

JANUARY 23, 2012

APPENDIX A: INTERWELLBORE COMMUNICATION DURING FRACTURING OPERATION EVENTS

Since 2008, almost 2,000 wells have been drilled in Alberta that utilized horizontal, multi-stage, hydraulic fracturing to enhance oil and gas recovery. Of these, more than 640 were gas wells and almost 1,300 were oil wells. The ERCB has confirmed five instances of hydraulic fracturing impacting nearby energy wells. There are no documented cases of a similar occurrence impacting water wells in Alberta.

The most recent incident occurred on Friday, January 13, 2012, when a Midway Energy Ltd. multi-stage fracturing operation appears to have impacted a nearby Wildstream Exploration Ltd. oil well. This most recent event remains under ERCB investigation.

No public safety or significant environmental impact was recorded in any of the incidents, including the most recent.

Following is a list of the five events.

Date: January 13, 2012
Owner of fractured well: Midway Energy Ltd.
Owner of impacted well: Wildstream Exploration Ltd.
Location of incident: 35 kilometres southwest of Innisfail, Alberta
Surface distance between wells: 1.2 kilometres
Subsurface distance between wells: Under investigation
Fracture fluid: Fracturing oil, sand, nitrogen
Volume released: Unconfirmed, ERCB investigation underway
Current status: Spill cleaned. ERCB investigation underway. No public safety impacts. Limited environmental impact.

Date: September 24, 2011
Owner of fractured well: Bonterra Energy Ltd.
Owner of impacted well: Sword Energy
Location of incident: 30 kilometers east of Drayton Valley
Fracture fluid: Nitrogen, foam, water
Volume released: Approximately 8m³
Current status: Spill cleaned up. No public safety impacts. Minimal environmental impact.

Date: March 17, 2011
Owner of fractured well: Yangarra Resources
Owner of impacted well: Yangarra Resources
Location of incident: 16 kilometres north of Rocky Mountain House
Surface distance between wells: Approximately 1,500 metres
Subsurface distance between wells: 110 metres
Fracture fluid: Nitrogen, foam, water
Volume released: Approximately 2.3 m³

Current status: Spill cleaned up. No public safety impacts. Minimal environmental impact.

Date: December 9, 2010

Owner of fractured well: Bellatrix Exploration

Owner of impacted well: Bellatrix Exploration

Location of incident: 38 kilometres northwest of Rocky Mountain House

Surface distance between wells: Approximately 530 metres

Subsurface distance between wells: 475 metres

Fracture fluid: Nitrogen, foam, water

Volume released: No liquid spill

Current status: No public safety impacts. No environmental impact.

Date: October 19, 2009

Owner of fractured well: Talisman Energy (now owned by Advantage Oil & Gas)

Owner of impacted well: Talisman Energy (now owned by Advantage Oil & Gas)

Location of incident: 75 kilometres northwest of Grand Prairie near BC border

Surface distance between wells: Approximately 1,600 metres

Subsurface distance between wells: 190 metres

Fracture fluid: Emulsified carbon dioxide

Volume released: Less than 1 m³

Current status: Spill cleaned up. No public safety impacts. Minimal environmental impact.