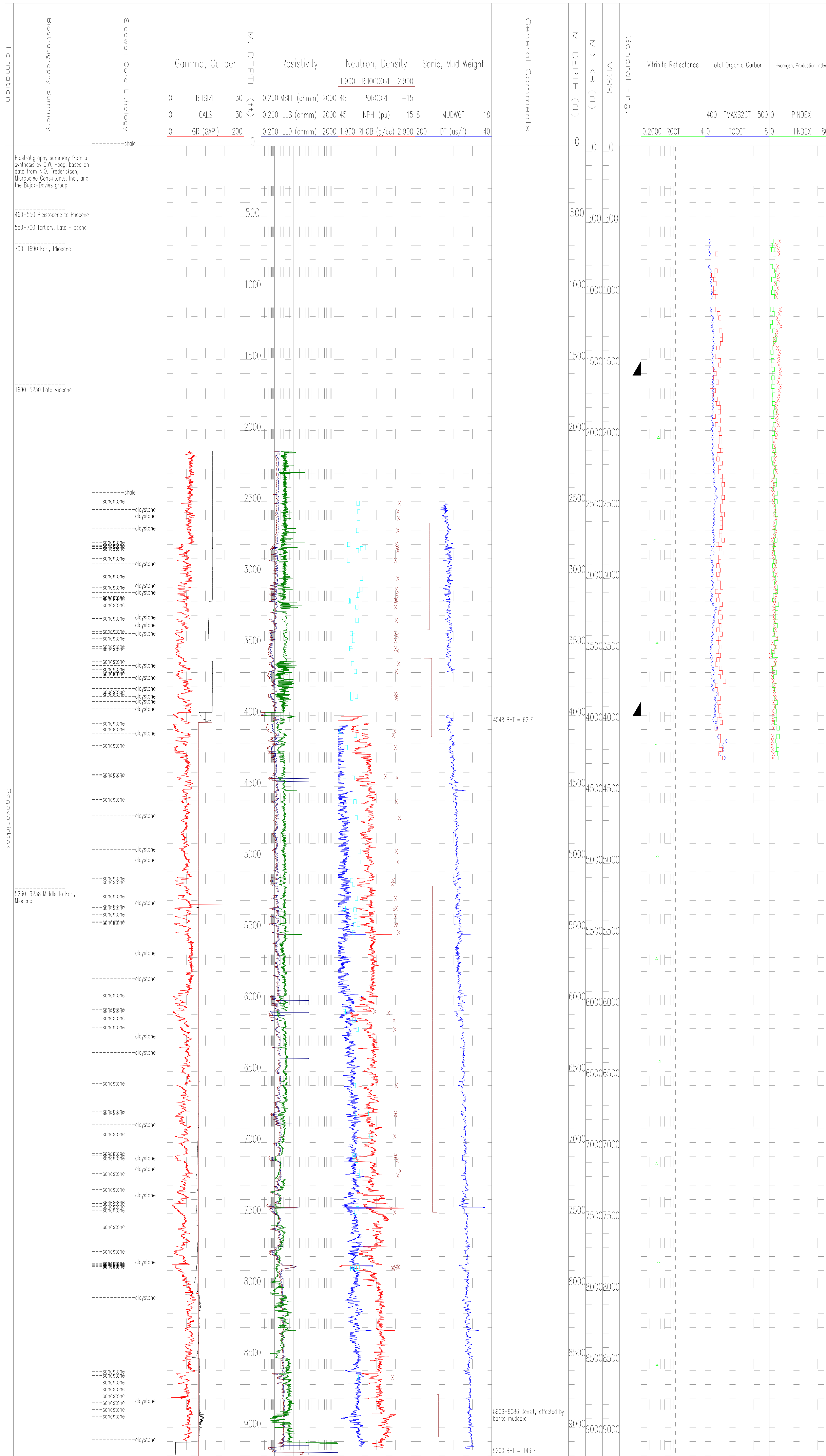


PLATE WL18. LOGS, CORE DATA, AND OTHER DATA FROM GALAHAD 1



Galahad 1 (Amoco) (OCS Y-1092-1)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 55-171-00007
70.5607444 north latitude, 144.95993 west longitude
Kelly Bushing elevation: 39 feet above sea level
Ground elevation: -166 feet
Total depth: 9238 feet
Completion year: 1991
No directional survey in file.

Drill and Test Summary: Bottomed in Tertiary. Logs suggest oil & gas from 7863-7890. Film of light brown oil recovered on RFT at 7877'.

no cores

Well logs and other paper records: Minerals Management Service.

Published reports and papers:
None

Data reports available from State of Alaska Geologic Materials Center:
230. Vitrinite Reflectance Data of Cuttings (1,960' - 9,238') from the Amoco Production Company Ocs Y-1092-1 (Galahad No. 1) Well.

Materials available from State of Alaska Geologic Materials Center:
None

Explanation of curves and symbols (from left to right):

BITSIZE Bit size in inches
CALS Caliper in inches
GR Gamma ray in API units

MSFL Microspherically focused resistivity in ohm-m
LLS Shallow laterolog resistivity in ohm-m
LLD Deep laterolog resistivity in ohm-m

RHOCORE Grain density from core measurements in gm/cc (brown x)
PORCORE Porosity from core measurements in percent (cyan square)
NPHI Neutron porosity in percent
RHOB Density in gm/cc

MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

M. DEPTH Measured depth along hole in feet
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

ROCT Vitrinite reflectance, mean value from cuttings in percent

TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent

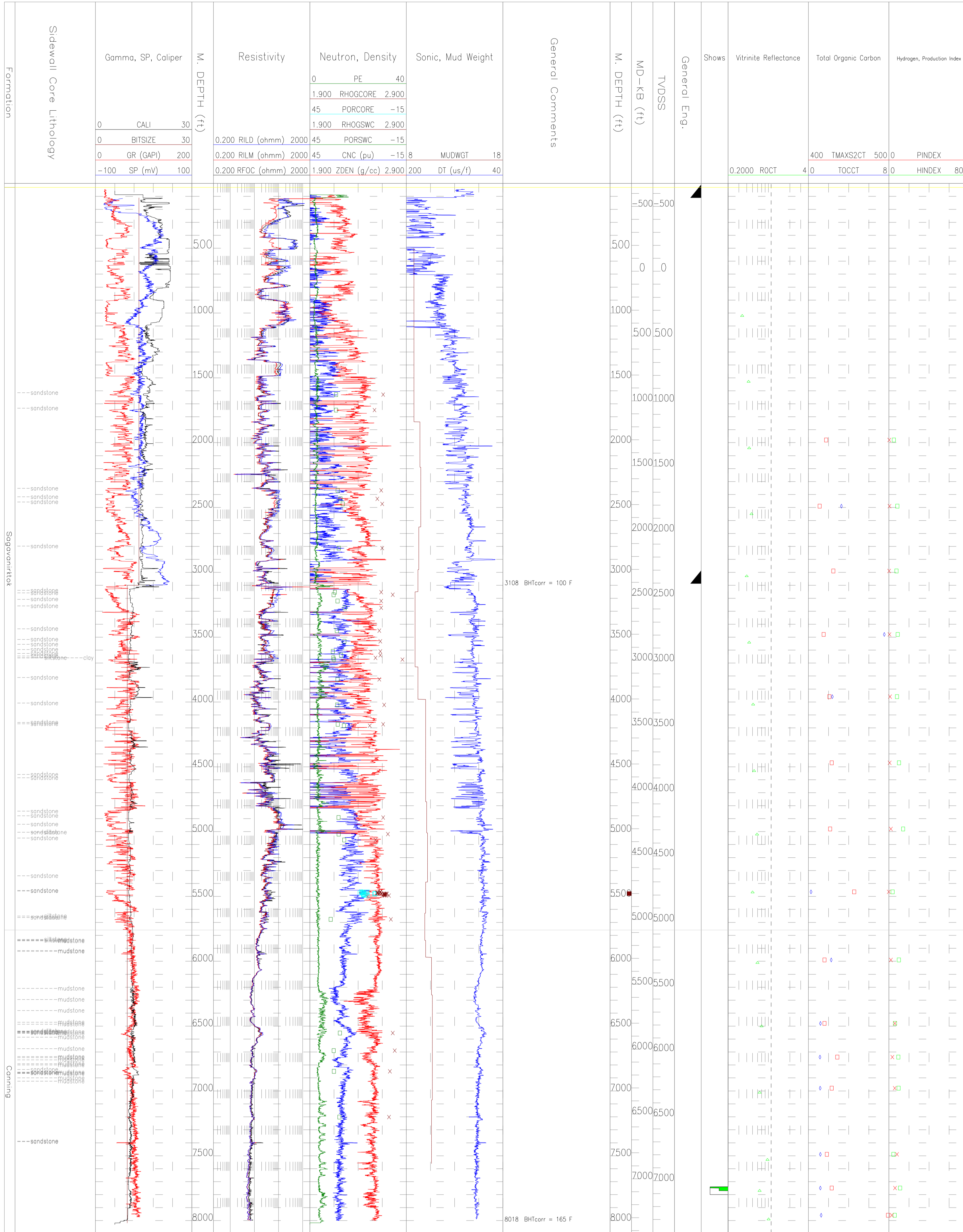
PINDEX Production index = S1/(S1+S2)
HINDEX Hydrogen index = 100*S2/TOC

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcor Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSIP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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PLATE WL19. LOGS, CORE DATA, AND OTHER DATA FROM GYR



Gyr (Arco)
Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-223-20018
69.65707 north latitude, 147.27939 west longitude
Kelly Bushing elevation: 678 feet above sea level
Ground value: 648 feet
Total depth: 8020 feet
True vertical depth: 8005 feet
Completion year: 1990

Drill and Test Summary: Drilled to Canning Formation. No hydrocarbons recovered.

Cored intervals and feet recovered:
1 5,463-493 30 Sagavanirktok Fm

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Data reports available from State of Alaska Geologic Materials Center:
None listed.

Materials available from State of Alaska Geologic Materials Center:
None listed.

Explanation of curves and symbols (from left to right)

CALI Caliper in inches
BITSIZE Bit size in inches
GR Gamma ray in API units
SP Spontaneous potential in millivolts

RILD Deep induction resistivity in ohm-m
RILM Medium induction resistivity in ohm-m
RFOC Focused resistivity in ohm-m

PE Photoelectric factor in barns per electron
RHOGCORE Grain density from core measurements in gm/cc (brown x)
PORCORE Porosity from core measurements in percent (cyan square)
RHOGSWC Grain density from sidewall core measurements in gm/cc (brown x)
PORSWC Porosity from sidewall core measurements in percent (green square)
CNC Neutron porosity in percent
ZEN Density in gm/cc

MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

M. DEPTH Measured depth along hole in feet
brown bars Cored intervals
MD-KB Measured depth minus Kelly bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

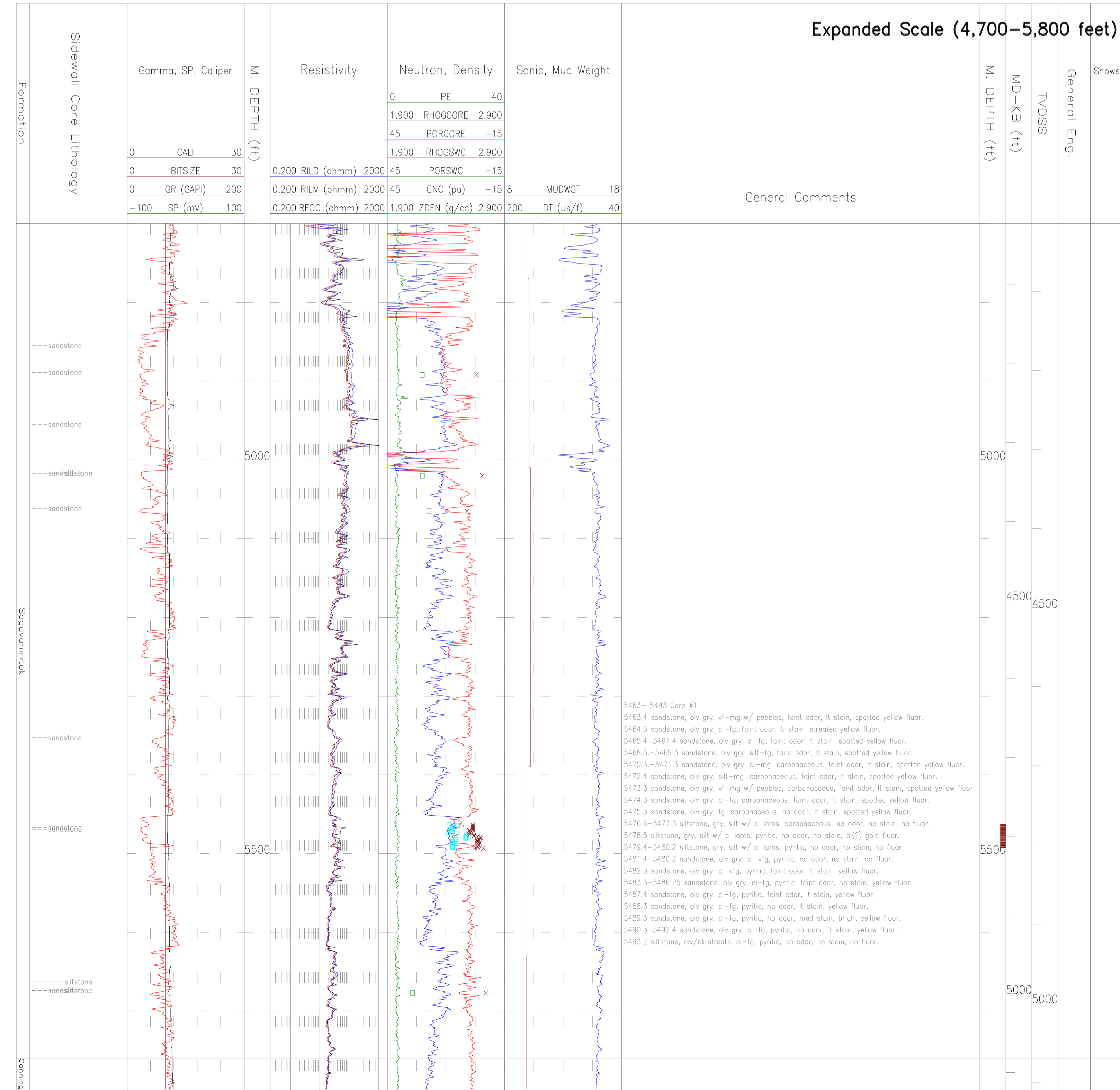
ROCT Vitrinite reflectance, mean value from cuttings in percent

TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent

PINDEX Production index = S1/(S1+S2)
HINDEX Hydrogen index = 100*S2/TOC

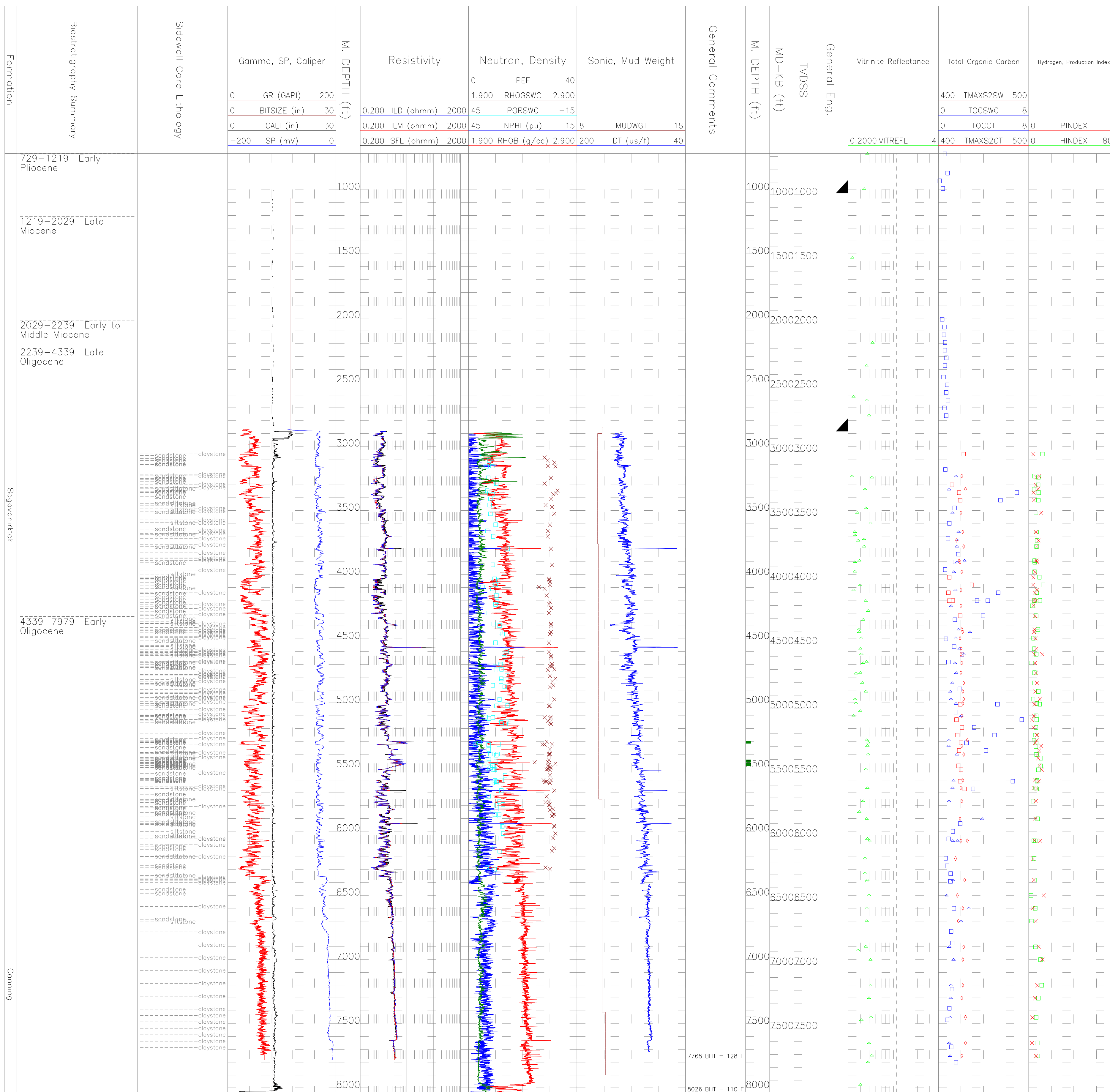
Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFD thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth



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PLATE WL20. LOGS, CORE DATA, AND OTHER DATA FROM HAMMERHEAD 1



Hammerhead 1 (Unocal) (OCS Y-0849 #1)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 55-171-00001
70.364611 north latitude, 146.02442 west longitude
Kelly Bushing elevation: 39 feet above sea level
Ground elevation: -104 feet
Total depth: 8034 feet
Completion year: 1985
No directional survey in file.

Drill and Test Summary: Bottomed in Tertiary. Recovered 17-20 API oil at rates of 744 - 912 bpd & gas at 182 MCF/D.

no cores

Well logs and other paper records: Minerals Management Service.

Published reports and papers:

Banet, S.M., and Scherr, J., 1992. Correlation study of selected exploration wells...p. 101-104 in 1992 Proc. Intl. Conf. On Arctic Margins, OCS Study MMS 94-0040.

Scherr, J., Banet, S.M., and Basile, B.J., 1991. Correlation study of selected exploration wells from the North Slope and Beaufort Sea, Alaska, Minerals Management Service OCS Report MMS 91-0076, 29 p. and 19 plates.

Data reports available from State of Alaska Geologic Materials Center:

90. Vitrinite Reflectance Data for the Union Oil Co. Ocs-Y-0849-1 (Hammerhead) Well

116. Geochemical Data (Lithology, Source Rock Parameters, and Hydrocarbon Data) of Cuttings from the Union Oil Company Ocs Y-0849-1 (Hammerhead No. 1) Well

197. Gas Chromatograms of Extracted Organic Matter from Unwashed Cuttings (5,280' - 5,400') of the Union Oil Company of California Ocs Y-0849-1 (Hammerhead No. 1) Well.

Materials available from State of Alaska Geologic Materials Center:

None listed.

Explanation of curves and symbols (from left to right):

GR Gamma ray in API units
BITSIZE Bit size in inches
CALI Caliper in inches
SP Spontaneous potential in millivolts

ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
SFL Spherically focused resistivity in ohm-m

PEF Photoelectric factor in barns per electron
RHOSSWC Grain density from sidewall core measurements in gm/cc (brown x)
PORSWC Porosity from sidewall core measurements in percent (cyan square)
NPHI Neutron porosity in percent
RHOB Density in gm/cc

MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

M. DEPTH Measured depth along hole in feet
olive bars Drill stem and production test intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

VITRFL Vitrinite reflectance, mean value in percent

TMAXS2SW Maximum temperature (deg C) from sidewall core from Rock Eval
TOCSWC Total organic carbon sidewall core samples in weight percent
TOCCT Total organic carbon from cuttings in weight percent
TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval

PIINDEX Production index = S1/(S1+S2)
HINDEX Hydrogen index = 100*S2/TOC

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature. Use of brand names is for descriptive purposes only and does not constitute endorsement by the U. S. Geological Survey.

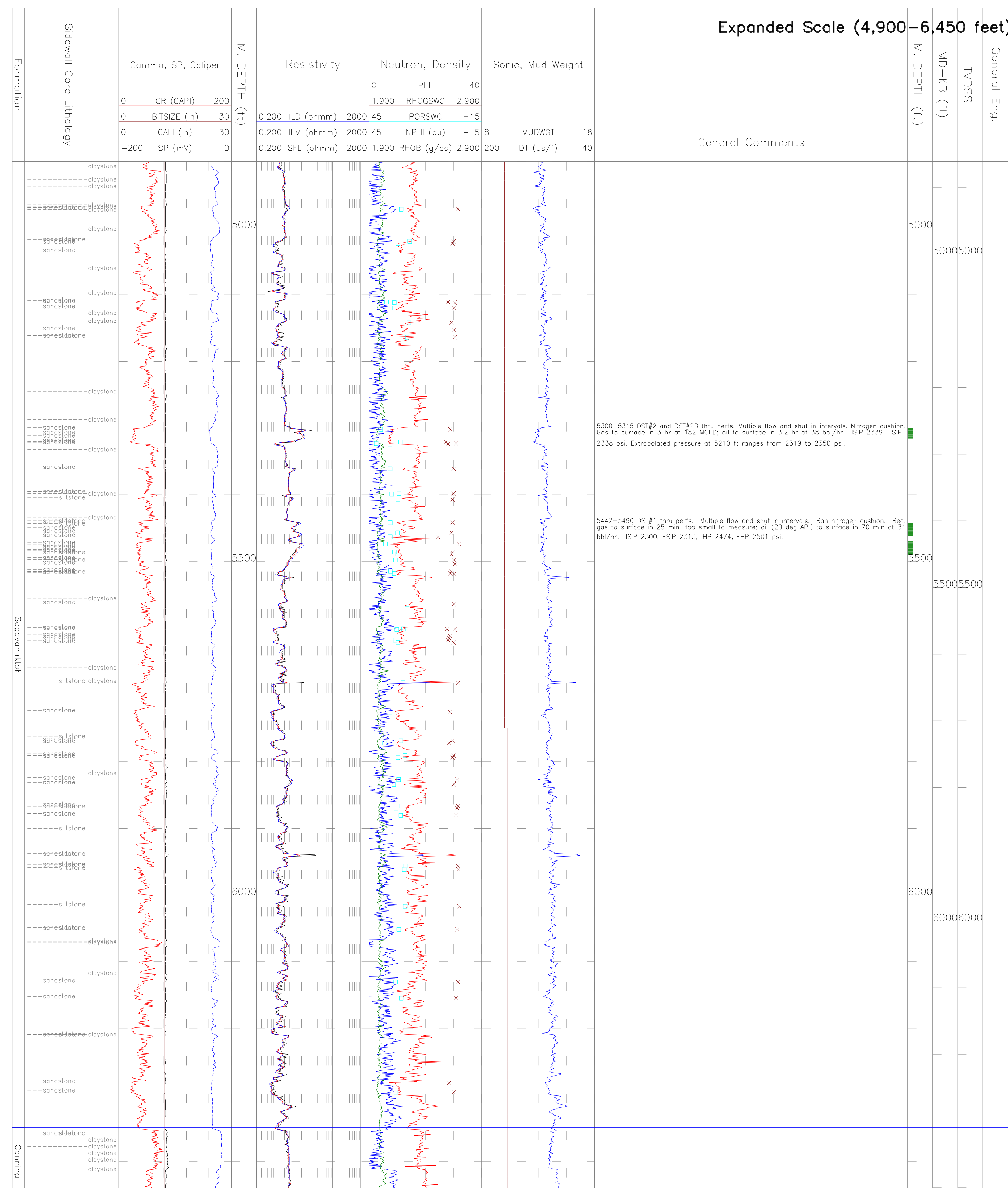


PLATE WL21. LOGS, CORE DATA, AND OTHER DATA FROM HAMMERHEAD 2

Hammerhead 2 (Unocal) (OCS Y-0849 #2)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 55-171-00006
70.378275 north latitude, 146.03123 west longitude
Kelly Bushing elevation: 40 feet above sea level
Ground elevation: -110 feet
Total depth: 6460 feet
True vertical depth: 6460 feet
Completion year: 1986

Drill and Test Summary: Bottomed in Tertiary. No hydrocarbons recovered.

No cores

Well logs and other paper records: Minerals Management Service.

Data reports available from State of Alaska Geologic Materials Center:

- 118. Vitrinite Reflectance Data of Cuttings from the Union Oil Co. Ocs Y-0849-2 (Hammerhead No. 2) Well
- 124. Total Organic Carbon, Rock-Eval Pyrolysis, and Vitrinite Reflectance Data from the Union Oil Co. Ocs Y-0849-2 (Hammerhead No. 2) Well
- 197. Gas Chromatograms of Extracted Organic Matter from Unwashed Cuttings (5,100' - 5,520') of the Union Oil Company of California Ocs Y-0849-2 (Hammerhead No. 2) Well.

Materials available from State of Alaska Geologic Materials Center:

None Listed.

