

## ACTION PLAN FOR AER DECISION 2008-089

### QUICKSILVER RESOURCES CANADA INC.

#### APPLICATIONS FOR CBM WELL AND PIPELINE LICENCES, GHOST PINE FIELD

ACTION ITEM	REQUIRED ACTION/COMMENTS	DECISION: 2008-089	AER PROCESS TO ENSURE FOLLOW-UP	STATUS & EVIDENCE
1 Surface Casing	For the 16 proposed CBM wells in the Ghost Pine field that are to be completed (perforated and/or fractured) shallower than 200 m and within a lateral distance of 200 m of a water well, Quicksilver is required to set surface casing 25 m below the depth of the deepest nearby water well. If the depth of any water well within the 200 m lateral distance of the CBM well is unknown, the surface casing must be set to a depth of 150 m. All water well locations and depths within 200 m of the 16 proposed wells must be reported to the nearest ERCB Field Centre.	Section: 6.3 Paragraph 7 P. 8	1. Quicksilver will report the number of wells to be perforated/fractured shallower than 200 m and within a lateral distance of 200 m of a water well.  2. Quicksilver will provide Red Deer Field Centre with all water well locations and depths within 200 m of the 16 proposed wells.	Completed - November 27, 2008 1. As per Quicksilver's November 27, 2008 letter, only one well is going to be perforated / fractured shallower than 200 m (6-9-31-21W4) and it is not within 200m of a water well. Therefore, part 1 of this condition is not applicable and no further action is required.  2. Quicksilver provided the report containing the required information.
2 Base of Groundwater Protection	Quicksilver must ensure that no well that is shut in or suspended allows cross-flow of water above the base of groundwater protection at any time.	Section: 6.3 Paragraph 3 P. 8	Discussions with the ERCB's Environment staff has determined that we may ask Quicksilver to notify the Red Deer Field Centre if any of the 16 wells are shut in or suspended and then we could check to see if cross-flow was an issue. The wells could be checked for cross-flow every 6 months or annually and have Quicksilver remediate if necessary.	Ongoing - Quicksilver has provided the ERCB with its supplemental strategy to address groundwater protection when wells are shut in or suspended.  March 2011 update: 6 of the well licenses were cancelled.  June 2017 update: no well has been shut in or suspended to date.

*The conditions imposed in approvals/licence(s) are monitored by the Alberta Energy Regulator (AER). The AER has developed a process whereby an action plan is developed internally to ensure that AER staff monitor conditions arising from decision reports for compliance. The conditions are managed in an action plan that is updated quarterly with statuses of conditions. The action plan defines the action required, timeframes for completion, and a summary of the evidence provided to confirm a condition was met. For more information, please contact the Action Plan Administrator at (403) 297-4289.*