



**SUMMARY OF  
CONSULTATION AND ENGAGEMENT  
RESULTS**

**December 16, 2016**

**WELL SUSPENSION AND ABANDONMENT GUIDELINES AND  
INTERPRETATION NOTES**

**OFFICE OF THE REGULATOR OF OIL AND GAS OPERATIONS**

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## EXECUTIVE SUMMARY

The Office of the Regulator of Oil and Gas Operations (OROGO) made the draft *Well Suspension and Abandonment Guidelines and Interpretation Notes* (Guidelines) available for consultation and public engagement on June 6, 2016. Eight responses were received from various organizations, including Aboriginal governments, the Government of the Northwest Territories, resource co-management bodies and industry.

The draft Guidelines were generally well received by stakeholders. No comments were received suggesting that the Guidelines as a whole were unnecessary or inappropriate, and several comments were received supporting the decision to issue Guidelines to provide more consistent direction for operators with respect to well suspension and abandonment.

The comments received ranged from broad policy questions to specific questions and suggestions about technical aspects of the suspension and abandonment process. Significant among these were:

- Comments, questions and recommendations on abandonment methods and approaches;
- Concerns that operator be able to use alternative approaches that meet the Regulator's safety and environmental protection objectives;
- Concerns about establishing a firm, six-year timeframe for well abandonment after suspension for all types of wells;
- Questions and recommendations on the monitoring and testing for gas migration, surface casing vent flow and annular pressure; and
- Concerns about surface and ground water monitoring and protection.

All comments received are summarized in this document, organized according to the sections of the draft Guidelines.

The Guidelines have been amended to reflect the comments received where possible, while maintaining the integrity of the Guidelines with respect to their objectives.

The Regulator thanks all of the organizations and individuals who took time to review and comment on the Guidelines.

## INTRODUCTION

The Office of the Regulator of Oil and Gas Operations (OROGO) made the draft *Well Suspension and Abandonment Guidelines and Interpretation Notes* (Guidelines) available for consultation and public engagement on June 6, 2016.

Information on the Guidelines was made available to the public on the OROGO website and advertisements were placed in *NewsNorth* and *L'Aquilon* inviting comments. A media release was also issued.

Specific invitations to review the Guidelines and provide comments were issued to:

- Aboriginal governments holding or asserting section 35 rights;
- Companies holding Operating Licences in OROGO's jurisdiction and the Canadian Association of Petroleum Producers;
- Other regulators with whom OROGO interacts as a result of existing Land Claim Agreements and Memoranda of Understanding;
- Federal and territorial government departments and agencies; and
- Selected environmental non-government organizations with an NWT presence.

The deadline for comments was August 31, 2016. Six organizations provided feedback by the deadline:

- Gwich'in Renewable Resource Board (GRRB)
- Gwich'in Tribal Council (GTC)
- Heenan Energy Services (HES)
- Sahtu Land and Water Board (SLWB)
- Strategic Oil and Gas Ltd. (SOG)
- Canadian Natural Resources Ltd. (CNRL)

Another two organizations requested extensions to the deadline. An extension to September 21, 2016 was provided. These organizations were:

- Canadian Association of Petroleum Producers (CAPP)
- Government of the Northwest Territories (GNWT) (comments were received after the extended deadline)

During the consultation and public engagement period, OROGO responded to questions from the following organizations about the Guidelines:

- CAPP
- Husky Energy
- ConocoPhillips Resources Canada Corp.
- CNRL
- SLWB
- GTC
- Petroleum Resources Division, Industry, Tourism and Investment, GNWT

- Corporate Affairs Division, Municipal and Community Affairs, GNWT

This document summarizes the comments received during the consultation and public engagement period and the response to these comments.

## COMMENTS RECEIVED AND RESPONSE

The comments received on the draft Guidelines ranged from very broad discussions of the objectives of the Guidelines to specific technical feedback on proposed methods for suspension and abandonment.

All comments received are summarized here, organized according to the sections of the draft Guidelines. General comments and comments that applied to more than one section of the Guidelines have been summarized first.

The responses to each group of comments are provided immediately after the comments themselves.

Typographical errors in the consultation draft that were identified by reviewers will be corrected in the Guidelines but are not addressed in this document.

### GENERAL COMMENTS

The draft Guidelines were generally well received by stakeholders. No comments were received suggesting that the Guidelines as a whole were unnecessary or inappropriate, and several comments were received supporting the decision to issue Guidelines to provide more consistent direction for operators with respect to well suspension and abandonment.

General comments that apply to the entire document are captured in the following table.

<b>Comments</b>	<b>Responses</b>
Requests to include information on open hole well suspensions and abandonments.	OROGO is not aware of any open hole wells in its jurisdiction. However, there is the potential for a well to be abandoned before it is cased. The Guidelines have been changed to indicate open hole wells will be addressed on a case-by-case basis.
A request to include information on the process for bringing a suspended well back into production.	The process for bringing a suspended well back into production is not within the scope of the current Guidelines. Any operator wishing to bring a suspended well back into production must obtain a Well Approval from the Regulator.

Comments	Responses
<p>Concerns about the long-term integrity of abandoned wells, including wells abandoned prior to the establishment of the Guidelines, and associated requests for ongoing testing and monitoring of these wells and research into the impacts of changes to permafrost on these wells.</p>	<p>Historic abandoned well sites are not within the scope of these Guidelines but are addressed in part through OROGO's Well Watch Program, which encourages the reporting of concerns with historic abandoned wells to OROGO so that they can be addressed. Section 39(c) of the <i>Oil and Gas Drilling and Production Regulations</i> (OGDPR) requires operators to ensure that the integrity of permafrost zones is taken into account in the design of the well and casing.</p>
<p>Concerns about drilling sumps associated with historic abandoned wells.</p>	<p>The Regulator's authority does not include in-ground drilling sumps for permanent disposal of drilling wastes. The land claim agreements give land and water boards primary responsibility for the regulation of land and water. The deposit of drilling waste into a sump requires a Type B water licence issued by a land and water board under the <i>Water Regulations</i>. Compliance with the conditions of the water licence would be enforced by an inspector from department of Environment and Natural Resources.</p>
<p>A request that well locations and results should be available as a resource on OROGO's website.</p>	<p>A map of all wells in OROGO's jurisdiction is available on its website at <a href="http://www.oro.go.gov.nt.ca">www.oro.go.gov.nt.ca</a> and additional information about specific wells can be obtained by contacting OROGO directly. OROGO continues to work toward improving the amount and usability of information available on its website as a means of promoting transparency in oil and gas regulation.</p>
<p>Requests for and recommendations to include requirements for groundwater mapping and monitoring, including the gathering of baseline groundwater information, monitoring of groundwater near historic abandoned wells, and ongoing groundwater studies.</p>	<p>The scope of the current Guidelines is limited to the suspension and abandonment of wells. The land claim agreements give the land and water boards primary responsibility for the regulation of land and water, including establishing requirements for the monitoring of surface and groundwater (section 27(1)(b) <i>Waters Act</i>). Inspectors from the GNWT departments of Environment and Natural Resources and of Lands are responsible for inspecting oil and gas activities and sites to ensure that the terms and conditions established by the land and water boards in land use permits and water licences are followed by operators. An example is the groundwater monitoring program conducted by ConocoPhillips Canada Resources Corp. along with its recent drilling activities. The monitoring program was a requirement of the Sahtu Land and Water Board (SLWB) and the results of the program are publicly available on the SLWB website. Groundwater protection is addressed in section 6B of the Guidelines. It includes the requirement for operators to identify potable water and groundwater zones intersected by the well and to ensure that those zones are isolated during the well abandonment process.</p>

