

## Well Identification:

API#	AREA	BLOCK	OPERATOR	WELL NAME	
55201000080000	Beaufort Sea	425	AMOCO PRODUCTION COMPANY	OCS Y-0371 001 SANDPIPER #2	ST00BP00
LATITUDE	LONGITUDE	KB	WATER DEPTH	GEO DATUM	ZONE
70° 35' 5.45"	-149° 5' 48.4"	59	-49	NAD83	6

## Overview

The Sandpiper #2 was spud as an exploratory well on February 8<sup>th</sup>, 1986 and located in the Beaufort Sea off the North Slope. The operator reported non-commercial hydrocarbons shows discovered at this location, and the well was plugged and abandoned. The analytical data collection program included well logging by Schlumberger, coring, and drill cutting samples collected by Baroid.

## Geologic Intervals used for Analysis:

Age/Period	Stratigraphy	Top	Source	Comments
Tertiary	SAGAVANIRKTOK FM	100		
Cretaceous	CANNING FM	8370		
	PebShale_Srfc_Top	9590		
	PebShale_Srfc_Bot	9610		
Triassic	ShublikFm_Srfc_Top	11700		
	ShublikFm_Srfc_Bot	11790		
Mississippian	ITKILYARIAK FM	12992		
	KAYAK SHALE	12992		
	LEDGE SANDSTONE	14380		
Devonian	BASEMENT	14900		

## Logging Runs and Parameters:

LOGGED	TOP	BASE	TEMP	BITSIZE	MWIN	RM	WIRELINE RUNS												
INTERVAL	ft	ft	degF	in	ppg	ohmm	RUN#	GR	DLL	DIL	NUC	SON	VSP	DIP	MICRO	SGR	SP	TEMP	RFT
1	100	6013	103	17.5	9.2	2.53	1	X		X		X				X	X	X	
							2	X			X							X	
							3	X						X			X		
2	6005	11932	166	12.25	9.5	2.11	1	X		X		X					X	X	
3	11932	14373		8.5	9.6		2	X			X					X		X	
4	14374	14924	235	6	9.6	1.26	1	X		X		X					X	X	

## Cored Intervals and Sample Analysis:

TOP	BASE	WHOLE CORE		TOP	BASE	SWS CORE	
ft	ft	ft	ROUTINE	ft	ft	#REC	ROUTINE
14411	14423	4	4				
14423	14438	15	15				
14438	14448	11	10				
14448	14463	11	10				

## Log Discussion:

The Sandpiper #2 well was drilled and logged with water-based drilling fluid containing Barite weighting material to total depth. Subsequent borehole sections were drilled with additional Barite to increase the borehole fluid pressure overbalance. All borehole sections required environmental corrections for hole size, temperature, pressure, and mud weight additives. Significant borehole problems limited the logging program and some logs were not acquired across the interval.

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### Environmental Corrections:

The Schlumberger 2000 Edition chartbook was used to correct the logs for borehole size, temperature, pressure, and drilling mud additives. The Gamma Ray log was corrected using chart GR-1. Compensated Neutron log was corrected using Por-14c and Por -14d. Dual Laterolog Resistivity logs were corrected using Rcor-2c and invasion corrected using Rint-9b. Dual Induction logs were corrected using Rcor-4a and invasion corrected using Rint-10.

Minor caliper enlargements were observed in various sections of the well, in cases where the borehole caliper readings were above the correction charts, the maximum chart correction was applied, however these corrections under estimate the true formation measurement.

The bulk density measurement was the most environmentally affected log in the dataset, where the density log readings measured drilling fluid when the caliper reading exceed 16 inches. Repair of the density log utilized a Gardner et al. (1974) sonic to density transform.

### Observations Logged Interval

Observed some significant caliper readings where density log was affected, the logged interval showed the bulk density required minor editing using the Gardner<sup>1</sup> density transform. Sonic log data was compared to the Faust<sup>4</sup> velocity transform to correct anomalies in borehole washouts. Logged intervals where the bulk density was not present the delta-t sonic was used as the porosity model input to the final computed results.

