DISPLAY D4

Core from the Buzzard Field - Wells 20/6-3, 20/6-4 and 20/6-5.

Graham Doré & Chris Forster (EnCana (U.K.) Limited)

The selection of core from the Buzzard Field includes samples of some of the depositional facies from over 1200 ft of core acquired in six exploration/appraisal wells across the field. The reservoir interval largely comprises Late Jurassic age, base of slope, gravity flow sandstones.

The structureless sandstones and laminated sandstones (that can be observed in Well 20/6-3) are typical of the main reservoir ('Buzzard 4') interval and are commonly tens of metres thick comprising amalgamated, homogeneous sandstones. Within the structureless sandstones the primary structure may have been erased by dewatering. These are interpreted as stacked turbidites that have undergone rapid depositon from surge-like flows.

The thick laminated sandstone intervals contain thin, dark bituminous bands that highlight subtle variations in grain size, grain packing density and grain orientation on a centimetre to millimetre scale. These are interpreted as sustained turbidites or hyperpycnites that are indicative of continual sedimentation in a near-slope depositional setting (possibly related to river flooding).

Sandier facies are interbedded with structureless and laminated mudrocks, suggesting the accumulation of hemipelagic sediments and dilute mud-rich turbidity currents respectively. Several calcite cemented intervals are also seen in the core representing doggers with little lateral continuity.

Core from Well 20/6-5 illustrates the Buzzard Field OWC. The field has an estimated hydrocarbon column of 1400 ft.

Plate A

Well: UKCS 20/6-3 Interval: 8551 ft – 8566 ft

Structureless sandstones commonly tens of metres in thickness comprising amalgamated units of less than 1 ft to over 5 ft thick. Bases to these units can be erosive or non-erosive. These were probably deposited as high density turbidity currents that underwent rapid deposition. Some of the primary fabric may have been removed by dewatering.

Plate B

Well: UKCS 20/6-3 Interval: 8590 ft – 8599 ft

Laminated Sandstone intervals that are commonly tens of metres in thickness. The sands are dominantly fine- to medium-grained. Darker stained laminae are not related to clay content but are bituminous layers that highlight subtle variations in grain size, sorting and orientation. These were possibly deposited as stacked, 'sustained' turbidites deposited from aggradational turbidity flows. Contortions in the laminae are dewatering effects

Plate C

Well: UKCS 20/6-3 Interval: 8638 ft – 8653 ft

Further examples of laminated sandstones.

Plate D

Well: UKCS 20/6-4 Interval: 8693 ft – 8708 ft

Coarse-grained massive sandstone rapidly deposited from high density, surge-like turbidity currents. This is some of the best quality reservoir seen in the Buzzard Field with measured horizontal permeability of 18 Darcy's present.

Plate E

Well: UKCS 20/6-5 Interval: 9245 ft - 9260 ft

Buzzard Field OWC. The fine- to medium-grained turbidite sandstones from the water leg show features obscured by the darker oil leg sandstones including amalgamation surfaces highlighted by sharp grain size changes, subtle fine-scale parallel lamination in parts and dark organic grains dispersed throughout.