Comments	Responses
<p>A recommendation that OROGO require operators to prepare and submit a detailed mitigation strategy in the event that it is found that a suspended or abandoned well is contaminating groundwater resources.</p>	<p>If a suspended or abandoned well was contaminating groundwater resources, it would be considered a loss of well containment or pollution event under the OGDPR. The OGDPR require that an operator report such events to the Regulator as soon as the circumstances permit, and submit to the Regulator, within 21 days of the occurrence, a report that addresses the root cause of the incident, any causal factors and the corrective actions being taken by the operator.</p>
<p>A question about the number of orphaned or historic wells that exist in the NWT</p>	<p>“Orphaned” is not a term defined or used in the <i>Oil and Gas Operations Act</i> (OGOA) or the OGDPR. There are nearly 600 abandoned wells, drilled between 1920 and 2014, in the Regulator’s jurisdiction. As described in section 1 of the Guidelines, wells that were abandoned prior to the coming into force of the Guidelines are not required to be re-abandoned unless they are re-entered or found to be leaking, at which point they must be re-abandoned as required in the Guidelines. Historic abandoned well sites are not within the scope of these Guidelines but are addressed in part through OROGO’s Well Watch Program, which encourages the reporting of concerns with historic abandoned wells to OROGO so that they can be addressed.</p>
<p>A question about the engagement of Aboriginal and community governments on the draft Guidelines.</p>	<p>A description of the engagement process is contained in the Introduction to this summary document. One commenter specifically thanked OROGO for its engagement efforts and recognized OROGO’s commitment to public input and disclosure.</p>
<p>Recommendations to require operators to notify the appropriate regulatory Board and inspector of casing and other failures, as well as OROGO.</p>	<p>The Guidelines cannot include requirements associated with other regulators. Those regulators are free to establish reporting requirements for matters over which they hold jurisdiction. A casing or other failure could also trigger reporting requirements under the <i>Environmental Protection Act</i> and regulations, which is publicly available information.</p>

## SECTION 1: INTRODUCTION

The comments received about section 1 of the Guidelines and the responses are captured in the following table.

Comments	Responses
<p>A request for clarification on the process and timelines for abandonment of previously suspended wells and a recommendation that the timeline for abandonment be tied to the expiry of any exploration rights, mineral rights or land access rights, as opposed to being set at 6 years after suspension.</p>	<p>The Guidelines have been changed to clarify the process and timelines for abandonment of previously suspended wells.</p> <p>The recommendation with respect to the timeline for abandonment is addressed in the comments on section 6 of the Guidelines.</p>
<p>A request for clarification on how previously suspended wells will be reviewed for compliance with the Guidelines and who is responsible for testing and monitoring the wells.</p>	<p>The Guidelines have been changed to clarify the process for evaluating previously suspended wells using inspections conducted by operators and by OROGO or National Energy Board inspectors.</p> <p>Under the OGDPR, operators are responsible for testing and monitoring suspended wells on a regular basis. The resulting reports are submitted to OROGO.</p> <p>OROGO also conducts planned inspections of suspended wells and follows up on any concerns. This process is independent of operator-conducted inspections.</p>
<p>A question about why so much time was allowed for operators to submit a plan for or to complete the re-suspension or abandonment of suspended wells not in compliance with the Guidelines.</p>	<p>Operators will require some time to develop plans to re-suspend or abandon non-compliant suspended wells and access to these wells is often limited to a relatively short winter season.</p> <p>However, non-compliant suspended wells must be addressed in a timely manner that reflects the risks associated with each individual well.</p> <p>The Guidelines have been changed to include “or as otherwise specified by the Regulator”, which confirms the Regulator’s power to require re-suspension or abandonment to occur sooner if appropriate.</p>
<p>A recommendation that, if a previously abandoned well or zone is re-entered or is found to be leaking and requires re-abandonment, it should be abandoned in compliance with the Guidelines from the total depth to surface, as opposed to from the re-entry depth to surface.</p>	<p>The Guidelines require re-abandonment in compliance with the Guidelines from re-entry depth or the depth of the leak to surface as the remainder of the well is already abandoned and is not leaking. There is no need to disturb the existing, functioning abandonment and doing so could potentially create new problems with the wellbore.</p> <p>The Guidelines have not been changed.</p>



## SECTION 2: WELL CLASSIFICATION FRAMEWORK

The comments received about section 2 of the Guidelines and the responses are captured in the following table.