### References

1. Gardner et al., 1974, Formation velocity and density—the diagnostic basics for stratigraphic traps Geophysics, 39 (6) (1974), pp. 770-780
2. Graton, L. C., and H. J. Fraser, 1935, Systematic packing of spheres with particular reference to porosity and permeability: Journal of Geology, v. 43, p. 785–909, DOI: 10.1086/jg.1935.43.issue-8
3. Carmichael, R.S. ed. 1982. Handbook of Physical Properties of Rocks, Vol. 2, 1-228. Boca Raton, Florida: CRC Press Inc.
4. L. Y. Faust, "A Velocity Function Including Lithologic Variation," Geophysics, Vol. 18, No. 2, 1953, pp. 271-288.

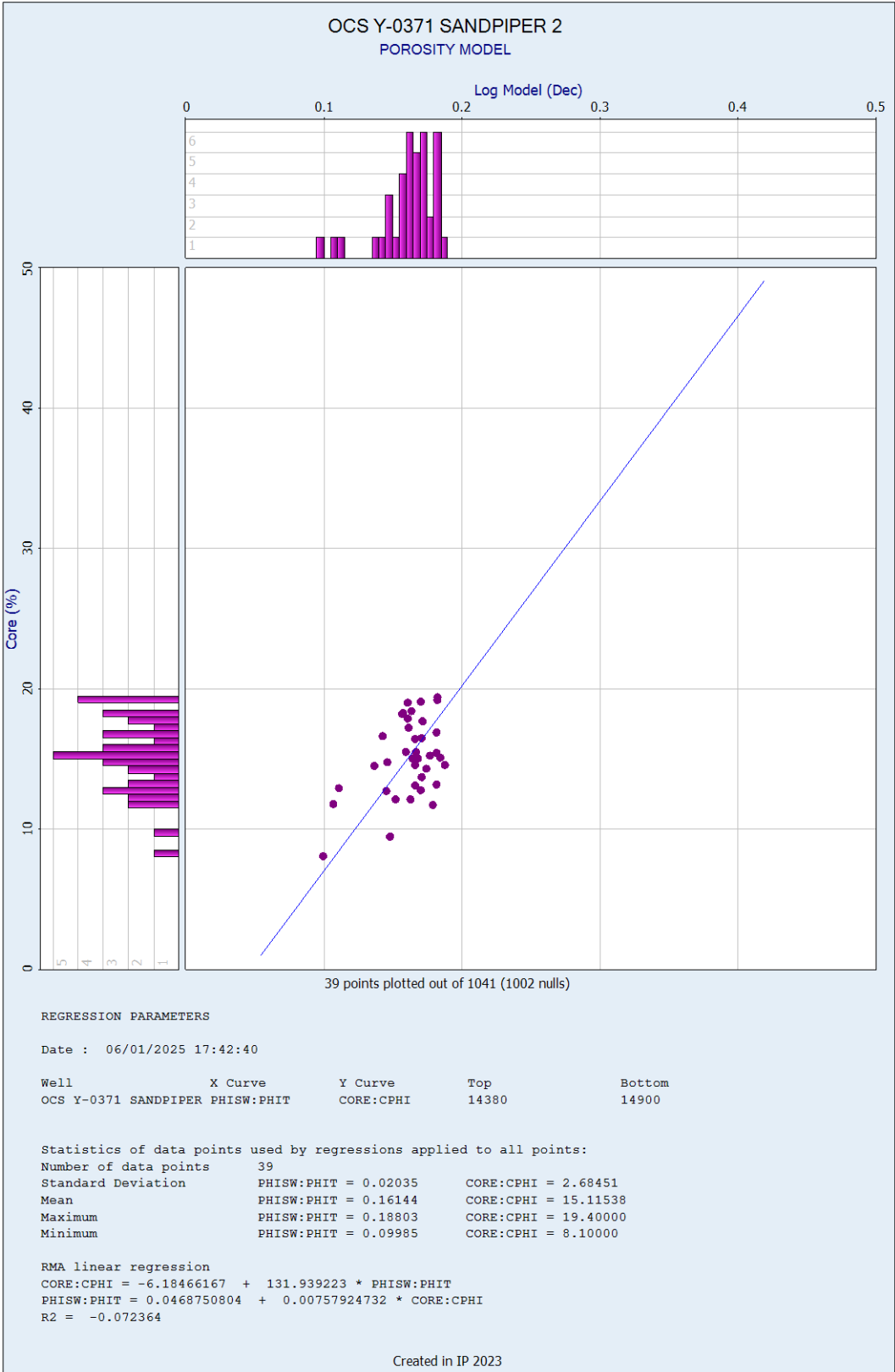
### Summation Report:

RESERVOIR SUMMARY											
Zone	Zone Name	Top	Bottom	Gross	Net	N/G	Av Phi	Av Sw	Av Vcl	Phi*H	PhiSo*H
1	ORIGINAL BOREHOLE	108	14983	14875	47	0.003	0.224	0.368	0.164	10.51	6.64

Reservoir summary cut off values used were porosity greater than 10% (PHIE > 0.1), shale volume less than 50% (VSHALE < 0.5), and water saturation less than 50% (SW < 0.5).