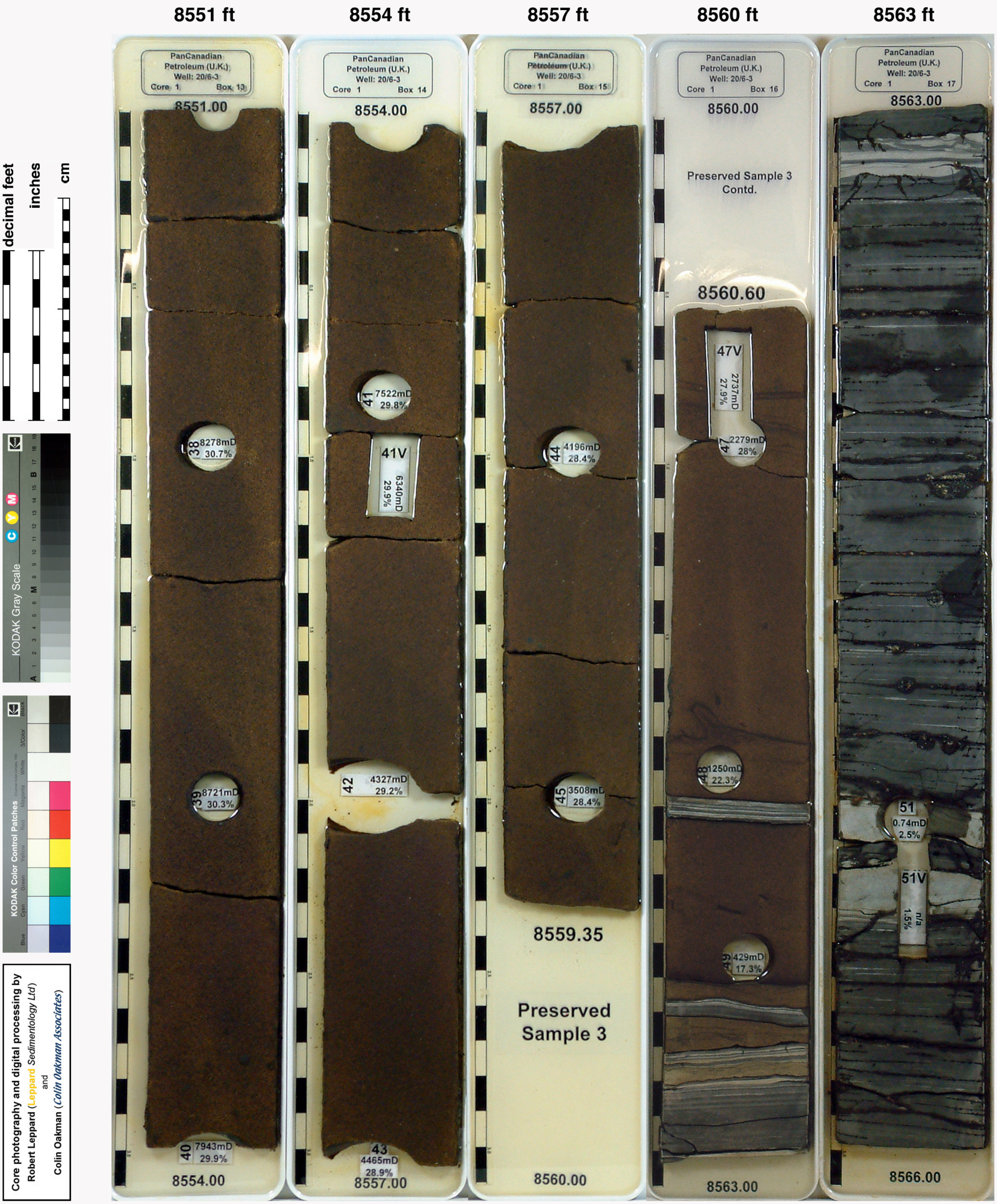
Plate F

Well: UKCS 20/6-5 Interval: 9343 ft – 9352 ft

The fine- to medium-grained turbidite sandstones from the water leg show features obscured by the darker oil leg sandstones including amalgamation surfaces highlighted by sharp grain size changes, subtle fine-scale parallel lamination in parts and dark organic grains dispersed throughout.