Explanation of curves and symbols (from left to right):

- BITSIZE Bit size in inches
- GR Gamma ray in API units
- CALI Caliper in inches
- ILD Deep induction resistivity in ohm-m
- ILM Medium induction resistivity in ohm-m
- RHOB Density in gm/cc
- PEF Photoelectric factor in barns per electron
- RHOGSWC Grain density from sidewall core measurements in gm/cc (brown x)
- PORSWC Porosity from sidewall core measurements in percent (cyan square)
- NPHI Neutron porosity in percent
- MUDWGT Mud weight in pounds per gallon
- DT Sonic travel time in microseconds per foot
- M. DEPTH Measured depth along hole in feet
- MD-KB Measured depth minus Kelly Bushing in feet
- TVDSS True vertical depth subsea in feet
- GENERAL ENG Casing shoe
- VITREFL Vitrinite reflectance, mean value in percent
- TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval
- TOCCT Total organic carbon from cuttings in weight percent
- PIINDEX Production index = $S1/(S1+S2)$
- HINDEX Hydrogen index = $100 \times S2/TOC$

Abbreviations:

- API American Petroleum Institute
- bbl barrel
- BHP Bottom-hole pressure
- BHT Bottom-hole temperature from well log headers
- BHTcorr Bottom-hole temperature, corrected for circulation
- bopd barrels of oil per day
- C degrees Centigrade
- calc. calculated
- cu.ft. cubic feet
- deg degree
- DST Drill stem test
- est estimated
- F degrees Fahrenheit
- FHP Final hydrostatic pressure
- fm formation
- FSIP Final shut-in pressure
- FTA(M) Fission track age and standard deviation in Ma, mean age
- FTA(P) Fission track age and standard deviation in Ma, pooled age
- GCM Gas-cut mud
- GOR Gas-oil ratio
- hr hour
- IHP Initial hydrostatic pressure
- ISIP Initial shut-in pressure
- LCU Lower Cretaceous Unconformity
- MCFD thousand cubic feet per day
- MCFG thousand cubic feet gas
- MMCFD million cubic feet per day
- md millidarcies
- min minutes
- perfs perforations
- ppm part per million
- press pressure
- psi pounds per square inch
- psig pounds per square inch, gauge
- Rec recovered
- TD Total depth

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature. Use of brand names is for descriptive purposes only and does not constitute endorsement by the U. S. Geological Survey.

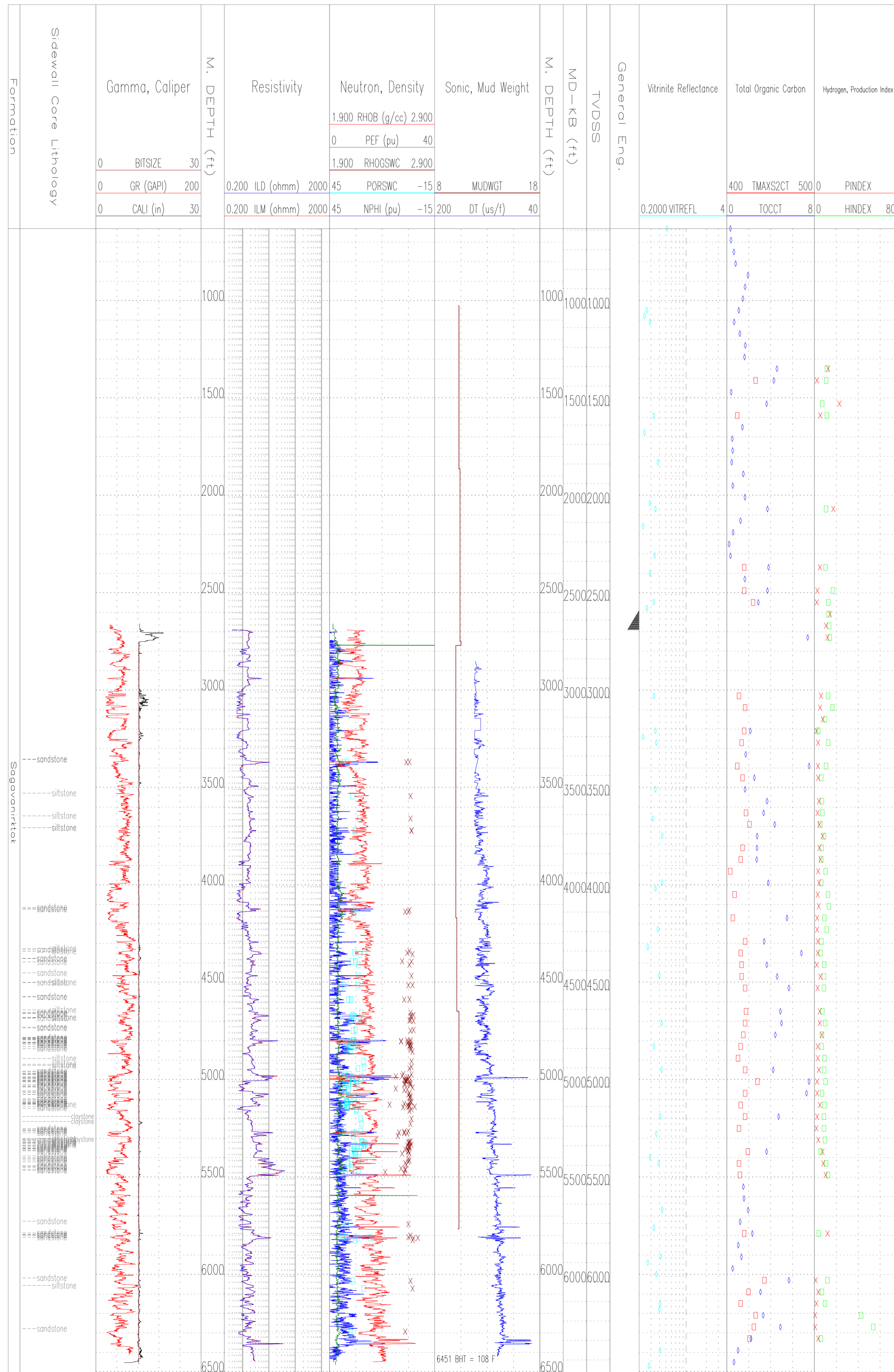
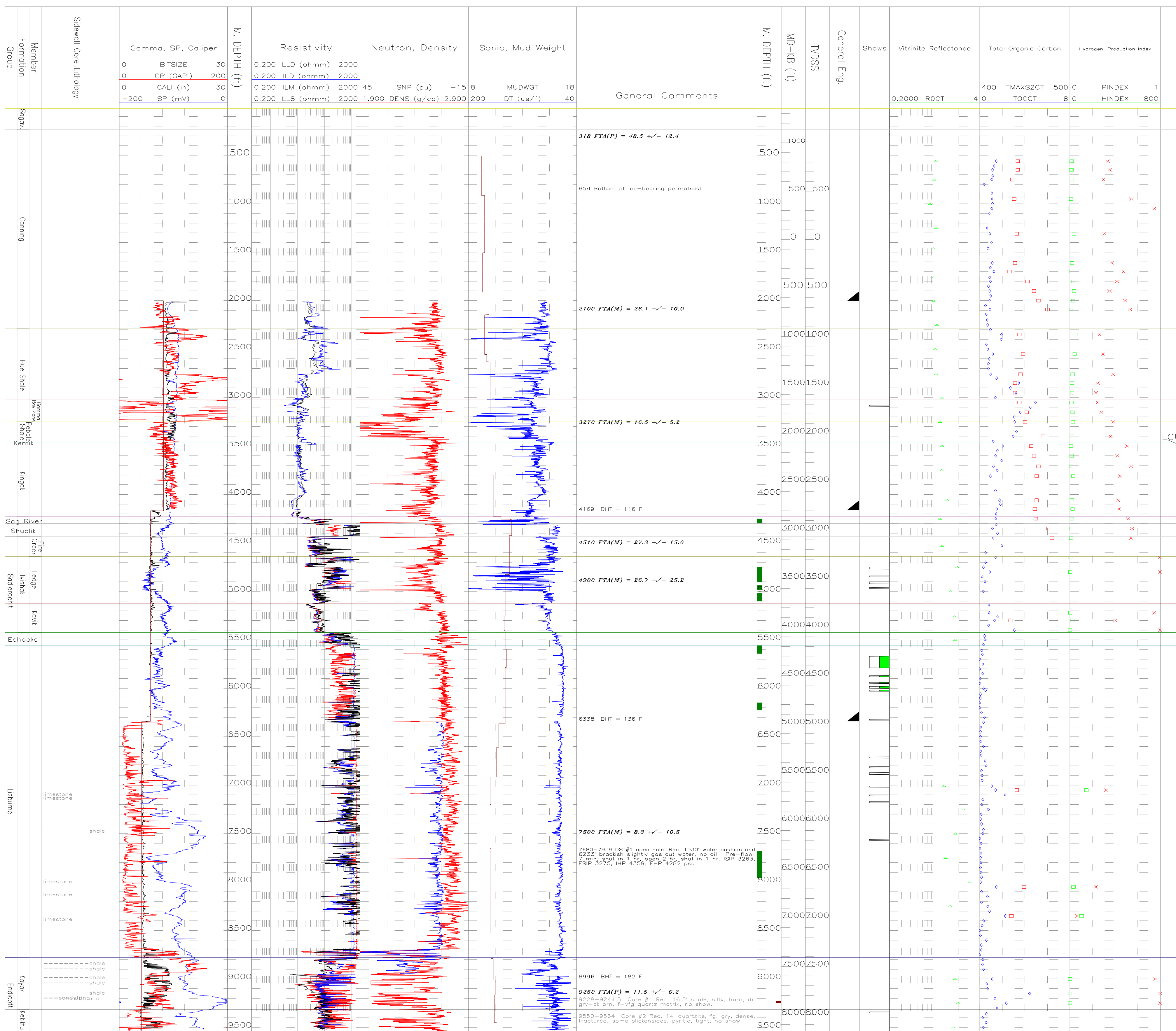


PLATE WL22. LOGS, CORE DATA, AND OTHER DATA FROM KAVIK 1



Kavik 1 (Pan American)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-179-20001
69.63184 north latitude, 146.56948 west longitude
Kelly Bushing elevation: 1368 feet above sea level
Ground elevation: 1352 feet
Total depth: 9564 feet
Completion year: 1969
No directional survey in file

Drill and Test Summary: Flowed 10,500 MCF gas from Sag River sandstone at 4,252-4,292' and 44,000 MCF gas from Ivishak sandstone at 4,748-5,100'.

Cored intervals and feet recovered:

1	9228-245	17	Koyuk Shale
2	9,550-564	9	Kaktik or Ivishak below a thrust fault

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Published reports and papers:

U.S. Geol. Survey Bulletin 1778; 1987, K.J. Bird and L.B. Magoon, eds.: Magoon, L.B., and 4 others, Chap. 11, Figure J in Appendix 11.1.

Data reports available from State of Alaska Geologic Materials Center:

9. Report on Rock-Eval Data for Eight North Slope Wells (05/13/82) Arco Alaska, Inc.

10. Report on Total Organic Carbon and Vitrinite Reflectance For Eight North Slope Wells (05/10/82) Arco Alaska, Inc. Kavik Unit #1

164. Gas Chromatograms from the Following 8 North Slope Wells: Arco Alaska Inc. Kavik No. 1, Between 2800' and 3462' of Cuttings

225. Apatite Fission Track Data Derived from Cuttings of the Following Alaska Arctic White Hills Oil and Gas Wells: Arco Alaska Inc. Kavik No. 1 (75' - 9,540')

Materials available from State of Alaska Geologic Materials Center

Apatite fission track slides
Foraminifera Slides
Kerogen Slides
Palyinologic Slides
Petrographic Thin Sections of Core
Petrographic Thin Sections of Ditch Samples
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):

BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts

LLD Deep laterolog in ohm-m
ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
LLB Laterolog-B resistivity in ohm-m

SNP Sidewall epithermal neutron porosity in percent
DENS Density in gm/cc

MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

M. DEPTH Measured depth along hole in feet
olive bars Drill stem and production test intervals
brown bars Cored intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

ROCT Vitrinite reflectance, mean value from cuttings in percent

TMAXSCT Maximum temperature (deg C) from cuttings from Root Eval
TOCCT Total organic carbon from cuttings in weight percent

INDEX Production index = S1/(S1+S2)
HINDEX Hydrogen index = 100*S2/TOC

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est. estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSIP Final shut-in pressure
FTACM Fission track age and standard deviation in Ma, mean age
FTACP Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG million cubic feet gas
MCMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press. pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec. recovered
TD Total depth

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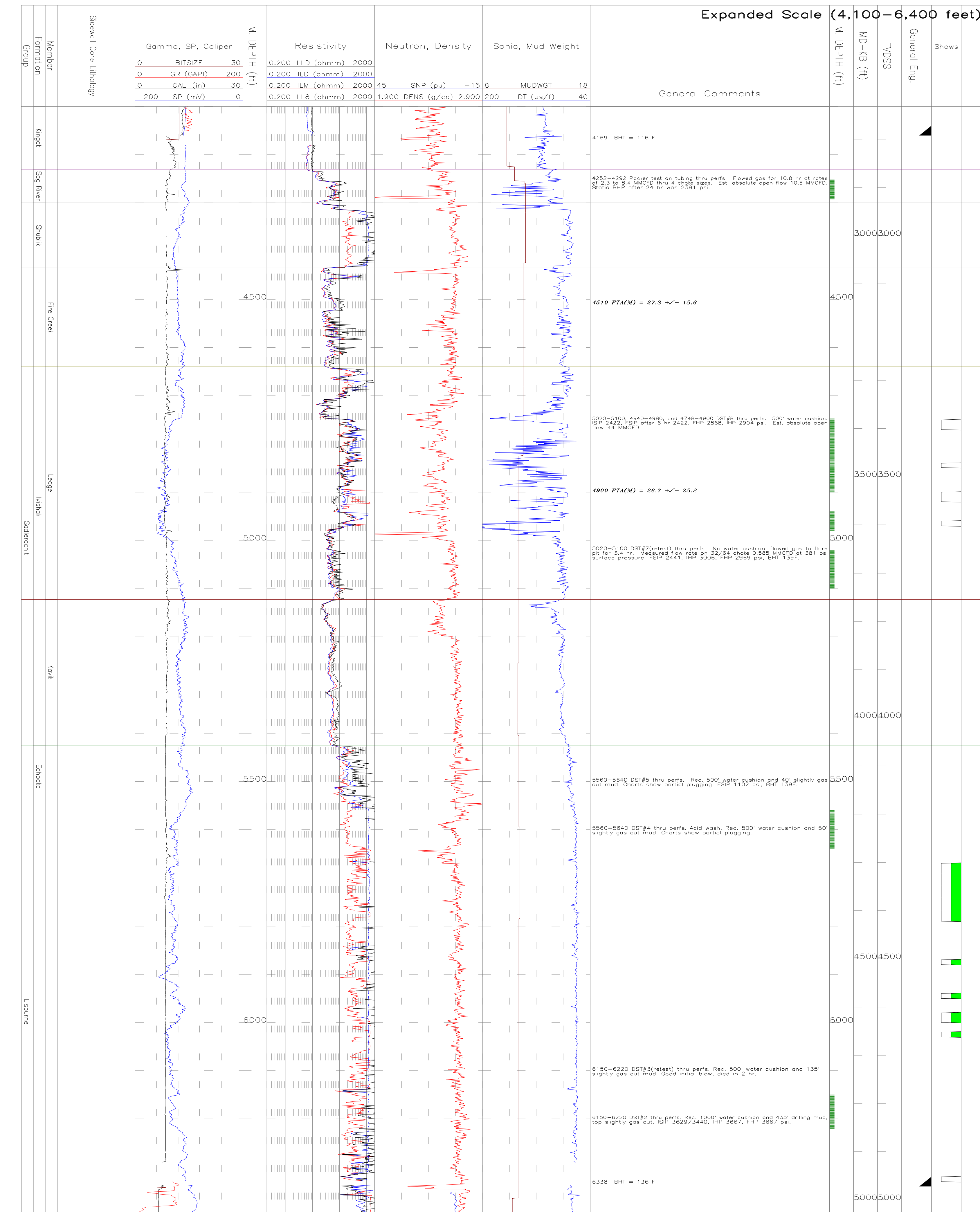
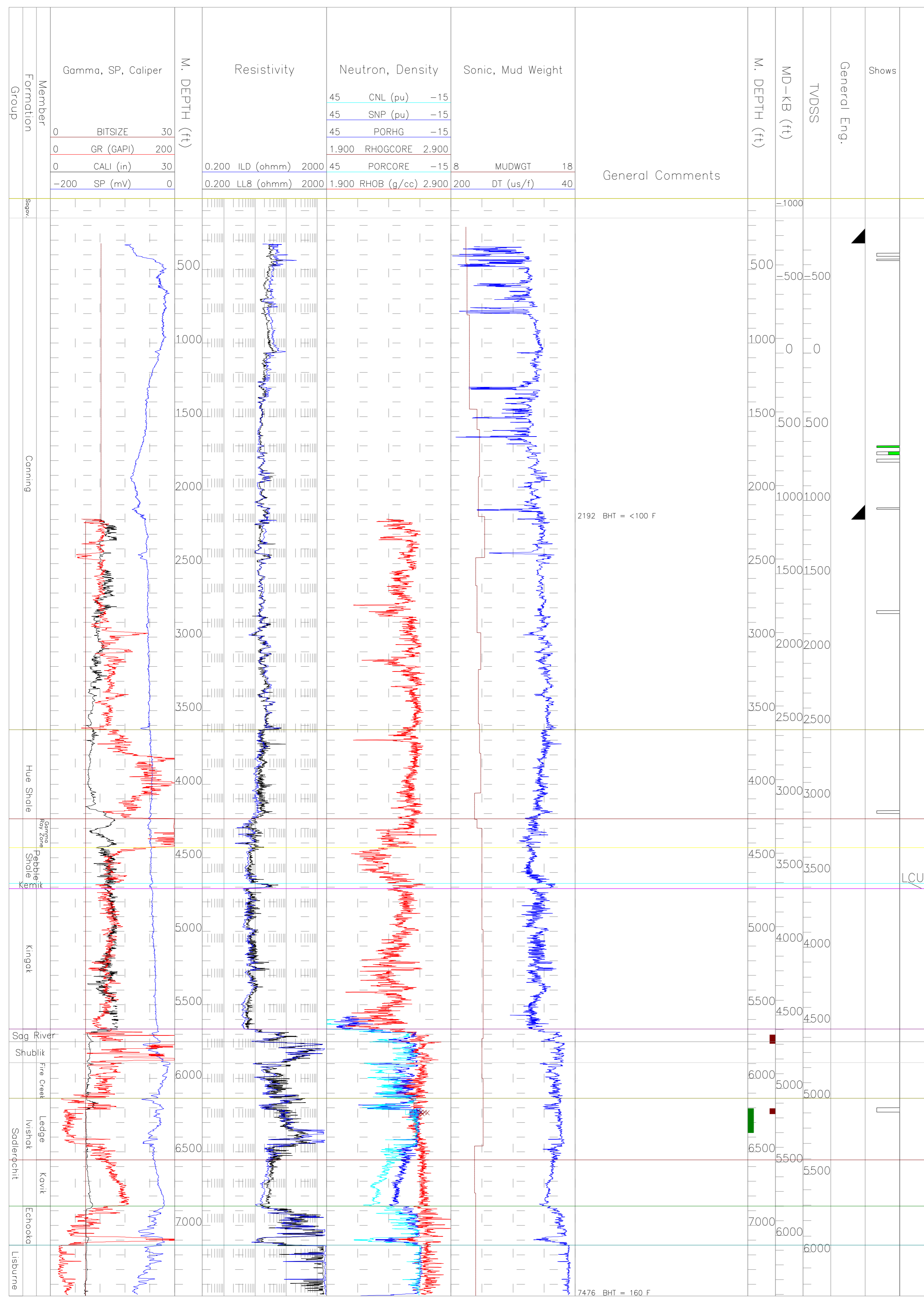


PLATE WL23. LOGS, CORE DATA, AND OTHER DATA FROM KAVIK UNIT 2



Kavik Unit 2 (Arco)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-179-20003
69.63244 north latitude, 146.65597 west longitude
Kelly Bushing elevation: 1069 feet above sea level
Ground elevation: 1051 feet
Total depth: 7500 feet
True vertical depth: 7307 feet
Completion year: 1973

Drill and Test Summary: Bottomed in Mississippi carbonates. No hydrocarbons recovered.

Cored intervals and feet recovered:
1 5,705-764 57 Sag River Ss (siltstone)
2 6,205-229 23 Ivishat Ss
3 6,229-241 13 Ivishat Ss

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Data reports from State of Alaska Geologic Materials Center:
None

Materials available from State of Alaska Geologic Materials Center:
Foraminifera Slides
Kerogen Slides
Palyonologic Slides
Petrographic Thin Sections of Core
Petrographic Thin Sections of Ditch Samples

Explanation of curves and symbols (from left to right):

- BITSIZE Bit size in inches
- GR Gamma ray in API units
- CALI Caliper in inches
- SP Spontaneous potential in millivolts
- ILD Deep induction resistivity in ohm-m
- LL8 Laterolog-8 resistivity in ohm-m
- CNL Neutron porosity in percent
- SNP Sidewall epithermal neutron porosity in percent
- PORHG Porosity from mercury injection in percent
- RHOCCORE Grain density from core measurements in gm/cc (brown x)
- PORCORE Porosity from core measurements in percent (cyan square)
- RHOB Density in gm/cc
- MUDWGT Mud weight in pounds per gallon
- DT Sonic travel time in microseconds per foot
- M. DEPTH Measured depth along hole in feet
- olive bars Drill stem and production test intervals
- brown bars Cored intervals
- MD-KB Measured depth minus Kelly Bushing in feet
- TVDSS True vertical depth subsea in feet
- Grain Size Grain size on approximate phi scale for clastic (red) and carbonate (blue)

GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

Abbreviations:

- API American Petroleum Institute
- bb barrel
- BHP Bottom-hole pressure
- BHT Bottom-hole temperature from well log headers
- BHTcorr Bottom-hole temperature, corrected for circulation
- bopd barrels of oil per day
- C degrees Centigrade
- calc. calculated
- cu.ft. cubic feet
- deg degree
- DST Drill stem test
- est estimated
- F degrees Fahrenheit
- FHP Final hydrostatic pressure
- fm formation
- FSP Final shut-in pressure
- FTA(M) Fission track age and standard deviation in Ma, mean age
- FTA(P) Fission track age and standard deviation in Ma, pooled age
- GCM Gas-cut mud
- GOR Gas-oil ratio
- hr hour
- IHP Initial hydrostatic pressure
- ISIP Initial shut-in pressure
- LCU Lower Cretaceous Unconformity
- MCFD thousand cubic feet per day
- MCFG million cubic feet gas
- MMCFD million cubic feet per day
- md millidarcies
- min minutes
- perfs perforations
- ppm part per million
- press pressure
- psi pounds per square inch
- psig pounds per square inch, gauge
- Rec recovered
- TD Total depth

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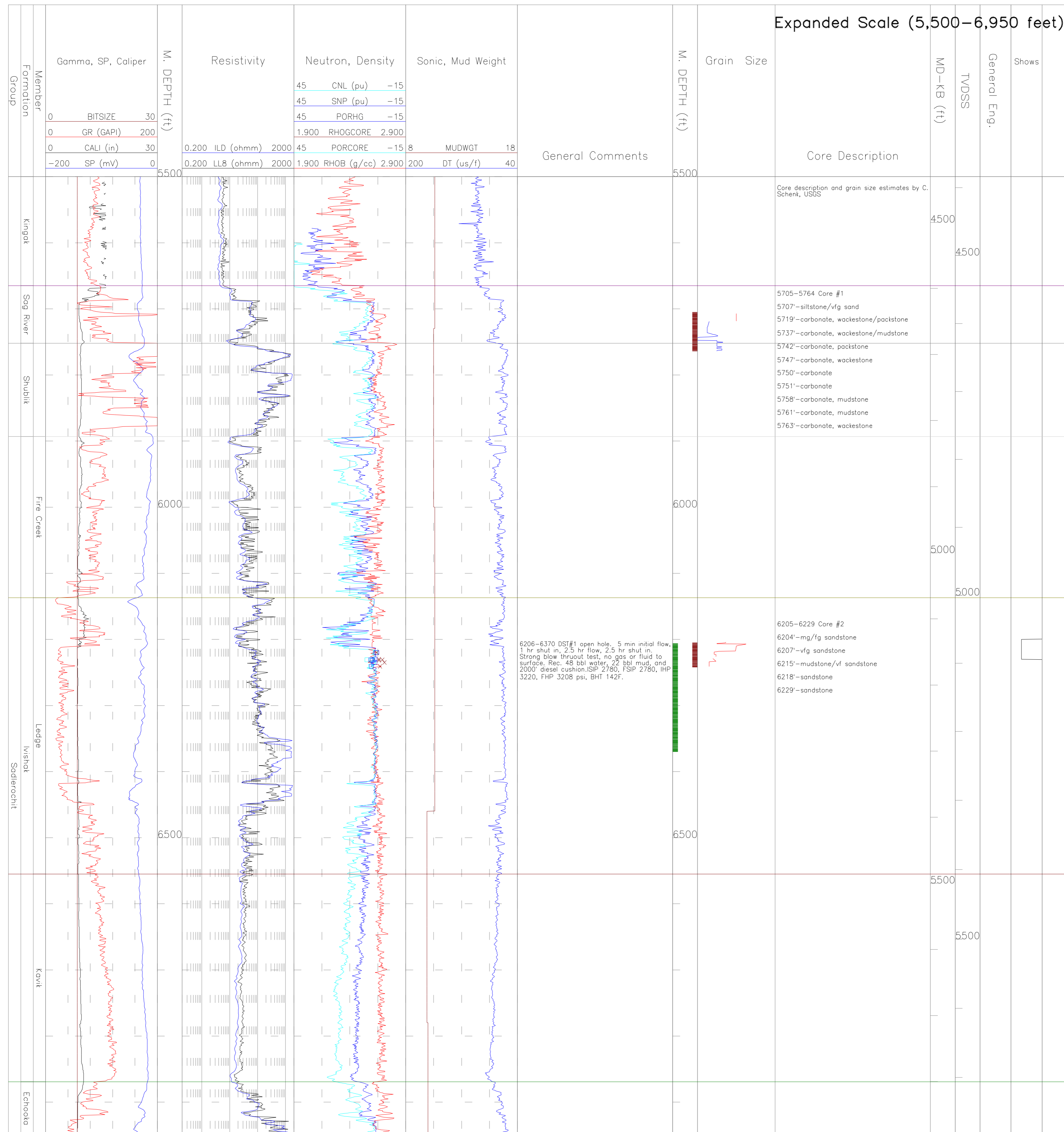


PLATE WL24. LOGS, CORE DATA, AND OTHER DATA FROM KAVIK UNIT 3

Kavik Unit 3 (Arco)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-179-20004
69.63228 north latitude, 146.53229 west longitude
Kelly Bushing elevation: 1501 feet above sea level
Ground elevation: 1475 feet
Total depth: 5850 feet
Completion date: 1974
No directional survey in file

Drill and Test Summary: Flowed 7400 MCFD gas from Sag River sandstone at 4,935-5,070' and 170,000 MCFD gas from Ivishak sandstone at 5,524-5,850'.

