

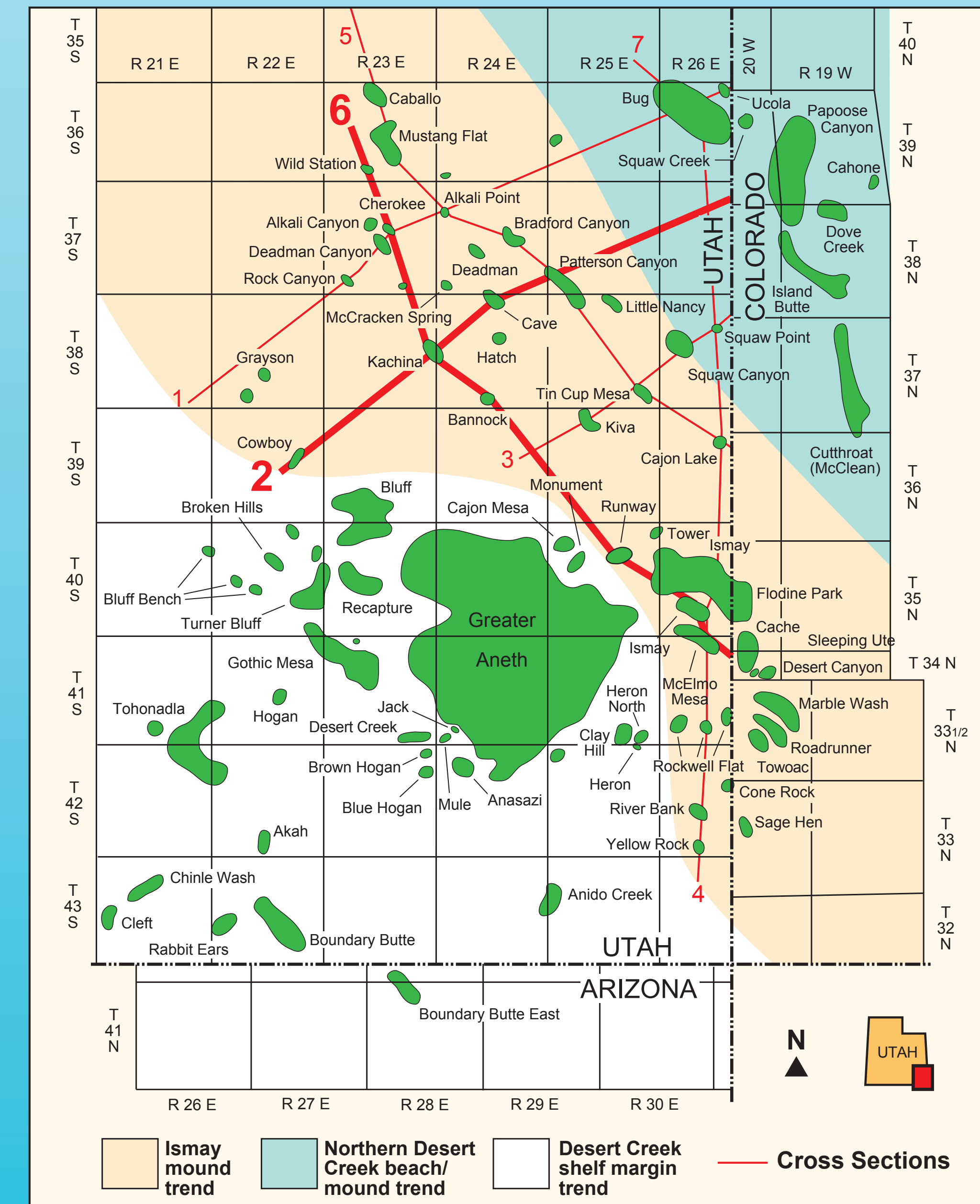
Regional Facies Trends in the Upper Ismay Zone of the Blanding Sub-Basin of the Paradox Basin, Utah: Aids for Identifying Possible Targets for Horizontal Drilling

