



Report from the Provincial Government

Happy Holidays and Best Wishes for the New Year! We hope that everyone is starting to get into the spirit of the season. We would like to take this opportunity to update you on recent activities at the Ministry of Environment (MOE) and Ministry of Forests, Lands and Natural Resource Operations (MFLNRO).

Funding for Ground Water Projects

This Fall, MOE and MFLNRO were able to obtain substantial funding for work (sources of funding: Ministry base funding, research funding from MFLNRO, and Climate Action and Clean Energy (CASE) funding). Much of the funding is focussed on upgrading baseline information, making data more publically accessible and useful to improve assessment of impacts from proposed mining, oil and gas, and large groundwater extraction activities, activities that can trigger an Environmental Assessment Review. The following projects have been approved, using the funding:

- Enter well records into the WELLS database to prevent any backlog and address other legacies related to well record data (relating the aquifer classification number to the well record).
- Make much needed enhancements to WELLS (to help in processing well records) and to GWL (to better access observation well groundwater level data).
- Produce more well ID plates.
- Continue to map and classify developed aquifers across the province.

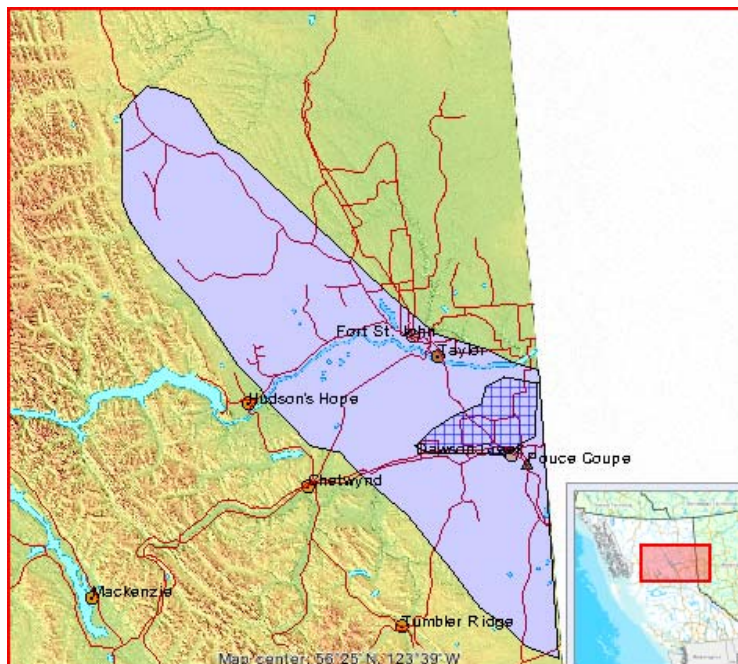


Figure 1: Montney Gas Play (blue shaded area) and Area for Proposed Observation Well Installation (cross hatched).

- Develop guidelines on: 1) use of numerical models in assessing impacts of natural resource activities, 2) requirements for baseline information for assessing mining impacts, and 3) information required to assess impacts of use of deep saline groundwater for fracking in the Horn River Basin (near Fort Nelson).

- Delineation of capture zones for community wells in northeast BC (with Northern Health Authority).

- Characterization of the hydrogeology of the Montney Play area in the Peace River area (see Figure 1). This project (in partnership with Ministry of Energy and Mines and Simon Fraser University) will involve exploring for deep paleochannels in the Groundbirch area, drilling observation wells in up

to 7 locations to monitor groundwater levels in surficial and bedrock aquifers, and a field survey of existing wells to map groundwater levels, characterize regional groundwater flow and groundwater geochemistry.

In addition to these projects, MOE and MFLNRO are also working to respond to the Auditor General's audit of how the provincial government manages and protects its groundwater resource (to see the Auditor General's audit, go to: <http://www.bcauditor.com/pubs/2010/report8/audit-management-groundwater-resources-british-columbia>). One of the responses is to develop a list of priority aquifers for characterization. Another is a pilot project with Fraser Health to capture source water quality data from water supply systems into MOE's EMS database.

All of these projects are scheduled to be completed by end of March, 2012.

Water Act Modernization Update

Modernizing the *Water Act* is a key commitment of [Living Water Smart: British Columbia's Water Plan](#) and will better protect our water resources and help keep our environment, economy and communities strong.

Over the past 16 months the MOE has been engaging widely with British Columbians on modernizing the *Water Act*.

Last December MOE released a [Policy Proposal on BC's new Water Sustainability Act](#) that provides a proposed framework to respond to current and future pressures on water including population growth, resource development and climate change. We received almost 1400 written [submissions](#) including 540 comments on the [Living Water Smart Blog](#).

