

January 16, 2008

Ms. Jessica Ernst  
Box 753  
Rosebud, Alberta  
T0J 2T0

Dear Ms. Ernst:

**RE: Closure of Investigation No. 7894**  
**Water Well Complaint at SE-13-027-22 W4M**

Alberta Environment's investigation regarding the possible impact of coalbed methane development on your water well at SE-13-027-22 W4M is complete.

Dr. Alec Blyth, an expert isotope geochemist/hydrogeologist from the Alberta Research Council, was retained to conduct an independent review the data and Alberta Environment's process for handling well water complaints. A copy of their review is attached.

The Alberta Research Council used various lines of evidence to determine whether your well has been impacted. The report concludes that the methane gas in your water well is biogenic, indicating it was formed at a shallow depth. The gas most likely originates from the shallow coal seams where most Rosebud area water wells are drilled. The report concludes that coalbed methane and other energy development projects have not impacted your water well. Based on these findings, Alberta Environment is closing this investigation.

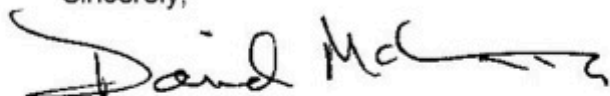
Please note that various laboratory records on your well dating back to 1986 indicate that some routine water quality parameters have exceeded the Guidelines for Canadian Drinking Water Quality<sup>i</sup> (GCDWQ). These include the aesthetic objectives<sup>ii</sup> of pH, sodium, iron, manganese and total dissolved solids. Regarding health-related parameters, fluoride exceeded the GCDWQ maximum acceptable concentration<sup>iii</sup> value of 1.5 mg/L in 1986 and 2003. Total coliforms exceeded the maximum acceptable concentration limit in your well in 2003, an indicator of possible surface water contamination through a leaky well casing seal. Alberta Environment recommends that you contact your Regional Health Authority for further advice regarding these results.

As well, both sulphate reducing bacteria and iron related bacteria were detected in your well in 2006 and 2007 and can sometimes cause taste, odour, staining and well production issues. These bacteria naturally exist in the subsurface and can be controlled by regularly shock chlorinating your well.

Given the presence of gas in your well, Alberta Environment recommends that you take measures to properly vent your water well and distribution system. There are no known or demonstrated adverse human health effects associated with drinking or bathing with well water that contains methane. Methane gas that accumulates in a confined space or enclosed area has the potential to create oxygen-deficient and flammable/explosive environments. Please refer to the attached materials on how to mitigate situations where gas is present in groundwater. Alberta Environment recommends you consult with a qualified water well contractor to deal with the aesthetic and gas related issues pertaining to your well.

Alberta Environment will continue to supply water to your residence until April 18, 2008 to give you an opportunity to make any necessary arrangements to secure your water supply.

Sincerely,



David McKenna  
Business Unit Leader  
Groundwater Policy Branch

Enclosures

cc: John Knapp  
Alberta Environment

Martin Foy  
Alberta Environment

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<sup>1</sup>*Guidelines for Canadian Drinking Water Quality (March 2006)* help to protect the health of Canadians by establishing maximum acceptable concentrations for substances found in water used for drinking. The guidelines apply to all public and private drinking water supplies and to treated or finished water as it emerges from the tap. Drinking Water Quality Guidelines are developed by and available through Health Canada. Please consult with your local Health Authority regarding any parameters above the set criteria relating to possible health affects.

<sup>2</sup>*Aesthetic objective(s)* are the characteristics of drinking water that can affect consumer acceptance such as appearance and taste. If a concentration is well above an aesthetic objective, there is a possibility of a health hazard. For further information, please contact your local Health Authority.

<sup>3</sup>*Maximum Acceptable Concentration(s)* have been established for certain substances that are known or suspected to cause adverse effects on health. Each MAC has been derived to safeguard health assuming lifelong consumption of drinking water containing the substance at that concentration. Please consult with your local Health Authority regarding any parameters above the set criteria relating to possible health effects.