Display D4 Plate A

Well UKCS 20/6-3

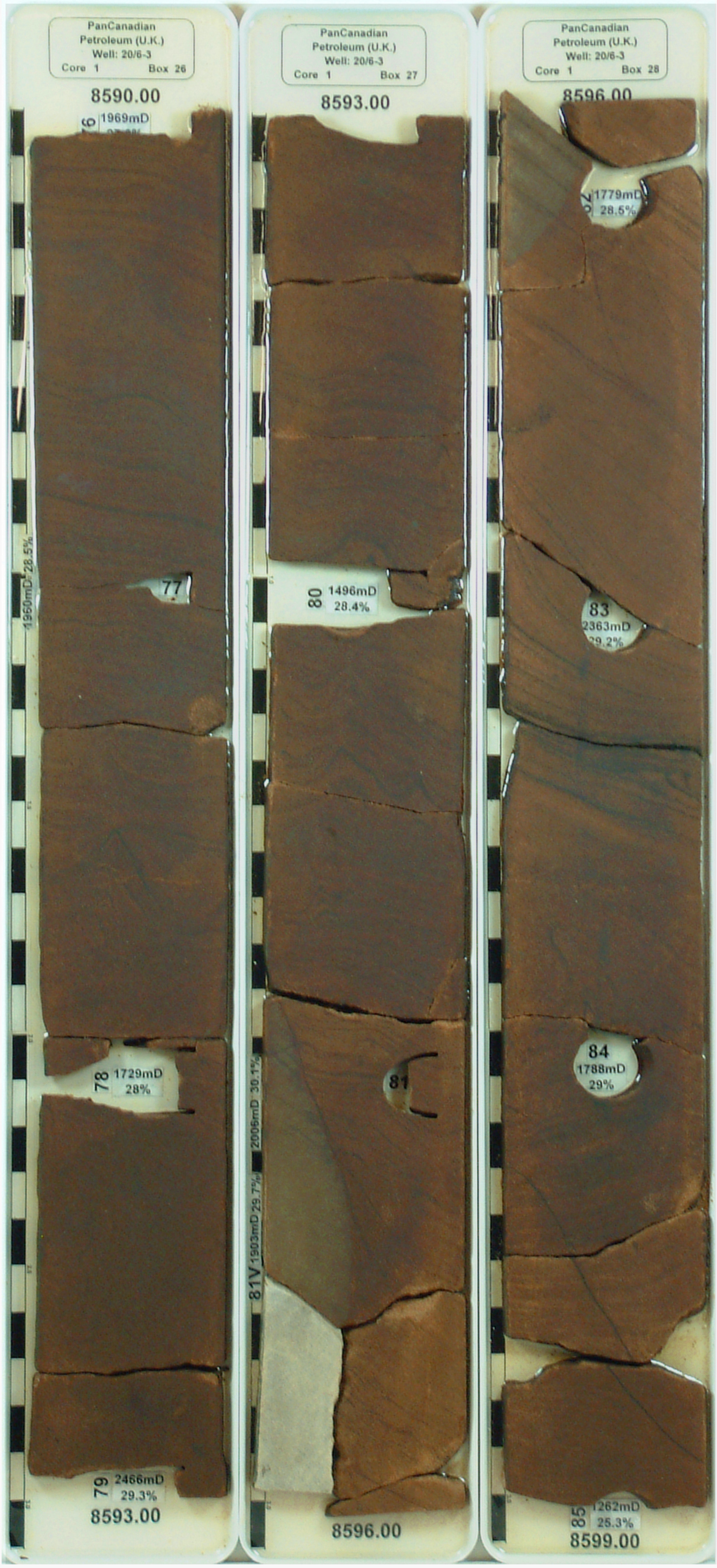


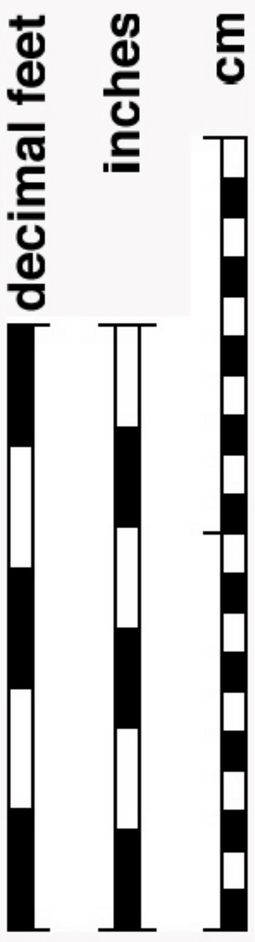
Core photography and digital processing by
Robert Leppard (Leppard Sedimentology Ltd)
and
Colin Oakman (Colin Oakman Associates)

Display D4 Plate B

Well UKCS 20/6-3

8590 ft | 8593 ft | 8596 ft





Core photography and digital processing by
Robert Leppard (Leppard Sedimentology Ltd)
and
Colin Oakman (Colin Oakman Associates)