Over the summer and fall, staff have been reviewing the public input, and continue to refine the proposed policies, and assess their implications. Throughout this process MOE has received suggestions and ideas on an unprecedented scale and quality. Many British Columbians expressed a need for more detail on the policies and legislation than what we provided in the Policy Proposal. In response, Government has committed to take more time to further engage with British Columbians in 2012 on draft legislation before it is finalized and introduced into the Legislature. Crafting new legislation and incorporating regulatory provisions for groundwater is a complex task; it's important that they are integrated with the other goals and objectives of the proposed *Water Sustainability Act*. Stay tuned for further updates on our progress and engagement opportunities by visiting the Living Water Smart [Blog](#) and [website](#) at: www.livingwatersmart.ca.

Flowing Artesian Wells

In recent months, MFLNRO staff members have fielded a number of questions concerning uncontrolled flowing artesian wells. Uncontrolled flowing artesian wells can result in significant environmental and

property damage. Mitigating the effects of this damage can be time consuming and expensive. However, with some investigation and planning prior to drilling, the chances of unexpectedly encountering flowing artesian conditions can be reduced.

How can flowing artesian conditions be determined before drilling?

Before a well is drilled, it is important for the driller or the person supervising the drilling (e.g., qualified professional (QP)) to do a pre-drilling assessment to determine whether flowing artesian conditions are likely to be encountered.

The pre-drilling assessment should include gathering information about geological conditions, static water levels and any history of flowing artesian wells in the area. This information can be obtained from:

- reviewing available local well construction reports;
- reviewing hydrogeologic information (e.g., maps on the iMap BC <https://webmaps.gov.bc.ca/imfz/imf.jsp?site=imapbc> or Water Resource Atlas http://www.env.gov.bc.ca/wsd/data_searches/wrbc/index.html showing flowing artesian well coverage or reports on Ecocat <http://www.env.gov.bc.ca/ecocat/>);
- consulting with the MFLNRO regional hydrogeologists (see listing at end of this article); and
- consulting with well drillers and professional hydrogeologists or geotechnical engineers with knowledge of the local area.

What should be done if flowing artesian conditions are suddenly encountered?

When unexpected flowing artesian conditions are encountered, a QWD or QP, must take responsibility to stop or control the artesian flow. The well owner and/or the land owner should be contacted immediately to report the situation and the QWD or QP should provide and implement plans to stop or control the flow.

It is important for the driller to develop a clear understanding with the well owner and/or land owner on the likelihood of encountering flowing artesian conditions and how the flow can be stopped or controlled before any work on the well commences, to avoid or minimize potential misunderstandings when artesian flow is encountered.

For more information on controlling flowing artesian wells, please refer to the Ministry of Environment's "Flowing Artesian Wells" brochure at:

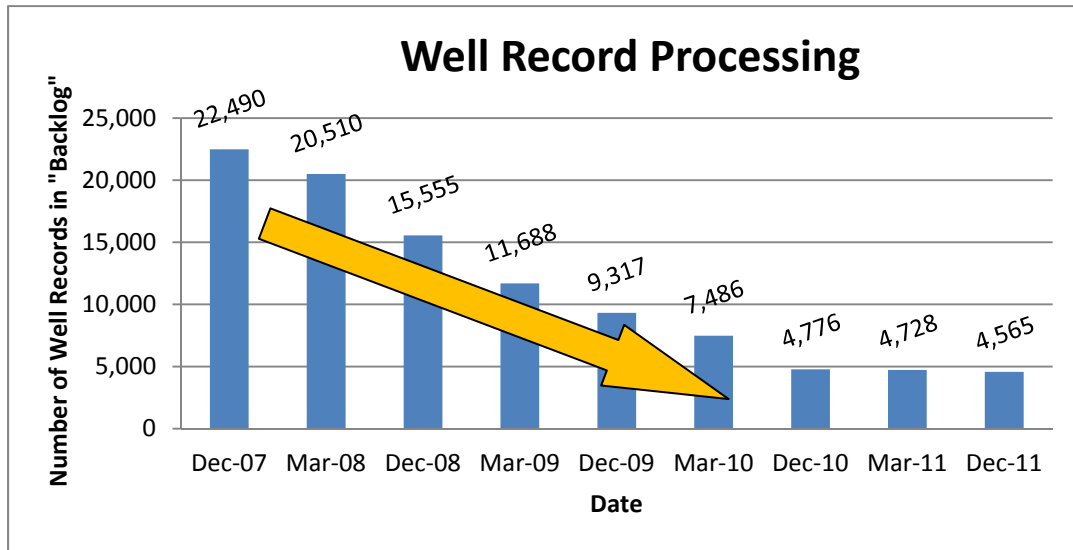
http://www.env.gov.bc.ca/wsd/plan_protect_sustain/groundwater/flowing_artesian_wells.pdf

WELLS Database Update

The WELLS database currently contains 103,270 well records. The following graph depicts the overall status of well record processing. Significant progress has been made to reduce the number of records in the Ministry's "backlog". Since December 2007 there has been a 79% decrease in the backlog.

