ERCB Energy Resources Conservation Board

Summary of Stakeholder Feedback and ERCB Responses on Directive 081

Stakeholder Feedback - Issue	Stakeholder	ERCB Response
Section 3.1 Compliance with Disposal Limit – Issue: Scheme Expansions		
The Draft Directive should be modified to allow for a grace period for scheme expansions where it is specifically applied for and the appropriateness assessed by the ERCB.	Canadian Association of Petroleum Producers (CAPP)	Rejected Depending on the size of the expansion, the overall reservoir retention may increase. The resulting reduction in the scheme's produced water may temporarily reduce disposal rates at schemes that are disposing of excess water, or have minimal impact at schemes where the additional make-up water required has a quality that is similar to or better than the produced water quality. The *Directive 019: Compliance Assurance* voluntary self-disclosure process provides opportunity for operators to explain a noncompliance and justify temporary relief from the disposal limit.
The last sentence of Section 3.1 should be modified to say "The start-up grace period does not apply to scheme expansions unless relaxation is specifically requested and approved as part of the scheme expansion application and approval process."	Devon Canada Corporation	Rejected See response to CAPP
Operators who construct major CPF additions (new plants at existing sites) or construct new CPF sites at different locations need a one year grace period to get these facilities up to "steady-state" operations.	MEG Energy Corp.	Rejected See response to CAPP. To mitigate the impact of expansions on a project's water use and disposal, operators are encouraged to integrate new facilities with existing processes to the greatest extent feasible.
Section 3.1 Compliance with Disposal Limit – Issue: Relaxation of Experimental and Pilot Projects		
The directive should be modified to provide for an application process for relaxation of the disposal limit for experimental and pilot projects that require more than 500,000 m3 of water annually.	CAPP	Rejected Experimental and pilot projects with make-up water requirements, in the absence of recycle, exceeding 500,000 m^3/year has not been an issue to date. Should such situations arise, the ERCB is prepared to deal with them on a case-by-case basis.
Section 4 Water Reporting and Facility Water Balance – Issue: Amendments to Table B1, Appendix B		
Table B1 – Fresh Transfer REC should also include oil sands projects (ABOS) or a 3rd party such as a municipality. Table B1 – Brackish REC/PROD should also include non-ERCB licensed wells (brackish source wells <150m depth that are not license with ERCB nor ESRD).	Nexen	Accepted in part. Table B1 – Fresh In REC and Fresh Transfer REC will be modified to include oil sands projects. Fresh water receipts from 3rd parties such as municipalities may be reported as from AB MC. Brackish REC/PROD from unlicensed brackish source wells may be reported as from AB MC.

