reservoir management practices and conventional well spacing. Most of the major Texas oil reservoirs can be grouped into 48 geological plays which account for 71% (32 billion bbl) of all Texas oil production.

Twenty-one of the plays are located in a belt along the Texas Gulf coastal plain and in the East Texas basin. Mesozoic and Cenozoic sandstone reservoirs deposited in fluvial-deltaic and strandplain systems dominate over fluvial sandstones and carbonate reservoirs. The remaining 27 plays extend westward from north-central to west-central Texas. Dolomite is the prevalent reservoir lithology with sandstone and reef-associated limestone being more abundant than chert, conglomerate, and nonreef associated limestone. Reservoir genesis in the north and west Texas plays is diverse and includes a spectrum of clastic depositional environments from fan and fan delta to slope and basin systems. Carbonate reservoirs have been interpreted as open and restricted shelf deposits, platform margin-associated banks and reefs, and deeper water atoll and pinnacle reef systems. Unconformity-related reservoirs in west and east Texas, such as the prolific East Texas field, are grouped into two plays regardless of the depositional history of the reservoir. Recovery efficiencies of the Paleozoic north and west Texas plays are considerably lower than those of the coastal plain and east Texas plays.

The effects of drive mechanism, lithology, permeability, API gravity, and viscosity on reservoir performance are well known. An additional important control on recovery efficiency that has been emphasized by this study is reservoir genesis. Although productivity can be modified by extremes in permeability or hydrocarbon character, it otherwise follows predictable trends based on the known geologic complexity and heterogeneity of the depositional system of the reservoir.

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Ocean Margin Drilling Project Data Synthesis off Eastern North America

An atlas of geological and geophysical maps has been compiled for the east coast of the North American continent, covering an area from well onshore to the ocean crust, and from 39 to 46°N lat., as part of the Ocean Margin Drilling Project.

Included in the atlas are maps of the depth to continental oceanic basement, depth to the top of Lower and Middle Jurassic (reflectors J_M/J_3 and J_S/J_2, to the top of Jurassic (reflectors J/J_1), to the top of Neocomian (reflector Beta), to the top of Cretaceous (reflector A*), to the top of Paleogene (reflector A_u), and to the top of early Miocene (reflector X). Isopach maps between these reflectors and between them and the sea floor are also included. Contours are two-way travel time with a contour interval of 0.25 to 1 sec.

The atlas also contains a tectonic map of basement, a pre-Quaternary geologic map and lithofacies maps for six time slices.

There are geophysical maps of magnetic and gravity anomalies and compressional wave velocities in sediments and basement.

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Peculiarities of Petroleum Formation in Highly Bituminous, Siliceous, Shaly, Carbonaceous Facies, Timan-Pechora Basin, USSR

Over 50 oil and gas fields with total reserves of about 6×10^9 BOE have been discovered in the Timan-Pechora basin, one of the most important Russian frontiers. Almost all the sequence is productive, although major reserves are confined to two stratigraphic intervals beneath regional seals. Principal source rocks are the so-called Domanik facies, 25 to 150 m (82 to 492 ft) thick, represented by rapidly alternating black shales, chert, marls, and siliceous and organic limestones. Exclusively sapropelic organic matter averages 5 to 7% and reaches 20% or more. Soluble bitumen is very abundant (1 to 2 wt. %) and contains all the components characteristic of crudes: from light oils to heavy tars and typical high-molecular asphaltenes. These characteristics exist even on the basin's periphery where Domanik facies are only marginally mature. In other areas, Domanik facies are mature; they are probably overmature in the deepest troughs. Outside the area covered by Domanik facies, pools and even significant shows are absent.

Deposition of this prominent facies began during the end of early Frasnian time in a wide stagnant sea that covered the eastern edge of the Russian platform. Beginning in the late Frasnian, shallow-water carbonate sedimentation resumed along the basin's edges and on uplifted blocks. Condensed Domanik deposits continued to form in the gradually deepening sea on the east side of the basin. Barrier reefs and clastic terraces that prograded basinward formed along the northern and western boundaries. The deep-water trough was finally filled by thick clastics at the end of early Tournaisian time.

The unusual composition of Domanik facies and their exceptional enrichment by sapropelic organic matter result in their peculiarities as petroleum source rocks. Lithology of the rocks, particularly the abundance of huge carbonate concretions fully or partly replaced by silica, suggests a long delay in lithification and the relative importance of the late diagenetic stage of oil generation. This explains the presence of immature oils in underlying Devonian clastics and their absence elsewhere in the sequence. On the other hand, Domanik facies, owing to significant silicification that trapped giant amounts of bitumen in the rocks, became a "natural repository" of oil during geologic history. This oil migrated because of fracturing, especially during stages of tectonic activity. Spatial distribution of oil types and deposits of solid bitumen in traps having different ages of formation, clearly shows predominance of pulse-like vertical migration. Migration of oil from the Domanik continued during late stages of geologic history along with block uplifting, cooling of the sedimentary cover, and absence of sedimentation. Thus, methods of applied geochemistry that invoke models of heating should not be applied to Domanik-type rocks and more geologic data are required to assess their role as oil sources.

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Influence of Accretionary Tectonics on Sedimentation and Diagenesis: Paleogene Yager Formation of Northern California

The Yager formation of Humboldt County, California, comprises well-bedded mudrock, sandstone, and conglomerate of Paleogene age. These strata are much less deformed than coeval broken formations and melange of the Coastal Belt Franciscan. We infer that deposition occurred within slope, slope-channel, and trench-slope–basin environments, in an overall subduction or transpressional tectonic regime.

The following observations suggest that Yager basins were both restricted in size and elongate in shape: (1) feeder-channel