Comments	Responses
A question about whether various water wells are included in the definition of non oil and gas wells.	Non oil and gas wells include all wells drilled through sedimentary rock to a depth of greater than 150 meters. Groundwater monitoring wells and potable water source wells that meet these criteria are considered non oil and gas wells for the purposes of these Guidelines.
Questions about whether the risk level framework could be adjusted to include a third level of well to reflect the Alberta Energy Regulator's Directive 013.	The Alberta Energy Regulator (AER) Directives contain three categories of risk for suspension (Directive 013), but only two for abandonment (Directive 020). The Guidelines use a two-level risk framework because there are very few wells in the Regulator's jurisdiction that would meet the criteria for a "low risk" well under the AER's suspension directive and in order to have one risk framework that would apply to both suspension and abandonment activities. The Guidelines have not been changed.
Suggestions that a simplified requirements table based on risk levels, similar to Table 1 in Directive 013, would improve the readability of the Guidelines.	The Guidelines address both suspension and abandonment in one document, as opposed to the AER Directives, which consist of two separate documents. It was not possible to develop a summary table that captured the necessary information in a concise and readable format.
Requests for a more specific definition of acid gas well that includes concentrations of H <sub>2</sub> S and CO <sub>2</sub> that would trigger the definition.	Any amount of CO <sub>2</sub> combined with H <sub>2</sub> S would result in a well being classified as an acid gas well. The Guidelines have been changed to clarify the definition.
Concerns about basing the definition of a critical sour well on distances from a municipal boundary, which does not recognize where people in the Northwest Territories spend their time (e.g. in seasonal camps) or address the potential impact of H <sub>2</sub> S on the wellbeing of wildlife and the environment in general.	The definition has been re-worded to reference "population centre" rather than "urban centre" and "population centre" has been defined to include seasonal camps and similar areas. The flexibility for the Regulator to determine that other areas are also considered population centres, possibly on a seasonal basis, will remain. There is no information available on the impacts of H <sub>2</sub> S on wildlife. Therefore, the definition cannot be changed to address this concern at this time. Should additional information become available, the definition can be adjusted. In the meantime, the Regulator retains ultimate discretion.
A question about why wells with multiple zones are not classified based on the highest risk zone, regardless of whether it has already been abandoned.	Abandoned zones, which are not leaking, are considered to have already been addressed. The abandonment process for Level I zones reflects and mitigates the additional risk associated with those zones. Therefore, abandoned Level I zones should not affect the risk classification of the remaining zones in the well.

<b>Comments</b>	<b>Responses</b>
A question about how a well would be classified if it was only suspended and not abandoned.	If a well is suspended, it would be classified based on the zone with the highest risk level, whether that zone has been suspended or not. As the higher risk zones in the well have not been completely abandoned, the higher potential risk remains.
A question about whether previously abandoned zones would be grandfathered in under the Guidelines.	Previously abandoned zones are grandfathered unless they are re-entered or found to be leaking.

### **SECTION 3: CEMENT REQUIREMENTS**

No comments were received on section 3 of the Guidelines.

### **SECTION 4: GAS MIGRATION, SURFACE CASING VENT FLOW AND ANNULAR PRESSURE TESTING REQUIREMENTS**

The comments received about section 4 of the Guidelines and the responses are captured in the following table.

<b>Comments</b>	<b>Responses</b>
A recommendation that testing for gas migration (GM) should be required during the suspension process only if there is an obvious indication of a fire, public safety hazard or environmental disturbance.	Visible evidence at the surface level does not always reflect GM occurring below the ground surface. Evidence such as distressed vegetation and gas bubbles may not always be an accurate indicator: some vegetation is not negatively affected by GM and gas bubbles can only be seen when there is standing water surrounding the wellhead. The requirements for GM testing have not been changed.
A concern that the definition of a serious GM is vague and has caused issues in Alberta.	The definition has been expanded to include two points: <ul style="list-style-type: none"> <li>• Combined GM and SCVF is always considered serious, and</li> <li>• GM or SCVF occurring after a well has been abandoned is always considered serious.</li> </ul>
A question about monitoring for potential groundwater contamination as a result of a serious GM.	A GM is considered a loss of containment or pollution event under the OGDPR. The operator must report such incidents to OROGO and prepare and submit a report, which includes information on how the operator is planning to mitigate the incident. At that time, depending on the nature and extent of the GM, the Regulator may choose to require site-specific groundwater monitoring by the operator. A GM may also trigger requirements on behalf of other regulators for additional monitoring of groundwater.

Comments	Responses
<p>A question about how the concentration for saline water used in the definition of a serious surface casing vent flow (SCVF) was determined, given that water with the proposed concentrations of total dissolved solids (TDS), if released, could cause serious harm to freshwater ecosystems and could result in potable water no longer being desirable for human consumption.</p>	<p>The concentration for saline water used in the definition of a serious SCVF is taken from AER's Interim Directive 2003-01.</p> <p>This threshold is one of several indicators of a serious SCVF. An SCVF would also be considered serious if it constitutes a "fire, public safety or environmental hazard", which allows for the assessment of impacts on freshwater ecosystems and potable water. The Guidelines also allow the Regulator to determine that an SCVF is considered serious for reasons other than those described in the definition.</p> <p>If an SCVF is considered non-serious and therefore does not require immediate repair prior to the suspension of the well, the Regulator may still require the operator to take action to mitigate the impact of the SCVF. Other regulators may also require the operator to act, depending on the nature of the SCVF.</p> <p>The Guidelines have not been changed.</p>
<p>A question about whether the threshold for stabilized gas flow resulting in a serious SCVF was too high.</p>	<p>The 300 m<sup>3</sup>/day threshold for stabilized gas flow is consistent with AER's Interim Directive 2003-01. The Guidelines have not been changed.</p>
<p>A request for a more specific definition of annular pressure.</p>	<p>The definition of annular pressure has been revised as follows: Annular pressure is sustained pressure in a casing annulus, excluding the surface casing and the tubing/casing annulus.</p>
<p>A question about why any amount of GM or SCVF would not be considered serious, with particular concern about historic or orphaned well sites, and a request that the Guidelines include methods required for testing, monitoring and reporting of GM or SCVF at historic or orphaned well sites.</p>	<p>All GM and SCVF, serious or non serious, must be addressed before well abandonment, which must occur within the timeframes specified in the Guidelines. The process for addressing a GM or SCVF can be very intensive and may result in more damage to the wellbore or emissions than allowing the minor GM or SCVF to continue for a limited time.</p> <p>"Orphaned" is not a term defined or used in OGOA or the OGDPR.</p> <p>Historic abandoned well sites are not within the scope of these Guidelines but are addressed in part through OROGO's Well Watch Program, which encourages the reporting of concerns with historic abandoned wells to OROGO so that they can be addressed.</p>

### Section 4A: Gas Migration

The comments received about section 4A of the Guidelines and the responses are captured in the following table.

Comments	Responses
A question about the requirement for GM testing prior to downhole suspension and abandonment and prior to surface abandonment.	The Guidelines require several GM tests throughout the suspension and abandonment process in order to ensure that efforts to address any existing GM were successful before moving to the next step in the process.
A suggestion to improve the wording for the GM testing subsection.	The GM testing subsection has been changed to clarify the testing requirements. Air-soil interface gas detection will be required in all cases. If this test detects methane, in-soil gas detection will be required.
Recommendations that GM testing only be required if there is visible evidence of a GM issue (such as vegetation stress, gas bubbles, indicators on a personal monitor).	Visible evidence at the surface level does not always reflect GM occurring below the ground surface. Evidence such as distressed vegetation and gas bubbles may not always be an accurate indicator: some vegetation is not negatively affected by GM and gas bubbles can only be seen when there is standing water surrounding the wellhead. The requirements for GM testing have not been changed.
A request for more details on the GM testing equipment considered acceptable to the Regulator.	It is not possible to provide exhaustive requirements for GM testing equipment as it varies on a case-by-case basis. However, the Guidelines have been changed to clarify that the equipment to be used should be specified in the application for the suspension or abandonment program, allowing for its review by the Regulator and the consideration of technological advancements in the field.
A question about whether OROGO would create a form for reporting a GM and whether a specific time frame could be set for notification, rather than “as soon as the circumstances permit”.	A GM is considered a loss of containment or pollution event under the OGDPR. The reporting timeframe reflects the requirement of the regulation and cannot be changed by this Guideline. All incidents, including suspected GM, should be reported to OROGO through normal incident reporting channels.

