ENVIRONMENTAL LAW CENTRE

January 19, 2011 Our File: 5320

Energy Resources Conservation Board
Resources Applications Group
Spacing Framework Review
Suite 1000, 250 – 5 Street SW
Calgary, Alberta T2P 0R4

Via Email: spacing@ercb.ca

To whom it may concern,

Re: Bulletin 2010-39 Province-Wide Framework for Well Spacing for Conventional and Unconventional Oil and Gas.

The Environmental Law Centre (ELC) is a charitable organization incorporated in 1982 as a public source of information on environmental law and policy in Alberta and Canada. The ELC's mission is to ensure that laws, policies and legal processes protect the environment. The ELC is pleased to provide its comments regarding the Province-Wide Framework for Well Spacing for Conventional and Unconventional Oil and Gas (hereinafter the "Well Spacing Bulletin").[1]

A full assessment of altering well spacing and density impacts is required

The Well Spacing Bulletin proposes to significantly augment and remove well spacing and well density limits within the Province. There is little information provided to evaluate the effect of these amendments on the environment and specifically the impacts on water, air quality, land and biodiversity within the province. Prior to proceeding with any alteration of regulations there is a need to fully assess, in a public forum, the impacts of the proposed well spacing.

This assessment may take the form of a strategic level of environmental assessment and include analysis of impacts of increased spacing on sensitive landscapes, saline and non-saline water aquifers, and biodiversity, including species at risk. Regulatory limits should not be amended in the absence of credible information as to the risks inherent in proceeding with a regulatory change. To proceed without a full assessment is likely to lead to further adverse environmental effects. In this regard, it should be noted that the mandate of the Energy Resources Conservation Board (ERCB) is not limited to efficient extraction of hydrocarbon resource and resource conservation but includes "***ensuring environment conservation*** in the exploration for, processing, development and transportation of energy resources and energy"(emphasis added).[2] Further, the ELC

[1] Energy Resources Conservation Board, Bulletin 2010-39, online: Energy Resources Conservation Board < http://www.ercb.ca/docs/documents/bulletins/bulletin-2010-39.pdf.>
[2] *Energy Resources Conservation Act*, R.S.A. 2000, c. E-10 at s. 2(d).

submits that the ERCB, in considering the public interest in administration of its statutory mandate, must be fully informed about the economic, social and environmental impacts prior to proceeding with a decision under the Well Spacing Bulletin.

The potential for adverse environmental effects resulting from the Well Spacing Bulletin must be fully canvassed. Two examples are useful in relation to the potential and likely impacts on the environment related to altered well spacing and the related increase in activities on the landscape that are likely to occur. First, in considering the proposed removal of any well density controls to the base of the Colorado Group in the part of the province delineated in Schedule 13A of the *Oil and Gas Conservation Regulation* one must consider the impacts on federally and provincially listed species at risk in this area.[3] The areas is set out in Figure 3 of the Bulletin and reproduced below for reference. If one then contrasts this with the current range and critical habitat of species at risk. In this instances the critical habitat (active leks) and current range of the endangered Greater Sage Grouse is presented for illustration purposes. For fuller information regarding this species and the federal recovery strategy see the federal *Replacement of Section 2.6 of the Recovery Strategy for the Greater Sage-Grouse (Centrocercus uorphasianus urophasianus) in Canada* (hereinafter the Recovery Strategy).[4]

Well Spacing Bulletin – proposal for no well density controls to the base of the Colorado Group.

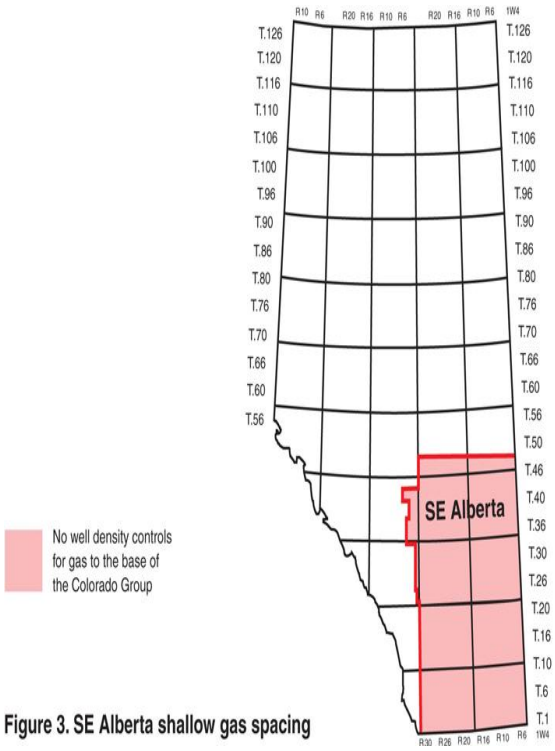
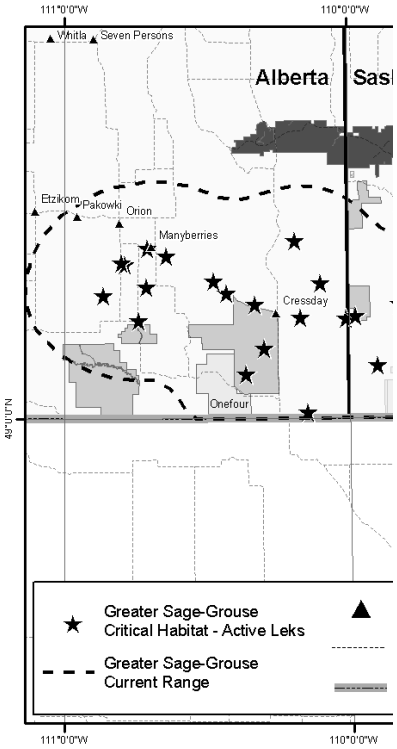