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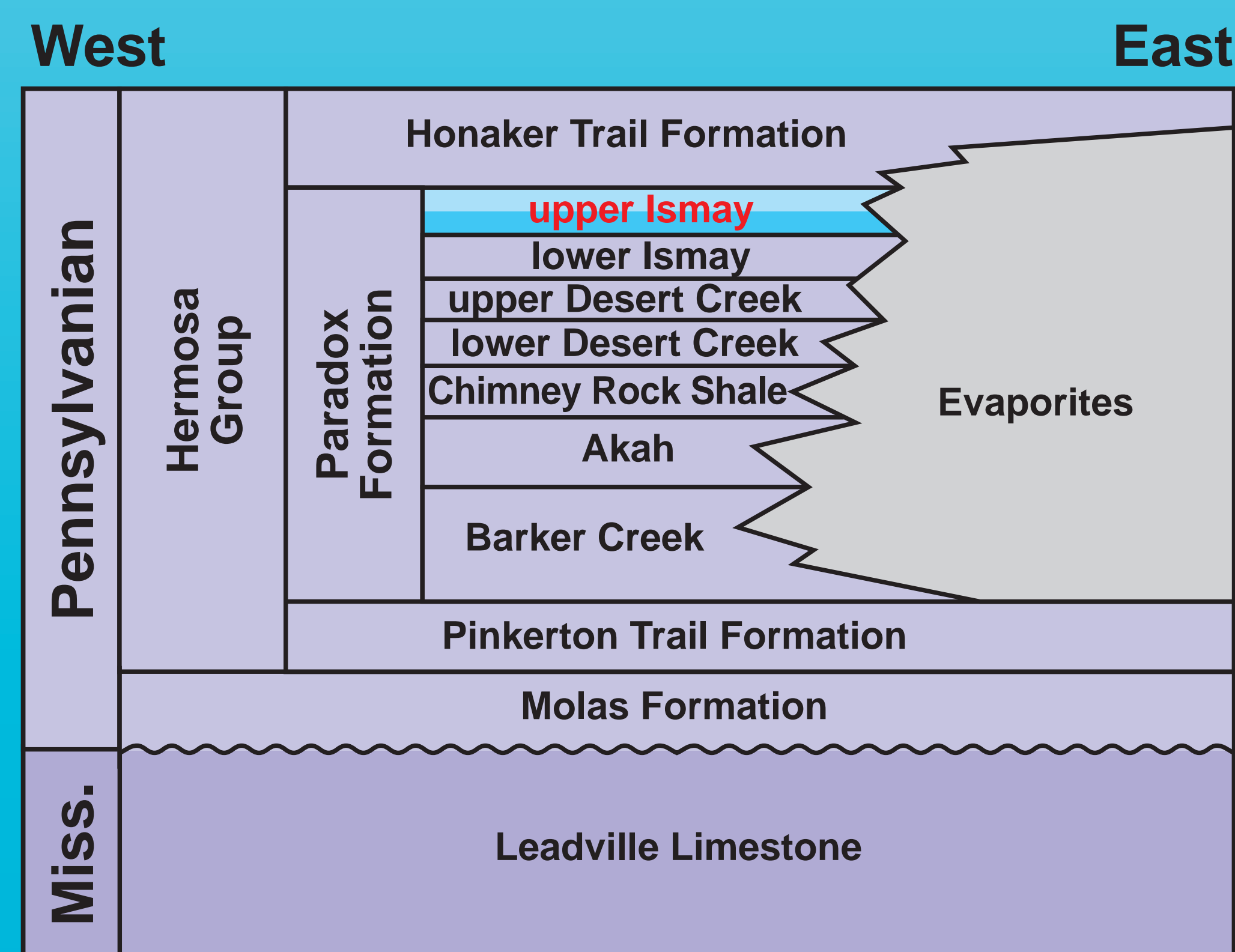
Abstract

The Pennsylvanian (Desmoinesian) Paradox Formation has produced over 50 MMBO in the Blanding sub-basin of the Paradox Basin, Utah and Colorado. Reservoirs within the Utah portion of the upper Ismay zone of the Paradox Formation are dominantly limestones composed of small, phylloid-algal buildups; locally variable, inner-shelf skeletal calcarenites; and rare, open-marine, bryozoan mounds. Regional subsurface mapping of depositional facies for the two productive intervals of the ~150-ft-thick upper Ismay zone shows considerable spatial heterogeneity of the reservoir and non-reservoir rock types. The location and shape of several anhydrite-rich, intra-shelf basins play major roles in the deposition and orientation of productive phylloid-algal buildups, as well as the shoreline facies that wrap around these evaporite basins. Facies distal from the anhydrite-filled basins generally contain less favorable reservoir rocks, whereas most phylloid-algal buildups and porous inner-shelf facies are very close to the intra-shelf basins. The two upper Ismay zone intervals mapped show considerable differences in the distribution of these anhydrite basins and their surrounding facies.

