ADR SURVEY AT SEAWARD, OKLAHOMA

by Adnik 2010

Geological interpretation of the Adnik topsoil electrical resistivity survey at depth of investigation K-reference-1, Kleckner Prospect 1 and Kleckner Site-3

Prepared for Caithness Petroleum

March-April 2010

Enclosure 5

i) Cross Section-1

Stratigraphic section from Kleckner 1, Kleckner Prospect and Kleckner Site 3 (Ontario Top Modified Shale)

ii) Cross Section – 1A

Correlation of peaks below Wabash Sandstone at Kleckner 1 and Kleckner Prospect gives depth to top Wabash at Kleckner Prospect-1.

iii) Cross Section-2

Structural section from Kleckner-1, Kleckner Prospect and Kleckner site 3 (Datum: Ground level – Note: Ground level is assumed to be flat for this section).

On regional interpretation of the ADK logs of the area encountered engineering depth for Blackstone, Klondike Prospect and Klondike Shelf

In 2021, Ardent carried out ADK surveys in three locations across Seaward acreage in Oklahoma in fields that the reservoir rock is the Wilcox sandstone found at depths of between 6,000 and 7,000 feet. The Blackstone Well is an oil producer. Two prospects, Blackstone Prospect and Klondike Shelf, were scheduled to be drilled starting in April 2021. These later locations were where the ADK survey was undertaken. Article gives the main results of the survey, published in January 2021.

The objective of the report by Jason Dane Tingle on behalf of Ardent was to provide information regarding the depth and thickness of the Wilcox sandstone found in prospects and to ascertain the extent to which the Wilcox would be oil-bearing in the locations. The Admiralty Court is tasked with this review and the quantification of reserves (see page 7 of the report). The depths of the Woodford Shale and the Wilcox Sandstone taken from the composite log of Blackstone 1 were essential to the interpretation.

From the Blackstone 1 composite log, the drillers depth to the top of the Wilcox Sandstone was 6252 feet (below KB) or 6242 feet below ground level. This depth was marked on the Blackstone log, the Blackstone Prospect and the Klondike Shelf Prospect (Cross Section 1 and 2). The depth to the Woodford Shale that corresponds to the Wilcox Sandstone is not calculable by correlation. But a very sharp peak is found at 6501 feet (Blackstone variation spectral) that corresponds to the Organic Woodford Shale on the composite log. The Woodford shale is high-carbon and rich but not radioactive. It could be expected to have a low dielectric constant since hydrocarbon content is likely to be high across most depressurized structure or maybe it would be like that for a sandstone. The dielectric logs from the Blackstone Prospect 1 and Well 1 both showed the Woodford shale peak at about 6,710 feet.

On the Blackstone 1 log, a section across the Wilcox Sandstone moves to 6261 feet and found a corrected accuracy well with the comparable sections on the Blackstone Prospect and Shelf. The depth to the Woodford Shale is 6,510 feet on the Blackstone 1 log and was picked at the point of maximum negative (downward) curvature in the dielectric log at the Shale/Sandstone interface. The Wilcox Sandstone is characterized by moderate resistivity (see page 14). The main Wilcox Sandstone in Blackstone 1 was found to be 258 feet thick. Six gas kicks were found in the Wilcox (6,410 to 6,510 feet, see Cross Section 1). Blackstone 1 was drilled with gas to 6,510 feet. This thin gas kicks in the Wilcox Sandstone of Blackstone Prospect and Klondike 1 (6,240 feet, see Cross Section 1). But based on Tomasini's depiction of the Wilcox would not be considered to be economically significant oil field. The conclusion must be that, while there were gas kicks in the two prospects, drilling in Blackstone 1 was unsuccessful although the thing was accurate at Blackstone 1.

The main implication of these depth predictions is that the oil-bearing zone thickness is less in Blackstone 1 than in the Blackstone Prospect and Klondike Shelf. The presence of the Wilcox Sandstone at approximately 6,240 feet, some distance from the Blackstone 1 well, is a significant finding in that the Wilcox would not be considered to be economically significant oil field. The conclusion must be that, while there were gas kicks in the two prospects, drilling in Blackstone 1 was unsuccessful although the thing was accurate at Blackstone 1.

