

National Assessment of Oil and Gas Fact Sheet

2002 Assessment of Undiscovered Oil and Gas Resources: Cretaceous Travis Peak and Hosston Formations, Jurassic Smackover Interior Salt Basins Total Petroleum System, Louisiana-Mississippi Salt Basins Province, Northern Gulf Coast Region

Using a geology-based assessment methodology, the U.S. Geological Survey estimated means of 1,136 billion cubic feet of undiscovered natural gas, 29 million barrels of undiscovered oil, and 22 million barrels of natural gas liquids in the Travis Peak and Hosston Formations in the East Texas Basin and Louisiana-Mississippi Salt Basins Provinces of the northern Gulf Coast region. These hydrocarbon volumes represent a total for three defined assessment units that combine to form a single total petroleum system within the provinces.

Introduction

The U.S. Geological Survey (USGS) recently completed an assessment of the undiscovered oil and gas potential of the Lower Cretaceous Travis Peak and Hosston Formations in the East Texas Basin and Louisiana-Mississippi Salt Basins Provinces of the northern Gulf Coast region (fig. 1) as part of a national oil and gas assessment effort. The assessment of the petroleum potential of the Travis Peak and Hosston Formations was based on the general geologic elements used to define a total petroleum system (TPS), which includes hydrocarbon source rocks (source-rock maturation, and hydrocarbon generation and migration), reservoir rocks (sequence stratigraphy and petrophysical properties), and hydrocarbon traps (trap formation and timing). Using this geologic framework, the USGS defined three assessment units (AU)—Travis Peak–Hosston Gas and Oil AU, Travis Peak–Hosston Updip Oil AU, and Travis Peak–Hosston Hypothetical Updip Oil AU—that combine to form a single TPS, the Jurassic Smackover Interior Salt Basins TPS. A fourth AU, Hosston Hypothetical Slope-Basin Gas, was not quantitatively assessed because of a lack of geological data.

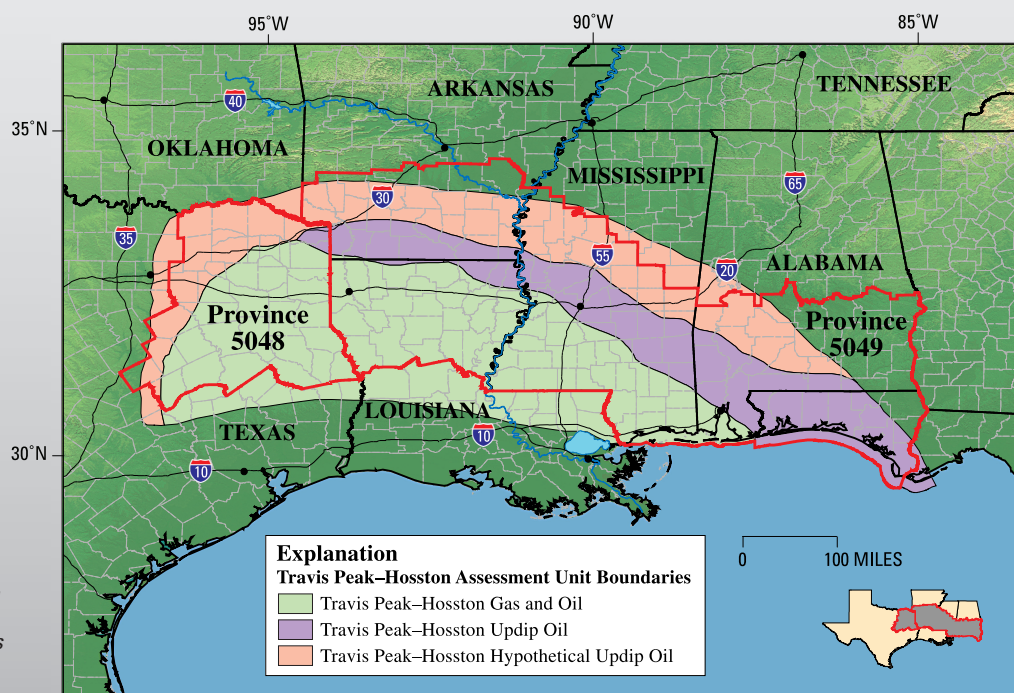


Figure 1. Map of Louisiana-Mississippi Salt Basins Province 5049 and East Texas Basin Province 5048 of the northern Gulf Coast region showing geographic distribution of the Travis Peak and Hosston Formations assessment units in the Jurassic Smackover Interior Salt Basins Total Petroleum System.