### Section 4B: Surface Casing Vent Flow

The comments received about section 4B of the Guidelines and the responses are captured in the following table.

Comments	Responses
A question about whether an SCVF test would be required after downhole abandonment if surface abandonment was to occur within days.	An SCVF test will always be required after downhole abandonment in order to determine whether the SCVF has been addressed by downhole abandonment activities (and no new SCVF has been created) before the wellhead is removed.

<b>Comments</b>	<b>Responses</b>
A recommendation that the size of the test hose should be specified, consistent with the requirements of the AER and the British Columbia Oil and Gas Commission (BCOGC).	The size of test hose determines the volume and frequency of the bubbles during testing and therefore should be standardized. The Guidelines have been changed to reflect the AER's requirements for hose dimensions.
Comments on the process for SCVF rate determination, identifying that the proposed approach may not be suitable in all circumstances and, particularly, for lower flow rates.	Alternative methods may be required to identify and measure lower flow rates. The intention is that operators should use best practices and a methodology that reflects the flow rate. The Guidelines have been changed to specifically indicate "or another method approved by the Regulator".
A comment that testing to stabilized pressure may result in fracturing at the casing shoe if the source zone is high pressure or deep and suggested setting a maximum pressure equivalent.	The Guidelines have been changed to reflect the AER's requirements in this area.
Comments on the need to ensure that the determination of stabilized shut-in surface casing pressure isn't influenced by temperature fluctuations of the surrounding environment.	In order to allow for flexibility in response to temperature fluctuations, the Guidelines have been changed to specifically indicate "another method may be used as approved by the Regulator".
Questions about the process for notification of SCVF and whether a form would be available.	A SCVF is considered a loss of containment or pollution event under the OGDPR. The reporting timeframe reflects the requirement of the regulation and cannot be changed by this Guideline. All incidents, including SCVF, should be reported to OROGO through normal incident reporting channels.

#### **Section 4C: Annular Pressure**

The comments received about section 4C of the Guidelines and the responses are captured in the following table.

<b>Comments</b>	<b>Responses</b>
Requests for a clearer definition of annular pressure.	The definition of annular pressure in Section 4 has been revised to read as follows: Annular pressure is sustained pressure in a casing annulus, excluding the surface casing and the tubing/casing annulus.
A comment that the title "Required Testing" was unclear and a recommendation to change the title to "Testing for Annular Pressure and Flow".	The Guidelines have been changed to use the suggested revised title.
A comment that negative tests should be sufficient when testing annular pressure.	The Guidelines have been amended as outlined in the next comment and response below.

A suggestion to revise the wording for the testing sub-section to make the Regulator’s expectations clearer and avoid confusion between annular pressure checks and positive pressure testing.	The testing sub-section has been reworded as follows: The pressure on any casing must be recorded. In the event of pressure being present, the operator may safely bleed off the pressure. If the pressure continues to build or cannot be bled off, the annulus must be left to vent for up to 24 hours. A check for flow must then be performed as per section 4B.
A recommendation to substitute “annular pressure” for “annular flow” in the notification sub-section to clarify reporting expectations.	The Guidelines have been changed to reflect the recommended wording.
A recommendation to clarify what is meant by “annular flow” by adding the phrase “pressure which cannot be bled off and returns to measurable level during the inspection”.	The objective is to be notified of all annular pressures, whether or not they can be bled off or return to a measurable level during the inspection, in order to record changes over time with respect to the well. The Guidelines have not been changed.

#### Section 4D: Casing Pressure

The comments received about section 4D of the Guidelines and the responses are captured in the following table.

Comments	Responses
A comment that requirements for repairing a casing failure should be stricter than “as soon as possible” due to the potential severity of the incident and the urgent need for repairs.	A casing failure is considered to be a loss of well control under section 38 of the OGDPR, which requires that the operator take any action necessary to rectify the situation “without delay”. The Guidelines have been changed to reflect this wording.
A recommendation that repairs should occur immediately for sites where equipment is more local or the operator is active in the region, with an acknowledgement that some remote wells may require three months to mobilize equipment and begin repairs.	
Concerns with the 90-day period for repairing a casing failure, given the limited seasonal access to wells in OROGO’s jurisdiction and the need to balance the urgency of the repair with the environmental impact associated with access and operations.	

<b>Comments</b>	<b>Responses</b>
A suggestion that notification should occur after a casing failure is suspected, as opposed to discovered, as it may be difficult to confirm the casing failure without investigation.	The Guidelines have been changed to reflect this recommendation.
A recommendation to remove the requirements for a report within 21 days of the leak or failure.	The requirement for a report within 21 days is contained in a statutory obligation, contained in section 75(2)(b) of the OGDPR. The Guidelines have not been changed.

## **SECTION 5: WELL SUSPENSION AND MONITORING REQUIREMENTS**

The comments received about section 5 of the Guidelines and the responses are captured in the following table.

<b>Comments</b>	<b>Responses</b>
A request for clarification of “well barrier”.	The Guidelines have been changed to provide more information on what is meant by “well barrier”.
A recommendation to change the timeline for well suspension from the anniversary of no production/injection/disposal to the end of the calendar year following the anniversary.	The approach contained in the Guidelines reflects the current industry best practice and is consistent with AER’s regulatory approach. The Guidelines have not been changed.
A recommendation to adopt industry best practices for well suspension that meet or exceed the applicable legislation. These practices should be reviewed and revised periodically to reflect the best available technology.	The Guidelines are intended to reflect industry best practices. They are based on the AER’s Directives, which are recognized across Western Canada as reflecting regulatory best practices. The Guidelines are subject to periodic review and can be amended to reflect new technologies in a timely manner.
A recommendation to require annual reporting on wellbore integrity and to include a short description of reporting requirements in this section.	The Guidelines include a requirement for annual monitoring and reporting for Level I (higher risk) wells. The Guidelines should be read as a whole. Therefore, in order to avoid duplication of information and enhance readability, all information on monitoring and reporting requirements for suspended wells remains in section 5D.