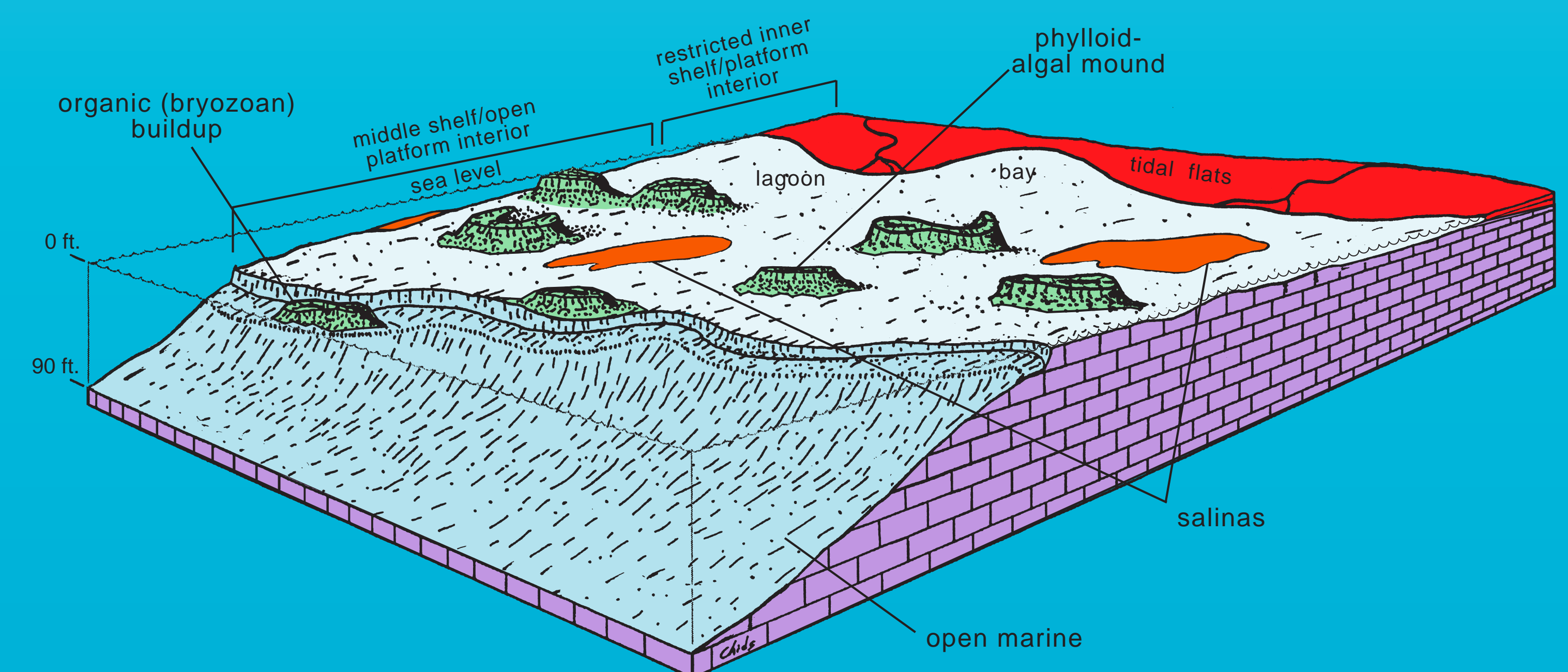
Regional cross sections, isopach relationships of important stratigraphic intervals, and facies types combined with examination of cores throughout the Blanding sub-basin have provided a significant database for identifying potential targets for horizontal drilling within the small, heterogenous phylloid-algal buildups and associated facies in the upper Ismay zone. Facies and reservoir controls imposed by the upper Ismay anhydritic intra-shelf basins should be considered when selecting the optimal location and orientation of any horizontal drilling for undrained reserves, as well as identifying new exploration trends.



Study Area and Fields within Ismay and Desert Creek Producing Trends (red lines designate cross section locations)



Pennsylvanian Stratigraphy of the Southern Paradox Basin. For this study the upper Ismay has been divided into two units – the “upper part” and the “lower part.”



Regional Ismay Depositional Facies (tan fairway on the study map above)

Acknowledgments

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