

Bulletin 2010-28

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Zones Eligible for Shale Gas Fluid Codes

The purpose of this bulletin is to provide guidance on the use of shale gas fluid codes for designating production in the Petroleum Registry of Alberta (PRA). Six stratigraphic intervals that generally consist of mudstone or shale successions are identified. Gas-producing zones within these intervals but outside of conventional pools may reasonably be designated as shale gas. Guidance is also provided for assessing zones outside of these six intervals with respect to the use of shale gas fluid codes.

This bulletin replaces *Bulletin 2009-23: Shale Gas Development—Definition of Shale Identification of Geological Strata*.

Shale Gas Zones in Alberta

Shale gas zones are pervasive, predominantly mudstone or shale successions that have potential to produce natural gas. The following are the six stratigraphic intervals in Alberta identified as having a predominant lithology of mudstone and/or shale successions (refer to Energy Resources Conservation Board [ERCB] Table of Formations for stratigraphic equivalencies):

- 1) Colorado Group and equivalents (excluding predominantly sandy lithologies or formations of conventional production, e.g., Milk River, Medicine Hat, Chinook, Bad Heart, Cardium, Jumping Pound, Doe Creek, Dunvegan, Pouce Coupe, Barons, Viking and equivalents)
- 2) Wilrich Formation
- 3) Bantry Formation
- 4) Fernie Group shales, including Poker Chip, Rierdon, Nordegg and equivalents (excluding sandy and clean carbonate lithologies)
- 5) Exshaw and the lowermost mudstone/shale portion of the Banff Formation and equivalents
- 6) Ireton/Duvernay/Muskwa/Fort Simpson Formations and equivalents

Gas produced from zones within these six identified intervals can reasonably be classified as shale gas through the use of shale gas fluid codes submitted to the PRA provided that

- the zone is a mudstone and/or shale succession as demonstrated by core or interpreted from wellbore logs and drill cuttings;
- the zone is exclusive of thick sandstones, siltstones, and clean carbonates; and
- the production does not occur within, or in communication with, conventional hydrocarbon pools (as defined by ERCB pool orders).

For each of the shale gas stratigraphic intervals, a representative map and cross section will be available on the ERCB Web site www.ercb.ca to show the current understanding of the approximate distribution of the stratigraphic interval, the pool orders, and the variation of lithological character (shown by log traces).

General Guidance for Identifying Shale Gas Zones

If a shale gas fluid code is used for production from any other stratigraphic interval, the operator must be able to provide supporting evidence that production is occurring from hydrocarbon-bearing mudstone and/or shale successions.

As a general guide, a mudstone/shale succession may be defined by one or more of the following:

- A laminated indurated rock with >67 per cent clay-sized minerals, often with fissility.
- A blocky or massive fine-grained sedimentary unit (nonlaminated) in which the proportion of clay is approximately equal to or greater than silt-sized particles.
- A fine grained, low-permeability clastic, carbonate, or mixed lithology rock of which the exact composition is unknown; however, on a geophysical log, the response of the production interval is uniformly shaley.

All uses of shale gas fluid codes are subject to review by the ERCB.

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[Link to currently available representative maps and cross sections](#)