

Bulletin 2009-42

December 1, 2009

New ERCB Processes and Computer Systems for Oil Density and Acid Gas Content Values and Change Processes.

This bulletin provides information on the completion of the Energy Resources Conservation Board's (ERCB's) Alberta Royalty Framework (ARF) project and describes key elements of the guidelines used by the ERCB to determine acid gas content (AGC) values and the associated change request process.

1 ARF Project

The ERCB's ARF project was initiated to develop and introduce new processes and enhance ERCB computer systems to support the successful implementation of the Alberta Department of Energy's (DOE's) ARF initiative. The ERCB's ARF project has produced the following deliverables, which will be complete and operational by December 15, 2009:

1) Conventional Oil

- a) system solution to disseminate oil density values (pool level) to the Petroleum Registry of Alberta (PRA) on a monthly basis
- b) oil density change request process for industry to request a change to published oil density values, as described in *Bulletin 2008-42*

2) Natural Gas

- a) dissemination of AGC values to the PRA using an incremental data load strategy while the AGC system solution was under development
- b) system solution to calculate and disseminate AGC values to the PRA periodically (at least monthly)
- c) AGC change request process for industry to request a change to published AGC values

There were no ERCB requirements with regard to the Oil Sands Royalty Program under ARF.

2 Acid Gas Content Guidelines

In support of the ARF initiative, the ERCB has implemented changes to calculate and disseminate AGC data to the DOE for royalty calculation purposes.

The AGC value is the sum of the hydrogen sulphide (H₂S) and carbon dioxide (CO₂) content (mole fraction) of raw gas being produced in a well event. The ERCB is responsible for providing AGC data to the DOE via the PRA.

2.1 Pool Average Gas Analysis

In general, all wells in a geological pool are assumed to have the same gas composition. Each geological pool is assigned an AGC value based on an average of gas analyses for well events in the pool. This single pool AGC average is assigned to all well events in the pool. Note that assigning a single pool AGC average is not applicable to coalbed methane (CBM) pools because their gas composition varies over time and from well to well. Instead, the AGC value for a CBM well event is based on gas analysis for that particular well event. CBM wells do not produce H₂S. The AGC for a CBM well is based solely on the CO₂ production from the well.

When a well event produces from commingled pools, its AGC value is calculated as the average of the AGC values of the contributing pools. The assumption is that within that well event, all pools contribute equally to the production. This only applies to the commingling of conventional pools.

2.2 Data Completeness

The ERCB reminds industry that a gas analysis is required for each gas well completed outside an existing pool order. It also recognizes that the gas analysis data set is not complete for the province. Therefore,

- if the ERCB determines that a pool has a sufficient number of well events with valid gas analyses, a pool average AGC value will be calculated and used in determining the AGC value for all well events associated with the pool; but
- if the ERCB determines that a pool does not have a sufficient number of well events with valid gas analyses to determine a reliable pool average AGC value, only those well events with valid gas analyses will be assigned AGC values based on an average of all analyses in the pool.

For additional information regarding the process for determining pool average AGC values, please contact the ERCB by sending an e-mail to Inquiries@ercb.ca with the subject line: **Acid Gas Content Change Request**.

2.3 AGC Data Start and End Dates

Each set of AGC data is accompanied by a start date and an end date. These dates specify the period during which a particular set of AGC data is to be applied. The following guidelines are used for setting dates based on the method of gas production.

Conventional oil and gas pools and enhanced recovery pools: The AGC values for conventional pools are assumed to be constant over the life of the pool. The AGC values for enhanced recovery pools are based only on gas analyses that are representative of the original reservoir fluid. As new data are submitted, the ERCB will be able to refine its estimates of pool AGC values.

- Changes to AGC estimates are retroactive to “Time Zero” (January 1, 2009).
- An end date is not assigned.

CBM wells: The CO₂ content of wells producing CBM or a combination of CBM and conventional gas may increase over the production life of the well. As such, AGC values are assigned to CBM well events only when a gas analysis is provided for a specific well event and upon successful request for a change in AGC.

- The start date is based on the gas analysis sample date.
- AGC changes are applied only on a go-forward basis.

Commingled wells

- The first AGC value has an initial “Time Zero” start date.
- When a change in a well event completion interval indicates that a pool was added or deleted, a revised AGC will be assessed and a new start date set such that any AGC change is applied only on a go-forward basis.

3 Process for Requesting a Change in Acid Gas Content

When submitting a request for a change to the AGC value(s) of well events maintained by the ERCB, the requester should be aware of the following:

- The AGC of a well event is determined from gas analysis tests submitted to the ERCB through the Well Test Capture part of the Digital Data Submission (DDS) system. The ERCB will not consider gas analysis tests not submitted through this process when investigating a change request.
- ERCB assessment of an AGC change request will take into consideration all gas analyses within the ERCB-defined pool.

An AGC change request should be sent by e-mail to the ERCB Customer Contact Centre at Inquiries@ercb.ca, with the subject line: **Acid Gas Content Change Request**. The submission must include the following information:

- unique well identifier (UWI)
- well licence number
- field, pool code, and name
- description of the requested change, including
 - the requested AGC value for the well event
 - the current AGC value for the well event
 - reason for change and technical information to support the request
- contact name, title, and organization, well as phone number and e-mail address

Additionally, one or more of the following may be submitted to support the change request assessment process:

- The unique reference number assigned by the ERCB for relevant gas analysis test(s) that have already been submitted to the ERCB’s Well Test Data Capture DDS. If a unique reference number is not available, provide key information that could be used to uniquely identify the tests.
- AGC information for other wells in the subject pool.

The ERCB will process AGC change requests in the order in which they are received. Under normal circumstances, a request that has reached the front of the queue will be processed by the ERCB within 10 business days, assuming there are no deficiencies. Approved requests may take up to 6 weeks to reach the PRA system, as AGCs are transferred to the PRA on a monthly basis.

Once the request has been reviewed, the ERCB will issue a response indicating whether the request has been approved. If the request is denied, a reason will be given. Further requests to reexamine or reassess a change request decision must be accompanied with new or previously unavailable supporting information.

If the request results in a change to the AGC value for a pool containing multiple wells, only the originator of the change request will be notified by the ERCB. However, operators and licensees of wells in the same pool will have the ability to view the revised AGC value when it becomes available on the PRA system.

The status of a submitted change request will not be posted by the ERCB. However, the requester may inquire about the change request status by sending an e-mail to Inquiries@ercb.ca with the same subject line: **Acid Gas Content Change Request**. This e-mail must contain sufficient detail to enable the ERCB to identify the specific change request and confirm its status.

Note that inquiries related to DOE's ARF must be directed to DOE via its Web site <http://www.energy.gov.ab.ca>.

<original signed by>

Cal Hill
Executive Manager
Regulatory Development