Of the 4,565 well records that remain to be processed, it is estimated that approximately 50% are not spatially locatable.

It should be noted that the status of the database is in flux as data entry and data projects occur on a regular basis.



We are planning to enter well construction reports into WELLS over the next 4 months. If you have any well records that you have not submitted to MOE, please send them to us, care of:

Sr. Ground Water Data Specialist
Ministry of Environment, Water Stewardship Division
PO Box 9362 STN PROV GOVT
Victoria BC V8W 9M2

Registration of Qualified Well Drillers and Qualified Well Pump Installers – MoE Registration Contact Person

If you require information regarding your registration status with the provincial government as a qualified well driller or qualified well pump installer or if you are applying for registration, please contact Esther Parker by phone at (250) 953-3408 or by email at Esther.Parker@gov.bc.ca. Esther will be assisting the Deputy Comptroller with registration while Lindsay Macfarlane is on leave.

Staff Contact Information

Recent staff changes include:

Penticton Office - Skye Thomson is the new Groundwater Hydrologist with the MFLNRO, in Penticton. Skye was the Groundwater Protection Officer in the Penticton office for 2 years. Prior to employment with the province, he was a consulting hydrogeologist with an engineering firm for several years.

Skye earned a BSc in Environmental Sciences from UBC and his MSc from UBC in the same program. His MSc thesis involved characterization of an aquifer near the Kelowna UBC campus using geophysical and conventional techniques. He is looking forward to his new position and working with the groundwater industry.

Victoria Office - Klaus Rathfelder will be joining the Groundwater and Aquifer Science Section as the new Aquifer Water Quality Scientist. Klaus, originally born in Canada but raised, educated and works in the USA, has a PhD in Civil Engineering from the University of California, Los Angeles (UCLA). Klaus has over 20 years experience as a private consultant, as a research scientist at the University of Michigan, and briefly as an engineer/planner with the US Army Corp of Engineers. Klaus has a family with three children and will be moving to Victoria from Portland, Oregon.

Office	Name	Statutory Title	Phone	E-mail	Ministry
Nanaimo	Pat Lapcevic, P. Geo.	A/Reg. Water Manager	250-751-3149	Pat.Lapcevic@gov.bc.ca	MFLNRO
	Rachelle Ormond	Officer	250-751-3265	Rachelle.Ormond@gov.bc.ca	MFLNRO
	Graeme Henderson	Officer	250-751-7119	Graeme.Henderson@gov.bc.ca	MFLNRO
Surrey	Michele Lepitre, P. Geo	A/Reg. Water Manager	604-582-5364	Michele.Lepitre@gov.bc.ca	MFLNRO
	Mike Simpson, GIT	Officer	604-582-5205	Mike.Simpson@gov.bc.ca	MFLNRO
Penticton	Des Anderson, P. Eng.	Section Head	250-490-8221	Des.Anderson@gov.bc.ca	MFLNRO
	Vacant Skye Thomson	A/Reg. Water Manager	250-490-8276	Skye.Thomson@gov.bc.ca	MFLNRO MFLNRO
Kamloops	Kevin Bennett, P. Eng.	Engineer	250-371-6319	Kevin.A.Bennett@gov.bc.ca	MFLNRO
	Laurie Lyons	Officer	250-371-6280	Laurie.Lyons@gov.bc.ca	MFLNRO
Prince George	Vacant Kirsten Heslop	Engineer Officer	250-656-6445	Kirsten.Heslop@gov.bc.ca	MFLNRO MOE
Smithers	Emily Bulmer	Officer	250-847-7350	Emily.Bulmer@gov.bc.ca	MFLNRO
Victoria	Lindsay Macfarlane (On Leave)	Officer			MOE
	Kevin Ronneseth, P. Geo.		250-356-5180	Kevin.Ronneseth@gov.bc.ca	MOE
	Vicki Carmichael, P. Ag.		250-387-9465	Vicki.Carmichael@gov.bc.ca	MOE
	Mike Wei, P. Eng.	Dep. Comptroller	250-356-5062	Mike.Wei@gov.bc.ca	MOE
	Emilia Saarinen		250-387-3426	Emilia.Saarinen@gov.bc.ca	MOE
	Esther Parker (Replacement for Lindsay Macfarlane)		250-953-3408	Esther.Parker@gov.bc.ca	MOE
	Klaus Rathfelder (starting in Dec-Jan)		TBD	TBD	MOE