A reasonable correlation can be made between the top depths of the Wilcox Sandstone in the Blackstone Prospect 1 and Well 1 (Cross Section 2). The expected oil-bearing zone is found to be 258 feet thick at the Blackstone Prospect 1 and 258 feet thick at Well 1. Unlike Well 1, the Woodford Shale is reached immediately at the end of the Wilcox Sandstone in the Blackstone Prospect 1 and Well 1 (see Cross Section 2). The Wilcox Sandstone is found to be 258 feet thick at the Blackstone Prospect 1 and 258 feet thick at Well 1. Unlike Well 1, the Woodford Shale is reached immediately at the end of the Wilcox Sandstone in the Blackstone Prospect 1 and Well 1 (see Cross Section 2). The Wilcox Sandstone is found to be 258 feet thick at the Blackstone Prospect 1 and 258 feet thick at Well 1. Unlike Well 1, the Woodford Shale is reached immediately at the end of the Wilcox Sandstone in the Blackstone Prospect 1 and Well 1 (see Cross Section 2).

The seismic survey line from the Woodford Shale to the Wilcox Sandstone was 6240 feet. The Wilcox Sandstone is found to be 258 feet thick at the Blackstone Prospect 1 and 258 feet thick at Well 1. Unlike Well 1, the Woodford Shale is reached immediately at the end of the Wilcox Sandstone in the Blackstone Prospect 1 and Well 1 (see Cross Section 2). The Wilcox Sandstone is found to be 258 feet thick at the Blackstone Prospect 1 and 258 feet thick at Well 1. Unlike Well 1, the Woodford Shale is reached immediately at the end of the Wilcox Sandstone in the Blackstone Prospect 1 and Well 1 (see Cross Section 2).

Conclusion

Based on the data from the Blackstone 1 well, the Wilcox Sandstone is found at a depth of 6,240 feet in the Blackstone 1,

