



U.S. Geological Survey Public Assessment Review: Western North Slope

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The USGS is conducting an assessment of undiscovered technically recoverable oil and gas resources of the Western North Slope (west of NPRA) and adjacent State waters. This assessment will not include the Nanushuk and Torok Formations west of NPRA, which were assessed in 2017. In preparation for the upcoming assessment, a public geology review talk will be presented by Dave Houseknecht as a webinar on Thursday November 5, 2020. Primary objectives are to (1) present the geological framework on which the assessment will be based and (2) solicit feedback from the geological community regarding the geology and interpretations that represent the foundation of the assessment.

Normally, the USGS asks the Alaska Geological Society to host an in-person geology review meeting as was done in November 2019 for the Nanushuk-Torok-NPRA assessment and in November 2020 for the Central North Slope assessment. However, in this "year of COVID-19" it was decided that a seminar-style talk delivered as a webinar would be an appropriate substitute. A normal Q&A time will follow the talk but the afternoon break-out session that typically follows USGS assessment public review meetings is not planned. Anyone interested in a more in-depth conversation is welcome to contact Houseknecht by email in the days following the talk.

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AGS Special Meeting

Date & Time:	Thursday, November 5; 12:00 to 1:00 pm; email discussion after presentation
Program:	U.S. Geological Survey Public Assessment Review: Western North Slope
Speaker:	David W. Houseknecht, U.S. Geological Survey, Reston, VA
Place:	Virtual online presentation
Reservations:	Reservations are not required
Login:	For more information about AGS presentations see: http://www.alaskageology.org/events.html
How to Join:	Zoom link: https://meet.google.com/kbm-stvd-jvw?hs=122&authuser=0
	or Join by phone (US) +1 240-514-7971 PIN: 873 128 037#

About the Speaker:

Dave Houseknecht is a senior research geologist with the U.S. Geological Survey (USGS) in Reston, Virginia with a focus on basin analysis, geological controls of petroleum resource occurrence, and petroleum resource assessment. This work mainly is concentrated in Arctic Alaska and adjacent regions. He frequently represents the USGS scientific perspective on petroleum resources in the Arctic National Wildlife Refuge, National Petroleum Reserve in Alaska, other areas of Alaska, and the global Arctic to the Administration and Congress. Dave joined the USGS in 1992, serving as Energy Program Manager through 1998 and then moving to a research position. Previously, Houseknecht was a professor of geology at the University of Missouri (1978-1992) and consultant to the oil industry, working on domestic and international projects. He received geology degrees from Penn State University (Ph.D. 1978, B.S. 1973) and Southern Illinois University (M.S. 1975).



Figure 1. Surprise Creek Anticline, view to west. High-standing ridge that defines anticline comprises sandstone in the Mount Kelly Graywacke. Strata in core of anticline include imbricates of Shublik (Otuk) Formation and Kingak Shale. Geologists with orange vests for scale.



Figure 2. Rib of Shublik (Otuk) Formation exposed in Surprise Creek Anticline.



Figure 3. Outcrop of friable, oil-saturated sandstone in Nanushuk Formation on Kokolik River in westernmost NPRA. Oil charge likely originated in Western North Slope, west of NPRA.



Figure 4. Fissile shale and interbeds of siltstone and bentonite in pebble shale unit and gamma-ray zone of Hue Shale at Redwul section, Western North Slope. Shale includes petroleum source rocks with total organic carbon ranging up to 11.2 weight percent (Mull and Kirkham, unpublished DGGS report).