Improved Flow Modelling through integrated Sequence Stratigraphic Correlations - Lauren CSG Field, Walloon Subgroup, Surat Basin.

Jeff Copley, Mark Reilly, Stephen Tyson, and Suzanne Hurter. Research Title: Seismo-Sequence Stratigraphy: Towards Improved Flow Modelling Through Integrated Sequence Stratigraphic Correlation for the Surat Basin.

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AIMS OF THE STUDY

Seismic surfaces are inherently chronostratigraphic The existing geologic framework is based upon arbitrary boundaries. Correlation of significant stratigraphic surfaces within the Bowen and Surat Basin stratigraphy has traditionally been undertaken by well to well studies with rarer "postage" stamp" seismic verification of these surfaces. This study intends to bring a better understanding of lateral correlation of significant seismic surfaces throughout the Surat Basin integrated with the sequence stratigraphy surfaces.

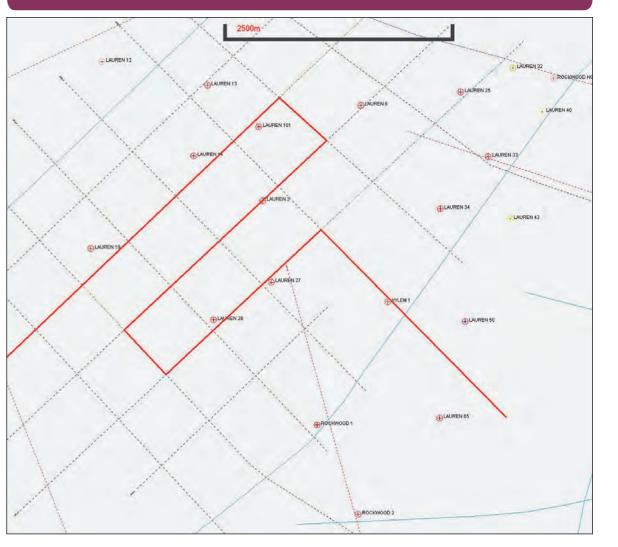
CONCLUSIONS

- Chronostratigraphic or sequence stratigraphic methodologies integrated with seismic data provide the most robust depositional framework.
- The cyclicity within the chronostratigraphic framework will demonstrate the lateral continuity and dis-continuity of depositional settings, i.e. channel, floodplain, coal forming environments.

BACKGROUND

lithological correlations which are generally not chronostratigraphic boundaries. This study will utilise sequence stratigraphic methods concepts (accepted best practice in basin analysis) together with the substantive seismic data set available throughout the basin. This integrated sequence stratigraphic and seismic method would inherently define both lower and higher order cyclicity basin-wide within the stratigraphy. The sequence stratigraphic methodology and nomenclature is similar to that employed on the North West Shelf (NWS) of Australia (Longley et al, 1993). The NWS study was undertaken to provide a consistency and a common basis between different parties across the area, and it is hoped that ultimately this study will be the catalyst for a similar understanding for the Surat Basin stratigraphy.

LAUREN FIELD SEISMIC LINE MAP



DATA - Composite Seismic Lines and Well-Well Correlation Lines

LAUREN 19	LAUREN 101	LAUREN 3	LAUREN 28 LA	UREN 27 XYLEM 1	
Scismic 2D Jine [XM8	36-7] LAUREN 14 U53.0	Seismic 2D line [XM86-5] J53.0 J52.0 J51.0	Seismic 2D-line () J52.0	XM86-3] Seismic 2D line [XM86-10]	
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250 500 750 1000 1250m 1	GR RT GR 014404.07.3 014404.07.3 014404.07.3 SP SP SP	2007 K10 (arX2000) programming 1,2007 K00 (arX2000) programming programing programming <th pr<="" td=""><td></td><td>Image: Stratigraphy of the surat basin</td></th>	<td></td> <td>Image: Stratigraphy of the surat basin</td>		Image: Stratigraphy of the surat basin
				AGE Groups Lithostratigraphic UNT Seq Start Surface Quaternary Allovium / Colluvium Qu1 B Quaternary Chinchila Sands T100 B Tertiary Chinchila Sands T100 B Griman Creek Formation K001 S9 K000 S9	

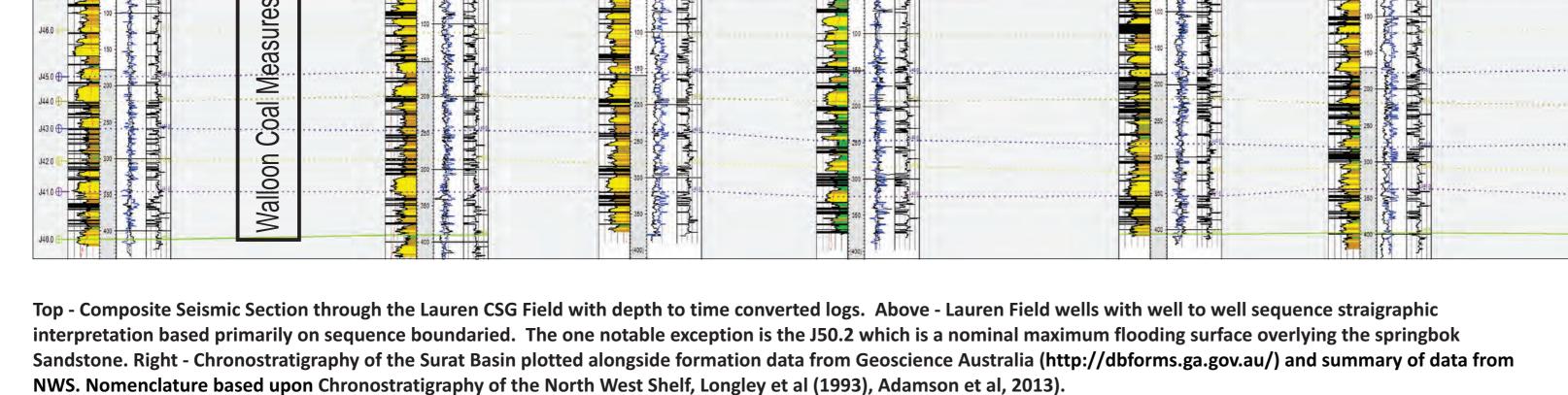
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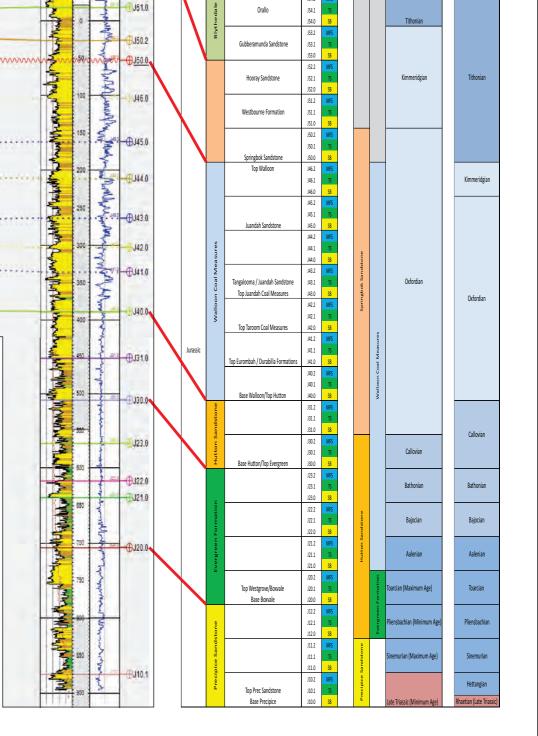
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