Cored intervals and feet recovered:

1	4,942-950	6	Sag River Ss
2	5,021-081	58	Shublik Fm
3	5,316-332	11	Ivishak Ss
4	5,400-434	28	Ivishak Ss
5	5,434-442	8	Ivishak Ss

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Data reports from State of Alaska Geologic Materials Center:

53c. Scanning Electron Micrographs of Selected Samples from Paleozoic Through Tertiary Sandstones, North Slope, AK. Arco Alaska, Inc. Kavik Unit #3

Materials available from State of Alaska Geologic Materials Center:

Petrographic Thin Sections of Core
Petrographic Thin Sections of Ditch Samples

Explanation of curves and symbols (from left to right):

- CALL Caliper in inches
- BITSIZE Bit size in inches
- GR Gamma ray in API units
- ILD Deep induction resistivity in ohm-m
- ILM Medium induction resistivity in ohm-m
- LL8 Laterolog-8 resistivity in ohm-m
- RHOBCORE Grain density from core measurements in gm/cc (brown x)
- PORCORE Porosity from core measurements in percent (cyan square)
- NPHI Neutron porosity in percent
- RHOB Density in gm/cc
- MUDWGT Mud weight in pounds per gallon
- DT Sonic travel time in microseconds per foot
- M. DEPTH Measured depth along hole in feet
- olive bars Drill stem and production test intervals
- brown bars Cored intervals
- MD-KB Measured depth minus Kelly Bushing in feet
- TVSS True vertical depth subsea in feet
- Grain Size Grain size on approximate phi scale for clastic (red) and carbonate (blue)
- GENERAL ENG Casing shoe
- Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

Abbreviations:

- API American Petroleum Institute
- bbl barrel
- BHP Bottom-hole pressure
- BHT Bottom-hole temperature from well log headers
- BHTcorr Bottom-hole temperature, corrected for circulation
- bopd barrels of oil per day
- C degrees Centigrade
- calc. calculated
- cu.ft. cubic feet
- deg degree
- DST Drill stem test
- est estimated
- F degrees Fahrenheit
- FHP Final hydrostatic pressure
- fm formation
- FSP Final shut-in pressure
- FTM(M) Fission track age and standard deviation in Ma, mean age
- FTM(P) Fission track age and standard deviation in Ma, pooled age
- GCM Gas-cut mud
- GOR Gas-oil ratio
- hr hour
- IHP Initial hydrostatic pressure
- ISIP Initial shut-in pressure
- LCU Lower Cretaceous Unconformity
- MCFD thousand cubic feet per day
- MCFG thousand cubic feet gas
- MMCFD million cubic feet per day
- md millidarcies
- min minutes
- perfs perforations
- ppm part per million
- press pressure
- psig pounds per square inch, gauge
- Rec recovered
- TD Total depth

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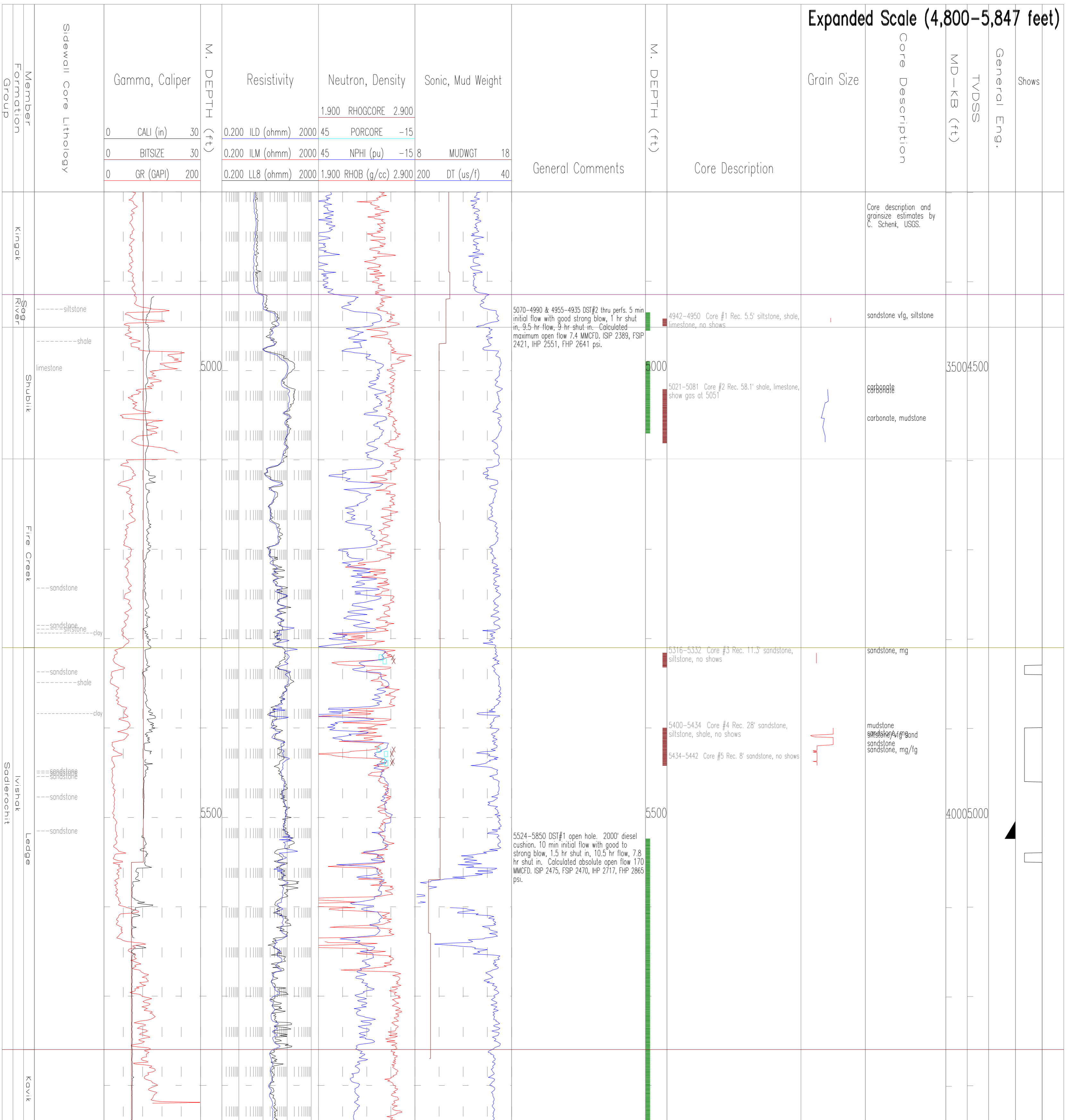
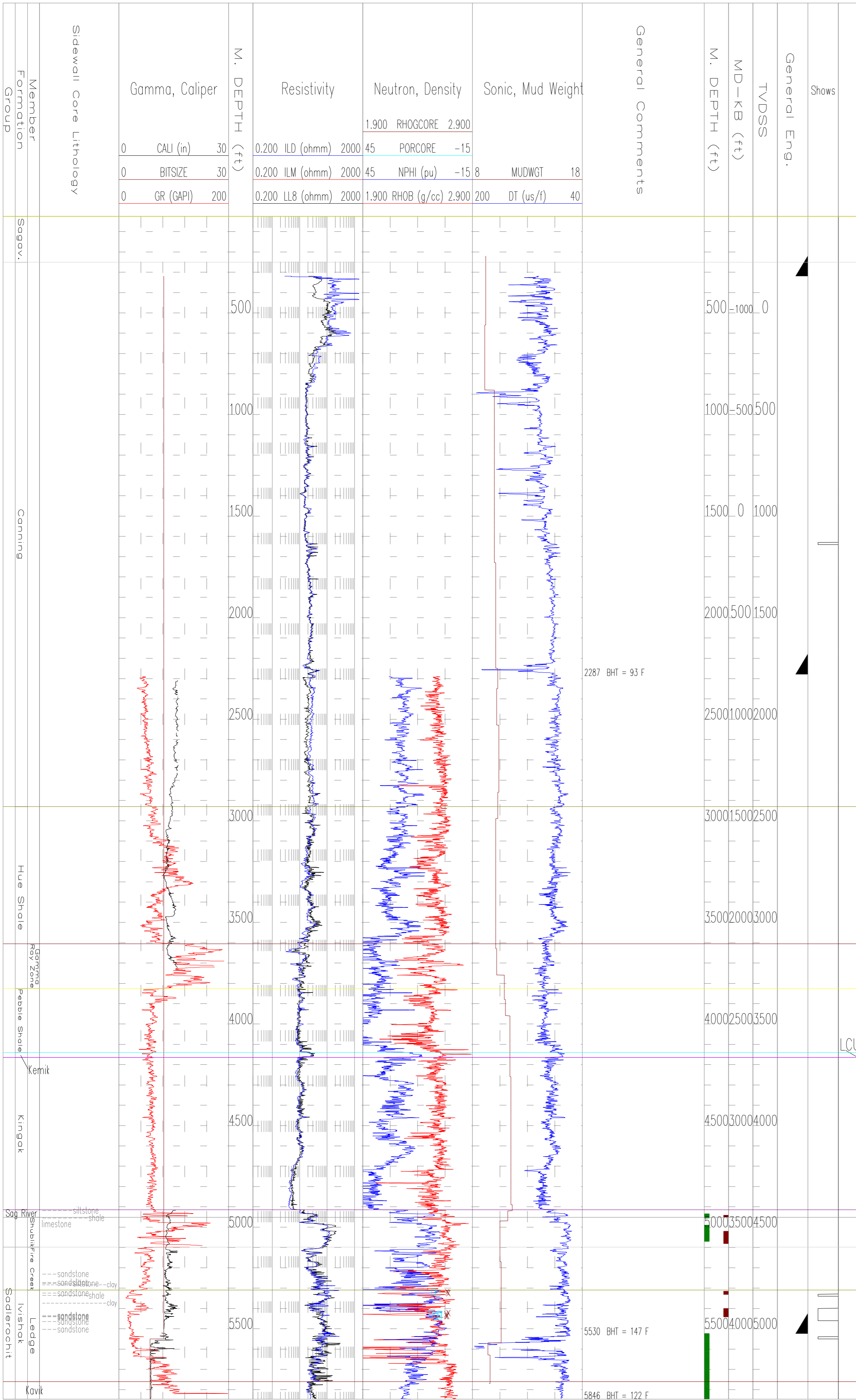
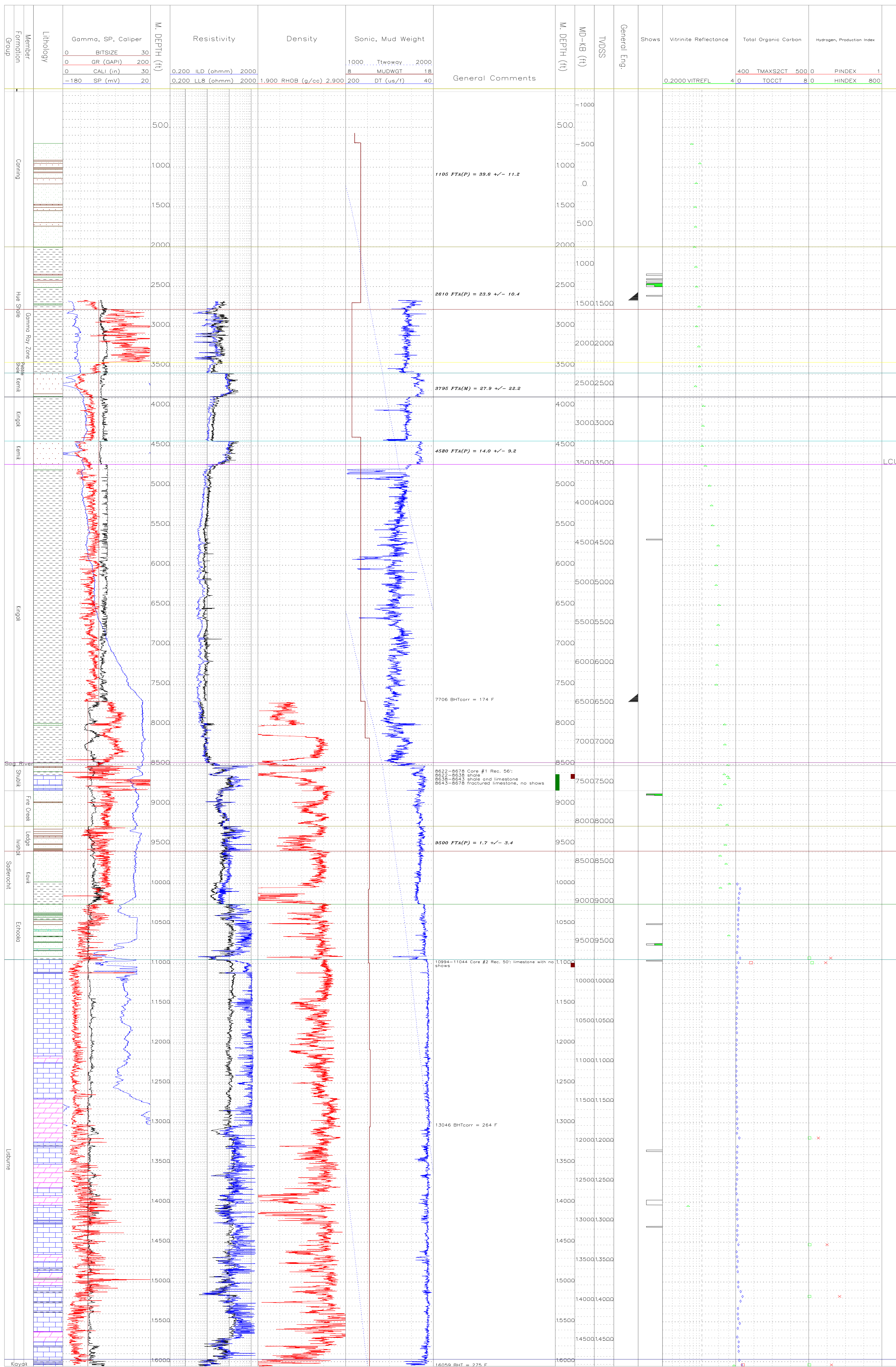


PLATE WL26. LOGS, CORE DATA, AND OTHER DATA FROM KEMIK UNIT 1



Kemik Unit 1 (Forest)
Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-223-20006
69.440511 north latitude, 147.26994 west longitude
Kelly Bushing elevation: 1234 feet above sea level
Ground elevation: 1220 feet
Total depth: 16,073 feet
Completion date: 1972
From drilling history: inclination = 3 degrees at 16073 feet.

Drill and Test Summary: Drilled to Mississippian shales. Flowed gas at ~12,000 MCFD from Shublik Fm at 8,679-8,719'.

Cored intervals and feet recovered:
1 8,622-8,678 58 Shublik Fm
2 10,994-11,045 50 Lisburne Group

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Data reports available from State of Alaska Geologic Materials Center:
9. Report on Rock-Eval Data for Eight North Slope Wells (05/13/82)
10. Report on Total Organic Carbon and Vitrinite Reflectance For Eight North Slope Wells (05/10/82) Forest Oil Corp. Kemik Unit #1
25. Geochemical Analysis (Total Organic Carbon, Rock-Eval Pyrolysis, Kerogen Type, Vitrinite Reflectance) Forest Oil Corp. Kemik #1
53c. Scanning Electron Micrographs of Selected Samples from Paleozoic Through Tertiary Sandstones, North Slope, AK, Forest Oil Corp. Kemik Unit #1
208. HRZ Total Organic Carbon and Rock-Eval Data from Cuttings of the Following Colville Basin and Arctic Foot Hills Exploratory Wells: BP Exploration (Alaska) Inc. (Forest) Kemik Unit No. 1 (2,800-3,410')
225. Apatite Fission Track Data Derived from Cuttings of the Following Alaska Arctic White Hills Oil and Gas Wells: BP Exploration (Alaska) Inc. Kemik Unit No. 1 (710' - 10,000').
234. Rock-Eval Data with Hydrocarbon Index of Samples from the Following North Slope Wells: BP Exploration (Alaska) Inc. Kemik Unit No. 1 Cuttings (2,800 - 3,410')

Materials available from State of Alaska Geologic Materials Center:
Apatite fission track slides
Foraminifera Slides
Kerogen Slides
Polynologic Slides
Petrographic Thin Sections of Core
Petrographic Thin Sections of Ditch Samples
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):
BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts
ILD Deep induction resistivity in ohm-m
LL8 Laterolog-8 resistivity in ohm-m
RHOB Density in gm/cc
TtwoWay Two-way travel time in milliseconds (top interval, 0-1000 ms; second interval 1000-2000 ms; etc)
MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot
M. DEPTH Measured depth along hole in feet
olive bars Drill stem and production test intervals
brown bars Cored intervals
MD-KB Measured depth minus Kelly Bushing in feet
TDVSS True vertical depth subsea in feet

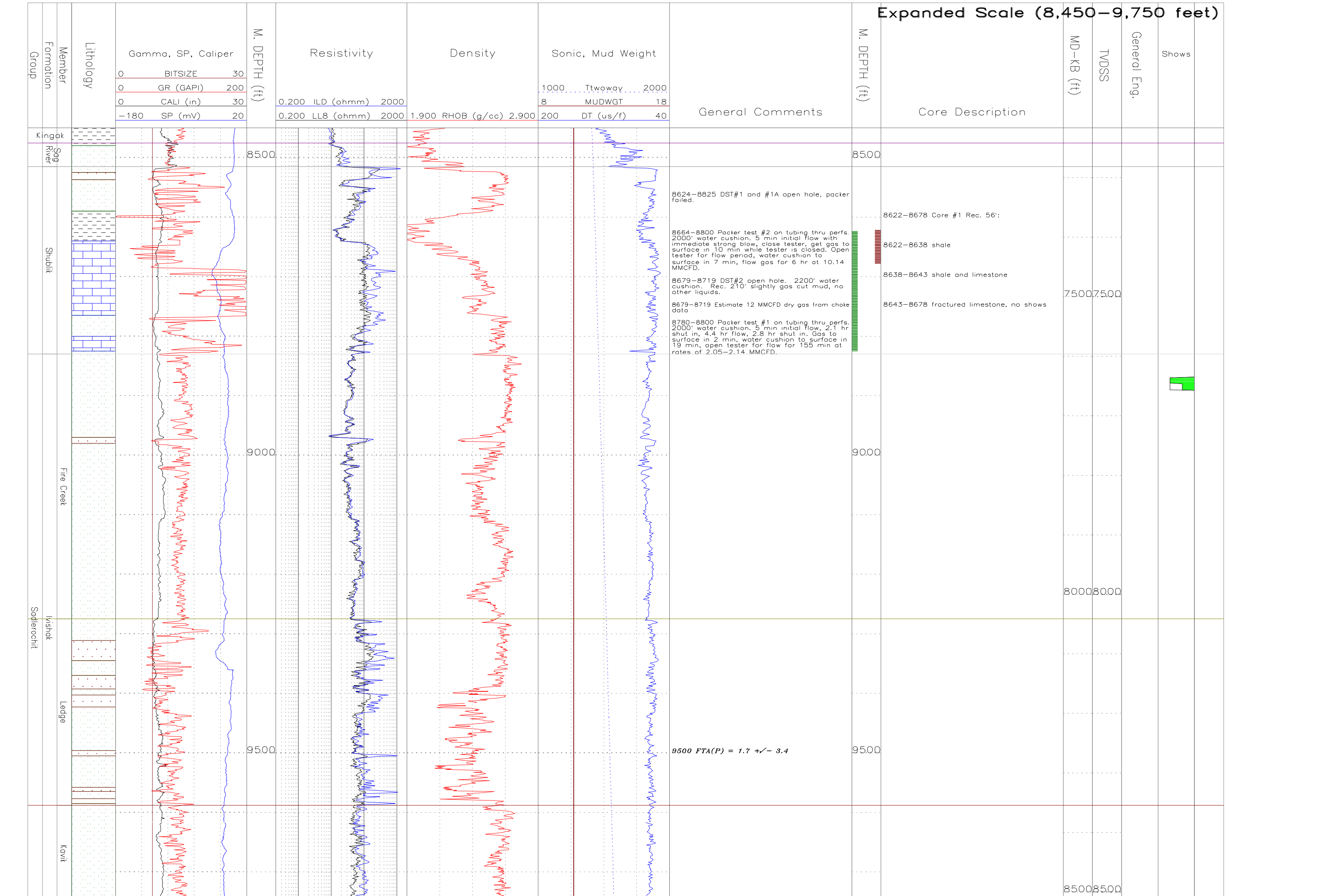
GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

VITREFL Vitrinite reflectance, mean value in percent
TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent
PINDEX Production index = S1/(S1+S2)
HINDEX Hydrogen index = 100*S2/TOC

Abbreviations:
API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg. degree
DST Drill stem test
est. estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press. pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec. recovered
TD Total depth

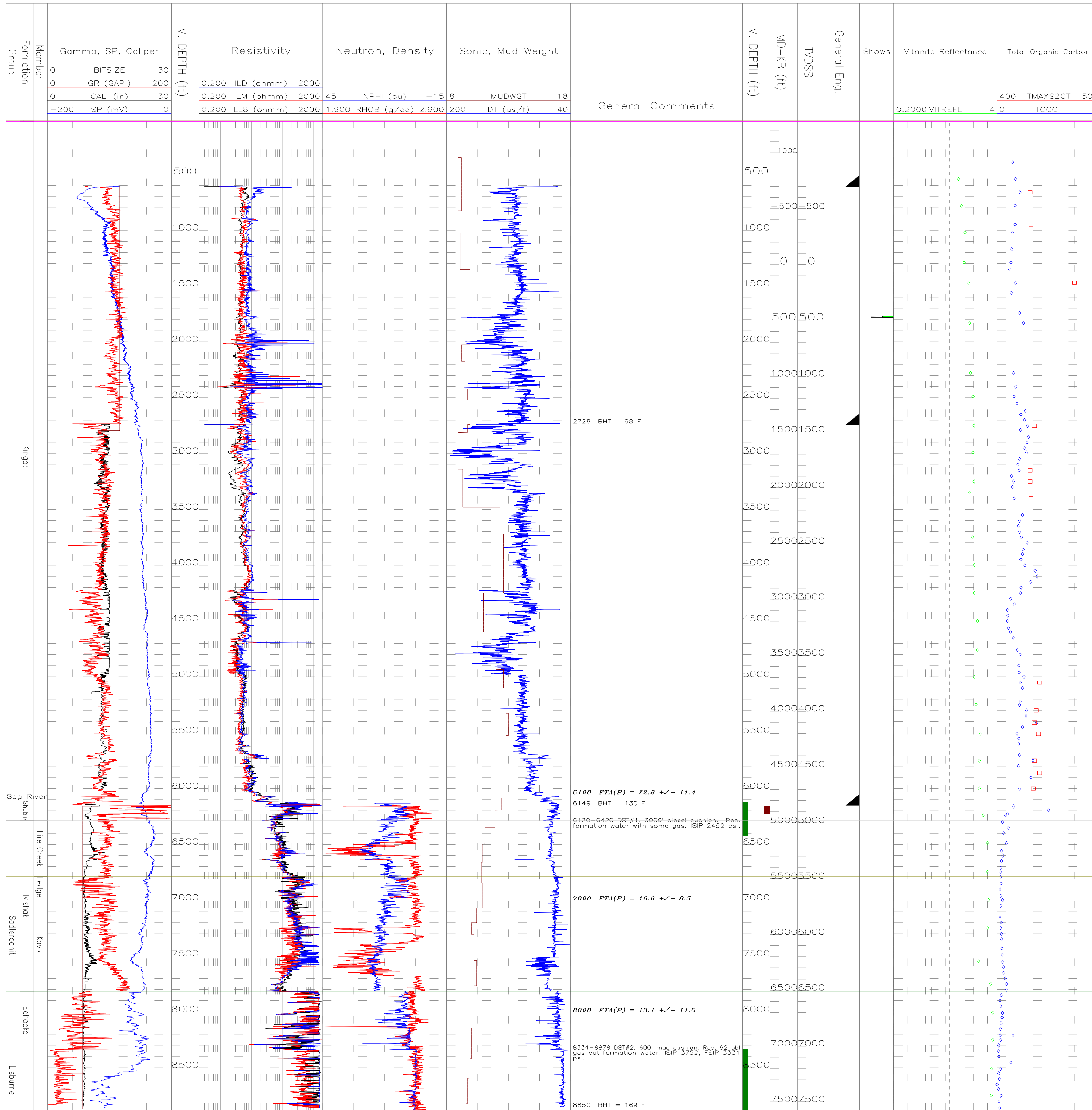
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Expanded Scale (8,450-9,750 feet)

LITHOLOGY PATTERNS
Clay, claystone
Siltstone
Shale
Carbonaceous shale
Coal
Sandstone
Conglomerate
Chert
Shaly limestone
Limy shale
Limestone
Dolomite
Tuff
Argillite

PLATE WL27. LOGS, CORE DATA, AND OTHER DATA FROM KEMIK UNIT 2



Kemik Unit 2 (BP)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-223-20013
69.38642 north latitude, 147.15579 west longitude
Kelly Bushing elevation: 1307 feet above sea level
Ground elevation: 1288 feet
Total depth: 8880 feet
Completion year: 1975
No directional survey in file.

Drill and Test Summary: Drilled to Mississippian carbonates. Minor gas shows encountered.

Cored intervals and feet recovered:

1	6,160-167	7	Shublik Fm
2	6,167-225	58	Shublik Fm

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Data reports available from State of Alaska Geologic Materials Center:

- Report on Rock-Eval Data for Eight North Slope Wells (05/13/82)
- Report on Total Organic Carbon and Vitrinite Reflectance For Eight North Slope Wells (05/10/82)
- Preliminary Results of 25 Apatite Fission Track Analyses of Samples from the Following Five Wells on the North Slope of Alaska: BP Alaska Inc. Kemik Unit No.2, Cuttings (6100-8000').