Figure 3. SE Alberta shallow gas spacing

Greater Sage Grouse current range and critical habitat-(active leks) (Federal *Recovery Strategy*)



[3] *Supra* note 1 at 9.
[4] Parks Canada, (Ottawa: Government of Canada, 2009), online: SARA Registry <http://www.sararegistry.gc.ca/virtual_sara/files/plans/rs_sage_grouse_sec_2-6_1009_e1.pdf>.

The *Recovery Strategy* further outlines the following activities that may lead to destruction of critical habitat of the sage grouse:[5]

> For example, Sage-Grouse breeding, nesting, and brood-rearing critical habitat may be destroyed by activities that have the following effects at certain times of the year (Ellis 1987, Aldridge and Brigham 2002, Holloran 2005, Walker *et al*. 2007, Doherty *et al.* 2008):
>
> - loss or disturbance of vegetation and/or soil substrate,
> - disturbance or reduction of appropriate levels of sagebrush cover,
> - increase in bare ground,
> - increase in human-modified areas,
> - increase in noise disturbance,
> - changes in vertical structure of prairie habitat that lead to an increase in predator density (e.g., by increasing perching and nesting areas for avian predators),
> - reduction in prey or forage availability.
>
> Examples of activities on critical habitat that will result in destruction of critical habitat (Holloran 2005, Kaiser 2006, Aldridge and Boyce 2007, Walker *et al*. 2007, Doherty *et al.* 2008) include, but are not limited to:
>
> - cultivation and/or conversion of native prairie to annual cropland or non-native pasture,
> - construction of roads,
> - industrial development such as the construction of oil and gas wells.

An increased well density in the current range of Greater Sage-Grouse would likely lead to destruction of critical habitat as it would involve several activities and impacts outlined in the *Recovery Strategy*. Further, there are ongoing recovery efforts for numerous other species at risk in the proposed area, including, but not limited to the following species: [6]

- Chestnut-collared Longspur,
- Burrowing Owl,
- Gold-edged Gem,
- Loggerhead Shrike,
- Ord's Kangaroo Rat,
- Small-flowered Sand-verbena,
- Sprague's Pipit, and
- Tiny Cryptantha.

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[5] *Ibid*. at 6.

[6] For further information for these species at risk including their current ranges go to the Species At Risk Act Registry online at www.sararegsitry.gc.ca.

Similarly, the proposed increase in wells per pool per section proposed in the Well Spacing Bulletin (reproduced as Figure 5 below) must be contrasted with the habitat of the Woodland Caribou, particularly the Little Smoky herd (reproduced from the *Status of the Woodland Caribou (Rangifer tarandus caribou) in Alberta: Update 2010)*[7] .

4 well per pool per section proposed area pursuant to Well Spacing Bulletin

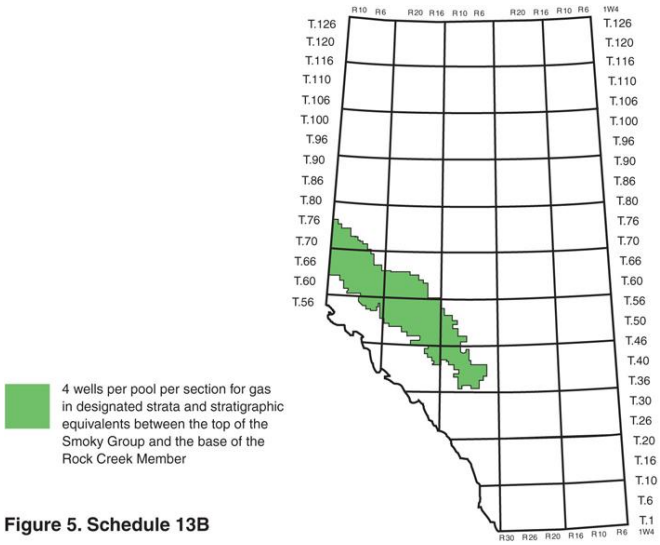

Figure 5. Schedule 13B

Woodland Caribou Range Areas (Provincial Woodland Caribou status report)