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Section 5 Water Measurement Requirements – Issue: Duplication of Measurement Requirements in *Directive 017*		
Remove water measurement requirements for thermal schemes. They already reside in sections 12.3 and 12.4 of ERCB *Directive 017: Measurement Requirements for Oil and Gas Operations*	Imperial Oil	Accepted Section 5 of the directive has been removed and thermal in situ measurement requirements will reside solely in *Directive 017*.
Section 6.2 Disposal Limit Formula – Issue: Alternate Water Classification		
The directive should allow water disposal factors to be determined through an application process, and would not require new categories for alternate water sources. It could be accomplished by recognizing variations in water quality for the existing categories of fresh, brackish, and produced. For example, surface water contaminated by industrial processes (e.g., tailings water) or non-saline groundwater that has elevated levels of natural contaminants could be assigned appropriate disposal factors through the scheme application process.	CAPP	Rejected: The directive is in line with the current ESRD policy on surface water and non-saline groundwater. At such time as ESRD policies on the protection and permitting of these waters are revised, the directive will be adjusted to align with the new policies. For existing water types, the directive's disposal factors are achievable over a wide range of water qualities and water-steam ratios (WSR) using current technology. Requested variations in disposal factors for all water types are also address in the next section; (6.2 Disposal Limit Formula - Disposal Factors / Environmental Net Effects).
Incorporating alternative water definitions into future directive updates may enhance the feasibility to use these low quality waters and further reduce the net environmental footprint of industry operations.	Devon	
Similar to CAPP comments.	Husky & Imperial Oil	
Similar CAPP comments but add treated municipal waste water to the list of alternate waters. Propose that the disposal factors for alternate water should range from 0.10 and 0.35.	Nexen	
Similar to CAPP comments but suggest expanding the definition of produced water to include process-affected water such as tailings, etc.	British Petroleum	
6.2 Disposal Limit Formula – Issue: Disposal Factors / Environmental Net Effects		
1. The significant variation in disposal factors for fresh, brackish, and produced water may cause operators to use a make-up water source and treatment technology that increases environmental net effects and costs. 2. The fresh water disposal factor should be increased from 0.03 to 0.13 and the produced water disposal factor should be increased from 0.10 to 0.13. This will reduce the disparity between disposal factors and accommodate fluctuations in the ratio of fresh/brackish/produced waters as schemes mature.	CAPP	1. Rejected The current disposal values will maintain the historical produced-water recycle rate of ~90% at operations that use only fresh make-up water. This recycling standard has been consistently achieved at existing commercial fresh-only operations. While it may require adding a "tail-end" evaporator to concentrate and reduce water disposal and increase water recycle, the impacts on GHG emissions and scheme economics are expected to be minor. 2. Rejected CAPP's proposed increase to fresh and produced

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		disposal factors would significantly lower the current water recycle standards in Alberta. The larger disposal factor for brackish water recognizes the challenges in treating high TDS water, yet significantly restricts brackish water use relative to the recycle rate formula defined in *Bulletin 2006-11* which allows for unlimited brackish water use.
1. Similar to CAPP issue (1) regarding the potential impact of disposal factors on Environmental Net Effects and scheme economics. 2. The disposal limit formula and disposal factors will make it tougher for projects with high WSR's to meet the directive requirements, even though make-up requirements are low. In some cases this will increase water treatment requirements and costs. WSR is expected to increase as schemes mature.	Imperial Oil	1. Rejected See response (1) to CAPP. 2. Disagreed A higher WSR may make it easier to meet the directive requirements by reducing the need for fresh water make-up or high-TDS brackish water make-up. Variations in WSR's may be the result of operational choices rather than the type of reservoir. For SAGD operations an increasing WSR as well pads mature has not been established, and may not be as severe as it is for CSS, due to much lower average reservoir retention. The directive provides for adjustments to disposal factors where WSR is excessive (e.g., >1.05), but the operator must provide justification.
Similar to CAPP issue (1) regarding the potential impact of disposal factors on Environmental Net Effects.	British Petroleum	Rejected See response to CAPP
The directive should recognize the potential for difficulties in treating produced water from carbonate reservoirs, and the high reservoir retention expected.	Husky Oil	Currently there are 3 experimental schemes approved for carbonate reservoirs and no commercial schemes. Issues regarding water treatment problems are speculative, and the ERCB will deal with them on a case-by-case basis until more is known.
Where a CSS scheme injects 100% quality steam and recycles boiler blowdown, it should be evaluated using the SAGD produced water disposal factors.	Penn West Petroleum	Rejected The directive will not be modified to address this unique situation. The ERCB will deal with Penn West's project through the scheme application process.
If the disposal formula cannot be modified to put integrated SAGD-upgrading facilities on equal footing with stand-alone SAGD projects, the directive should clarify that formula only applies to stand-alone thermal in situ schemes and excludes in-situ thermal schemes integrated with upgrading facilities.	Nexen Oil Sands	Rejected The SAGD portion of integrated facilities must recycle water to the same standard as stand-alone SAGD facilities. Therefore, the disposal formula applies to integrated SAGD-upgrading projects.