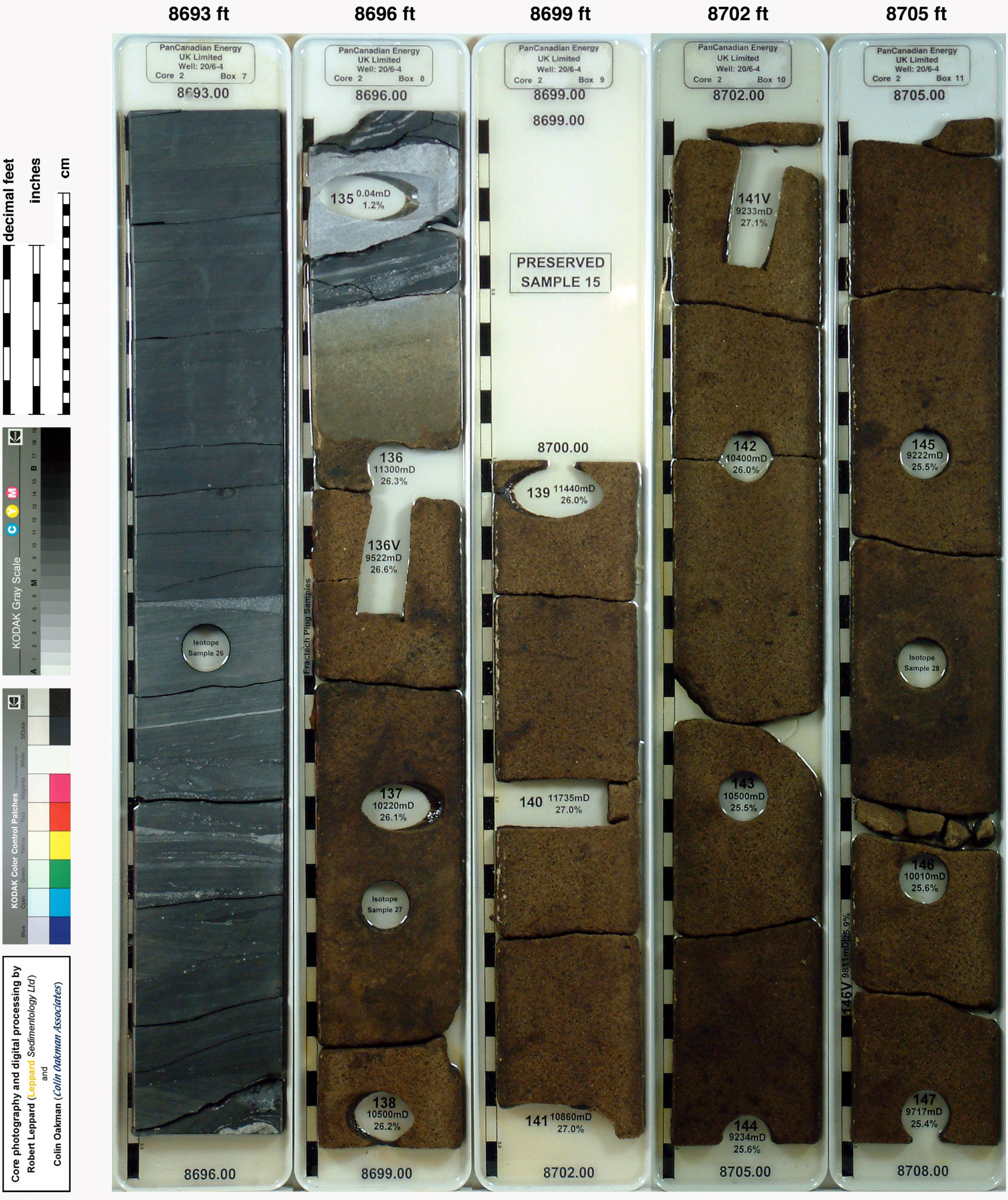
Display D4 Plate C

Well UKCS 20/6-3

Core photography and digital processing by
Robert Leppard (Leppard Sedimentology Ltd)
and
Colin Oakman (Colin Oakman Associates)

Display D4 Plate D

Well UKCS 20/6-4



Core photography and digital processing by
Robert Leppard (Leppard Sedimentology Ltd)
and
Colin Oakman (Colin Oakman Associates)

Display D4 Plate E

Well UKCS 20/6-5

Core photography and digital processing by
Robert Leppard (Leppard Sedimentology Ltd)
and
Colin Oakman (Colin Oakman Associates)

Display D4 Plate F

Well UKCS 20/6-5

Core photography and digital processing by
Robert Leppard (*Leppard Sedimentology Ltd*)
and
Colin Oakman (*Colin Oakman Associates*)