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Water Use by Alberta's Oil and Gas Industry

Recently, there has been much discussion about the amount of water used by the oil and gas industry in Alberta. The Government of Alberta and the oil industry share Albertans' concerns regarding appropriate water management and use by industry.

The oil and gas industry's use of water is well regulated through a system of licensing and monitoring in accordance with:

- the *Water Act*;
- the 2006 Water Conservation & Allocation Policy ;
- Guidelines for Oilfield Injection;
- Alberta Environment; and
- the Alberta Energy and Utility Board (EUB) regulations.

The industry has been innovative in its use of water and has made great strides in water conservation and improved recycling technology. For example, saline groundwater (not suitable for drinking or agriculture use) is now used whenever possible.

Alberta's energy industry is the primary engine that fuels our province's economy. The government allows exploration and production to continue in a responsible way. The oil and gas production industry employs approximately 150,000 Albertans and in 2005 the oil and gas industry invested more than \$25 billion in Alberta.

Facts and Figures

(Source: *Alberta Environment, 2005 data*)

- The oil and gas sector is allocated, through licenses, only 7.1 per cent of the total water licensed in Alberta.

- This figure compares with 45.5 per cent licensed for agriculture (including irrigation) and 11.2 per cent licensed for municipalities and 6.6 per cent for commercial.
- Approximately 97 per cent of the current water licensed in Alberta is from surface water (water from lakes and rivers), while 3 per cent is groundwater (obtained from underground aquifers).
- Oil and gas companies hold 37.5 per cent of total groundwater allocations. The oil and gas sector uses only about 25 per cent of its groundwater allocation. The oil and gas industry's groundwater allocations are 1.1 per cent of total allocations in Alberta.

Use of Water in Oil and Gas Production

- Using water (saline, recycled or fresh) allows the oil industry to produce more oil.
- Over half of all oil produced in Alberta is developed using enhanced oil recovery (injection of water to recover oil from the reservoir). *Source: Canadian Association of Petroleum Producers*
- Use of CO₂ in enhanced oil recovery projects still requires use of water.
- Oil and gas industry use of saline groundwater has increased ten-fold in the past 20 years. *Source: EUB Water Source Tables 2005*

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- All water license applications are screened by Alberta Environment to ensure protection of the environment. Alberta's 2006 Water Conservation & Allocation Policy and Guidelines for Oilfield Injection requires the oil and gas industry to evaluate combined effects of their proposed water use and other water diversions and to make maximum efforts to reduce (or eliminate on a case-by-case basis) non-saline water use, especially in water short areas.

Provincial Water Strategy

The Government of Alberta has developed *Water for Life*, the provincial water strategy, which will ensure healthy and sustainable ecosystems, safe and secure drinking water, reliable water for a sustainable economy and the knowledge to make effective water management decisions. One of the key components of that strategy is a water use policy for oilfield injection.

If you would like to know more, the provincial water strategy can be found online at: www.waterforlife.gov.ab.ca.

Oil and Gas Industry Use of Water in a Provincial Context

(2005 Allocation Data provided by Alberta Environment & 2004 Use Data provided by the Alberta Energy and Utilities Board)

Millions of cubic metres

