Regional Stratigraphy of the Trenton-Black River Interval

Ron Riley and Mark Baranoski

FUTURE TASKS FOR 10/05 - 3/06

- Complete integration of stratigraphy task with structure task and finalize isopach maps in November.
- Integrate stratigraphy with petrography and refine depositional model.
- Integrate with other tasks to develop areas of potential exploration interest.
- Conduct detailed field studies (York field and Harlem field)
- Write final report in 2/06 to 3/06.

OUTLINE

- Stratigraphic framework of Middle and Late Ordovician.
- Paleogeography and facies mapping.
- Log signature of mapped facies across the basin.
- Cross sections illustrating facies distribution across the basin.
- Regional isopach maps of Cambrian-Ordovician
- Basin architecture
- Relationship of isopach maps to producing trends
- Summary and Conclusions

Importance of Paleogeography, Facies Mapping and Basin Geometry

- To understand areas of best potential reservoir rocks, (i.e. clean carbonates, grainstones).
- To understand best potential areas for hydrothermal dolomitization (HTD).
- Basin geometry may be influenced by deep-seated faulting and related to HTD.
- To understand differences in seismic signature on Trenton which may vary depending on depositional setting and basin location.
- To aid in determining relationship to producing trends and potential exploration areas.



FACIES MAP OF BLACK RIVER TIME









Clean carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact









Williams County, OH Permit 60004 Clean carbonate with

sharp upper contact

FACIES MAP OF TRENTON/PT. PLEASANT TIME



Clean carbonate grainstones, packstones, and wackestones with sharp upper contact

Argillaceous carbonate grainstones, packstones, and wackestones with sharp upper contact



Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact





Marion County, OH

Permit 196

Sub basin facies

FACIES MAP OF TRENTON/PT. PLEASANT TIME





Clean carbonate grainstones, packstones, and wackestones with sharp upper contact



Argillaceous carbonate grainstones, packstones, and wackestones with sharp upper contact



Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact



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Warren County, OH Permit 60005 Sub-basin facies

FACIES MAP OF TRENTON/PT. PLEASANT TIME





Clean carbonate grainstones, packstones, and wackestones with sharp upper contact



Argillaceous carbonate grainstones, packstones, and wackestones with sharp upper contact



Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact







Steuben County, NY Permit 22859 Argillaceous carbonates with sharp upper contact

FACIES MAP OF TRENTON/PT. PLEASANT TIME





Clean carbonate grainstones, packstones, and wackestones with sharp upper contact



Argillaceous carbonate grainstones, packstones, and wackestones with sharp upper contact



Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact





Pike County, KY

Permit 24577

Argillaceous carbonate with gradational upper contact

FACIES MAP OF TRENTON/PT. PLEASANT TIME





Clean carbonate grainstones, packstones, and wackestones with sharp upper contact



Argillaceous carbonate grainstones, packstones, and wackestones with sharp upper contact



Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact





Pendleton County, WV

Permit 6

Clean carbonates that have been overthrust

FACIES MAP OF TRENTON/PT. PLEASANT TIME





Clean carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with sharp upper contact



Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact









Clean carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact







Clean carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact





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Clean carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact



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Clean carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact











Clean carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact







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Clean carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with sharp upper contact

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Argillaceous carbonate grainstones, packstones, and wackestones with gradational upper contact





SUMMARY AND CONCLUSIONS

- Exploration potential exists along the platform margin. Grainstones in skeletal shoals along platform margin that wraps around from IN-OH-ONT-PA appear to have some of the best reservoir quality (Lake Erie region has great potential).
- Best facies for hydrothermal reservoirs appear to be in clean Trenton and Black River carbonates.
- Area of western NY that contains a clean upper Trenton carbonate may have potential for hydrothermal reservoir facies.
- Localized areas of clean carbonate buildups deeper in the basin and off the platform region are present and are potential targets.
- Areas that contain a clean Trenton with a sharp upper contact may be imaged seismically to identify potential exploration trends?

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			Millbrig Diecke Black River Group				