## **Section 5A: Wellhead Requirements for Suspended Wells**

The comments received about section 5A of the Guidelines and responses are captured in the following table.

<b>Comments</b>	<b>Responses</b>
A request to clarify whether a wellhead is considered a single barrier.	A tested wellhead is considered to be a single barrier for the purpose of well suspension. A statement to this effect has been added to section 5B. A definition of barrier was added to section 5 for clarification.

Comments	Responses
A recommendation to re-word the requirement for wellhead servicing and pressure testing to require operators to follow Original Equipment Manufacturer's (OEM) Guidelines for servicing and testing.	The Guidelines have been changed to reflect this recommendation.
A recommendation to accept alternative equivalent methods of managing the hazard of trapped pressure in wellheads that would maintain safety requirements and may not be subject to damage by wildlife rubbing on the wellhead.	The Guidelines have been changed to allow for the use of equivalent alternative methods.
A recommendation to include a short description of monitoring and testing requirements in this section.	The Guidelines should be read as a whole. Therefore, in order to avoid duplication of information and enhance readability, all information on monitoring and reporting requirements for suspended wells remains in section 5D.
A comment that the Guidelines do not describe the acceptable service requirements for wells in the Northwest Territories.	The Guidelines describe what the Regulator considers to be the acceptable service requirements for wells in the NWT.
Questions about whether all wellheads require physical barriers around them to prevent accidental vehicular damage.	The Guidelines have been changed to specifically allow "unless otherwise approved by the Regulator".

### Section 5B: Downhole Well Suspension Requirements

The comments received about section 5B of the Guidelines and responses are captured in the following table.

Comments	Responses
A question about whether the inability of a well to flow to surface could be considered a barrier.	Inability to flow is not considered a barrier for the purpose of well suspension. A definition of well barrier has been included in section 5 of the Guidelines to provide greater clarity.
A recommendation that the option of using a bridge plug capped with cement for both Level I and Level II wells should result in a three year inspection schedule, as opposed to a one year inspection schedule.	<p>The inspection schedule for Level I and Level II wells suspended with a bridge plug capped with cement has been changed as follows:</p> <ul style="list-style-type: none"> <li>• Level I wells – First inspection required 12-24 months after suspension; second inspection required after 5 years or prior to applying to abandon the well, whichever comes first.</li> <li>• Level II wells – Inspection required after 5 years or prior to applying to abandon the well, whichever comes first.</li> </ul>



<b>Comments</b>	<b>Responses</b>
A comment that the testing and assessment requirements for non oil and gas wells should be similar to oil and gas wells, as they have the potential for GM or SCVF or to produce saline water. Testing for leaks, failures, etc. should also be required for these wells.	The Guidelines require SCVF and GM testing for non oil and gas wells prior to suspension, the same as for other wells. The post-suspension testing requirements for these wells are tied to their risk level. Some tests may not be possible for non oil and gas wells (for example, a non oil and gas well may not have a wellhead and/or surface casing vent assembly and therefore cannot be tested for SCVF).
A question about the technical reason for not allowing retrievable plugs for well abandonment.	No research is available that demonstrates retrievable plugs work as well as permanent plugs for well abandonment. Therefore, the Regulator has chosen to take a precautionary approach and not allow retrievable plugs for well abandonment.
A question about the technical reason for not allowing permanent packers and tubing plugs for well abandonment.	The AER allows packers and tubing plugs for low risk well suspensions only. The majority of wells in OROGO's jurisdiction do not meet the AER's criteria for a low risk well. This approach also increases the potential for tubing corrosion. Tubing corrosion is not a significant issue if the well is only to be suspended for a maximum of 6 years, but is a significant concern for an abandoned well.
Concerns about the reference to "non-freezing liquid", as opposed to "non-freezing fluid" in suspended wells, including concerns about the risks associated with inhibited (non-freezing) fluids if spilled.	The AER requires non-compressible, non-freezing, corrosion-inhibiting wellbore fluid in suspended wells in permafrost areas. Air or other gasses are compressible. Air can also create an increased potential for corrosion of the inside of the wellbore at the air-liquid interface. The requirement for non-freezing fluid eliminates the use of fresh water and saline water. In the short term period of suspension (6 years or less prior to abandonment), the Regulator is more concerned with the risk of wellbore corrosion than of a spill of corrosion-inhibiting fluid.
A request for information on permafrost zones in the NWT.	Permafrost information can be obtained from the Northwest Territories Geological Survey.
A recommendation that OROGO provide a list of the type of fluid or standards for fluid that are considered acceptable.	In order to suspend a well, the operator must submit an application for a Well Approval. The application would include information on the proposed wellbore fluids post-suspension. There are many types of fluids and what is most appropriate could vary based on the circumstances. The Regulator can approve the proposed fluid or require the use of a different fluid during the approval process. The Guidelines have not been changed.

### Section 5C: Gas Migration and Surface Casing Vent Flow Testing and Repair Requirements during Well Suspension

The comments received about section 5C of the Guidelines and responses are captured in the following table.

Comments	Responses
Recommendations that GM testing only be required if there is visible evidence of a GM issue (such as vegetation stress, gas bubbles, indicators on a personal monitor).	Visible evidence at the surface level does not always reflect GM occurring below the ground surface. Evidence such as distressed vegetation and gas bubbles may not always be an accurate indicator: some vegetation is not negatively affected by GM and gas bubbles can only be seen when there is standing water surrounding the wellhead. The Guidelines have not been changed.
A request for clarification about whether the repair program for GM or SCVF must be submitted separately from the application for a Well Approval.	No separate submission will be required for the repair program for GM or SCVF. This information should be included in the application for a Well Approval. A Well Approval is required in order to suspend the well. The Guidelines have been changed to clarify this requirement.
A concern that wells are allowed to be suspended without repairing all GM and SCVF, including non-serious GM and SCVF.	The option to allow wells to be suspended without immediately repairing non-serious GM and SCVF is consistent with other regulators and reflects the limited period allowed for suspension under the Guidelines. Repairing GM or SCVF can require multiple casing perforations. These perforations may affect the integrity of the casing should the well go back into production in the future. The risk of damage to the casing outweighs the risk from a non-serious GM or SCVF. The Guidelines have not been changed.

### Section 5D: Testing and Inspection Requirements for Suspended Wells

The comments received about section 5D of the Guidelines and responses are captured in the following table.