Table 1. Assessment results summary—Travis Peak–Hosston Assessment Units within the Jurassic Smackover Interior Salt Basins Total Petroleum System, 504902.

[MMBO, million barrels of oil; BCFG, billion cubic feet of gas; MMBNGL, million barrels of natural gas liquids; MAS, minimum accumulation size assessed (MMBO or BCFG); Prob, probability (including both geologic and accessibility probabilities) of at least one accumulation equal to or greater than the MAS or, for continuous-type resources, at least one additional cell of equal to or greater than the minimum estimated ultimate recovery. Results shown are fully risked estimates. For gas accumulations, all liquids are included as NGL (natural gas liquids). F95 represents a 95-percent chance of at least the amount tabulated. Other fractiles are defined similarly. Fractiles are additive under the assumption of perfect positive correlation. Shading indicates not applicable]

Accumulation type	MAS	Prob (0-1)	Resources											
			Oil (MMBO)				Gas (BCFG)				NGL (MMBNGL)			
			F95	F50	F5	Mean	F95	F50	F5	Mean	F95	F50	F5	Mean
Travis Peak–Hosston Gas and Oil Assessment Unit														
Oil	0.5	1.00	1.25	3.77	9.09	4.28	9.20	29.24	76.28	34.26	0.21	0.72	1.97	0.86
Gas	3.0						395.49	1,007.23	1,854.68	1,051.08	6.55	17.60	35.86	18.93
Total		1.00	1.25	3.77	9.09	4.28	404.69	1,036.47	1,930.96	1,085.35	6.76	18.32	37.83	19.78
Travis Peak–Hosston Updip Oil Assessment Unit														
Oil	0.5	1.00	6.18	19.74	39.49	20.97	5.76	19.24	42.23	21.01	0.21	0.75	1.78	0.84
Gas	3.0						7.74	22.40	55.02	25.71	0.21	0.66	1.73	0.77
Total		1.00	6.18	19.74	39.49	20.97	13.50	41.64	97.25	46.72	0.42	1.40	3.51	1.61
Travis Peak–Hosston Hypothetical Updip Oil Assessment Unit														
Oil	0.5	0.76	0.00	3.13	9.72	3.66	0.00	3.01	10.14	3.66	0.00	0.12	0.42	0.15
Gas	3.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.76	0.00	3.13	9.72	3.66	0.00	3.01	10.14	3.66	0.00	0.12	0.42	0.15
Hosston Hypothetical Slope-Basin Gas Assessment Unit														
Not quantitatively assessed														
Total conventional undiscovered resources in Travis Peak–Hosston reservoirs of the Jurassic Smackover Interior Salt Basins Total Petroleum System														
Oil	0.5	1.00	7.44	26.63	58.29	28.92	14.96	51.50	128.65	58.93	0.43	1.58	4.17	1.85
Gas	3.0						403.24	1,029.63	1,909.70	1,076.79	6.75	18.25	37.58	19.70
Total		1.00	7.44	26.63	58.29	28.92	418.19	1,081.13	2,038.35	1,135.72	7.18	19.83	41.76	21.54

Resource Summary

The USGS assessed undiscovered conventional oil and gas for each of the AUs, resulting in total estimated means of 1,135.72 billion cubic feet of nonassociated gas and associated gas in oil fields, 28.92 million barrels of oil, and 21.54 million barrels of natural gas liquids in the Jurassic Smackover Interior Salt Basins TPS of these two provinces (table 1). All of the undiscovered resources are conventional. The Travis Peak–Hosston Gas and Oil AU contains 1,085.35 billion cubic feet of gas, representing about 95 percent of the total mean undiscovered gas resource (1,135.72 billion cubic feet) estimated for the Travis Peak and Hosston Formations in these two provinces.

For Further Information

Supporting geologic studies of total petroleum systems and assessment units and reports on the methodology used in the Travis Peak–Hosston assessment in the East Texas Basin and Louisiana–Mississippi Salt Basins Provinces of the northern Gulf Coast region are available at the USGS Central Energy Team Web site: <http://energy.cr.usgs.gov/oilgas/noga/>

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