instability triggers MTDs, which shape the seafloor topography and control the spatial and temporal development of the reservoir-prone channels and lobes.

Reservoir Depositional Element (RDE) Mapping: Adding detail to the regional picture

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Standard exploration products that are used to understand reservoir presence include Gross Depositional Environment (GDE) maps. These maps generally include major fairways (e.g. delta plain, delta front, slope), location of shelf edges and active faults for a single depositional sequence (100s ft thick). Such maps are generally insufficient to portray intra-sequence variability, which may impact reservoir deliverability and consequently field development and management decisions. Reservoir Depositional Element (RDE) maps are based on thinner stratigraphic intervals (10s ft thick) and a broader range of depositional settings (e.g. distributary channel, mouth bar, axial-, medial-, distal-delta lobe, upper and lower shoreface). They can be constructed for multiple intervals within a particular depositional sequence and used to highlight vertical and lateral variability. This presentation describes an RDE mapping workflow with illustrated examples.

The workflow begins with data gathering, before setting regional stratigraphic and structural context. Core and well logs are interpreted using sequence stratigraphic principles to define time equivalent intervals. Syn-depositional faults, that may influence sediment input points and depocenters, are mapped using seismic calibrated to well data. Depositional elements are interpreted from core, well logs and seismic. Illumination of the depositional elements on seismic has been made possible via improved imaging from Ocean Bottom Cable/Node (OBC/OBN) data and resultant attributes like spectral decomposition. Finally, analogs and conceptual models are used to assist interpreting the inter-well space and draw a range of RDE maps.

The detail depicted on RDE maps adds value at various phases of field development. In exploration, the maps facilitate prediction of reservoir presence, depositional setting and associated petrophysical ranges for a prospect. In field development and management,

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petrophysical trend directions, reservoir quality, reservoir connectivity, aquifer strength and size, that inform static volumes and dynamic behavior can be postulated. It is an integrated tool intended to inform technical and business decisions.