Comments	Responses
A recommendation to remove the wellhead pressure test from the testing requirements.	The Guidelines have been changed to refer to the OEM requirements, consistent with changes made to section 4 of the Guidelines. The wellhead pressure test is still required.
A recommendation to adjust the requirements for testing wells suspended with a closed polished rod blow out preventer (BOP).	A closed polished rod BOP is not an acceptable suspension method under these Guidelines, therefore additional testing methods are not required to accommodate this approach.
Concern that testing the wellhead valves and seals may not identify issues with the bridge plug or packer and tubing plug unless both the primary and secondary wellhead seals have failed.	The exception section in the draft Guidelines has been removed. Wellhead pressure tests and vent flow tests are required of all wells. If a well fails either of these two tests, a well integrity test is also required.

<b>Comments</b>	<b>Responses</b>
A recommendation to keep the well integrity testing period (10 minutes) consistent for both types of wells.	The Guidelines have been changed to reflect this recommendation.
Requests for clarification of the exception section.	The exception section in the draft Guidelines has been removed in response to concerns raised above.
Requests for clarification of the inspection frequency for Level II wells suspended with a bridge plug in relation to the timing requirements for well abandonment.	The inspection schedule for Level II wells suspended with a bridge plug capped with cement has been changed as follows: Inspection required at 5 years or prior to applying to abandon the well, whichever comes first.
Recommendations to use Level II testing requirements for wells with non-serious GM or SCVF, rather than Level I.	The Guidelines will continue to use Level I testing requirements for wells with non-serious GM or SCVF. This approach is consistent with other regulators, keeps the Regulator up to date on the circumstances and allows any changes to be identified and addressed in a timely manner.
A request for clarification of the monitoring and testing requirements for suspended non oil and gas wells.	Non oil and gas wells will be inspected at the same frequency as Level II wells or as otherwise required by the Regulator. The Guidelines have been changed to reflect this requirement.
A recommendation to remove the 21-day reporting requirement for failures.	The requirement for a report within 21 days is a statutory obligation, contained in section 75(2)(b) of the ODGPR. It will not be removed from the Guidelines.

## **SECTION 6: WELL ABANDONMENT REQUIREMENTS**

The comments received about section 6 of the Guidelines and responses are captured in the following table.

<b>Comments</b>	<b>Responses</b>
Concerns with the establishment of a 6 year timeframe for a suspended well to be abandoned.	Using land use permits and waters licences to set the timeframe to abandonment is not acceptable, as the durations are variable and outside of the control of the Regulator.
Recommendations that the timeframe for abandonment be changed to account for market conditions and the economics of moving to production.	Using the period of the applicable exploration, significant discovery or production licence is not suitable as these range in period from nine years (exploration licences) to indefinite (significant discovery licences). In some cases, there may not be any licence under the <i>Petroleum Resources Act</i> .
Recommendations that the timeframe for abandonment be changed to reflect the terms of any exploration rights, mineral rights or land access rights.	A six-year period to abandonment balances the operator's need to suspend wells from time to time with the additional risk that occurs with every year of suspension. It has also been a feature of previous versions of the regulations. The Guidelines continue to require the six-year timeframe to abandonment. They have been changed to confirm the Regulator's power to approve limited exceptions.

## Section 6A: Downhole Abandonment Requirements

The comments received about section 6A of the Guidelines and responses are captured in the following table.

Comments	Responses
A request for clarification of whether commingled pool production would be considered a single pool for the purposes of abandonment.	Commingled pools must be isolated separately during abandonment. The Guidelines have not been changed.
A comment that, in order to isolate non-saline groundwater zones, testing will be required and the Guidelines should include information on the testing requirements.	Groundwater protection requirements, including the information that must be provided by the operator when applying to abandon a well, are captured in section 6B.
A recommendation to allow the use of a retrievable bridge plug, packer and/or tubing plug as a basis for cementing during Level II well abandonments.	Retrievable plugs are not acceptable for well abandonment as there is no research demonstrating that they are as safe as permanent plugs. The AER does not allow packers and tubing plugs for well abandonments. This approach increases the potential for tubing corrosion, a significant concern for an abandoned well.
A recommendation to allow for a calculated cement top, as opposed to a measured cement top and to make cement evaluation optional, depending on its availability and applicability.	Calculations of the cement top can be inaccurate. Therefore the Guidelines require the cement top to be located in accordance with section 6C. Cement evaluation is also required, as it is the only way to gather first-hand information on the status of the cement behind the casing.
Concerns with respect to the use of inhibited, non-freezing liquid for well abandonments, including potential concerns associated with spills and with the use of inhibited fluid together with vented caps.	The Guidelines have been changed to require non-saline water in the wellbore post-abandonment.
A request that a process for abandonments using alternative methods be included in the Guidelines.	Section 1 of the Guidelines identifies that operators are free to propose alternative approaches if they meet the safety and environmental protection objectives of the Guidelines. The Guidelines have been revised to confirm that the Regulator may approve alternative approaches.
A concern that the fluid requirements for cased-hole wells with no perforations were not consistent with the requirements in section 6A.	The amended requirement for wellbore fluids in section 6A (see above) addresses this concern.

<b>Comments</b>	<b>Responses</b>
<p>Requests for clarifications with respect to the cementing requirements, including requests to allow for dump bailing of cement, and pressure testing requirements.</p>	<p>Cementing requirements are set at 15 meters of circulated cement for Level II wells and 30 meters of circulated cement for Level I wells. These amounts reflect the risks associated with the two well types, as well as the permanent nature of well abandonment (in comparison with well suspension).            Pressure testing is required for 10 minutes at 7,000 kPa for both Level I and Level II wells, or as approved by the Regulator.            For cased-hole wells without perforations, the pressure testing must have occurred within 12 months of the abandonment.            The Guidelines have been changed to reflect these changes.            The Guidelines do not allow for dump bailing of cement. Circulating cement is shown to have better results and is considered an industry best practice.</p>
<p>Requests for clarification about the placement requirements for bridge plugs in wells with cemented liners.</p>	<p>Bridge plugs in wells with cemented liners may be placed either within 15 vertical meters above the liner top or within 15 vertical meters of the zone top in which the liner is landed. The Guidelines have been changed to reflect this requirement.</p>
<p>Requests for clarification about the requirement for cement caps over bridge plugs for wells with cemented liners.</p>	<p>Wells with cemented liners require a cement plug, which must be located in accordance with section 6C. The Guidelines have been changed to reflect this requirement.</p>
<p>A suggestion to add a section for wells with uncemented liners across a single zone, a popular technique for completing horizontal multi-stage wells.</p>	<p>Wells with uncemented liners across a single zone should be abandoned in the same way as wells with cemented liners once the liner has been cemented. The Guidelines have been changed to reflect this requirement.</p>
<p>A request for clarification about how the risk level is determined for wells with casing patching, casing failures and previously cement squeezed intervals.</p>	<p>Wells with casing patching, etc., are to be addressed based on the risk level of the zone where the failure occurred.            The Guidelines have not been changed.</p>