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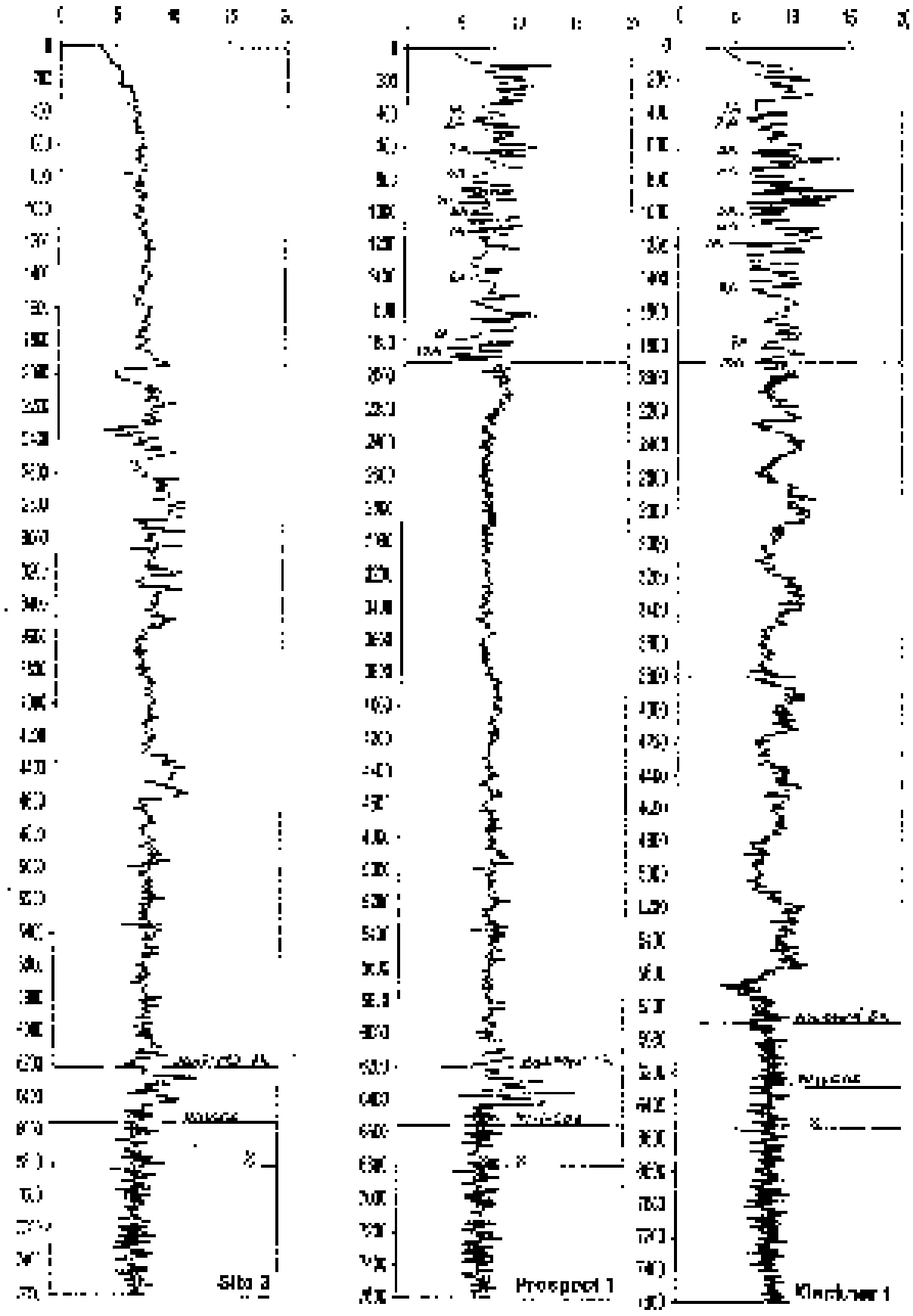
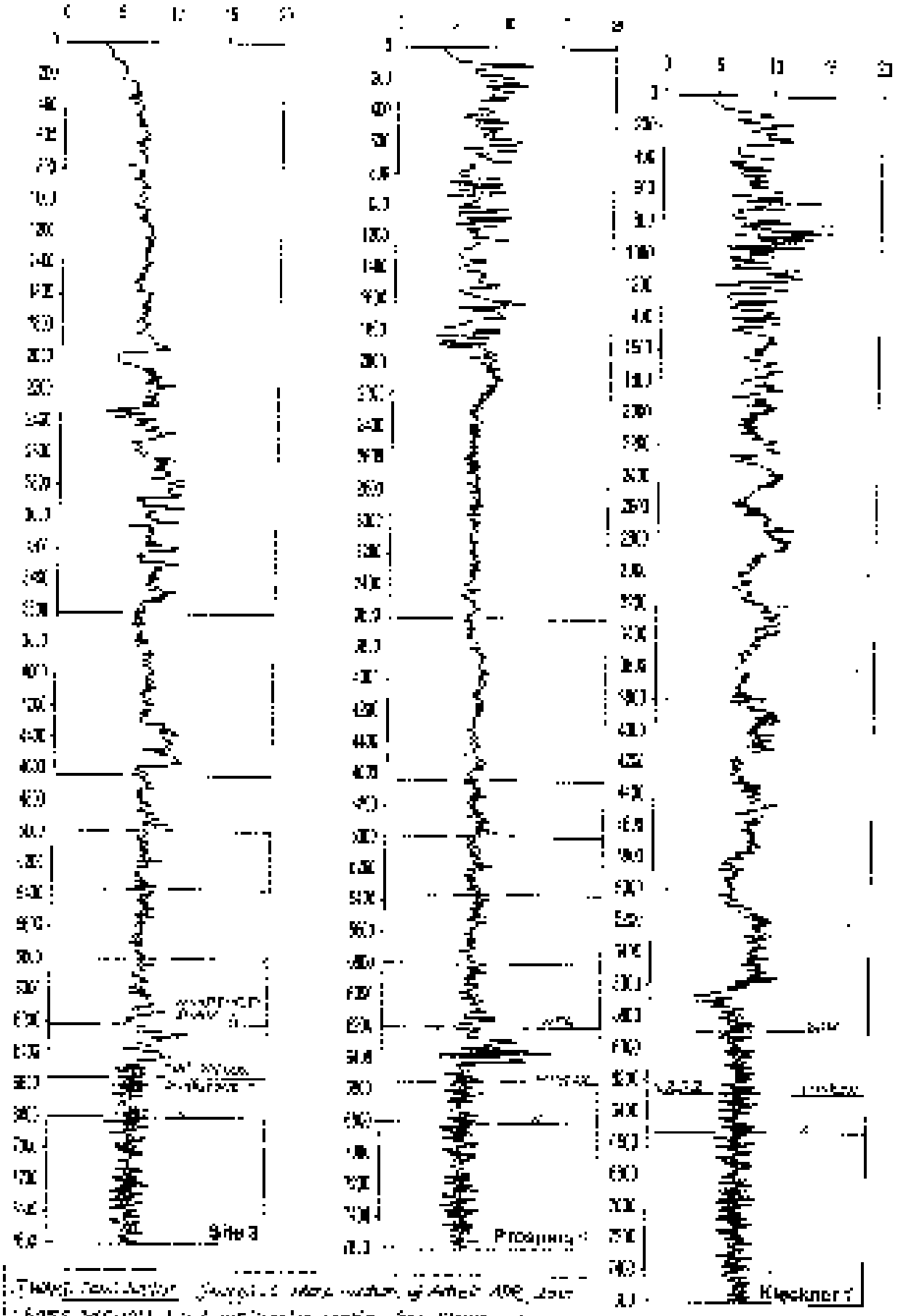