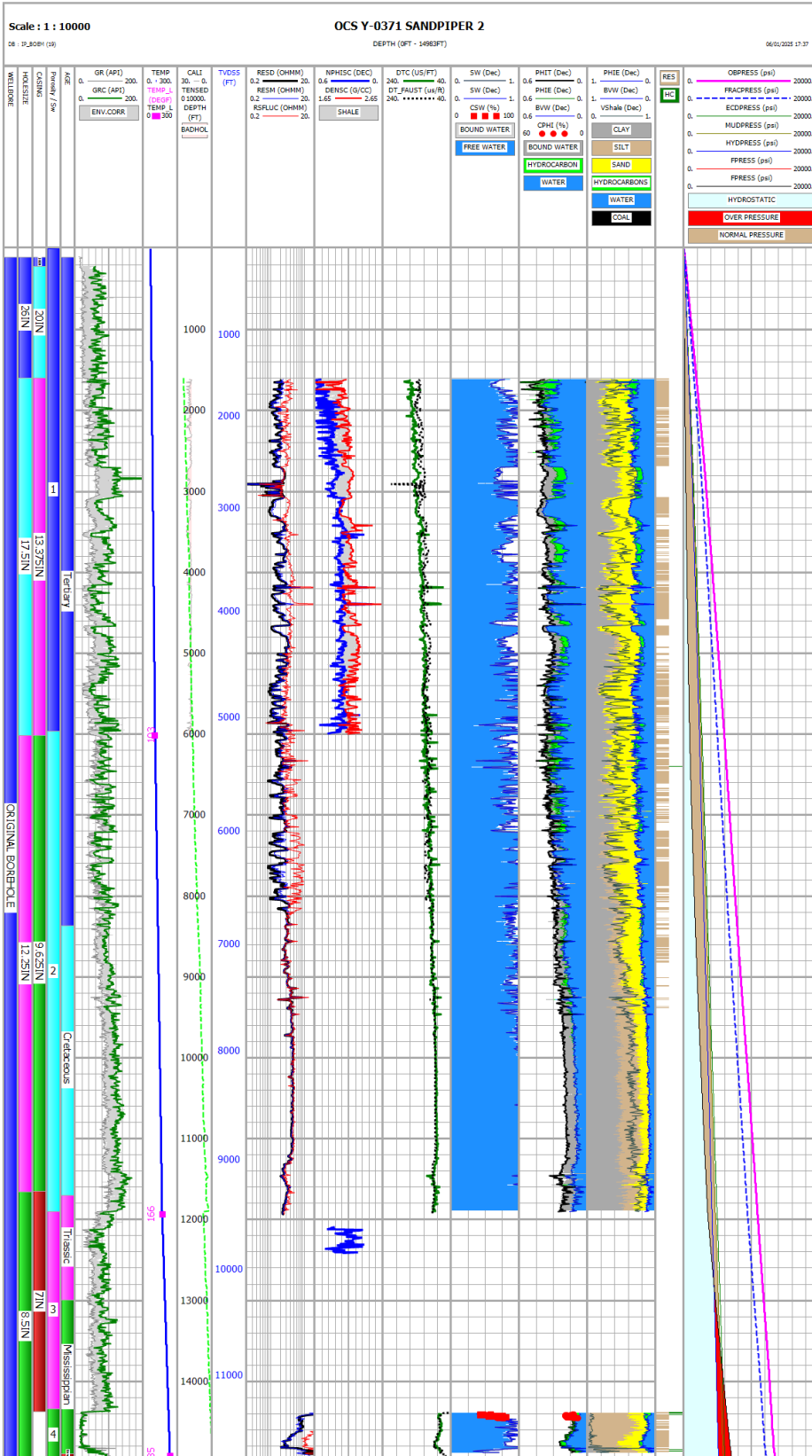
Report Date:

Core versus Log Porosity Crossplot:



Report Date:

## Summary Plot:



Report Date: