

# Assessment of Environmental Liabilities of Historically Reclaimed Sites



## About the BC Oil and Gas Commission

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The BC Oil and Gas Commission is an independent, single-window regulatory agency with responsibilities for overseeing oil and gas operations in British Columbia, including exploration, development, pipeline transportation and reclamation.

The Commission's core roles include reviewing and assessing applications for industry activity, consulting with First Nations, ensuring industry complies with provincial legislation and cooperating with partner agencies. The public interest is protected through the objectives of ensuring public safety, protecting the environment, conserving petroleum resources and ensuring equitable participation in production.

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EXECUTIVE SUMMARY

A February 2010 report by British Columbia’s Auditor General, entitled Oil and Gas Site Contamination Risks – Improved Oversight Needed, recommended that the BC Oil and Gas Commission (Commission) “assess the risks associated with legacy sites and develop a suitable workplan to deal with the risks.” The purpose of this report is to provide a summary of what constitutes a legacy site and provide additional information on the potential risks posed by these sites.

There are 3,721 legacy sites in British Columbia. Legacy sites are wellsites that were decommissioned and remediated prior to the establishment of the Crown Land Restoration Branch (CLRB) in 2004, which is now under the Ministry of Forests, Lands and Natural Resource Operations.

These wellsites were decommissioned and reclaimed in accordance with the prevailing standards at the time of well closure and as such there is no reason to believe that there are any unaccounted for liabilities associated with these wells. The Commission has undertaken research which shows that existing operators active in oil and gas developments in British Columbia or other Canadian provinces are linked to all but 54 of these wellsites, showing there remain viable operators with significant assets who are responsible for any further remedial costs that may arise from these well sites.

There is minimal environmental liability associated with the 54 wellsites for which no operator can be identified as only two were ever placed into active operation (one gas well on private land and one oil well on Crown land).

In addition to the 54 wellsites mentioned above, there are wells that were drilled and abandoned prior to any formal regulation and are not included in the Commission’s records. To date, approximately 16 potential locations have been identified in southeast British Columbia that were drilled by early prospectors between 1900 and 1930, and many of these were drilled at the location of natural oil seeps.

Provisions within the Oil and Gas Activities Act provide the

Legacy Sites	All sites that received a Certificate of Restoration (CoR), or were exempt from the requirement, prior to October 2004.  Oil and gas sites that may require remedial work but no viable operator can be identified. The Orphan Site Reclamation Fund was created for such instances. These sites are designated by the Commissioner.
Orphan Sites	
Certificate of Restoration (CoR)	This certificate ensures that a site used for oil and gas development was restored to a safe and productive state. The Commission is responsible for overseeing the restoration activity ensuring all applications approved are in the public interest with regard to environmental, economic and social effects.

ability to designate any Crown legacy sites as orphans and access the Orphan Site Restoration Fund to manage them if necessary. Any issues arising from residual contamination associated with wells on private land are also managed by the Commission under the Orphan Site Restoration Fund.



## BACKGROUND

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All wellsites, test holes and production facilities within British Columbia must be properly deactivated and the land restored before a surface lease is removed. In 1974 amendments were introduced to the Petroleum and Natural Gas Act to provide for the issuance of a CoR. From 1974 to 1998, CoRs were issued by the Ministry of Energy and Mines (MEM) to permit holders that had completed site restoration and had applied for a CoR. Prior to 1974, CoRs were not issued and sites were restored in accordance with the standards of the day under the administration of MEM. Some sites that were restored prior to the 1974 legislated requirement for CoRs were subsequently issued a CoR by MEM. Since the formation of the Commission in 1998, CoRs have been issued by the Commission.

A total of 3,721 sites within British Columbia are considered to be legacy sites. Table 1 provides a summary of the types of these sites.

**Table 1 – Summary of Legacy Sites**

Site Type		Total
Well Sites	Never Produced	3,507
	Gas Production	119
	Oil Production	64
	Mixed Oil and Gas Production	6
	Water Source Wells	11
	Water Disposal Wells	5
Test Holes	Drilled	9
<b>Total</b>		<b>3,721</b>

## ANALYSIS

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Test holes are shallow holes under 600 metres in depth that were typically drilled to obtain stratigraphic information about the geological conditions at the site. In rare circumstances, limited evaluation of a reservoir might occur. As the test holes are shallow and do not involve the commercial production of petroleum or natural gas, there is minimal risk of contamination associated with these sites.

Given that legacy sites were restored to a productive state in accordance with the standards administered by MEM, combined with the typical geology of northeast British Columbia and standard practices for the disposal of waste associated with drilling, the Commission believes there is minimal probability that these sites pose a significant risk to human health or the environment. It is expected the vast majority of these sites would not require any further remedial work if provincial risk assessment protocols and procedures were applied. However, the Commission is mindful standards change over time and additional information may be received regarding these legacy

sites indicating additional remedial work is required.

Under Section 45 of the Environmental Management Act (EMA), current and past owners and operators of contaminated sites and persons whose activities resulted in site contamination are responsible for the remediation of that contamination. This responsibility is not time sensitive and per Section 47(1) of the EMA the responsible parties are absolutely, retroactively and jointly and separately liable for incurred costs of the remediation whether on or off-site.

The bulk of legacy sites (3,341 sites) can be linked via Section 45 of the EMA to companies who have current active production operations within British Columbia. These are companies that have a favourable Liability Management Rating (LMR), meaning the Commission believes they have sufficient assets to provide for any additional site remedial work if required.

An additional 326 legacy sites can be linked to one or



Mulching on a restored activity site.

more companies who have operations in British Columbia or other jurisdictions. The Commission believes the companies responsible for these sites do have the resources to perform additional remediation work at legacy sites if required, but notes the LMR for these companies indicates a moderate risk of financial default.

The balance of legacy sites includes 54 wellsites for which no current operating company can be identified. A breakdown of these 54 wells by type is provided below in Table 2.

The responsibility for remediation of any legacy sites on Crown land lies with the CLRB. However, for practical purposes the Commission remains actively involved in the assessment and remediation of these sites as funding for any future restoration

work will potentially come from the Orphan Sites Reclamation Fund rather than from public funds.

Should additional restoration be required, the Commission will make all reasonable attempts to identify a responsible party and to recover funds through available legislative and legal means. In addition to the known legacy sites there are a limited number of sites which predate the provincial records. There is evidence approximately 16 wells that are not accounted for in Commission records may have been drilled in southeast British Columbia between 1900 and 1930. These wells typically targeted natural oil seeps near Sage Creek and Akamina Creek, and one well is known to have produced small quantities of light crude oil and saline water.

**Table 2 – Legacy Sites Not Linked to Current Operating Companies**

Site Type		# on Private Land	# on Crown Land	Total Number
Wellsites	Never Produced	19	33	52
	Producing Gas Site	1	0	1
	Producing Oil Site	0	1	1





## MOVING FORWARD

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This report was created to address the British Columbia Auditor General's report Oil and Gas Contamination Sites – Improved Oversight Needed, as well as detail Commission's ongoing efforts in identifying and restoring legacy sites.

Of the approximately 3,721 legacy sites, all but 54 – referred to as orphan sites – can be linked to active companies that own or operate wells or production facilities in British Columbia or other jurisdictions. The Commission continues to work toward restoring these sites through such means as the Orphan Site Restoration Fund.

A key priority of the Commission, as detailed in our mandate and expressed in our mission statement, is conservation of the environment. Moving forward, the Commission will continue transparency in the oversight of legacy sites and continue to ensure the balance between environmental concerns and resource development for the benefit of all British Columbians.

We welcome your comments on this report as well as suggestions to improve future reporting.

**For more information contact:**

Devin Scheck  
Director, Waste Management & Reclamation  
250-794-5232  
[Devin.Scheck@bcogc.ca](mailto:Devin.Scheck@bcogc.ca)