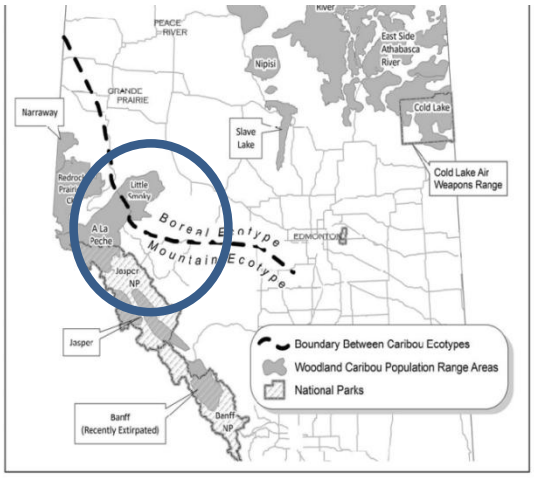

Figure 2. Woodland caribou population names and approximate current range areas in Alberta.

Woodland Caribou are a listed species at risk both provincially and federally. The federal process of identifying critical habitat for this species has yet to be completed. A fully assessment of altered well spacing in Caribou habitat must be undertaken.

In addition to likely impacts on species at risk, there has not be a long-term assessment of the potential impacts of reducing well spacing and the potential increased risks associated with drilling and abandonment of wells, including the potential down hole impacts (related to non-saline and saline aquifers) and in emissions to the surface where there are abandonment (casing/plug) failures.

An assessment of these risks and evaluation of areas that may be more susceptible to these risks should be undertaken. The work of Dr. Stefan Bachu and Theresa Watson has indicated that 48% of casing failures occurred below the cement top in a study of 64

[7] Government of Alberta and Alberta Conservation Association, Alberta Wildlife Status Report no. 30 (Update 2010), online: Alberta Sustainable Resource Development <http://www.srd.alberta.ca/BioDiversityStewardship/SpeciesAtRisk/DetailedStatus/documents/Status-WoodlandCaribou-inAlberta-Jul-2010.pdf>.

wells.[8] These same authors note that geographic area is of significant relevance to failures.[9] In this regard, there is a need to assess geographically specific risk factors associated with increased well densities and potential risks to valued or sensitive non-saline and saline aquifers. The blanket approach to well spacing proposed in the Bulletin fails to consider area specific risk factors.

The ELC recognizes that abandonment standards have changed through time however increases in casing and plugging failures are likely to occur commiserate with an increase in well densities. A full public assessment of the potential for these risks and the long-term impacts should be undertaken.

Conclusion

Any proposed amendments to the *Oil and Gas Conservation Regulation* should be deferred and should only take place once a thorough and public assessment of the potential environmental impacts has taken place. The absence of sufficient information in this regard is exasperated due to the fact there is not an effective regulatory system in place, either federally or provincially, to effectively deal with the potential impacts of increased hydrocarbon extraction activities on landscapes, biodiversity and water resources. [10]
Further the related impacts that may result from amendments to the regulation may directly undermine the mandate of other agencies, both federal and provincial, to ensure the sustainability of species at risk, to preserve biodiversity and to ensure that water resources and human health are adequately protected. While these issues are at the heart of the mandate of other agencies there are also directly relevant to the mandate of the Energy Resources Conservation Board. Further, land use planning initiatives may result in well spacing criteria being proposed in the Bulletin overridden pursuant to the *Alberta Land Stewardship Act* if it is found that the land use objectives justify limiting well densities.

Should you have any questions or concerns related to the foregoing please contact the ELC.

Sincerely,

Jason Unger
Staff Counsel

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[8] See Energy Resources Conservation Board and the Alberta Geologic Survey (undated PowerPoint presentation) *Factors Affecting or Indicating Potential Wellbore Leakage*, online: IEA Greenhouse Gas R&D Programme, *<http://www.co2captureandstorage.info/docs/WBI3Presentations/SBachuTWatson.pdf>*.
[9] *Ibid*.
[10] While there have been some updates to regulatory processes in relation to species at risk and public land dispositions under the Government of Alberta's Upstream Oil and Gas Best Management Guidelines for the Enhanced Approval Process the content of the Guidelines are quite limited in application and do not manage the host of activities that are likely to have impacts on a species and their habitat.
See Alberta Sustainable Resource Development online <http://www.srd.alberta.ca/ManagingPrograms/EnhancedApprovalProcess/ManualsGuidesForEAP/Default.aspx>