Comments	Responses
<p>Requests for clarification with respect to the requirements for wells with existing Level I zonal abandonments.</p>	<p>The requirements for abandoning wells with existing Level I zonal abandonments are:</p> <ul style="list-style-type: none"> <li>• If the previously abandoned Level I zone was not abandoned in accordance with the Guidelines, then an additional cement plug must be circulated and pressure tested as described above.</li> <li>• If the uppermost previously abandoned zone's plug is above the non-saline groundwater, it must be drilled out and an additional cement plug must be circulated on top of the uppermost previously abandoned zone and pressure tested as described in the Guidelines.</li> <li>• All perforations above this point must be abandoned as required in the Guidelines.</li> </ul> <p>The Guidelines have been changed to reflect these requirements.</p>

**Section 6Ai: Requirements for Abandonment of Non Oil and Gas Wells**

The comments received about section 6Ai of the Guidelines and responses are captured in the following table.

Comments	Responses
<p>A request to include wellbore fluid requirements for non oil and gas wells.</p>	<p>The wellbore fluid requirements for non oil and gas wells are the same as for other wells. The Guidelines have been changed to reflect this requirement.</p>
<p>A recommendation to consider whether the fluid level should be lowered prior to cutting and capping.</p>	<p>The Guidelines do not require the wellbore to be filled with fluid all the way to the surface for any type of well. Therefore fluid may be lowered, if necessary, prior to cutting and capping of any well. The Guidelines have not been changed.</p>
<p>A request to clarify the rationale for the fluid level test and re-evaluate whether one is needed.</p>	<p>The type of testing required to ensure that plugs are not leaking will depend on the downhole abandonment method chosen by the operator and the well infrastructure (for example, some non oil and gas wells do not have wellheads or Christmas trees). The Guidelines have been changed to offer two testing options: pressure testing or fluid level testing.</p>
<p>A recommendation to reconsider requiring GM and SCVF testing for a water well prior to surface abandonment, given that most water wells will not have a surface casing vent.</p>	<p>The Guidelines have been changed to remove the standard requirement for GM and SCVF testing but leave the flexibility for the Regulator to require such testing if it is deemed necessary.</p>

## Section 6B: Groundwater Protection Requirements

The comments received about section 6B of the Guidelines and responses are captured in the following table.

Comments	Responses
<p>Recommendations to provide a more detailed definition of potable groundwater that incorporates other parameters beyond TDS.</p>	<p>A more detailed definition of potable water that incorporates other parameters beyond TDS would likely limit the amount of groundwater that would be protected under this section of the Guidelines. The intention is to take a conservative approach and protect more groundwater. This is particularly important at the abandonment stage, as it may not always be easy to determine from the surface if an abandoned well has failed.</p> <p>Another consideration is ensuring the testing to determine the nature of the groundwater can be done in the field to facilitate decision-making.</p> <p>The Guidelines have not been changed.</p>
<p>A request to clarify the process for providing groundwater data to the Regulator in order to reduce the 600 meters protection requirement, including the timeframe within which the Regulator will respond.</p>	<p>Operators can provide information on the location of groundwater and on existing isolation of groundwater to the Regulator through the application for a Well Approval, which must be in place before abandonment can occur. OROGO's service standard for processing Well Approval applications with existing Operations Authorizations is 30 days.</p>
<p>A request to clarify the reasoning behind the 600 meter default protection requirement (in the absence of groundwater data).</p>	<p>The intention is to ensure that all non-saline groundwater is protected. In the absence of groundwater data, this requires a conservative approach to setting default protection requirements. Although information on groundwater is not available for the NWT to the same level of detail as it is for Alberta, recent drilling activity suggests that 600 meters is a reasonable default protection requirement.</p> <p>The default protection requirement will only come into effect if the operator is not able to provide adequate information to the Regulator to support a different depth of protection. Generally speaking, information on groundwater depths should have been obtained when the well was drilled and should be available to the operator.</p> <p>The Guidelines have not been changed.</p>
<p>A request to consider grandfathering in historic wells, rather than requiring the operator to provide proof of the existing isolation of non-saline groundwater.</p>	<p>As outlined in Section 1 of the Guidelines, all suspended wells must be abandoned in accordance with the Guidelines once they are in force.</p> <p>If the operator cannot provide proof of the existing isolation of non-saline groundwater, it will be required to carry out remedial isolation in order to assure the Regulator that the groundwater is isolated in accordance with the requirements of the OGDPR.</p> <p>The Guidelines have not been changed.</p>

<b>Comments</b>	<b>Responses</b>
A recommendation to consider a continuous cement plug and squeeze across multiple zones as a means of isolating non-saline groundwater.	If a continuous cement plug and squeeze across multiple zones is used to isolate non-saline groundwater, there is no way to confirm that the perforations in the lower zones are completely plugged. Therefore, this method for isolating non-saline groundwater is not acceptable and the Guidelines have not been changed.
A request for clarification of the requirements for cementing for remedial isolation options 3 and 4 and for pressure testing for remedial isolation option 4.	The cementing and pressure testing requirements associated with Level II exploratory and production well abandonments will apply to cementing for remedial isolation of groundwater. The Guidelines have been changed to reflect these requirements.
A recommendation to remove the term “Bradenhead cement plug and squeeze”, as it may cause confusion and the remaining text adequately describes the likely alternatives.	The Guidelines have been changed to remove the reference to a Bradenhead plug and replace it with the option to balance a cement plug and squeeze.

### **Section 6C: Requirements for Locating Cement Plugs**

The comments received about section 6C of the Guidelines and responses are captured in the following table.

<b>Comments</b>	<b>Responses</b>
A recommendation to accept a calculated cement top, as opposed to a measured / located cement top.	Calculations of the cement top can be inaccurate, which is why the Guidelines require the cement top to be located using one of the acceptable methods specified in this section.
A recommendation to set a minimum force required to locate cement top using the strap tally method and to consider whether tubing would also be acceptable if the same force / weight could be achieved.	The minimum force required is 18,000 decanewtons, consistent with the AER’s requirements. Use of tubing (either coil or jointed) for the strap tally is acceptable if this minimum force can be achieved. The Guidelines have been changed to reflect these requirements.
A concern with respect to using a radioactive tracer to locate plugs in a non-saline (or potentially potable) water zone.	The isotopes used for locating plugs are chosen specifically for their high rate of decay (short half-life) and are used in very small quantities. They are often the same isotopes used in humans for medical examinations and for leak detection in municipal water systems. The Regulator would have to approve the use of a radioactive tracer as part of a Well Approval application.
A recommendation to accept wireline/slickline as an option if the cement top has been calculated and the tagged depth verifies the placement of the cement top.	Wirelines or slicklines are not acceptable options for locating cement plugs. They are not rigid enough to achieve the necessary downward force to accurately locate the plug.