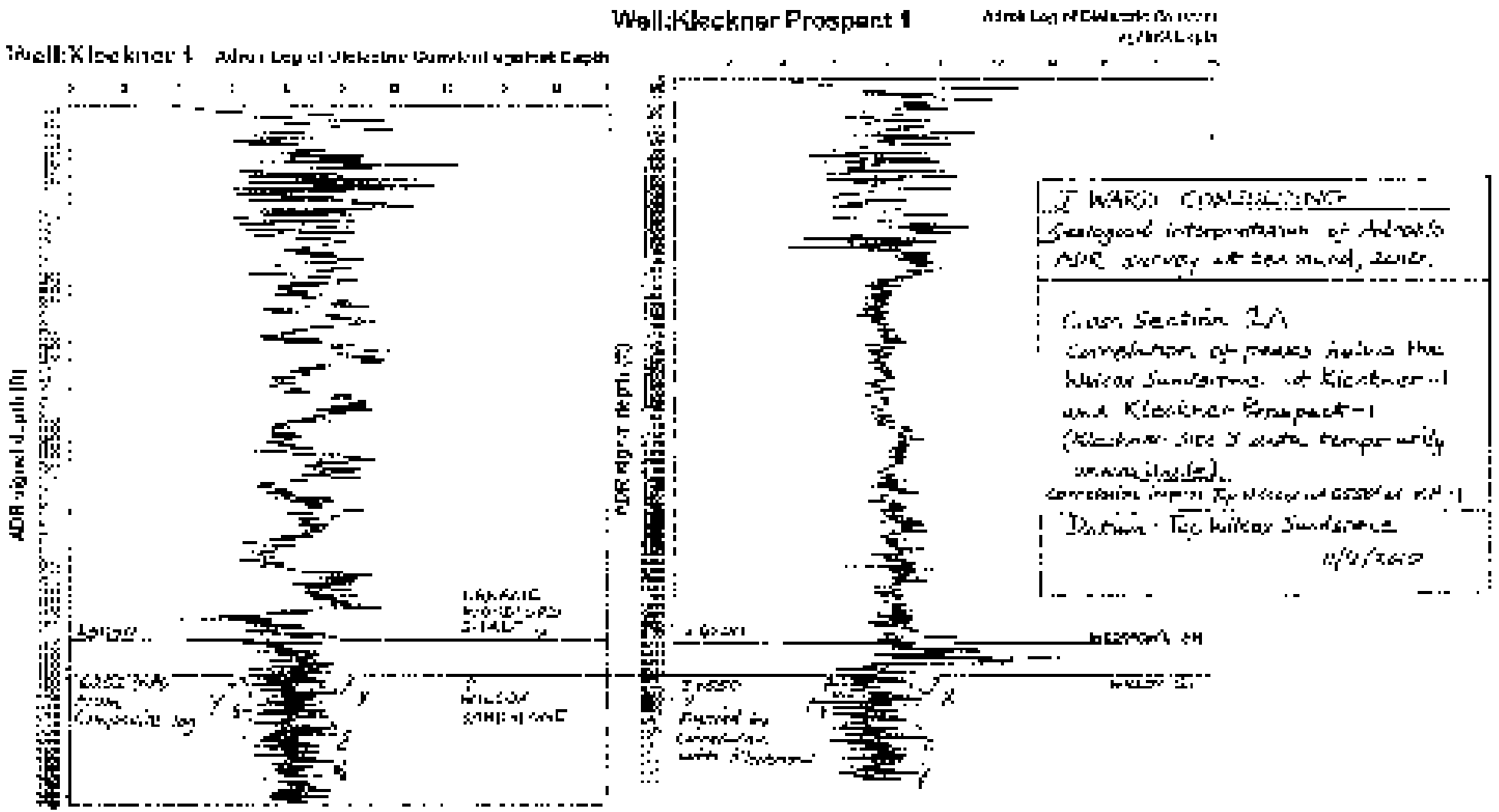
[illegible]


Sibo 2
Prospect 1
Klerksdorp 1




Well: Kleckner 1
Well: Kleckner Prospect 1
Top Kalkay Sandstone
11/9/2012