Materials available from State of Alaska Geologic Materials Center:

- Apatite fission track slides
- Foraminifera Slides
- Kerogen Slides
- Polynologic Slides
- Petrographic Thin Sections of Core
- Petrographic Thin Sections of Ditch Samples
- Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):

BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts

ILM Medium induction resistivity in ohm-m
ILD Deep induction resistivity in ohm-m
LL8 Laterolog-8 resistivity in ohm-m

NPHI Neutron porosity in percent
RHOB Density in gm/cc

MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

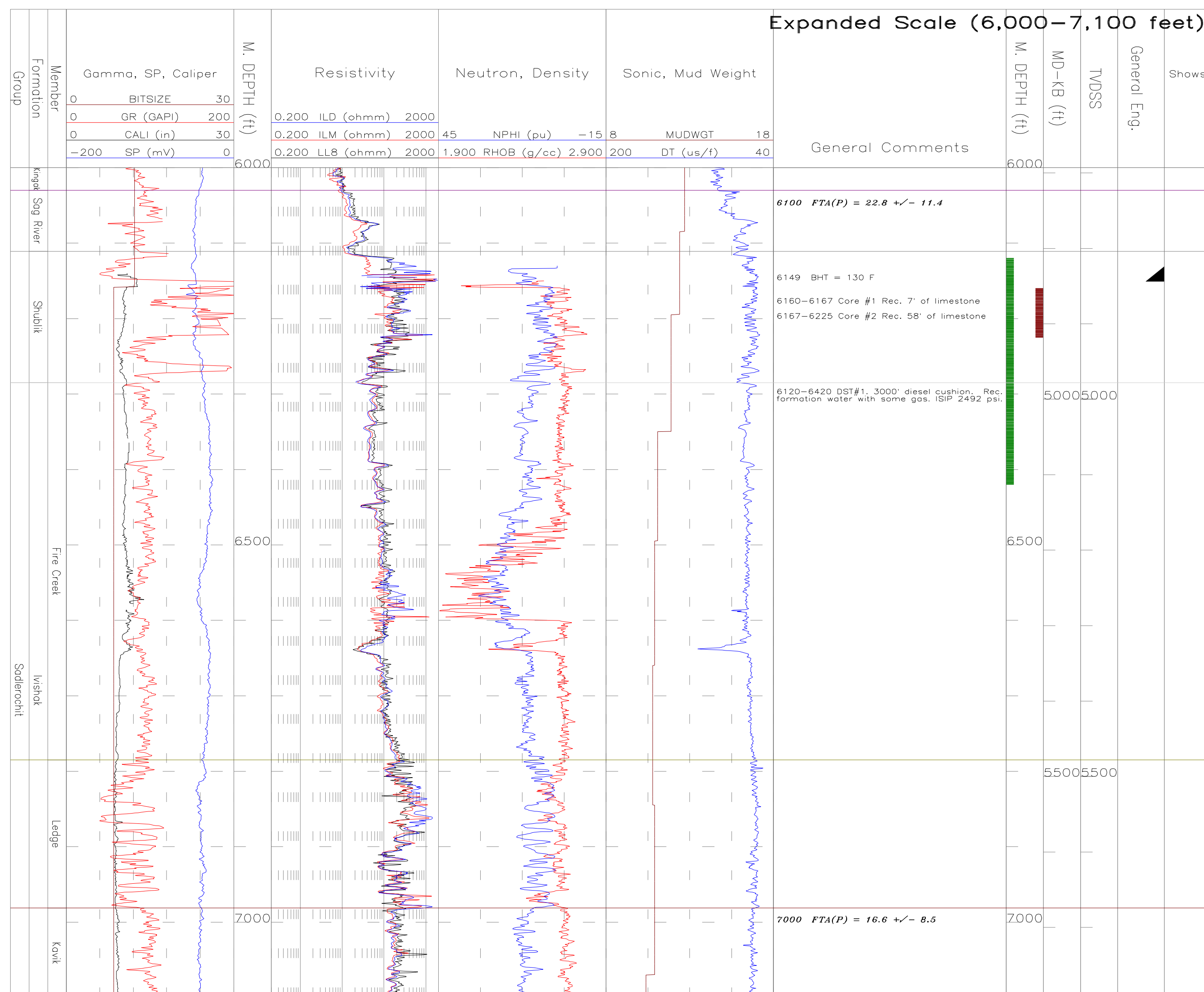
M. DEPTH Measured depth along hole in feet
MD-KB Drill stem and production test intervals
brown bars Cored intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

VITREFL Vitrinite reflectance, mean value in percent

TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent



Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg. degree
DST Drill stem test
est. estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSIP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press. pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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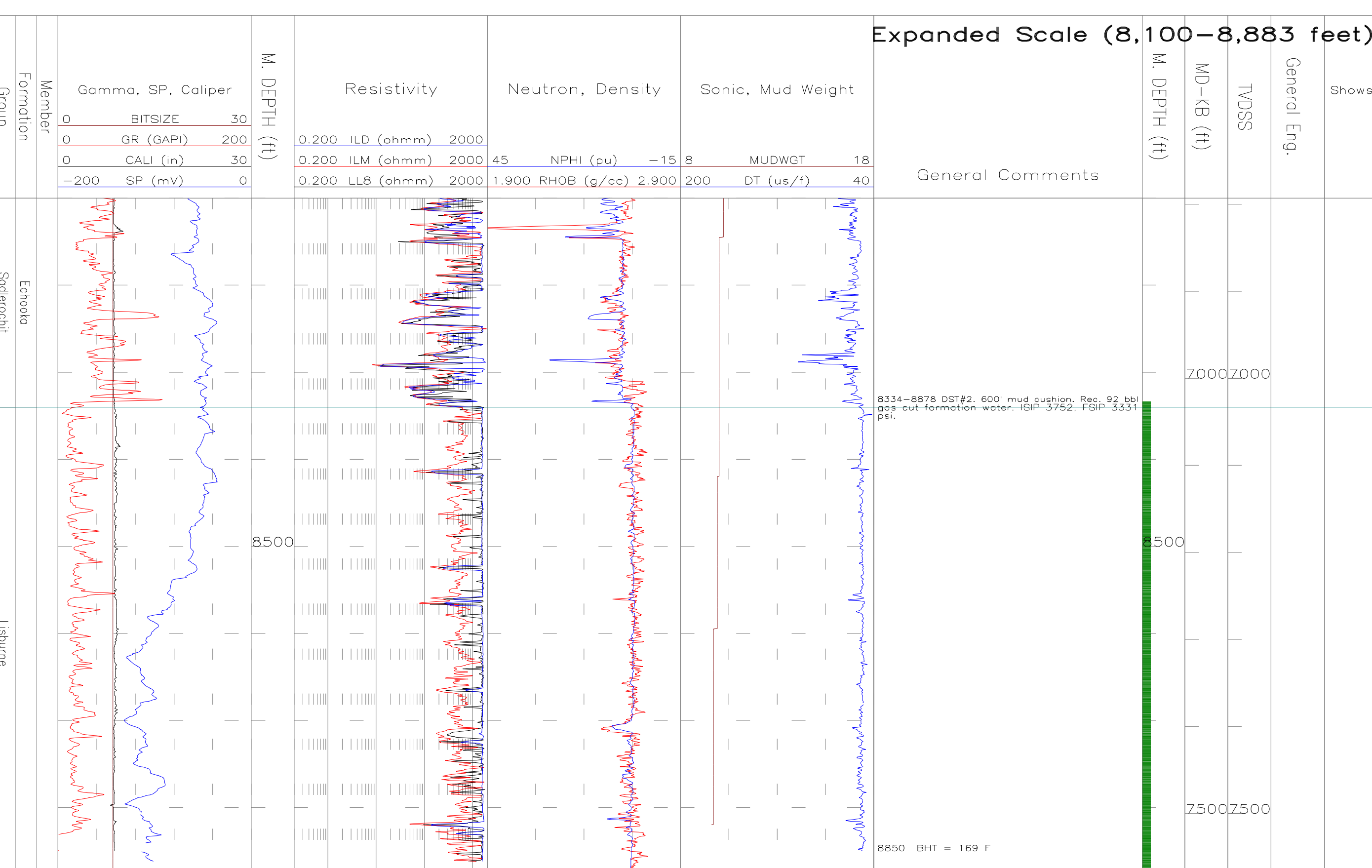
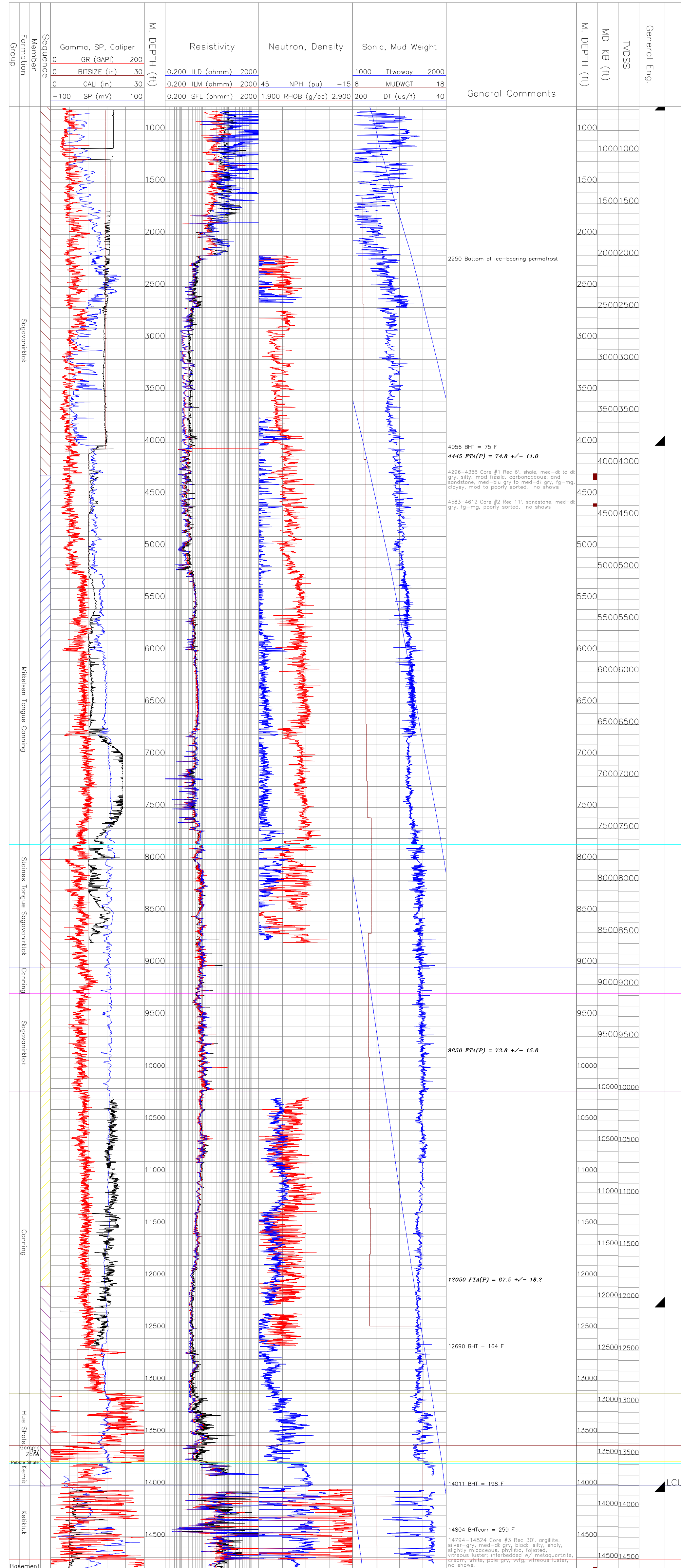


PLATE WL28. LOGS, CORE DATA, AND OTHER DATA FROM E DE K LEFFINGWELL



E De K Leffingwell - 1 (Union Oil of California)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Gberson
U.S. Geological Survey, Denver, Colorado

API 50-089-20021
70.0177778 north latitude, 146.51796 west longitude
Kelly Bushing elevation: 202 feet above sea level
Ground elevation: 170 feet
Total depth: 14,824 feet
True vertical depth: 14,041 feet
Completion year: 1984

Drill and Test Summary: Drilled to basement. No hydrocarbons recovered

Cored intervals and feet recovered:

1	4,296-356	6	Sagavanirktok Fm (shale)
2	4,583-612	11	Sagavanirktok Fm (sandstone)
3	14,794-824	30	basement argillite

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Data reports available from State of Alaska Geologic Materials Center:

77. Vitrinite Reflectance Data for the Union Oil Company of California
183. Geochemical Data for an Oil Show Project That included the Following
10 North Slope Well Materials: Union Oil Co. Of California E. De K. Leffingwell No.1, Washed Cuttings (13790'-13880')
196. X-Ray Diffraction Patterns of Clay from the Following Wells: Union Oil Company of California E De K Leffingwell, Cuttings (2,440' - 13,660')
198. Preliminary Results of Three Apatite Fission Track Analyses of Core (4,296' - 4,593') and of Cuttings (9,500' - 12,400') from the Union Oil Company of California E De K Leffingwell No. 1 Well, North Slope, Alaska.

Materials available from State of Alaska Geologic Materials Center:

Clay Mineral Slides
Foraminifera Slides
Kerogen Slides
Polynologic Slides
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):

SEQUENCES
A (green), B (brown), C (blue), D (red), E (yellow), F&G (purple)

GR Gamma ray in API units
BITSIZE Bit size in inches
CALI Caliper in inches
SP Spontaneous potential in millivolts

ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
SFL Spherically focused resistivity in ohm-m

NPHI Neutron porosity in percent
RHOB Density in gm/cc

Twoway Two-way travel time in milliseconds
(top interval, 0-1000 ms; second interval 1000-2000 ms; etc)
MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

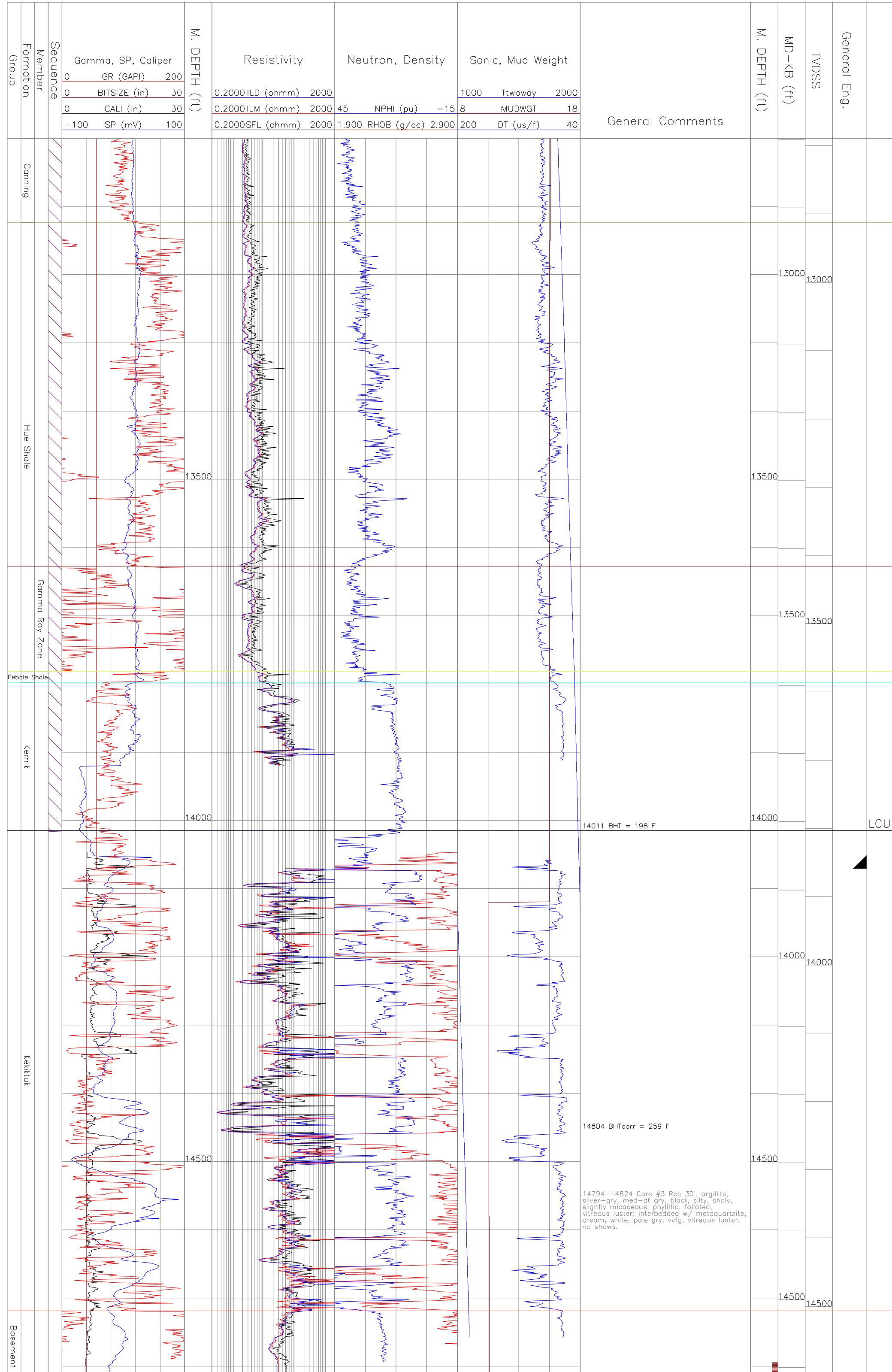
M. DEPTH Measured depth along hole in feet
brown bars Cored intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

Abbreviations:

API American Petroleum Institute
bb barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSIP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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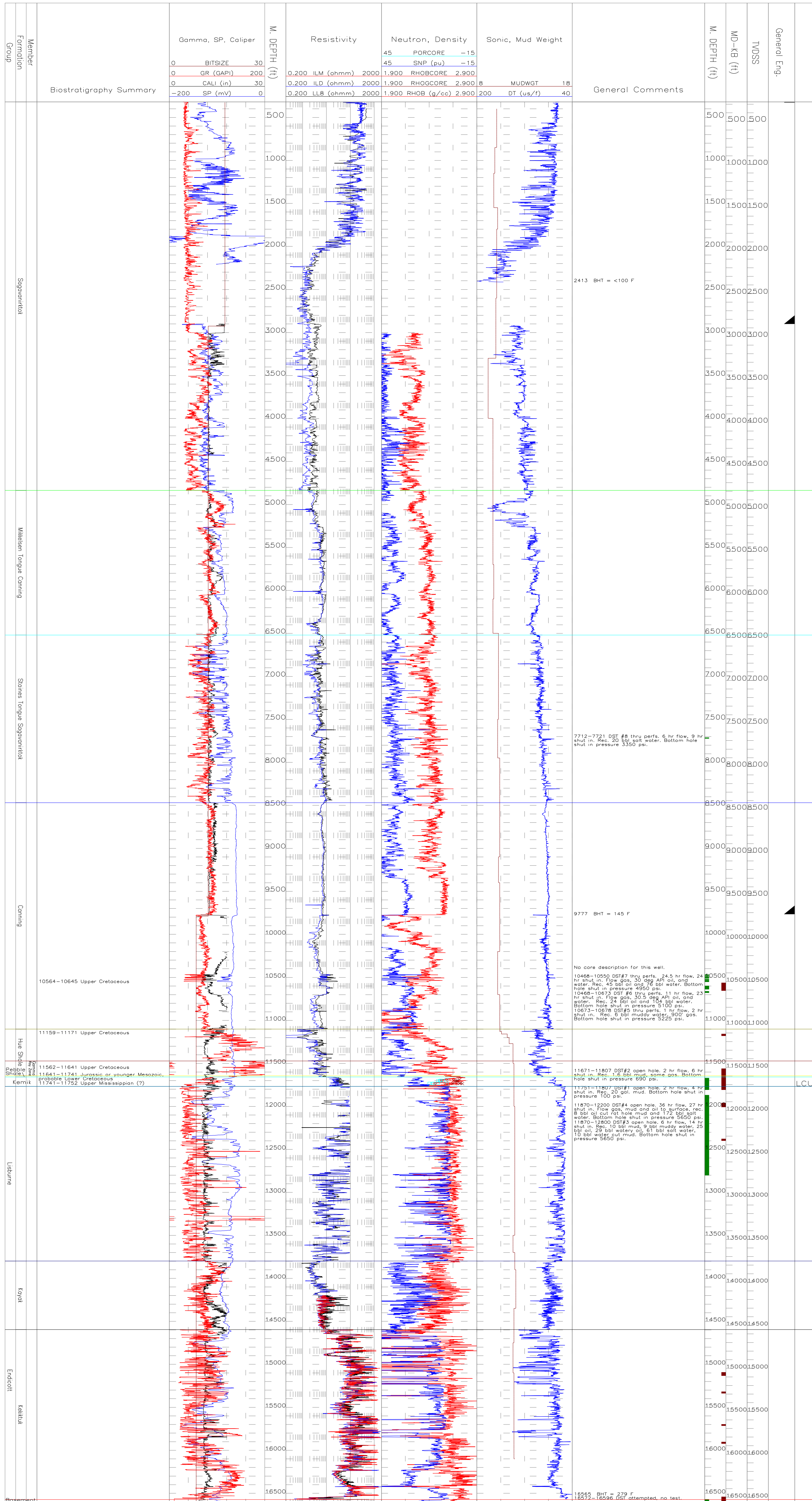


14011 BHT = 198 F

14804 BHTcorr = 259 F

14794-14824 Core #3 Rec 30' argillite, silty-gr, med-d gr, black, silty, shaly, slightly micaceous, shaly, argillite, micaceous, interbedded with quartzite, cream, white, pale gr, vfg, vitreous luster, no shows.

PLATE WL29. LOGS, CORE DATA, AND OTHER DATA FROM MIKKELSEN BAY STATE



Mikkelsen Bay State (Mobi)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-029-20055
70.13519 north latitude, 147.19743 west longitude
Kelly Bushing elevation: 18 feet above sea level
Ground elevation: 25 feet
Total depth: 16,595 feet
Completion year: 1970
No directional survey in file.

Drill and test Summary: Drilled to Basement, Rec. 25 bbl oil in 24 hr test in Lisburne, some gas from Thomson, gas and 30API oil from Canning, salt water from Staines Tongue of Sagaviniokot Fm.

Cored intervals and feet recovered:

1	10,564-624	60	Canning Fm sh & slst
2	10,624-654	29.5	Canning Fm sst, sh & slst
3	11,591-179	13.5	Hue Shale upper gamma-ray zone
4	11,562-591	29	Hue Shale
5	11,591-596	3	Hue shale
6	11,596-654	58	Hue Shale, pebble shale unit
7	11,654-713	59	pebble shale unit, Kemik Sandstone
8	11,713-721	8	Kemik Sandstone
9	11,721-778	57	Kemik Sandstone, Lisburne Gp (24')
10	11,778-792	14	Lisburne Gp
11	11,792-807	14	Lisburne Gp
12	11,802-889	25	Lisburne Gp
13	11,889-12,008	4	Lisburne Gp
14	12,378-399	21	Lisburne Gp
15	15,094-131	36	Keitkut
16	15,319-336	10.5	Keitkut
17	15,698-713	14	Keitkut
18	15,904-922	16.5	Keitkut
19	16,542-572	3	Pre-Miss. basement
20	16,572-596	19.5	Pre-Miss. basement

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Data reports available from State of Alaska Geologic Materials Center:

43. X-Ray Diffraction Clay Mineralogy Analysis
46. Shale Bulk Density Analysis
50. Petrological Analysis of Core Chips
53. Scanning Electron Micrographs of Selected Samples from Paleozoic Through Tertiary Sandstones, North Slope, Ak. Mikkelsen Bay St.
70. Core Permeability Determinations and Other Related Physical Analyses of the Following 20 North Slope Wells: Mikkelsen Bay St.
87. Capillary Pressure Test Data for the Following North Slope Wells: Mikkelsen Bay St.
159. Geochemical Characterization by Thermal Desorption, Liquid Chromatography, Gas Chromatography, Isotope-Mass-Spec and Gas Chromatography-Mass-Spectrometry of Extracts from the Following North Slope Wells: Mikkelsen Bay St. (10564-10650) of Core and (11650-11701) of Core
193. Sr87/86 Isotope Analyses of the Following North Slope Well Materials: Mikkelsen Bay State, Core Chips (16,543', 16,578', and 16,580')

Materials available from State of Alaska Geologic Materials Center:

Clay Mineral Slides
Foraminifera Slides
Kerogen Slides
Petrological Slides
Petrographic Thin Sections of Core
Petrographic Thin Sections of Ditch Samples

Explanation of curves and symbols (from left to right):

BITSZ Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts
ILM Medium induction resistivity in ohm-m
ILD Deep induction resistivity in ohm-m
LL8 Laterolog-8 resistivity in ohm-m

PORCORE Porosity from core measurements in percent (cyan square)
SNP Swell epithermal neutron porosity in percent
RHOBCORE Density from core measurements in gm/cc (red diamond)
RHOCORE Grain density from core measurements in gm/cc (brown x)
RHOB Density in gm/cc
MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

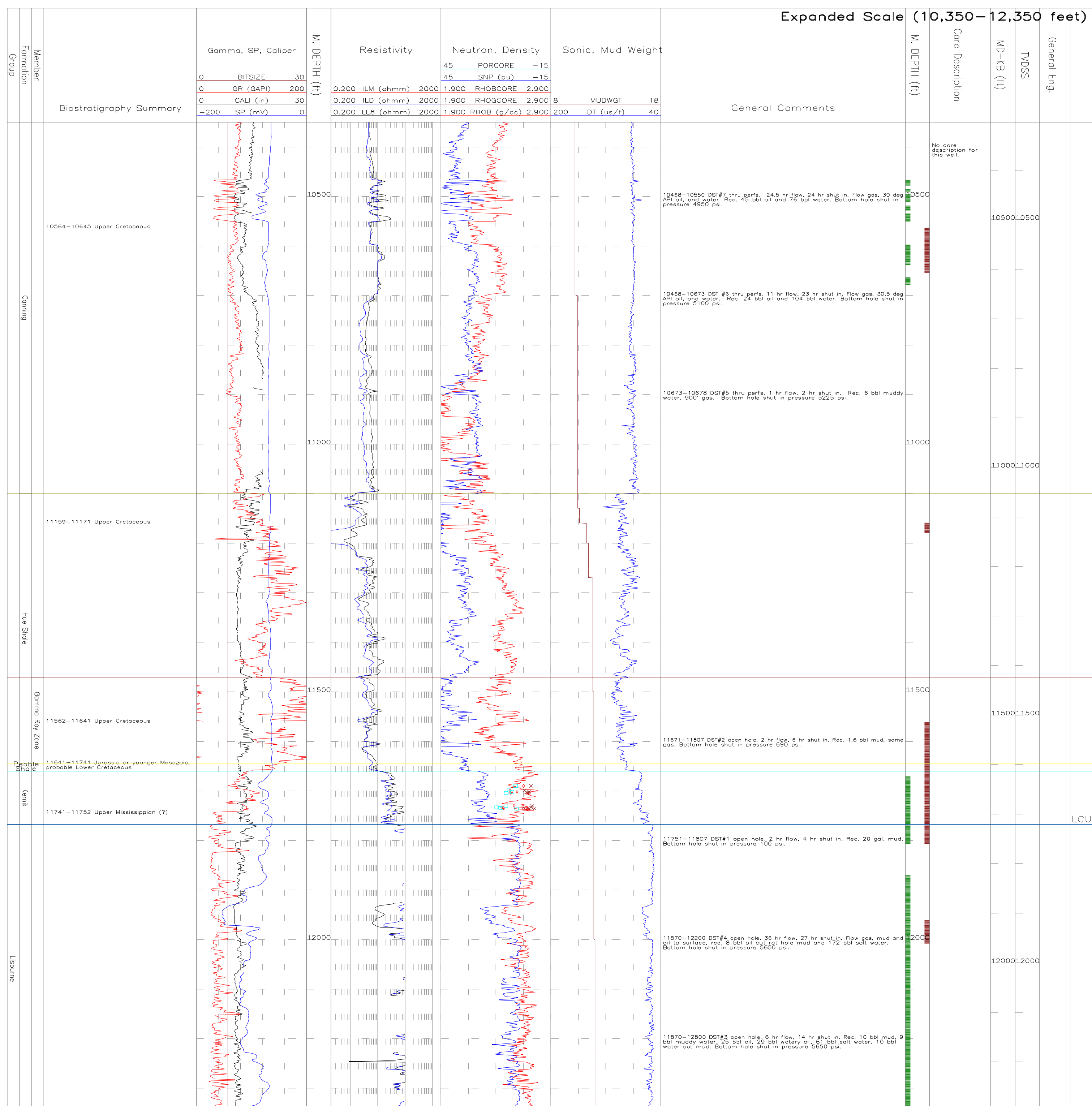
M. DEPTH Measured depth along hole in feet
olive bars Drill stem and production test intervals
brown bars Cored intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTCor Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
est estimated
F degrees Fahrenheit
cu/ft cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
OCM Gas-cut mud
GOR Gas-oil ratio
hr hour
HHP Initial hydrostatic pressure
ISP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md minutes
perfs perforations
ppm parts per million
press pressure
psi pressure
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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General Eng.

Core Description

MD-KB (ft)

TVSS

10500 10500

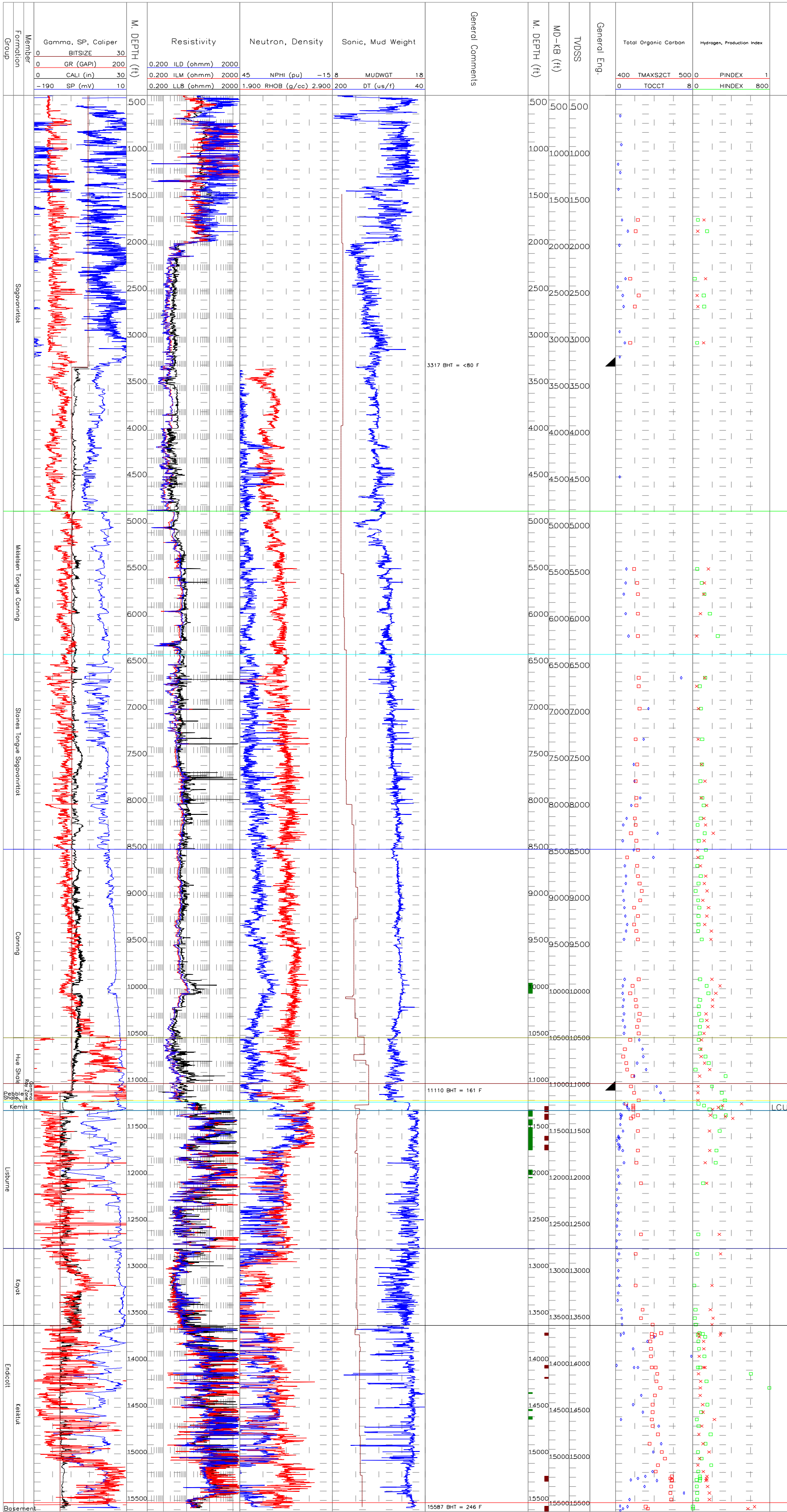
11000 11000

11500 11500

12000 12000

LCU

PLATE WL30. LOGS, CORE DATA, AND OTHER DATA FROM WEST MIKELSEN STATE 1



West Mikelsen State 1 (Arco)
Compiled by P.H. Nelson, J.E. Klier, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado
API 050-029-20278
70 18224 north latitude, 147.37834 west longitude
Kelly Blowing elevation: 51 feet above sea level
Ground elevation: 25 feet
Total depth: 15,620 feet
Completion year: 1978
No directional survey in file.

Drill and test summary: Drilled to basement. Tested Kestui but no fluids recovered, rec. water with small quantities gas and oil from Lisburne, rec. 26API oil at 302 bopd from Canning.

Cored intervals and feet recovered:
1 11,236-266 29 Kestui Gs
2 11,266-309 43 Kestui Ss (39), Lisburne Op (4)
3 11,309-323 14 Lisburne Op
4 11,349-409 60 Lisburne Op
5 11,585-631 46 Lisburne Op
6 11,681-733 52 Lisburne Op
7 13,700-726 26 Kestui
8 13,726-748 22 Kestui
9 14,048-079 31 Kestui
10 14,177-190 15 Kestui
11 15,208-295 87 Kestui
12 15,563-620 57 Pre-Max. basement

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Published reports and papers:
U.S. Geol. Survey Bulletin 1778: 1987, K.J. Bird and L.B. Magoon, eds.: Plate I. Well correlation sections showing selected data, northeastern Alaska gamma-ray, resistivity, stratigraphy, and well tests.
Blect, S. and J. Jones, Bureau of Geology, Prior to Drilling, in Sandstones of the Kestui Fm (Mississippian), North Slope of Alaska, AAPG Bull. v.74, n. 9, Sept 1990 p. 1371-1385. Thin section photo, SEM photo, cathodolum data...

Data reports available from State of Alaska Geologic Materials Center:
25. Geochemical Analysis (Total Organic Carbon, Rock-Eval Pyrolysis, Kerogen Type, Winline Reflectance)
53a. Scanning Electron Micrographs of Selected Radiolarians And Quartz Sand Grains
183. Geochronological Data for an Oil Show Project That Included the Following
10 North Slope Well Materials: Arco Alaska Inc. West Mikelsen State No. 1, Washed Cuttings (9970-10030; 10030-10070; and 11210-11260)
193. 587/56 Nitrogen Analyses of the Following North Slope Well Materials: Arco Alaska Inc. West Mikelsen State No. 1, Core Chips (15,569)

Materials available from State of Alaska Geologic Materials Center:
Famnetiferous Slides
Kerogen Slides
Palymineral Slides
Petrographic Thin Sections of Core
Petrographic Thin Sections of Dip Samples
Winline Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):
BT/SZC BT size in inches
GR Gamma ray in API units
CAU Caliper in inches
SP Spontaneous potential in millivolts
ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
LLB Laterolog-B resistivity in ohm-m
NPHE Neutron porosity in percent
RWOB Density in gm/cc
MUWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot
M. DEPTH Measured depth along hole in feet
dsh-bop Drift stem and production test intervals
bop-bop Core intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVDESB True vertical depth subsea in feet

GENERAL ENG. Casing shoe
TMAX82CT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent
PINDEX Production index = 51/(51+52)
HNINDEX Hydrogen index = 100-52/70C

Abbreviations:
API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu-ft cubic feet
deg degree
DST Drill stem test
est. estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSP Final shut-in pressure
FT(M) Friction track age and standard deviation in Ma, mean age
FT(D) Friction track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISP Initial shut-in pressure
LCU Lower Cambrian Unconformity
MCFD thousand cubic feet per day
MCFG million cubic feet per day
mi miles
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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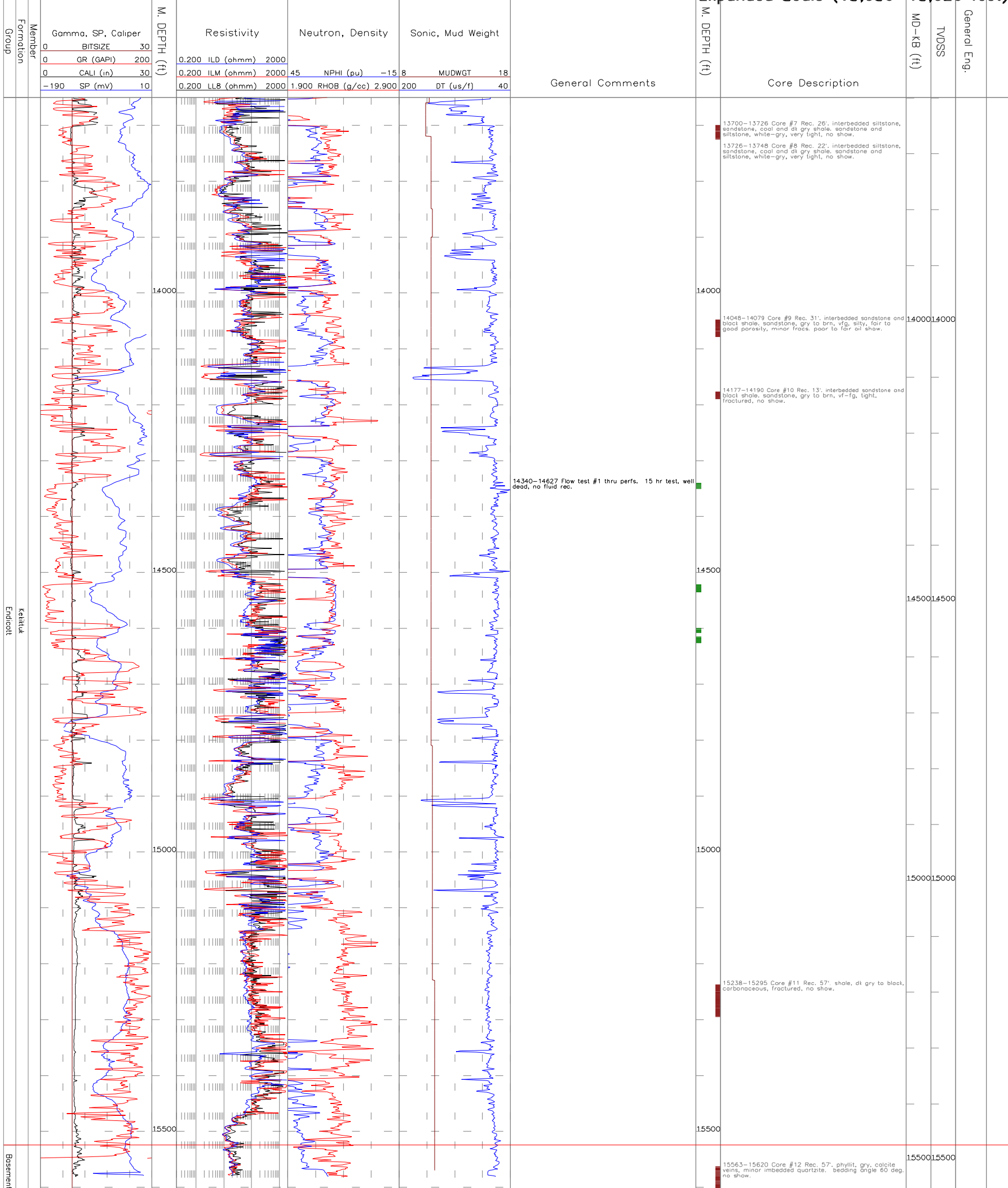
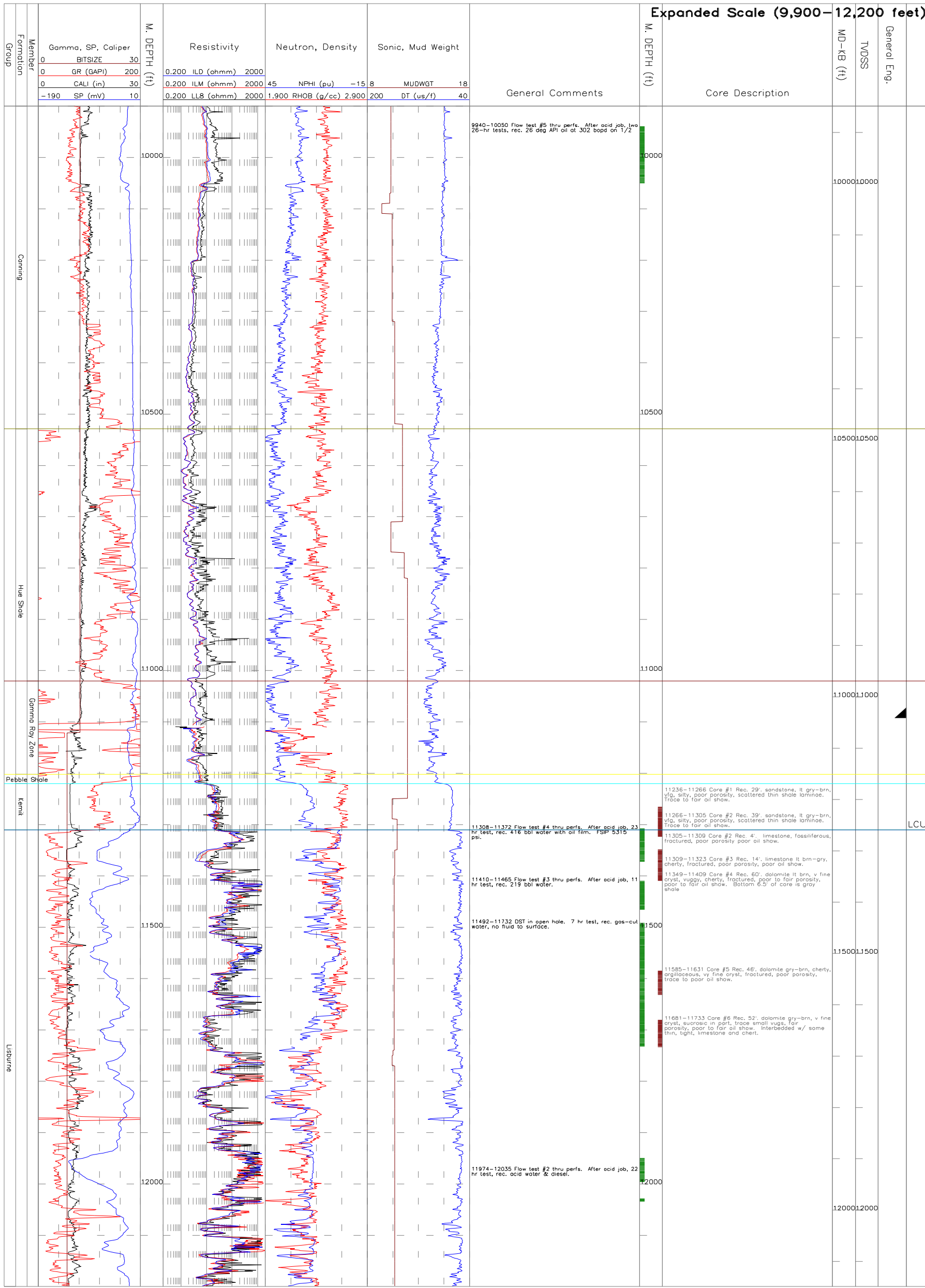
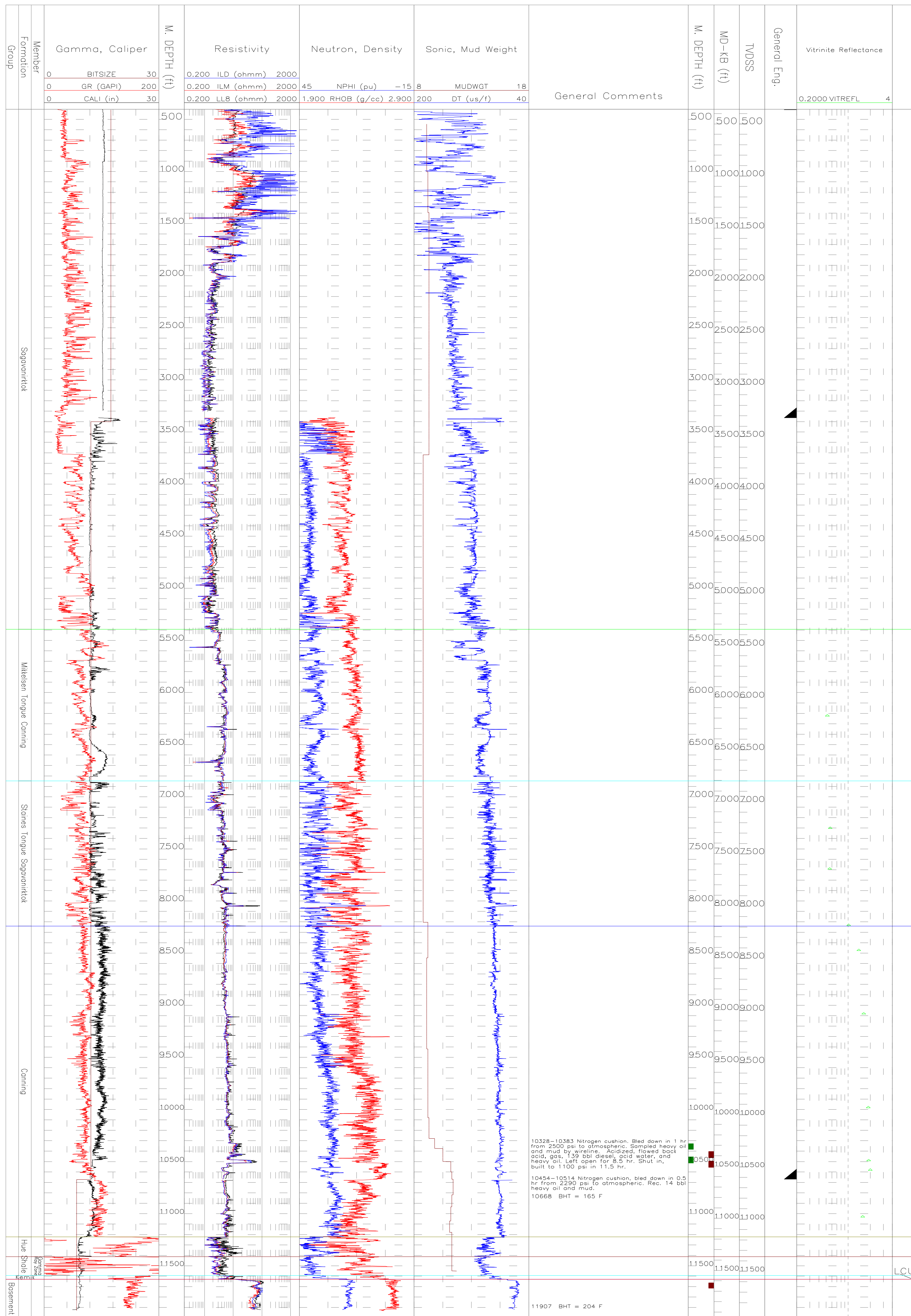


PLATE WL31. LOGS, CORE DATA, AND OTHER DATA FROM WEST MKKELSEN UNIT 2



West Mikkelsen Unit 2 (Arco)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Gberson
U.S. Geological Survey, Denver, Colorado

API 50-029-20357
70.221825 north latitude, 147.19002 west longitude
Kelly Bushing elevation: 44 feet above sea level
Ground elevation: 7 feet
Total depth: 11,930 feet
True vertical depth: 11,920 feet
Completion year: 1979

Drill and Test Summary: Drilled to basement. Recovered heavy oil from Canning Formation.

Cored intervals and feet recovered:

- 10376-10404 27 siltstone and silty sandstone, Canning Fm.
- 10409-10464 60 siltstone and silty sandstone, Canning Fm.
- 10496-10555 59 sandstone and siltstone, Canning Fm.
- 11664-11714 49 quartzite and argillite, basement rocks

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Data reports available from State of Alaska Geologic Materials Center:

167. Vitrinite Reflectance Data of Cuttings (6160'-11030') from The Arco Alaska Inc. W. Mikkelsen Unit No.2 Well
175. A Foraminiferal and Palynological Analysis of Composites Core Chips over the Interval 10512-10554' from the Arco Alaska Inc. West Mikkelsen Unit No.2 Well

Materials available from State of Alaska Geologic Materials Center:

- Foraminifera Slides
- Geogen Slides
- Palynologic Slides
- Petrographic Thin Sections of Core
- Petrographic Thin Sections of Ditch Samples
- Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):

BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches

ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
LLB Laterolog-B resistivity in ohm-m

NPHI Neutron porosity in percent
RHOB Density in gm/cc

MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds

M. DEPTH Measured depth along hole in feet
olive bars Drill stem and production test intervals
brown bars Cored intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe
VITREFL Vitrinite reflectance, mean value in percent

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSP Final shut-in pressure
FTAC(M) Fission tract age and standard deviation in Ma, mean age
FTAC(P) Fission tract age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG million cubic feet per day
md millidarcies
min minutes
perf perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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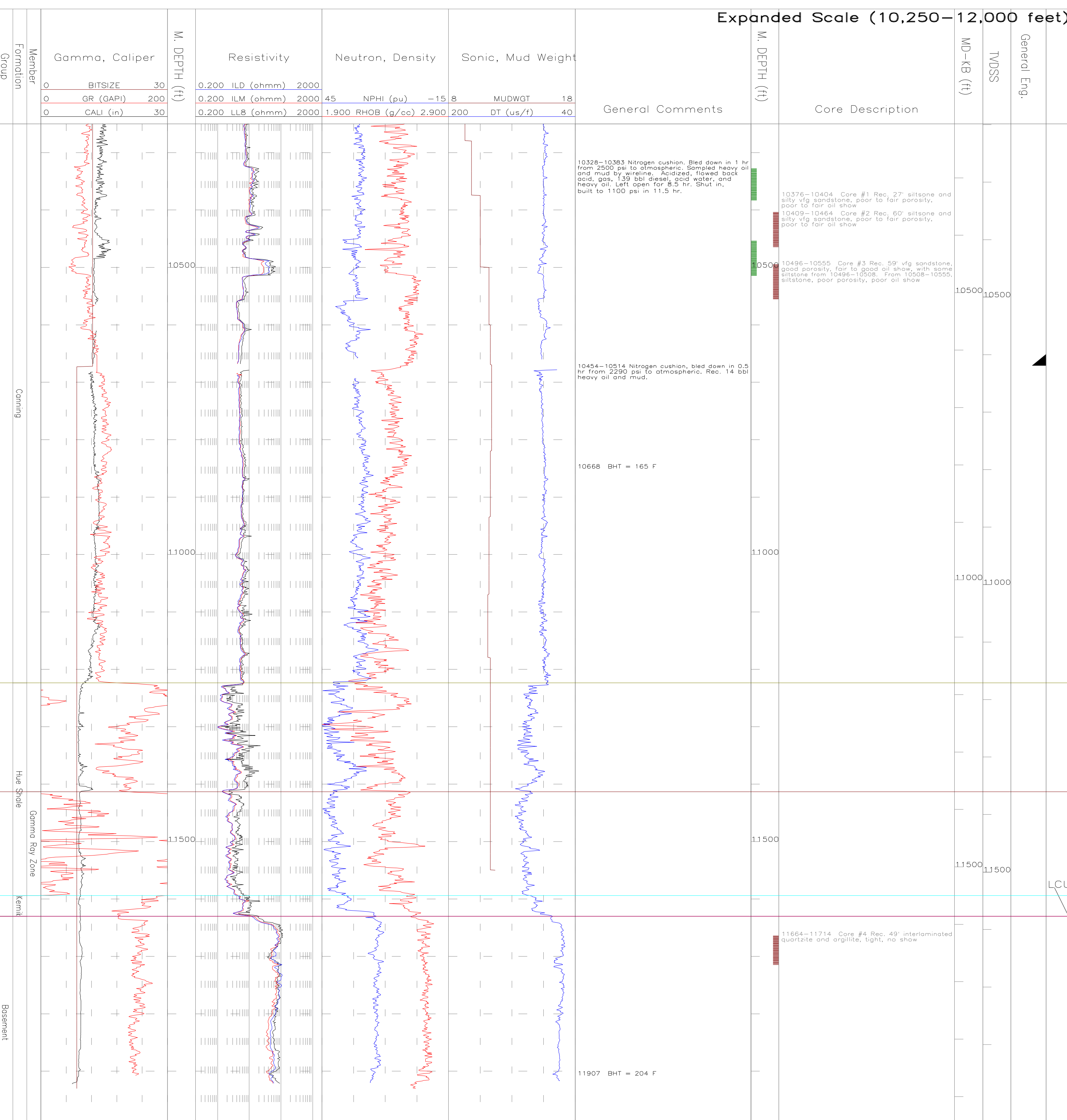
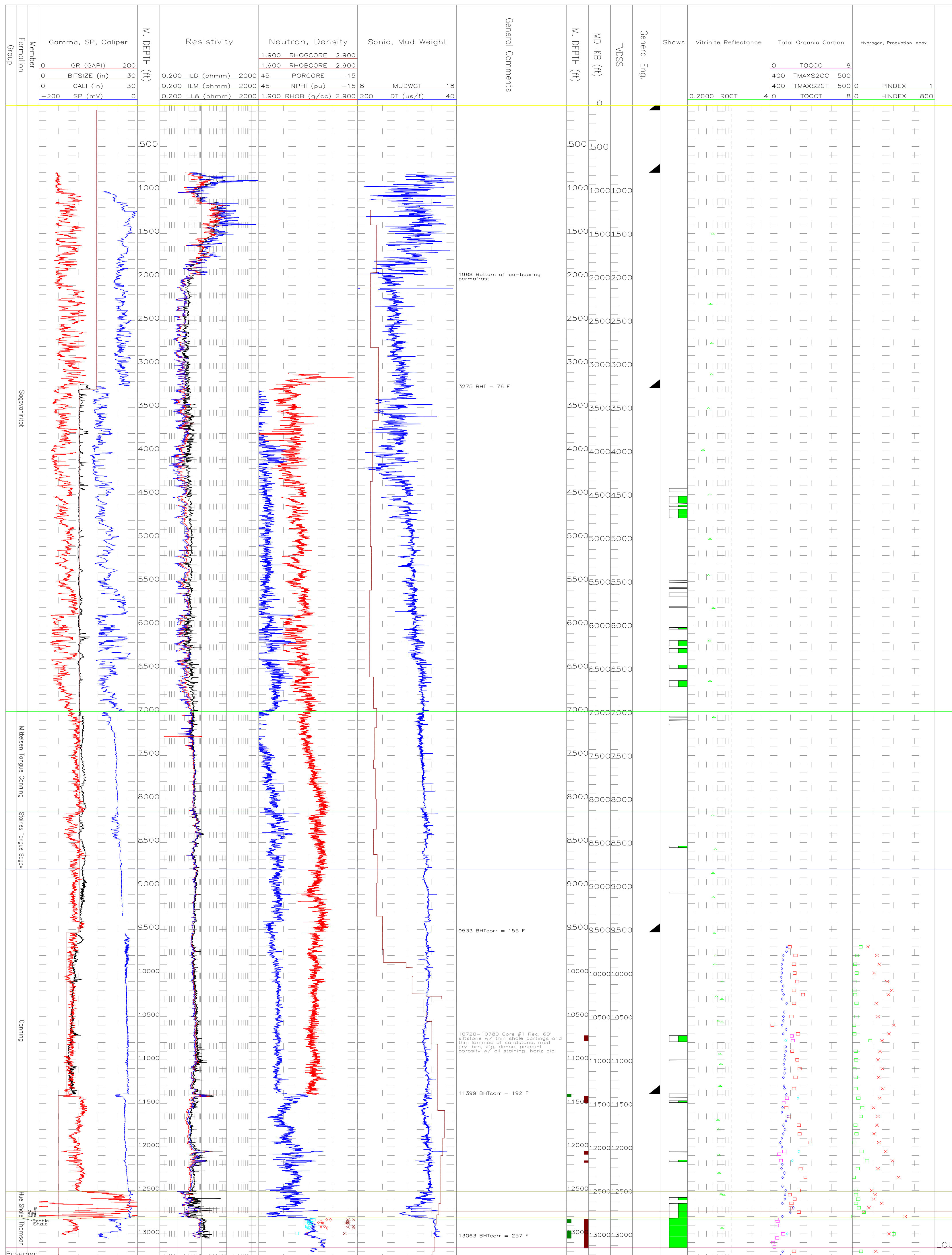


PLATE WL33. LOGS, CORE DATA, AND OTHER DATA FROM POINT THOMSON UNIT 1



Point Thomson Unit 1 (Exxon)
Compiled by P.H. Nelson, J.E. Kibler, and C.P. Olberson
U.S. Geological Survey, Denver, Colorado

API 50-089-20005
70.1741528 north latitude, 146.33739 west longitude
Kelly Bushing elevation: 33 feet above sea level
Ground elevation: 11 feet
Total depth: 13,288 feet
Completion year: 1977
No directional survey in file.

Drill and Test Summary: Drilled to basement. Tested 44API oil at 130 bopd and 2250 MCFD gas from Canning turbidites at 11,392-11,421. Tested 45API oil at 170 bopd and 3860 MCFD gas from Thomson sand at 12,834-12,874. Tested 18API oil at 2285 bopd and 13307 MCFD gas from Thomson sand at 12,963-13,050.

Cored Intervals and Feet Recovered:

1	10,720-780	60	Canning Formation siltst
2	11,420-455	29	Canning Formation siltst
3	11,455-492	37	Canning Formation siltst
4	12,052-086	34	Canning Formation siltst
5	12,158-178	19	Canning Formation sh & sst
6	12,830-890	60	Thomson Ss
7	12,890-950	60	Thomson Ss
8	12,950-13,009	59	Thomson Ss
9	13,009-069	59	Thomson Ss
10	13,069-128	59	Thomson Ss
11	13,128-128	30	Thomson Ss
12	13,158-163	5	Thomson Ss

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Published reports and papers:

U.S. Geol. Survey Bulletin 1778; 1987, K.J. Bird and L.B. Magoon, eds.: Plate 1, Well correlation sections showing selected data, northeastern Alaska: gamma-ray, resistivity, stratigraphy, and well tests.
Magoon, L.B., and 4 others, Chap. 11, Figure C in Appendix 11.1 and Figure 11.12 and Lapatin diagram in Figure 11.13.
Gaulier, D.L., and 2 others, Relationship of mineralogy, thermal maturity, and geopressure in wells of the Point Thomson Area, Chap. 13, Figure 13.1; organic-matter content, clay analyses, and vitrinite reflectance in other Tables and Figures.

Data reports available from State of Alaska Geologic Materials Center:

- Geochemical Analysis (Total Organic Carbon-Rock-Eval, Vitrinite Reflectance for Pt Thomson Unit #S 1 and 2 Only, Total Oxides and Total Silica S.E. Eiten #1 Only)
- Geochemical Analysis (Total Organic Carbon, Rock-Eval Pyrolysis, Kerogen Type, Vitrinite Reflectance)
- X-Ray Diffraction Mineral Percentages
- Scanning Electron Micrographs of Selected Samples from Paleozoic Through Tertiary Sandstones, North Slope, AK
- Core Permeability Determinations and Other Related Physical Analyses of the Following 20 North Slope Wells: Exxon Corp., Pt. Thomson Unit #1
- Capillary Pressure Test Data for the Following North Slope Wells: Exxon Corp., Point Thomson Unit No. 1

Materials available from State of Alaska Geologic Materials Center:

Foraminifera Slides
Kerogen Slides
Polynoidal Slides
Petrographic Thin Sections of Core
Petrographic Thin Sections of Ditch Samples
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):

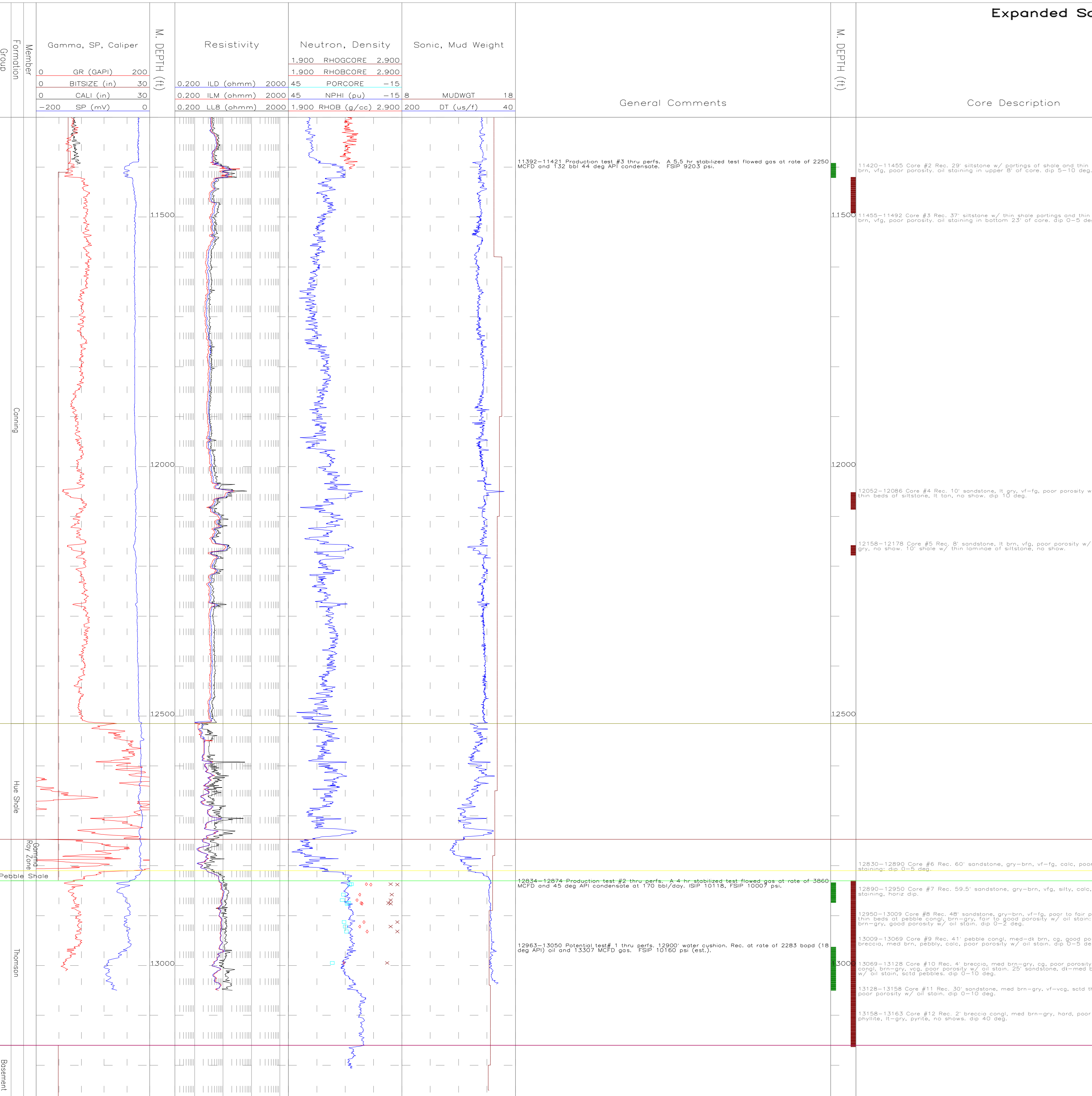
GR Gamma ray in API units
BITSIZE Bit size in inches
CALI Coliper in inches
SP Spontaneous potential in millivolts
ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
LLB Laterolog-B resistivity in ohm-m
RHOGCORE Grain density from core measurements in gm/cc (brown x)
RHOCORE Density from core measurements in gm/cc (red diamond)
PORCORE Porosity from core measurements in percent (cyan square)
NPH Neutron porosity in percent
RHOB Density in gm/cc
MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot
M. DEPTH Measured depth along hole in feet
olive bars Drill stem and production test intervals
brown bars Cored intervals
MC-IB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet
GENERAL ENG Casing shoe
Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent
ROCT Vitrinite reflectance, mean value from cuttings in percent
TOCCC Total organic carbon from conventional core in weight percent
TMAXS2CC Maximum temperature (deg C) from conventional core from Rock Eval
TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent
PINDEX Production index = S1/(S1+S2) from Rock Eval
HINDEX Hydrogen index = 100+S2/TOC from Rock Eval

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est. estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
HP Initial hydrostatic pressure
ISP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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Expanded Scale (11,300-13,280 feet)



11392-11421 Production test #3 thru corfs., 4.5-5 hr stabilized test flowed gas at rate of 2250 MCFD and 132 bbl 44 deg API condensate. FSP 9203 psi.

11420-11445 Core #2 Rec. 2P silstone w/ partings of shale and thin laminae of sandstone, s brn, vfg, poor porosity, oil staining in upper B' of core, dip 5-10 deg.

11445-11492 Core #3 Rec. 2P silstone w/ thin shale partings and thin laminae of sandstone, s brn, vfg, poor porosity, oil staining in bottom 2' of core, dip 0-5 deg.

12092-12096 Core #4 Rec. 10 sandstone, s grn, v-fg, calc, poor porosity w/ oil stain; 24 shale w/ thin beds of silstone, s tan, no show, dip 10 deg.

12158-12178 Core #5 Rec. 8 sandstone, s brn, vfg, poor porosity w/ oil stain; 2 silstone, s grn, no show, 10 shale w/ thin laminae of silstone, no show.

12830-12890 Core #6 Rec. 60 sandstone, gry-brn, v-fg, calc, poor to fair porosity w/ oil staining, hard dip.

12890-12950 Core #7 Rec. 59.5 sandstone, gry-brn, vfg, calc, calc, poor porosity w/ oil staining, hard dip.

12950-13009 Core #8 Rec. 48 sandstone, gry-brn, v-fg, calc, poor to fair porosity w/ oil stain, beds thin beds of silstone, calc, s tan, vfg, poor porosity w/ oil stain; 11 shale core, s tan, vfg, poor porosity, oil stain, dip 0-5 deg.

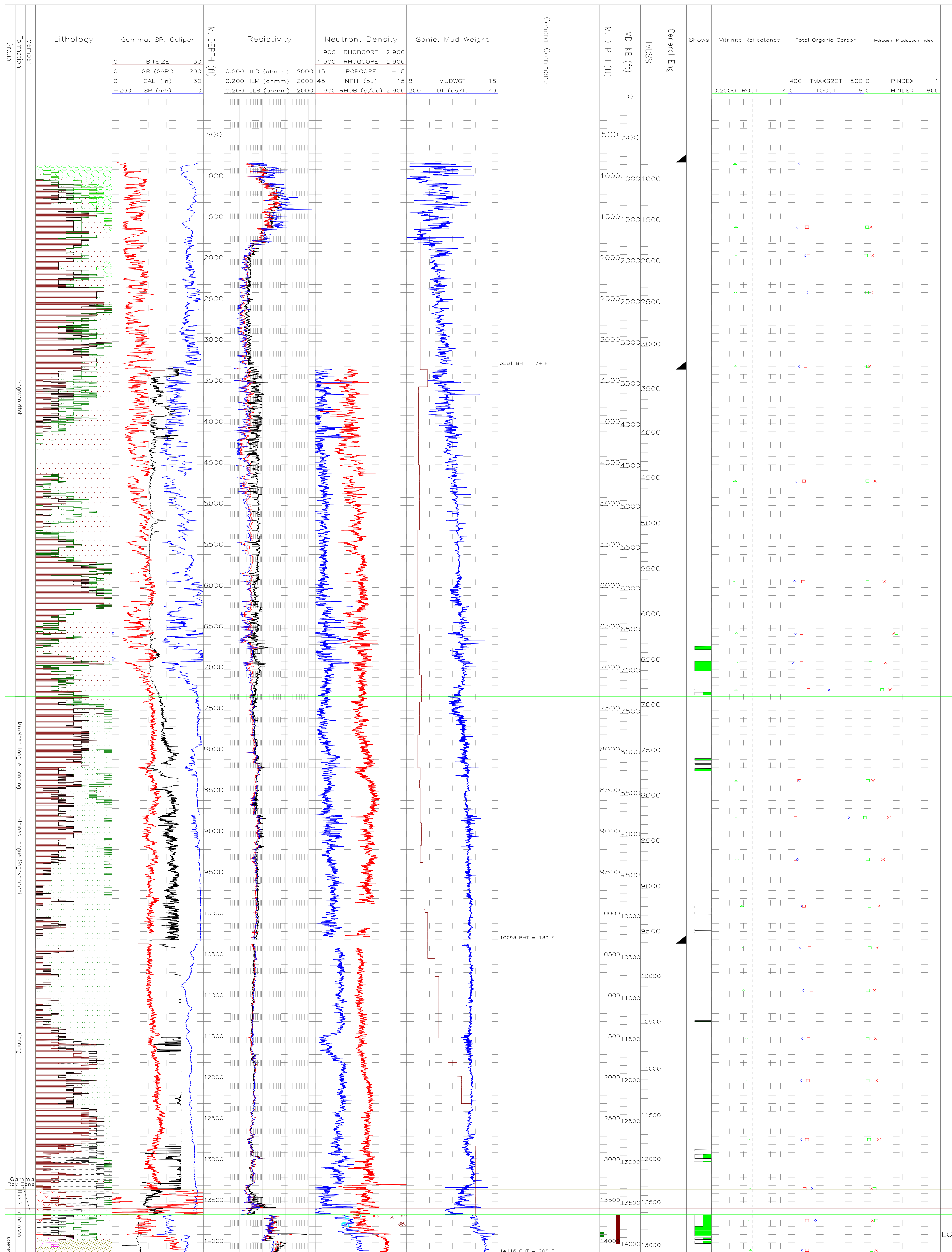
13009-13050 Core #9 Rec. 41 breccia cong, med brn, calc, good porosity w/ oil stain, 17.5 breccia, med brn, calc, calc, poor porosity w/ oil stain, dip 0-5 deg.

13050-13128 Core #10 Rec. 4 breccia, med brn-gr, calc, poor porosity w/ oil stain, 30 pebble cong, brn-gr, calc, poor porosity w/ oil stain, 25 sandstone, ol-med brn, v-fg, calc, poor porosity w/ oil stain, calc pebbles, dip 0-10 deg.

13128-13158 Core #11 Rec. 30 sandstone, med brn-gr, v-fg, calc thin beds of pebble cong, poor porosity w/ oil stain, dip 0-10 deg.

13158-13163 Core #12 Rec. 2 breccia cong, med brn-gr, hard, poor porosity w/ oil stain, 3 shaly, s-gr, sbrn, no show, dip 40 deg.

PLATE WL35. LOGS, CORE DATA, AND OTHER DATA FROM POINT THOMSON UNIT 3



Point Thomson Unit 3 (Exxon)
Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-089-20007
70,172,3489 north latitude, 146,2528 west longitude
Kelly Bushing elevation: 36 feet above sea level
Ground elevation: 3 feet
Total depth: 14,125 feet
True vertical depth: 13,151 feet
Completion year: 1979

Drill and Test Summary: Drilled to basement. Tested 38API oil at 476 bopd and 6348 MCFD gas from Thomson sand at 13,872-13,885'.

Cored intervals and feet recovered:
1 13,665-695 28 Thomson Ss
2 13,695-725 28 Thomson Ss
3 13,725-756 31 Thomson Ss
4 13,756-811 55 Thomson Ss
5 13,811-871 60 Thomson Ss
6 13,871-886 15 Thomson Ss
7 13,886-894 8 Thomson Ss
8 13,894-955 60 Thomson Ss (34') & basement argillite (26)
9 13,955-14,014 59 Basement

Well logs and other paper records: Alaska Gas and Oil Conservation Commission.

Published reports and papers:
U.S. Geol. Survey Bulletin 1778; 1987, K.J. Bird and L.B. Magoon, eds.: Magoon, L.B., and 4 others, Chap. 11, Figure E in Appendix 11.1, C and Figure 11.12.
Craig, J.D., Sherwood, K.W., and Johnson, P.P., 1985, Geologic report for the Beaufort Sea Planning Area, Alaska, Minerals Management Service OCS Report MMS 85-01111, 192 p., and 11 plates. Plate 10 gives geochemical data for Pt Thomson no. 3.

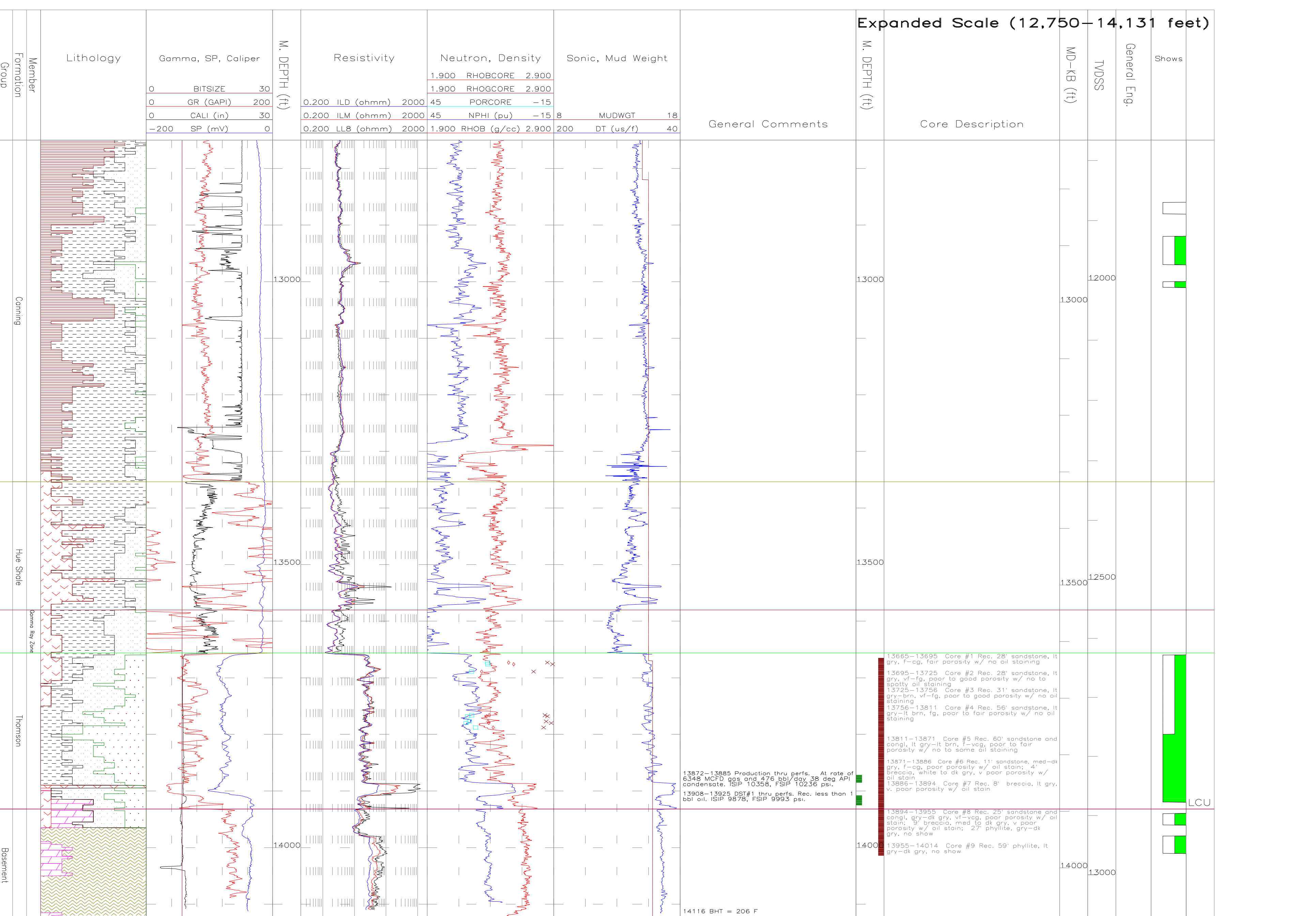
Data reports available from State of Alaska Geologic Materials Center:
17. Source Rock Analysis (Kerogen Data, Bitumen Geochemistry Vitrinite Reflectance)
45. X-Ray Diffraction Mineral Percentages
70. Core Permeability Determinations and Other Related Physical Properties of the Following 20 North Slope Wells: Exxon Corp. Point Thomson Unit No. 3

Materials available from State of Alaska Geologic Materials Center:
Foraminifera Slides
Kerogen Slides
Palylogenic Slides
Petrographic Thin Sections of Core
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):
LITHOLOGY From mudlog
BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts
ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
LLB Laterolog-8 resistivity in ohm-m
RHOCORE Density from core measurements in gm/cc (red diamond)
RHOGCORE Grain density from core measurements in gm/cc (brown x)
PORCORE Porosity from core measurements in percent (cyan square)
NPHI Neutron porosity in percent
RHOB Density in gm/cc
MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot
M. DEPTH Measured depth along hole in feet
olive bars Drill stem and production test intervals
brown bars Cored intervals
MD-EB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet
GENERAL ENG Casing shoe
Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent
ROCT Vitrinite reflectance, mean value from cuttings in percent
TMAXSCT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent
PINDEX Production index = $S1/(S1+S2)$
HINDEX Hydrogen index = $100*S2/TOC$

Abbreviations:
API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu/ft cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSP Final shut-in pressure
FTAM Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFD thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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LITHOLOGY PATTERNS

- Clay, claystone
- Siltstone
- Shale
- Carbonaceous shale
- Coal
- Sandstone
- Conglomerate
- Chert
- Shaly limestone
- Limy shale
- Limestone
- Dolomite
- Tuff
- Argillite

Expanded Scale (12,750-14,131 feet)

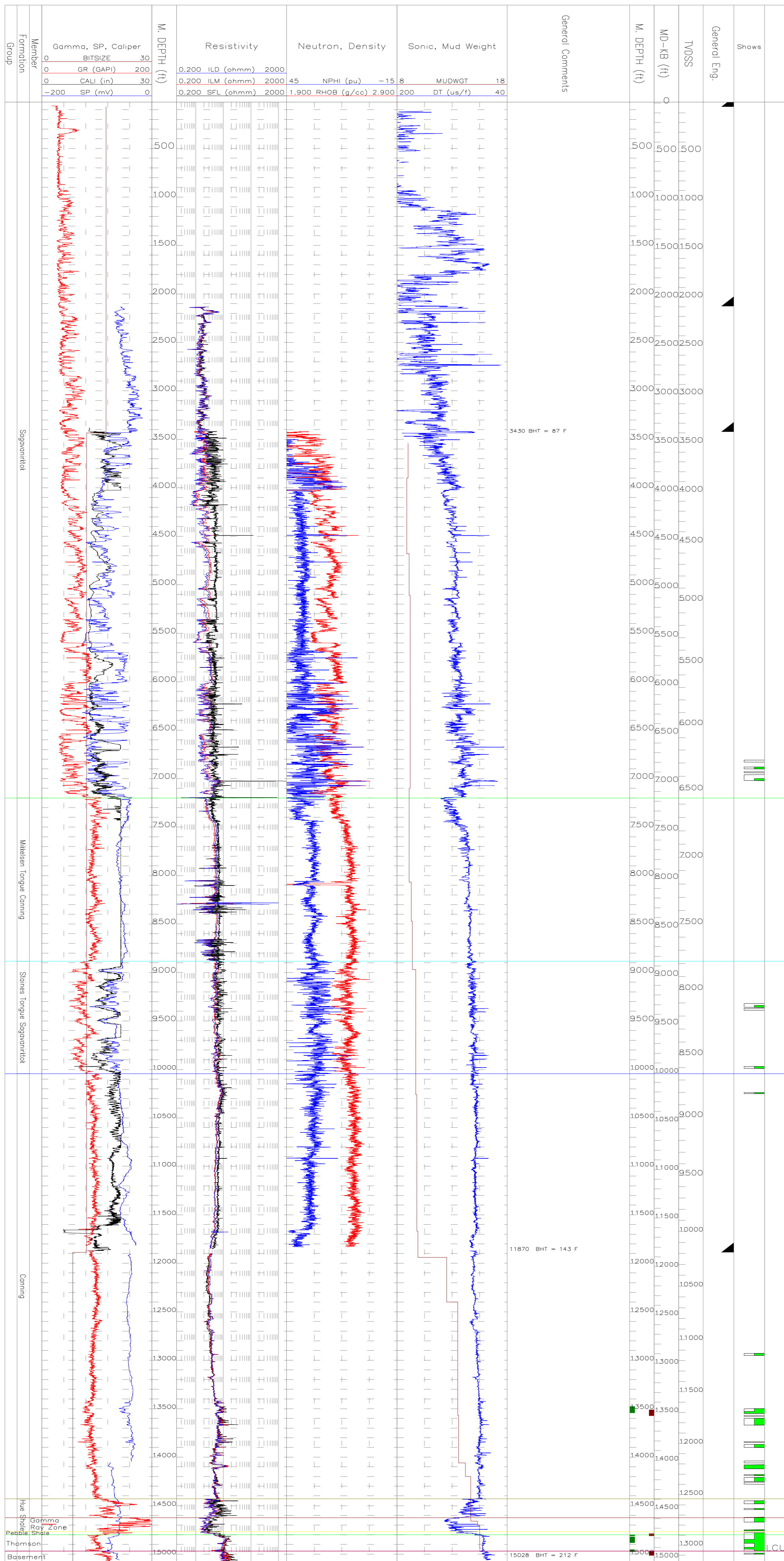
Core Description

13660-13695 Core #1 Rec. 28 sandstone, lt gray, fine, fair porosity w/ no oil staining.
13695-13725 Core #2 Rec. 29 sandstone, lt gray, fine, poor to good porosity w/ no oil staining.
13725-13756 Core #3 Rec. 31 sandstone, lt gray, fine, v-lg, poor to good porosity w/ no oil staining.
13756-13811 Core #4 Rec. 30 sandstone, lt gray, fine, poor to fair porosity w/ no oil staining.
13811-13871 Core #5 Rec. 60 sandstone and siltstone, lt gray, fine, poor to fair porosity w/ no oil staining.
13871-13886 Core #6 Rec. 11 sandstone, medium gr., fine, poor porosity w/ oil stain, 4' argillite, white to dk gray, v. poor porosity w/ no oil stain.
13886-13894 Core #7 Rec. 8 breccia, lt gray, v. poor porosity w/ oil stain.
13894-13955 Core #8 Rec. 29 sandstone and siltstone, gray, fine, average poor porosity w/ oil stain, 2' dk gray, gray-dk gray, no stain.
13955-14014 Core #9 Rec. 59 phyllite, lt gray-dk gray, no stain.

13872-13885 Production thru perf. at rate of 4248 MCFD gas and 476 bopd oil. @ dog API condensate. FSP 103.56, FHP 103.56 psi.
1396-13978 gas @ 1000 psi. Rec. less than 1 bbl oil. FSP 98.76, FHP 99.93 psi.

14116 BHT = 206 F

PLATE WL36. LOGS, CORE DATA, AND OTHER DATA FROM POINT THOMSON UNIT 4



Point Thomson Unit 4 (Exxon)
Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado
API 50-089-20009
70.1779222 north latitude, 146.60934 west longitude
Kelly Bushing elevation: 34 feet above sea level
Ground elevation: 8 feet
Total depth: 15,074 feet
True vertical depth: 13,194 feet
Completion year: 1981

Drill and Test Summary: Drilled to basement. Recovered oil and gas-cut mud from Canning turbidites at 13,478-13,542';

Cored intervals and feet recovered:

1	13,512-572	60	Canning Fm (sst & sh)
2	14,791-799	8	pebble shale unit
3	14,799-811	12	pebble shale unit
4	14,973-15013	40	basement

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Data reports available from State of Alaska Geologic Materials Center:
46. Shale Bulk Density Analysis

Materials available from State of Alaska Geologic Materials Center:
Foraminifera Slides
Kerogen Slides
Polynologic Slides
Petrographic Thin Sections of Core
Petrographic Thin Sections of Ditch Samples

Explanation of curves and symbols (from left to right):
BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts
ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
SFL Spherically focused resistivity in ohm-m
NPHI Neutron porosity in percent
RHOB Density in gm/cc
MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot
M. DEPTH Measured depth along hole in feet
olive bars Drill stem and production test intervals
brown bars Cored intervals
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est. estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSIP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG million cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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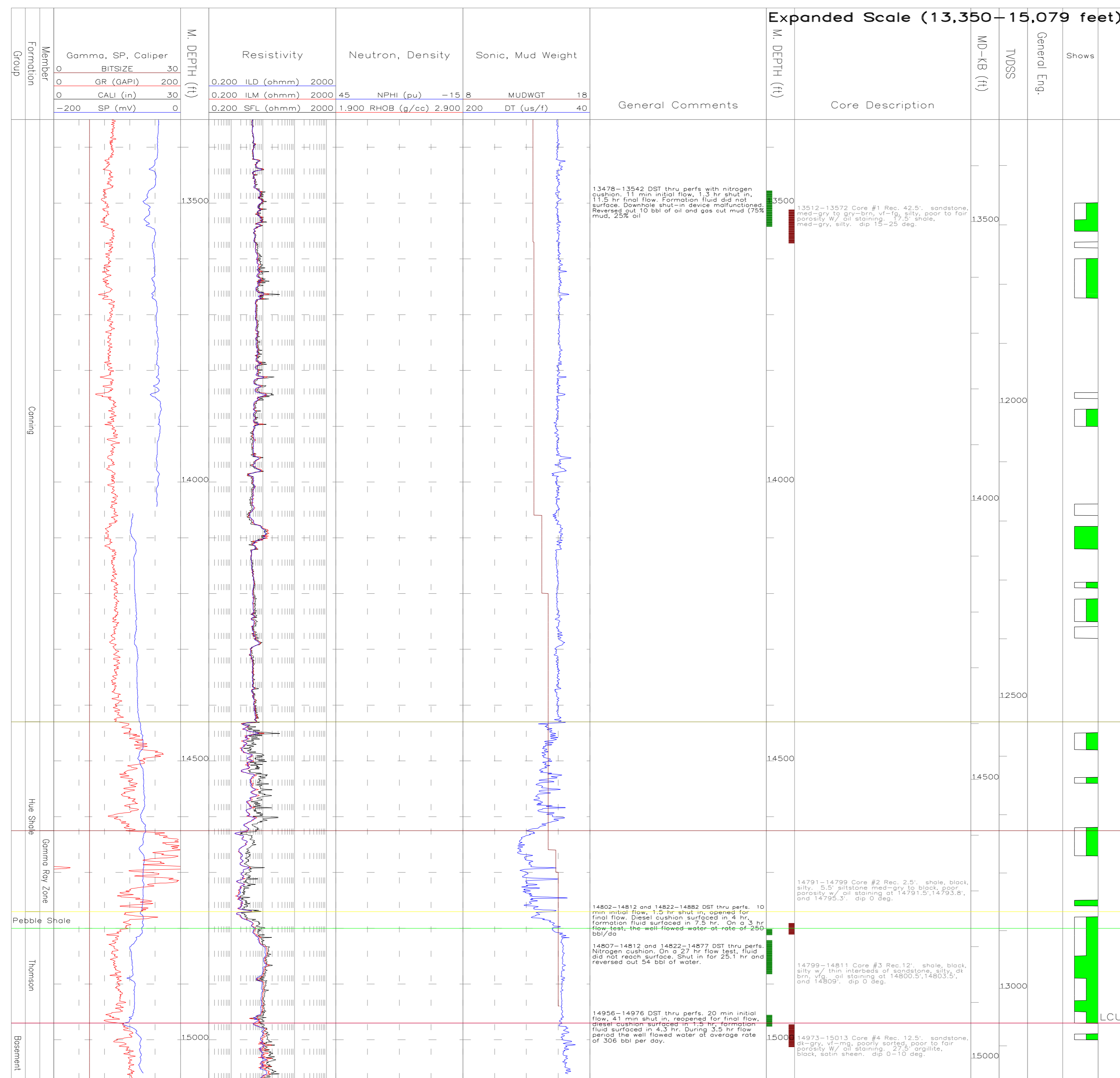
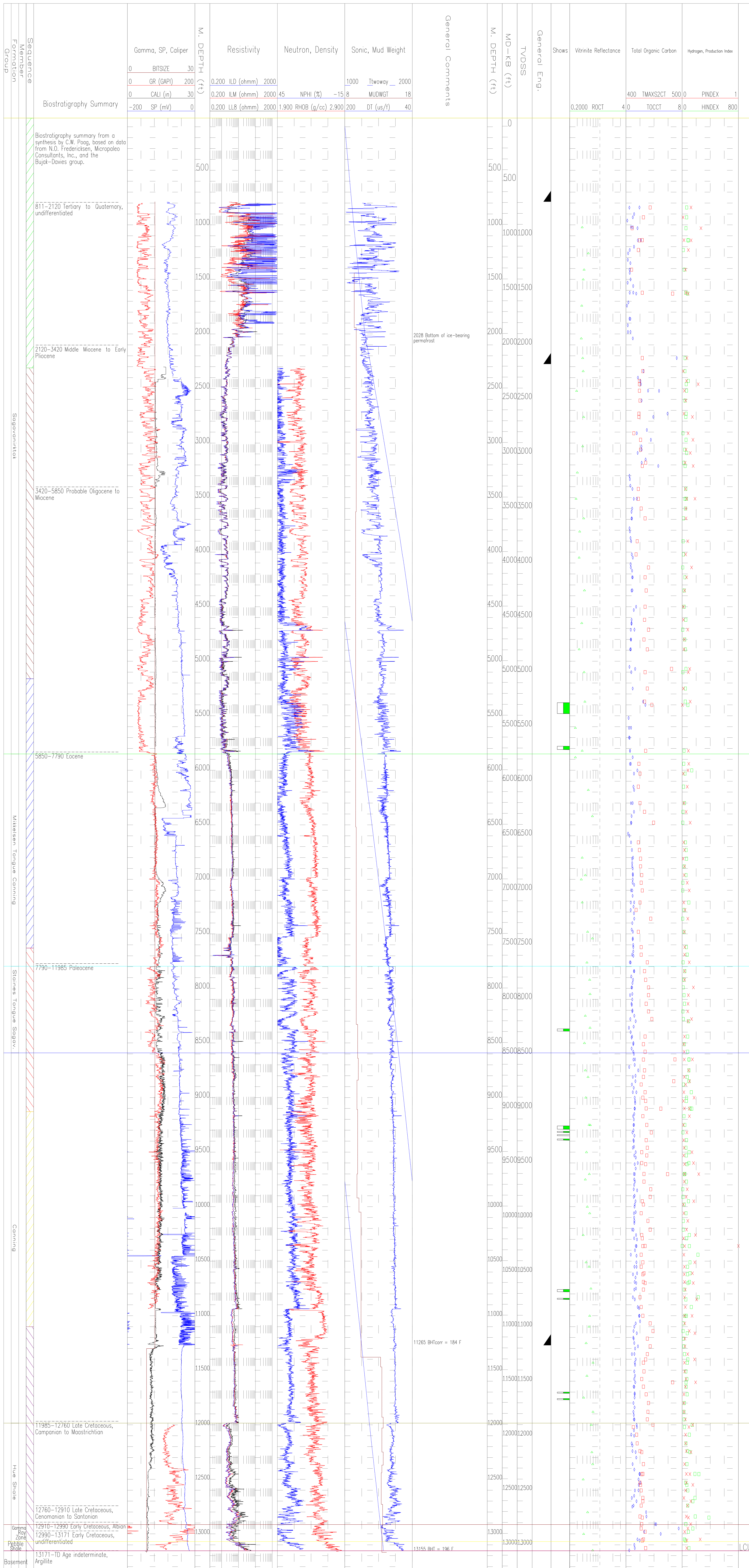


PLATE WL37. LOGS, CORE DATA, AND OTHER DATA FROM WEST STAINES STATE 2



West Staines State 2 (Mobil)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Gberson
U.S. Geological Survey, Denver, Colorado

API 50-089-20004
70.11053 north latitude, 146.41637 west longitude
Kelly Bushing elevation: 95 feet above sea level
Ground elevation: 75 feet
Total depth: 13,171 feet
True vertical depth: 13,169 feet
Completion year: 1975

Drill and Test Summary: Drilled to basement. No hydrocarbons recovered.

no cores

Well logs and other paper records: Alaska Oil and Gas Conservation Commission.

Published reports and papers:

U.S. Geol. Survey Bulletin 1778; 1967, K.J. Bird and L.B. Magoon, eds.: Plate I, Well correlation sections showing selected data, northeastern Alaska: gamma-ray, resistivity, stratigraphy, and well tests. Bird, K.J. and Molenaar, C.M., Stratigraphy, Chap 5, Figure 5.10. Magoon, L.B., and 4 others, Chap. 11, Figure B in Appendix 11.1 and Figure 11.12.
Craig, J.O., Sherwood, K.W., and Johnson, P.P., 1985, Geologic report for the Beaufort Sea Planning Area, Alaska, Minerals Management Service OCS Report MMS 85-01111, 192 p. and 11 plates. Plate 8 gives geochemical data.

Data reports available from State of Alaska Geologic Materials Center:

9. Report on Rock-Eval Data for Eight North Slope Wells (05/13/82) Mobil Oil Corp. W. Staines St. #2
10. Report on Total Organic Carbon and Vitrinite Reflectance for Eight North Slope Wells (05/10/82) W. Staines St. #2
25. Geochemical Analysis (Total Organic Carbon, Rock-Eval Pyrolysis, Kerogen Type, Vitrinite Reflectance) W. Staines #2
183. Geochemical Data for an Oil Show Project That Included the Following 10 North Slope Well Materials: West Staines State No.2, Washed Cuttings (13070-13110)

Materials available from State of Alaska Geologic Materials Center:

Foraminifera Slides
Kerogen Slides
Palynologic Slides
Petrographic Thin Sections of Ditch Samples
Vitrinite Reflectance Slides/Plugs

Explanation of curves and symbols (from left to right):

SEQUENCES

A (green), B (brown), C (blue), D (red), E (yellow), F&G (purple)

BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts
ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
LL8 Laterolog-8 resistivity in ohm-m
NPHI Neutron porosity in percent
RHOB Density in gm/cc
TIW Two-way travel time in milliseconds (top interval, 0-1000 ms; second interval 1000-2000 ms; etc)
MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

M. DEPTH Measured depth along hole in feet
MD-KB Measured depth minus Kelly Bushing in feet
TVOSS True vertical depth subsea in feet
GENERAL ENG Casing shoe

Shows Hydrocarbon shows (indications).
No shading: questionable, no fluorescence in solvent
Half shading: spotted staining, fluorescence in solvent
Full shading: even staining, fluorescence in solvent
ROCT Vitrinite reflectance, mean value from cuttings in percent
TMAXS2CT Maximum temperature (deg C) from cuttings from Rock Eval
TOCCT Total organic carbon from cuttings in weight percent
PINDEX Production index = S1/(S1+S2)
HINDEX Hydrogen index = 100*S2/TOC

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHICorr Bottom-hole temperature, corrected for circulation
boepd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-cut mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG million cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psf pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

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PLATE WL38. LOGS, CORE DATA, AND OTHER DATA FROM WEST STAINES (18-9-23)

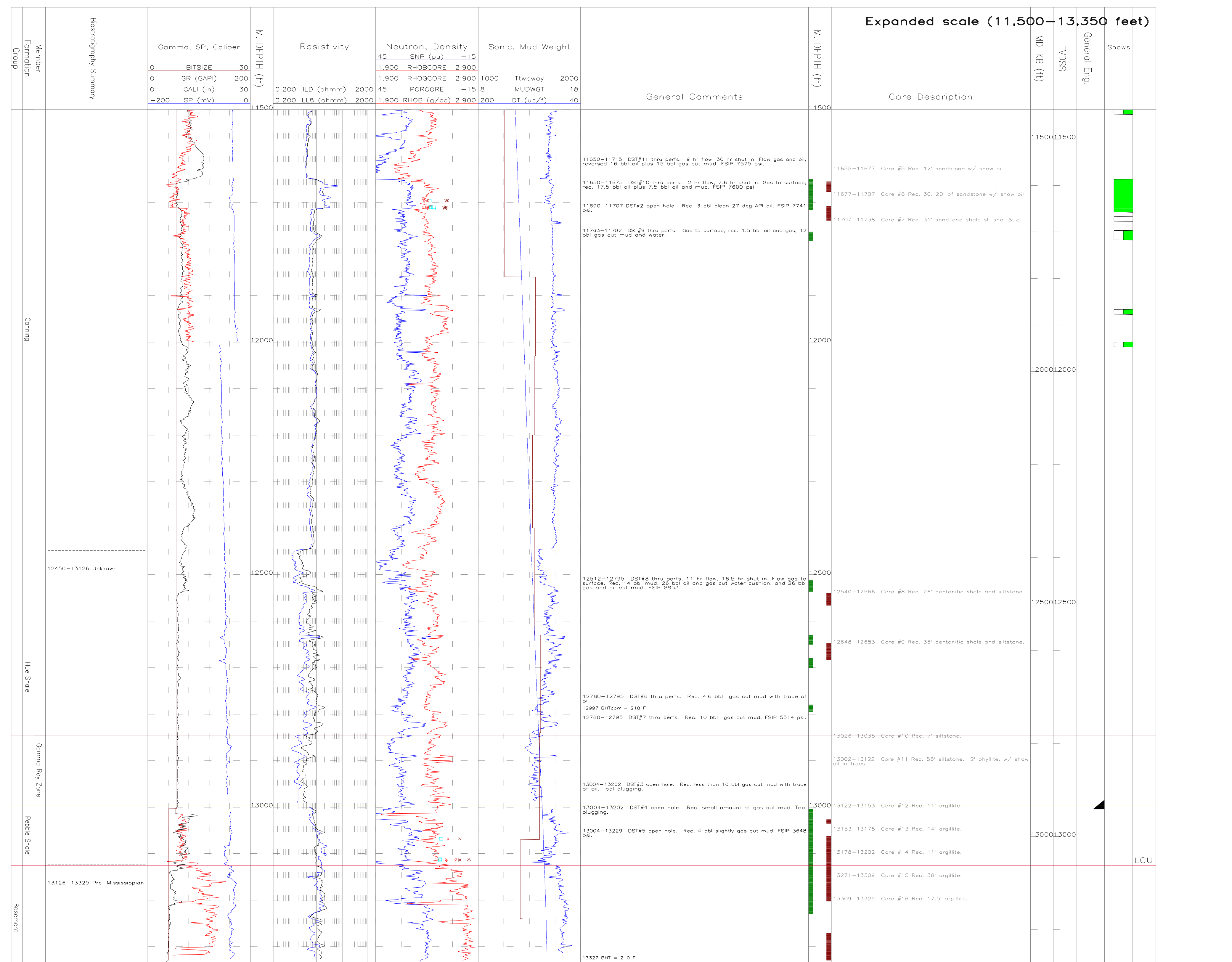
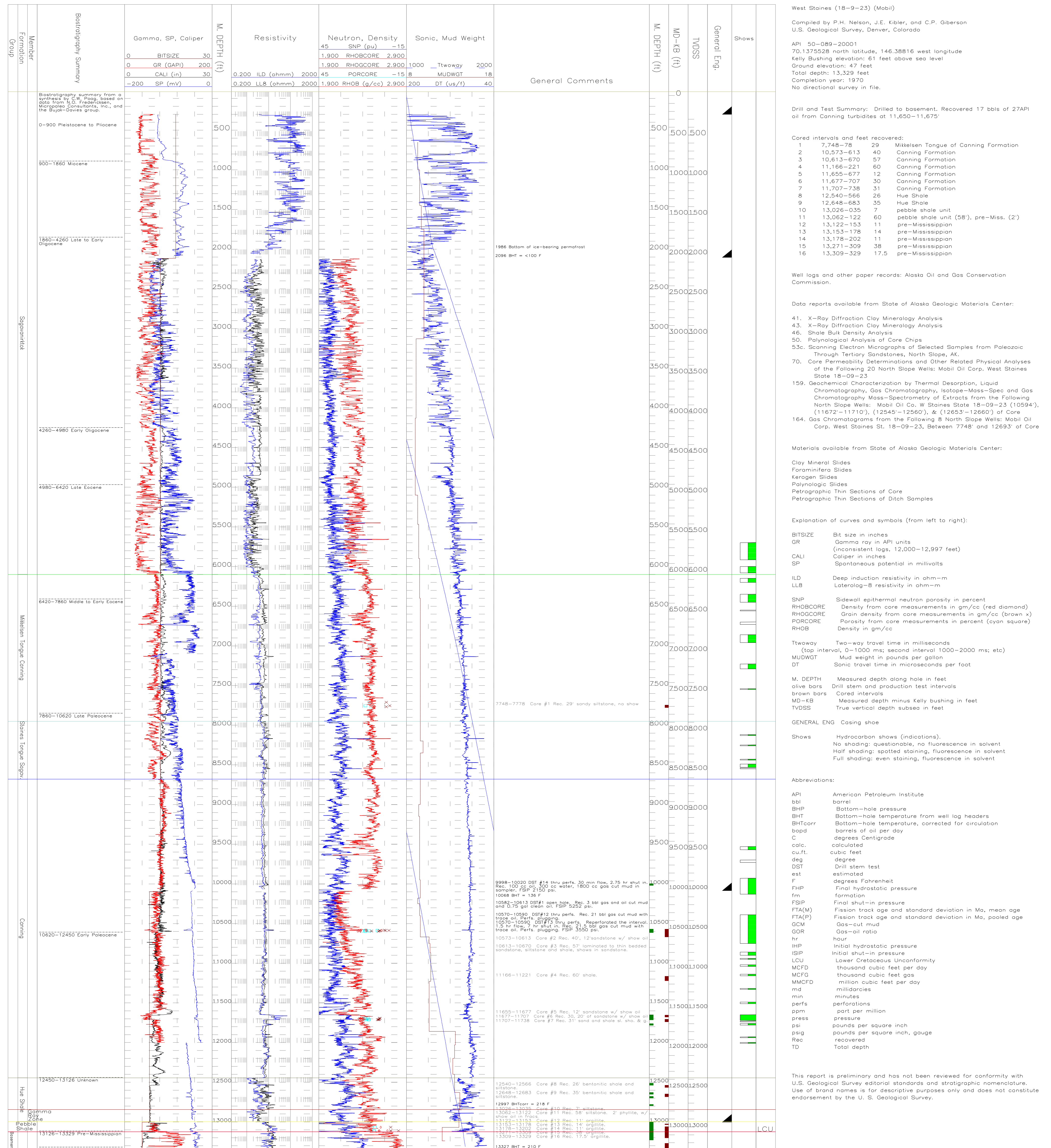
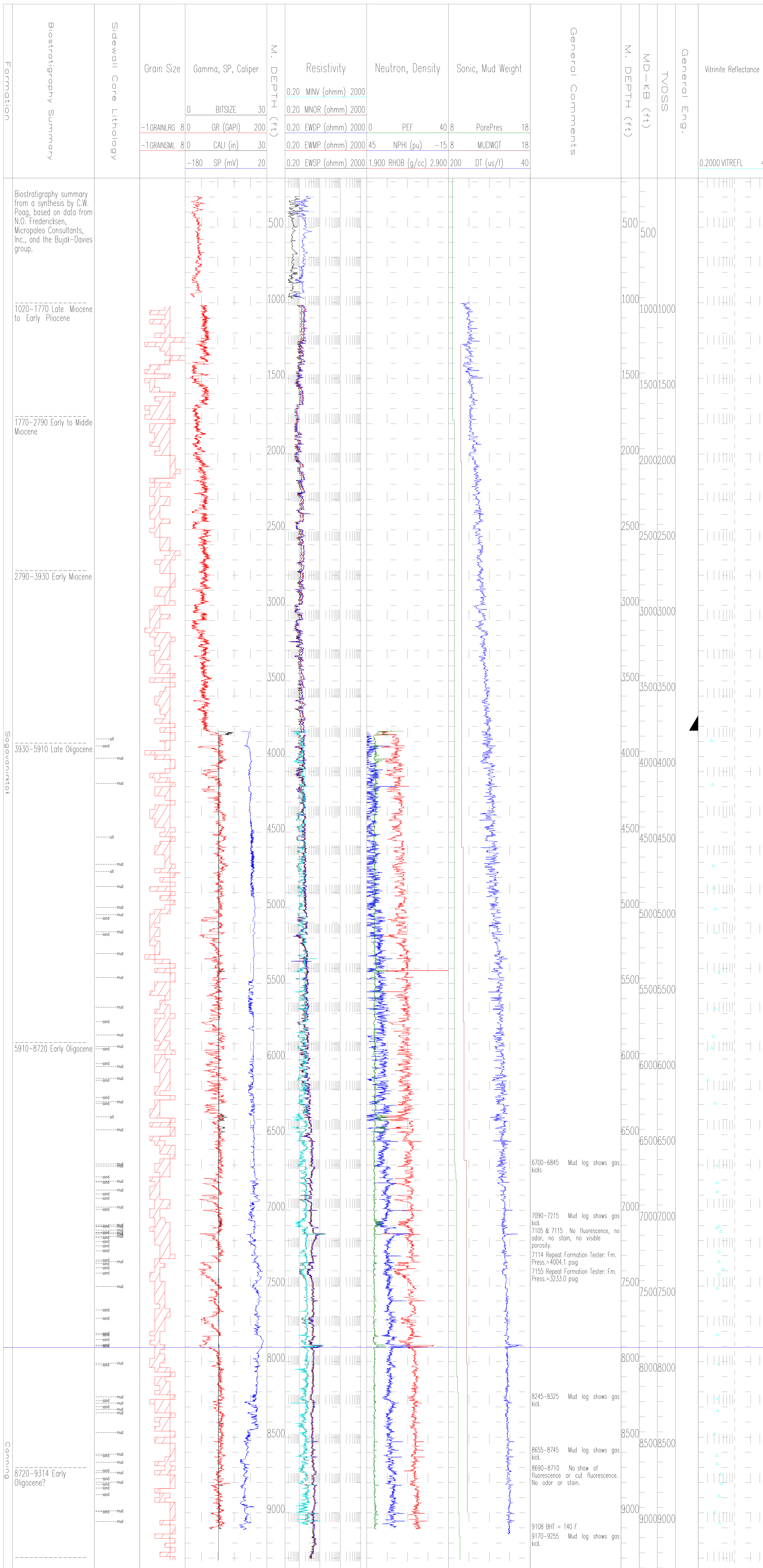


PLATE WL39. LOGS, CORE DATA, AND OTHER DATA FROM WILD WEASEL



Wild Weasel (Arco) (OCS Y-1597 #1)

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

API 50-171-00011
70.22289 north latitude, 145.49917 west longitude
Kelly Bushing elevation: 65 feet above sea level
Ground elevation: -87 feet
Total depth: 9314 feet
Completion year: 1993
No directional survey in file.

Drill and Test Summary: Bottomed in Canning Formation. No tests.

No conventional core; numerous sidewall cores.

Well logs and other paper records: Minerals Management Service.

Data reports available from State of Alaska Geologic Materials Center:
None

Materials available from State of Alaska Geologic Materials Center:
(materials transferred from MMS to Geologic Materials Center in April, 1996,
according to MMS internal communique.)

Explanation of curves and symbols (from left to right):

GRAINLRG High end of observed grain size distribution, approx. phi units
GRAINSML Low end of observed grain size distribution, approx. phi units

BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches
SP Spontaneous potential in millivolts

MNOR Micronormal resistivity in ohm-m
MINV Microinverse resistivity in ohm-m
EWDP Electromagnetic wave resistivity (deep) from MWD tool in ohm-m
EWMP Electromagnetic wave resistivity (medium) from MWD tool in ohm-m
EWSP Electromagnetic wave resistivity (shallow) from MWD tool in ohm-m

PEF Photoelectric factor in barns per electron
NPHI Neutron porosity in percent
RHOB Density in gm/cc

PorePres Pore pressure from drillers log in pounds per gallon
MUDWGT Mud weight in pounds per gallon
DT Sonic travel time in microseconds per foot

M. DEPTH Measured depth along hole in feet
MD-KB Measured depth minus Kelly Bushing in feet
TVDSS True vertical depth subsea in feet

GENERAL ENG Casing shoe

VITREFL Vitrinite reflectance, mean value in percent

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure
BHT Bottom-hole temperature from well log headers
BHTcorr Bottom-hole temperature, corrected for circulation
bopd barrels of oil per day
C degrees Centigrade
calc. calculated
cu.ft. cubic feet
deg degree
DST Drill stem test
est estimated
F degrees Fahrenheit
FHP Final hydrostatic pressure
fm formation
FSIP Final shut-in pressure
FTA(M) Fission track age and standard deviation in Ma, mean age
FTA(P) Fission track age and standard deviation in Ma, pooled age
GCM Gas-out mud
GOR Gas-oil ratio
hr hour
IHP Initial hydrostatic pressure
ISIP Initial shut-in pressure
LCU Lower Cretaceous Unconformity
MCFD thousand cubic feet per day
MCFG thousand cubic feet gas
MMCFD million cubic feet per day
md millidarcies
min minutes
perfs perforations
ppm part per million
press pressure
psi pounds per square inch
psig pounds per square inch, gauge
Rec recovered
TD Total depth

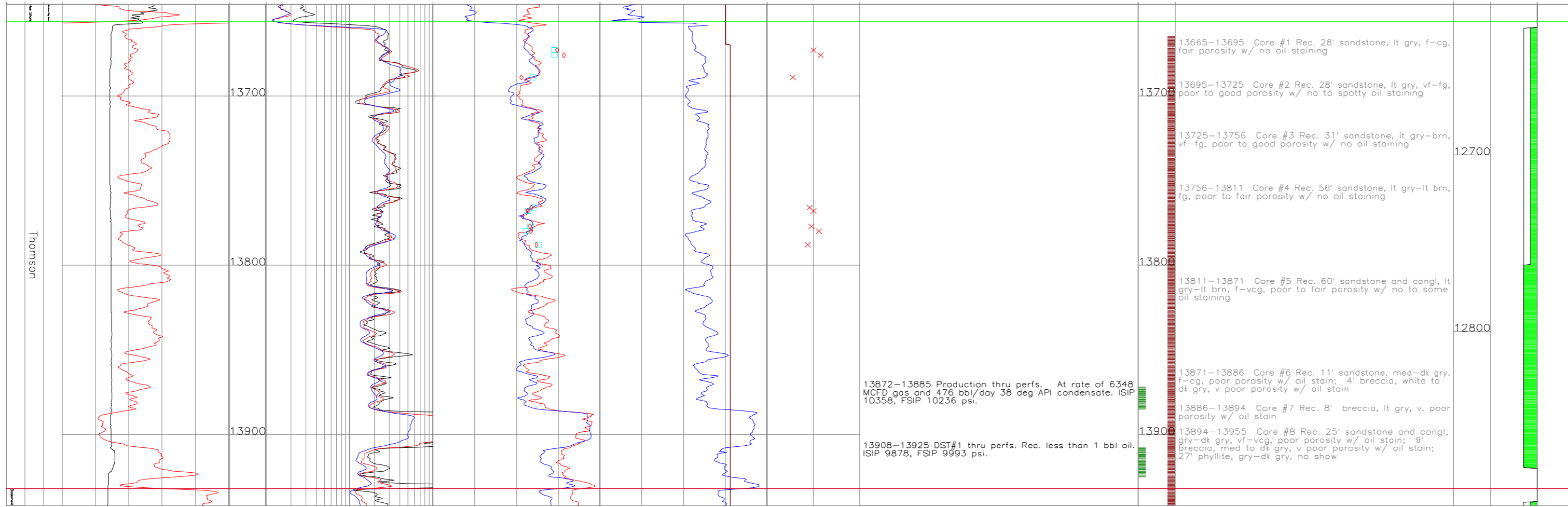
This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature. Use of brand names is for descriptive purposes only and does not constitute endorsement by the U. S. Geological Survey.

PLATE WL40. LOGS, CORE DATA, AND OTHER DATA FOR KEMIK AND THOMSON SANDSTONES

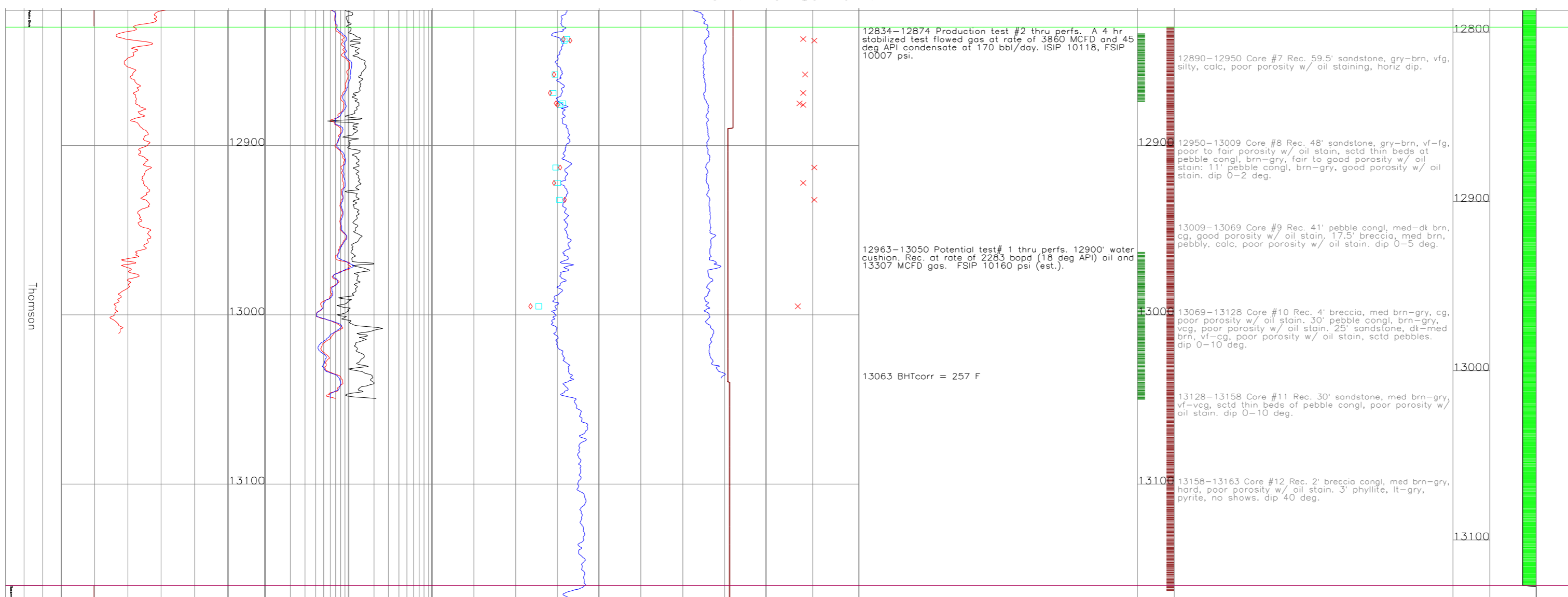
Alaska State C-1



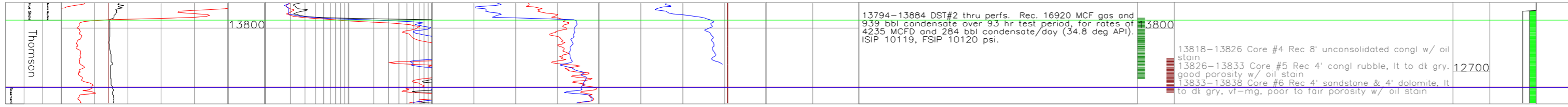
Point Thomson Unit 3



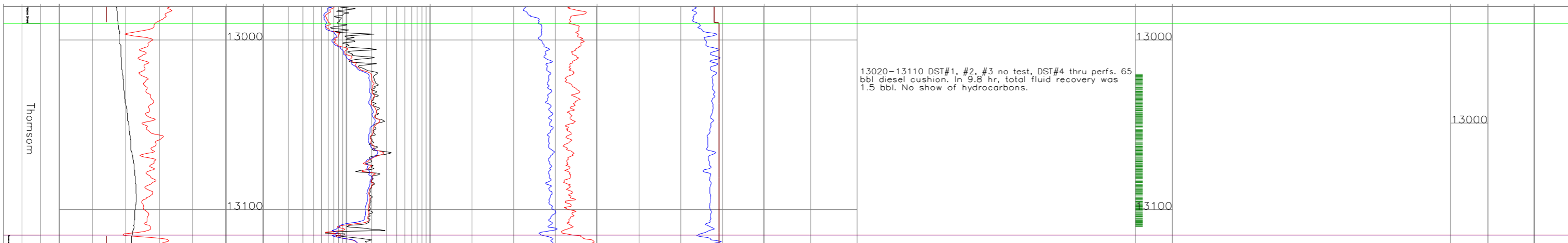
Point Thomson Unit 1



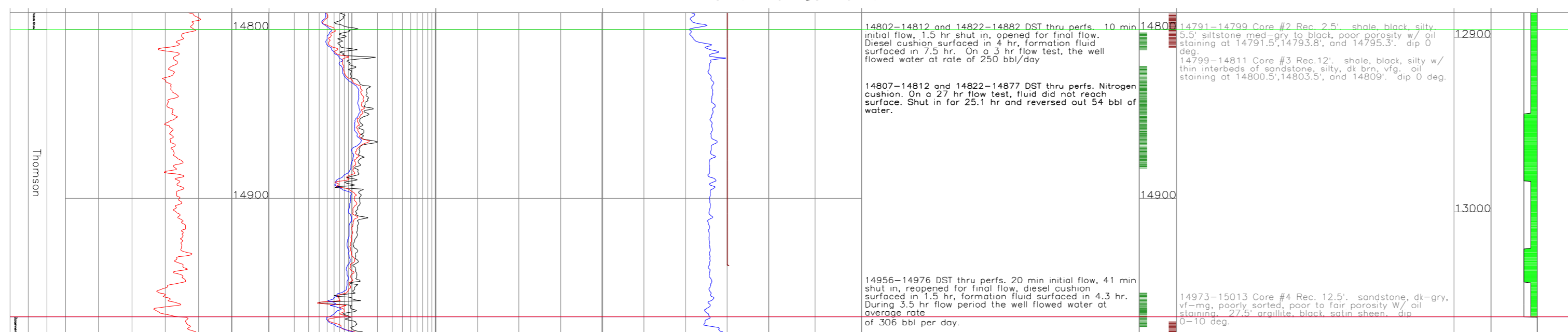
Alaska State F-1



Point Thomson Unit 2



Point Thomson Unit 4



Challenge Island 1

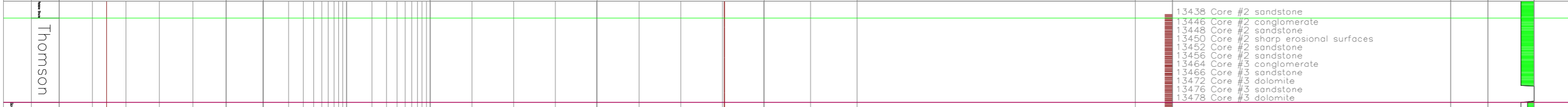
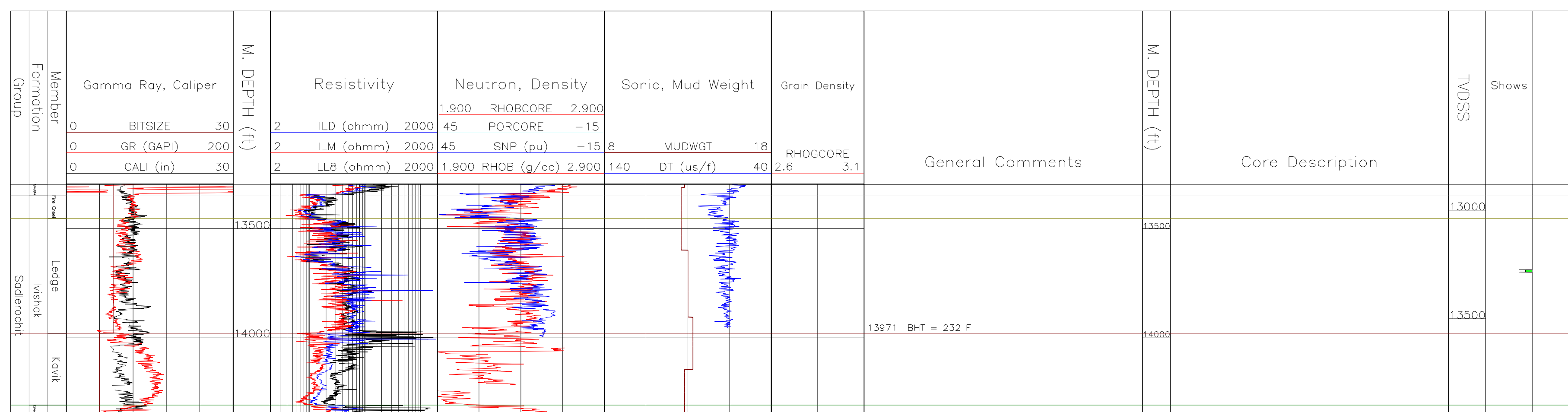
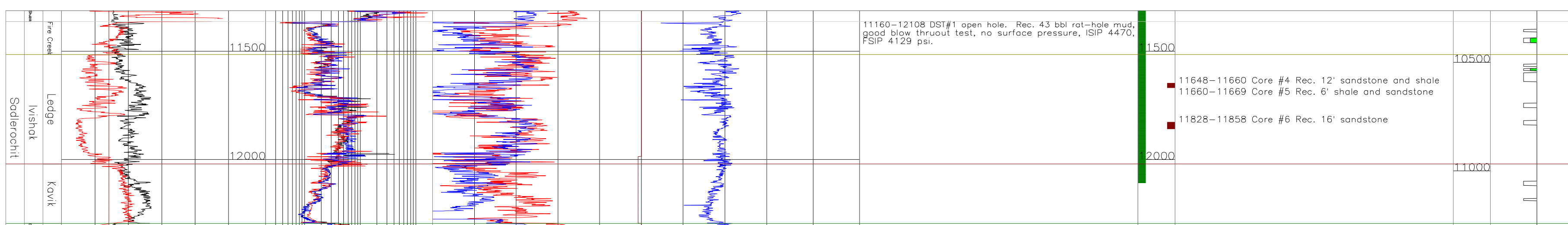


PLATE WL41. LOGS, CORE DATA, AND OTHER DATA FOR THE IVISHAK FORMATION

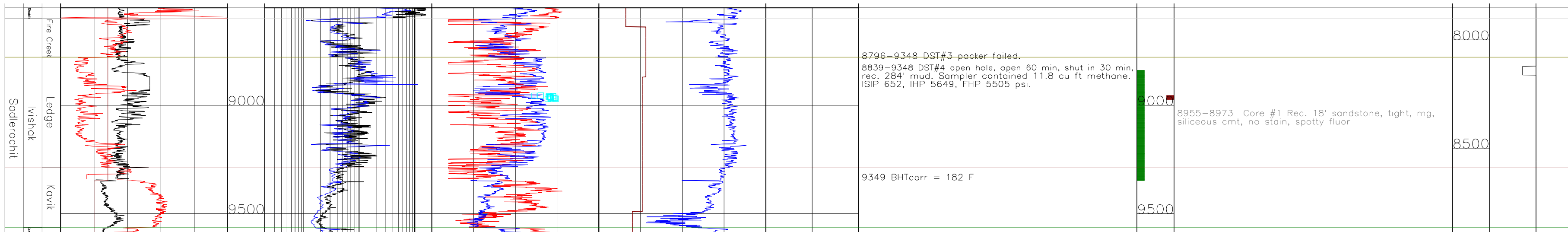
West Kavik 1



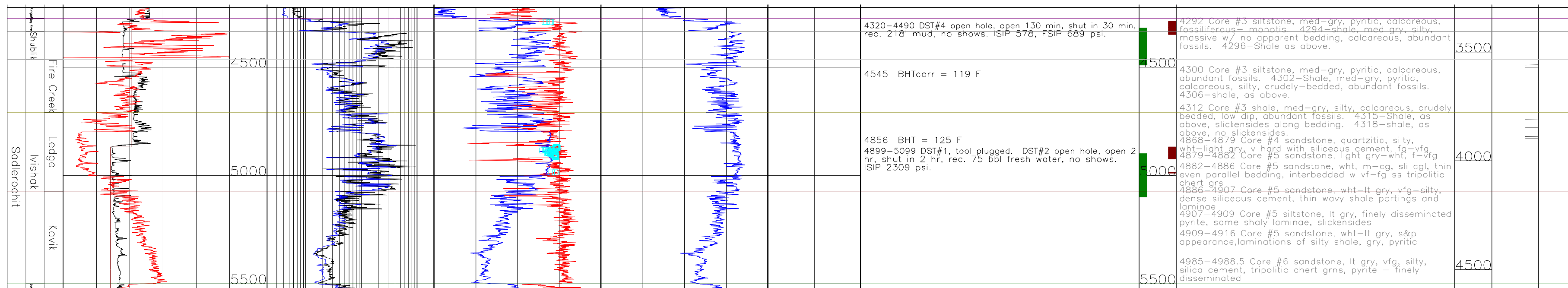
Beli Unit 1



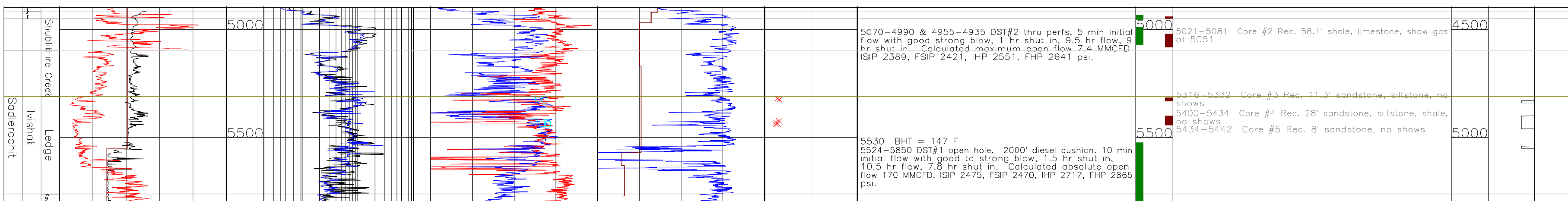
Canning River B-1



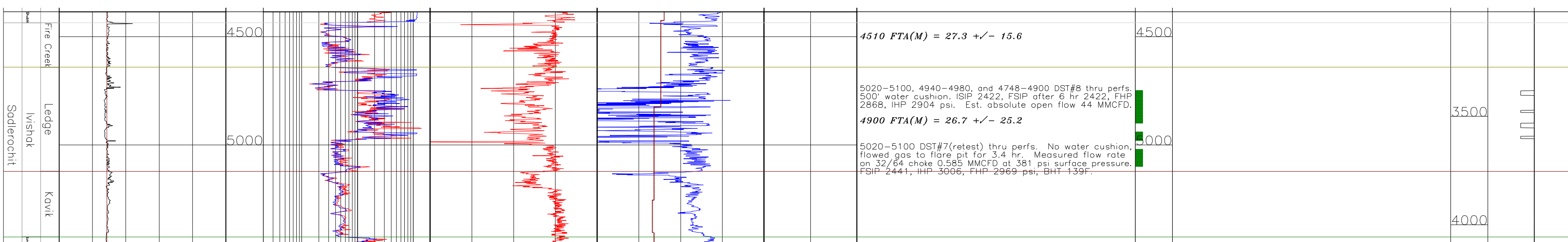
Canning River A-1



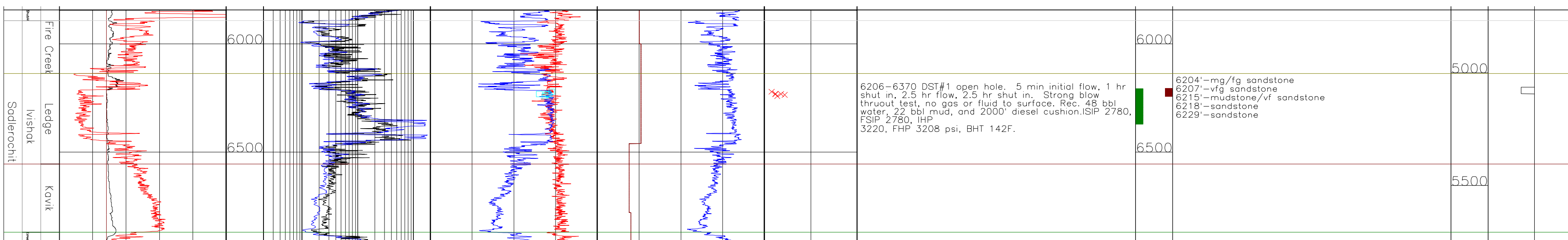
Kavik Unit 3



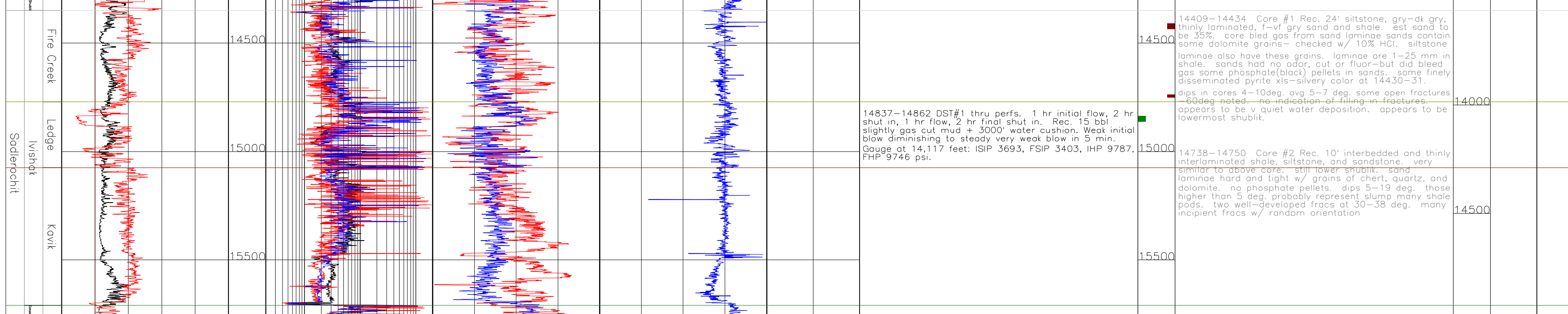
Kavik 1



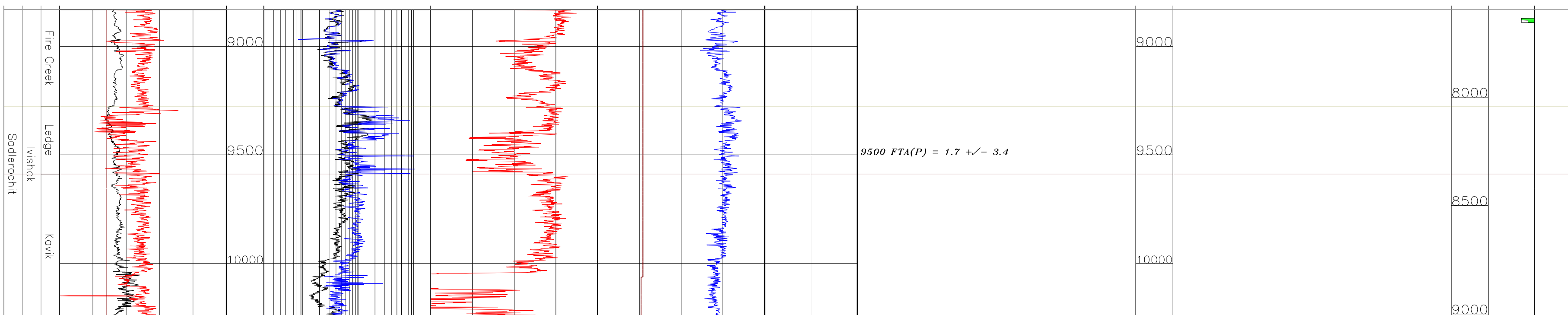
Kavik Unit 2



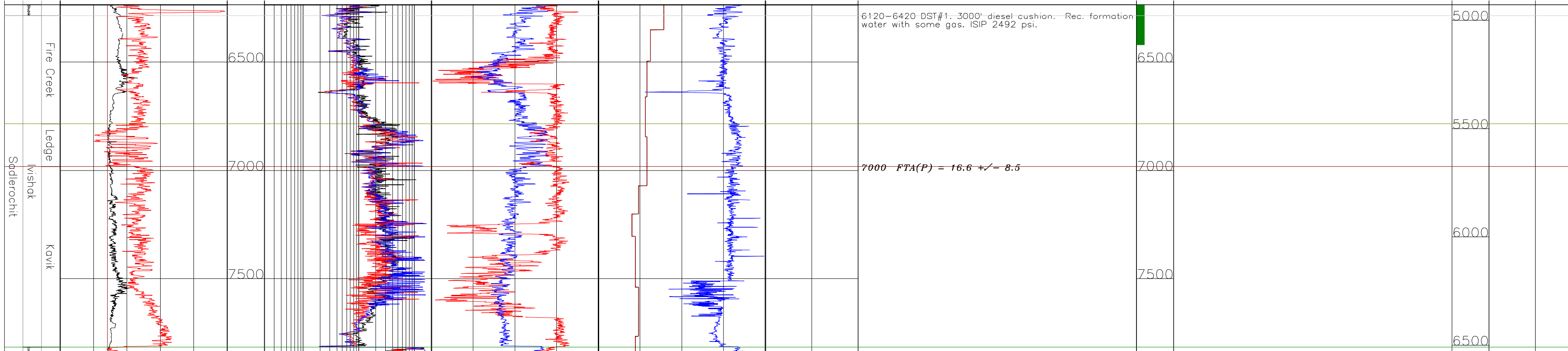
Fin Creek Unit 1



Kemik Unit 1



Kemik Unit 2



Wells penetrating the Ivishak Formation.

Compiled by P.H. Nelson, J.E. Kibler, and C.P. Giberson
U.S. Geological Survey, Denver, Colorado

Explanation of curves and symbols (from left to right):

BITSIZE Bit size in inches
GR Gamma ray in API units
CALI Caliper in inches

ILD Deep induction resistivity in ohm-m
ILM Medium induction resistivity in ohm-m
LL8 Laterolog-8 resistivity in ohm-m

RHOBCORE Density from core measurements in gm/cc (red diamonds)
PORCORE Porosity from core measurements in gm/cc (cyan squares)
SNP Sidewall epithermal neutron porosity in percent (in some wells, the blue line represents NPHI, the compensated neutron log)

RHOB Density in gm/cc

MUDWGT Mud weight in pounds per gallon

DT Sonic travel time in microseconds per foot

RHOGCOR Grain density from core measurements in gm/cc

M_DEPTH Measured depth along hole in feet

olive bars Drill stem and production test intervals

brown bars Cored intervals

TVSS True vertical depth subsea in feet

Shows Hydrocarbon shows (indications)

No shading: questionable, no fluorescence in solvent

Half shading: spotted staining, fluorescence in solvent

Full shading: even staining, fluorescence in solvent

Abbreviations:

API American Petroleum Institute
bbl barrel
BHP Bottom-hole pressure

BHT Bottom-hole temperature from well log headers

BHTcorr Bottom-hole temperature, corrected for circulation

bopd barrels of oil per day

C degrees Centigrade

calculated

cu.ft. cubic feet

deg degree

DST Drill stem test

est estimated

F degrees Fahrenheit

FHP Final hydrostatic pressure

fm formation

FSP Final shut-in pressure

FTA(M) Fission tract age and standard deviation in Ma, mean age

FTA(P) Fission tract age and standard deviation in Ma, pooled age

GCM Gas-cut mud

GOR Gas-oil ratio

hr hour

IHP Initial hydrostatic pressure

ISP Initial shut-in pressure

LCU Lower Cretaceous Unconformity

thousand cubic feet per day

MMCFD million cubic feet per day

mmcfD millidarcies

min minutes

perfs perforations

ppm part per million

press pressure

psi pounds per square inch

psig pounds per square inch, gauge

Rec recovered

TD Total depth

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