## Section 6D: Gas Migration, Surface Casing Vent Flow and Annual Pressure Testing and Repair Requirements during Well Abandonment

The comments received about section 6D of the Guidelines and responses are captured in the following table.

Comments	Responses
<p>A recommendation to remove the requirement for SCVF and annular pressure testing prior to downhole abandonment but require SCVF testing prior to downhole suspension and abandonment operations.</p>	<p>The Guidelines require several GM, SCVF and annular pressure tests throughout the suspension and abandonment process in order to ensure that efforts to address any existing GM, SCVF or annular pressure were successful before moving to the next step in the process.</p>
<p>A recommendation to require GM testing only where there is visible evidence of GM and if the well has a sealed, non-vented surface/production (or intermediate) annulus.</p>	<p>Visible evidence at the surface level does not always reflect GM occurring below the ground surface. Evidence such as distressed vegetation and gas bubbles may not always be an accurate indicator: some vegetation is not negatively affected by GM and gas bubbles can only be seen when there is standing water surrounding the wellhead.</p> <p>As the Guidelines require the use of a vented cap, there is no need to address situations where the well has a sealed, non-vented surface/production (or intermediate) annulus. The Guidelines have not been changed.</p>
<p>A recommendation to defer repair of GM or SCVF until after downhole abandonment is complete.</p>	<p>The intention is GM or SCVF should be repaired before surface abandonment occurs. GM or SCVF repair would most likely occur during the downhole abandonment process.</p> <p>An abandoned well that has GM or SCVF would not be considered completely abandoned by the Regulator according to the Guidelines.</p> <p>The Guidelines have been changed to better clarify this requirement.</p>
<p>A recommendation to allow minor GM or SCVF to continue, post-surface abandonment, with prior approval of the regulator.</p>	<p>Allowing minor GM or SCVF to continue after abandonment does not meet the requirements section 56 of the OGDPR. There is also a concern that GM or SCVF that appears minor at the surface may be an indicator of more significant issues downhole, which cannot be easily measured but must be addressed. The Guidelines have not been changed.</p>

## Section 6E: Surface Abandonment Requirements

The comments received about section 6E of the Guidelines and responses are captured in the following table.

Comments	Responses
A recommendation to remove the requirement for surface abandonment to occur within 12 months of downhole abandonment.	Complete abandonment (downhole and surface) must occur within the timeframe specified in section 6 of the Guidelines. Therefore, the Guidelines have been changed to reflect this recommendation.
Requests to clarify what is meant by a vented capping system that facilitates well control in the event of a failure post-abandonment and recommendations for alternative requirements and wording.	The Guidelines have been changed to clarify that only a vented capping system is required.
A recommendation to decrease the precision of the location requirements (for reporting) to seconds to one decimal place, as this is the limit of a hand held GPS unit.	The requirements for location reporting are consistent with those of the Mackenzie Valley Land and Water Board. The required level of precision can be obtained using a good quality hand held GPS unit. The Guidelines have not been changed in response to this recommendation. In order to further assist the Regulator to locate abandoned wells, the Guidelines have been changed to require the submission of a field sketch of the area, along with the GPS data.
Concerns with respect to requiring permanent signage for abandoned wells, including: the continued maintenance requirement, that permanent signage represents a hazard and that this requirement is inconsistent with the requirements of other western Canadian jurisdictions.	Section 56 of the OGDPR means that a well should be readily locatable by any individual in the vicinity of the well, not just those with access to a handheld GPS unit. The Guidelines have not been changed.
A recommendation to include allowing the post to be welded directly to the stub of the abandoned well.	Attaching the sign post to the stub of the abandoned well could increase the chance of communication between the wellbore and the post and of damage to the wellbore should the post be hit or broken off. The Guidelines have not been changed.
A request to clarify the size of the lettering required on the sign and how it should be made (e.g. bead welded or plasma cut).	The lettering must have long-term viability and be visible at a distance of several meters. The Guidelines have been changed to reflect these requirements.
A recommendation to require the sign to include the datum of the GPS coordinates for the well, to facilitate the reporting of concerns.	The Guidelines have been changed to suggest the use of NAD83 and to require that the datum be specified in the reported coordinates and on the well signage.

### Section 6F: Responsibility for Abandoned Wells

The comments received about section 6F of the Guidelines and responses are captured in the following table.

<b>Comments</b>	<b>Responses</b>
Requests for clarification of how changes in ownership of abandoned wells will be addressed.	Abandoned wells are the responsibility of the company that performed the abandonment or any successor company to the original company. The Guidelines have been changed to reflect these requirements.

### SECTION 7: APPLYING TO SUSPEND OR ABANDON A WELL

The comments received about section 7 of the Guidelines and responses are captured in the following table.

<b>Comments</b>	<b>Responses</b>
A recommendation to state that the Regulator confirms whether a proposed work or activity conforms with the Water Licence (where applicable) when reviewing an application.	Operations authorizations and Water Licences are separate authorizations issued by separate and independent regulators. Neither regulator is empowered to enforce compliance with the requirements of the other. Furthermore, in some cases applications to the Regulator may be made before the issuance of a Water Licence. In contrast, the check for conformity with the applicable Land Use Plan is an obligation of the Regulator under section 46 the <i>Mackenzie Valley Resource Management Act</i> .

## CONCLUSION

The consultation and public engagement process resulted in a number of comments on the Guidelines. Significant among these were:

- Comments, questions and recommendations on abandonment methods and approaches;
- Concerns that operator be able to use alternative approaches that meet the Regulator's safety and environmental protection objectives;
- Concerns about establishing a firm, six-year timeframe for well abandonment after suspension for all types of wells;
- Questions and recommendations on the monitoring and testing for GM, SCVF and annular pressure; and
- Concerns about surface and ground water monitoring and protection.

The Guidelines have been amended to reflect the comments received where possible, while maintaining the integrity of the Guidelines with respect to their objectives.

The Regulator thanks all of the organizations and individuals who took time to review and comment on the Guidelines.