

**From:** Jacob, Alain [mailto:AJacob@NRCan.gc.ca]  
**Sent:** February 13, 2008 12:25 PM  
**To:** Chris Knoechel; Jann Atkinson  
**Cc:** Bharat Dixit; Clark, Bill; Gagnon, Jean  
**Subject:** Comments on the proposed CANADA OIL AND GAS DRILLING AND PRODUCTION REGULATIONS and the Guidance Notes

Dear Mrs. Atkinson and Mr. Knoechel,

During the meeting held in December 2007 between representatives of the Canada Centre for Cadastral Management (CCCM), NRCan and the National Energy Board, one of the issues raised was the possibility of CCCM providing comments related to "surveys" in the proposed Canada Oil and Gas Drilling and Production Regulations.

CCCM has expertise in property rights systems, survey systems, and land registry systems. We are responsible for surveys on Canada Lands (these include National Parks, Indian Reserves, public lands in the North and Canada's Offshore Area). As such, our organization has experts in the field of geomatics. We currently review plans prepared by Canada Lands Surveyors showing the location of wells pursuant to Section 104 of the current *Canada Oil and Gas Drilling Regulations*.

Mr. Bharat Dixit recommended we send our comments to both of you for consideration. These are incorporated in the attached document. Our suggested changes are in red (underlined) and our comments are in green:

We apologize for the delay in providing our comments. If you have any questions concerning these comments, do not hesitate to contact me.

Regards,

**Alain Jacob**

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**Canada Centre for Cadastral Management suggested additions and comments  
on 11 November 2007 annotated draft of  
CANADA OIL AND GAS DRILLING AND PRODUCTION REGULATIONS**

1. (1) The definitions in this section apply in these Regulations.

[CCCM: Are definitions of “Canada Lands Surveyor”, “Canada Lands Surveys Records”, “survey”, or “Surveyor General” required as a result of the suggested addition to sec. 21? The need for these definitions to be decided by the Drafter of the Regulations.]

*Location Surveys*

[CCCM: Suggest adding “location” to more precisely define the nature of these surveys.]

21. (1) The operator shall ensure that a survey is used to confirm the surface location of every well and every installation.

[CCCM: a) Suggest removing the requirement to survey the location of “every installation” unless it is required by the Regulators. If it is required, CCCM and the surveying profession need clarification of what kind of installation requires a survey.  
b) Recommend “surface” be defined to also mean “seafloor” for offshore wells. Both the offshore Boards and surveying profession agree that “seafloor” location is more accurate than the drill string location on the rig, especially in deep water. See excerpts of correspondence with stakeholders at the end of this document.]

(2) The survey of a well location shall be performed by a Canada Lands Surveyor under instructions of the Surveyor General. The survey plan shall show the final location with respect to boundaries of the related interest and shall be recorded in the Canada Lands Surveys Records.

[CCCM: Recommend specific requirement for Canada Lands Surveyor and instructions of the Surveyor General. The second sentence is suggested if NEB and rights Regulators require the position of a well with respect to boundaries of the grid system for oil & gas interests.]

(23) The operator shall ensure that a copy of the recorded survey plan is provided to the Board.

[CCCM: Suggest reference to the “recorded plan” as being required by NEB.]

Canada Centre for Cadastral Management suggested **additions** and **comments**  
on May 24, 2007 Preliminary Draft Guidance Notes for the  
*Canada Oil and Gas Drilling and Production Regulations*

*Survey*

21. The operator shall ensure that a survey is used to confirm the surface location of every well.

[CCCM: See above comments on draft D&P regulations.]

**Draft Guidance Notes**

The operator is expected to ensure that, prior to or upon termination of every well, a final legal survey is carried out to confirm the surface well location, in relation to the grid area boundaries, and that the survey plan is recorded in the Canada Lands Surveys Records. This recorded survey plan should be included in the well termination report (please refer to Part 10, section 93) or at the latest with the well history report (please refer to Part 10, section 94).

- [CCCM: a) Recommend removing “legal” to avoid confusion with Frontier Lands Division Regulations.  
b) Recommend “surface” be defined to also mean “seafloor” for offshore wells. See above comment on sec. 21(1) of draft D&P regulations.  
c) See above comments on proposed sec. 21(2) and 21(3) of draft D&P regulations.]

Correspondence between Canada Centre for Cadastral Management and Stakeholders re. Seafloor Position for Deep Water Survey Plans

Pat Byrne, Construction and Positioning Manager, Fugro Jacques GeoSurveys, to CCCM, on August 30, 2006:

"We have just completed the survey of a well in over 2300 m of water.

The last few times that we had surveyed deepwater wells, we had published both the surface GPS derived position of the rigs drill string along with the subsea derived coordinate on the CLS plan. We then had performed all our relevant well calculations based upon the surface location.

Because this is deep water well, the surface position will not accurately represent the subsea well coordinate. The surface location will in fact be 15-20 m off from the subsea coordinate.

Based upon our experiences, we feel that the subsea well coordinate is the most accurate representation of this well. Therefore I would suggest that we publish both the surface and subsea coordinates on the CLS plan, however we would accept the subsea coordinate as primary and base all calculations upon this. We will also have backup documentation to substantiate the subsea value as per normal."

Jan Wentzel, Cadastral Services CCCM, to offshore Boards, on August 31, 2006:

"I received the email (above) from Pat Byrne, with respect to deep water wells. Mr. Byrne is recommending that the sea bed position of a well (e.g. the point where the drill stem pierces the seabed) be used as the reference point for the NAD27 based Grid Area system instead of the usual sea surface position of the drill stem in areas of deep water. At first glance, this makes sense to me.

In shallow water, the drill stem is assumed to be vertical and the horizontal position of the sea surface part of the drill stem is assumed to be the same as the seabed part of the drill stem. With deep water wells and under the conditions that Mr. Byrne explains, there is an extreme possibility that a drill ship could be physically positioned in one grid area while the well in fact is being drilled in an adjoining grid area.

Mr. Byrne also alludes to the existence of technology today that can accurately position the sea-bed position of a drill stem; something that was not easily achieved when the current regulations were drafted.

In the unlikely event of a dispute over the position of a well in the future, the only real physical evidence of the position will be the remnants of the drilling operation ( e.g. the drill casing) that will be left behind once the drill ship moves on. As this is the physical reference point, it follows that the other coordinates that we generate ( e.g. for the unit corners) should be based on coordinates of this point.

My recommendation is to proceed as Mr. Byrne has suggested. Before doing so however, I would be interested in any comments or concerns you may have. Theoretically, we can continue as we have in the past and follow current regulations and practices or we can proceed in a more practical and technically sound direction."

Bob Hale, Drilling & Operations CNSOPB, to CCCM, on August 31, 2006:

"I agree with your proposal and acknowledge that we need the sea bed (floor) position. I did not understand the requirement for the deep water sea surface position requirement, but always assumed that the sea floor position would be required, as well."

Jeff Bugden, CNLOPB, to CCCM, on August 31, 2006:

"For the CNLOPB's part - we concur 100% with the CNSOPB (and your recommendations) that the seabed position be used as the reference point."

Jan Wentzel, CCCM, to Pat Byrne, Fugro Jacques, on August 31, 2006:

"Thanks for your email and recommendations of August 30, 2006. As noted (above), I forwarded your recommendations to Bob Hale of CNSOPB and Jeff Bugden of CNLOPB for comment. It appears that everyone including myself are in complete agreement with your proposal. Please proceed as you have suggested.

We will endeavor to incorporate the concept and the practice in the new oil and gas regulations that are currently being drafted."