



**PERMIT FOR WATERCOURSE AND WETLAND ALTERATION  
ALT 31850'11 Revision**

(Regulations 90-80 under the Clean Water Act Chapter C-6.1, Act of New Brunswick 1989)

<b>PERMITTEE</b>	SWN Resources Canada, Inc.	<b>ADDRESS</b>	2350 N. Sam Houston Pky East Suite 125 Houston , TX 77032 United States
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(281)618-4740

**LOCATIONS**

Easting	Northing	Datum	Zn	Easting	Northing	Datum	Zn
see description below...							
<b>Affected Watercourse/Tributary:</b> Various							
<b>Affected Regions: ENV - 3, 5, 2</b>				<b>DFO - FUNDY, GULF</b>		<b>DNR - 2, 3</b>	
<b>1:50.000 Maps - Various</b>				<b>Countv - Various</b>		<b>Parish - Various</b>	

**PERMIT VALID FOR THIS PERIOD** FROM 2013/04/18 TO 2013/12/31  
(yyyy/mm/dd) (yyyy/mm/dd)

**Description of Watercourse/Wetland Alteration(s):**

This project consists of two dimensional seismic imaging to facilitate shale gas exploration and potential exploitation in New Brunswick.

Approximately 60% of the project will utilize existing access roadways, the remaining 40% will require manual and mechanical cutting of seismic lines, drilling of shot holes, and the layout of geophones and seismic charges. Seismic lines will cross several watercourses and wetlands throughout Albert, Kent, Kings, Northumberland, Queens, Sunbury, Westmorland and York counties.

Instream alterations are strictly prohibited under this authorization.

The Permittee may undertake only those Watercourse/Wetland Alteration(s) described above hereby approved by the Minister. Refer to Conditions of Approval stated on the attached Document "A". Responsibility for any action arising from any watercourse/wetland alteration must be borne by the Permittee and no liability shall be incurred by the Minister or the Department. This permit does not exempt or exclude the Permittee from the provisions of any Act of the Legislature of New Brunswick or of Canada to serve as legal defense to any action commenced by landowners who are adversely affected by the alteration.

Number of conditions attached to this permit: 26

Date of Issuance: 2013/04/18  
(yyyy/mm/dd)

Minister of Environment

SWN Resources Canada, Inc.  
2350 N. Sam Houston Pky East Suite 125  
Houston , TX 77032  
United States

**DOCUMENT "A" Attached to ALT 31850'11 Revision**  
**CONDITIONS OF APPROVAL**

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- ( 1 ) that any debris and excavated material be removed from the watercourse/wetland and adjacent areas and disposed of, or placed in a manner where it cannot be returned to the watercourse/wetland;
- ( 2 ) that all necessary precautions be taken to prevent discharge or loss of any harmful material or substance into the watercourse/wetland; including but not limited to creosote, hydrocarbons, biocides, fresh cement, lime, paint or concrete;
- ( 3 ) that exposed material resulting from cut and fill operations be stabilized against erosion immediately upon completion of the project to reduce siltation of the watercourse/wetland, unless stated otherwise in these "Conditions of Approval";
- ( 4 ) that machinery and pollutants be located or stored in areas not in danger of floodwaters;
- ( 5 ) that the permittee ensure that a copy of this permit (including the conditions of approval) is kept at the alteration site for the duration of the project, and such copy shall be produced by the permittee upon the request of an inspector designated to act on behalf of the Minister of Environment, or an employee of the federal Department of Fisheries and Oceans Canada;
- ( 6 ) that a License of Occupation shall be obtained prior to conducting any work on Crown Land. Please contact the Crown Land Information Line at 1-888-312-5600 for more information;
- ( 7 ) that the permittee acquire written permission from private landowners prior to any work on private land and a summary of properties approving work shall be submitted to the Department of Environment prior to the initiation of the project;
- ( 8 ) that all appropriate federal, provincial, and local permits be acquired prior to conducting any work;
- ( 9 ) that seismic lines shall be located as shown in the submitted application documentation. Deviations from these locations will require submission of documentation requesting changes to the permitted work areas, additional land use authorization if required, and revisions to this original authorization;
- ( 10 ) that no grubbing shall be carried out within watercourse and wetland regulated areas or the regulated 30 metre upland buffer as a result of the undertakings covered by this permit;
- ( 11 ) that no instream work shall be completed at any time under this authorization;
- ( 12 ) that machine operations within Provincially Significant Wetlands is strictly prohibited under this authorization;
- ( 13 ) that excavation and/or drilling and the installation of charges is strictly prohibited within any identified Provincially Significant Wetland;
- ( 14 ) that cutting of vegetation within Provincially Significant Wetland areas (when required to install geophone cable) must be completed by hand and must be the minimum width necessary to install the geophone cable;
- ( 15 ) that when alternative crossings are not available crossing of regulated wetlands that are NOT identified as Provincially Significant may be completed through the use of temporary swamp mats, or by driving over vegetation in-situ;
- ( 16 ) that trees removed for access within regulated wetlands the regulated 30 metre watercourse and wetland upland buffer, they must be close cut to within 20 cm of the ground and stumps are to remain in-situ;
- ( 17 ) that all paths cleared across watercourses/wetlands and associated 30 metre buffers be limited to 1 metre in width and areas within 15 metres of a watercourse or wetland shall be cut and cleared by manual methods;
- ( 18 ) that no heavy machinery be operated within 15 metres of a watercourse/wetland;
- ( 19 ) that no trees be felled across or into a watercourse;
- ( 20 ) that slash and brush within 30 metres of the shoulders of a watercourse that may get washed into the watercourse by floodwaters be removed and disposed of in a proper manner;

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- ( 21 ) that all equipment and vehicle refuelling/oiling/maintenance take place outside of the 30 metre buffer for watercourses/wetlands;
- ( 22 ) that all temporary watercourse crossings must be conducted via a temporary bridge. Culverts shall not be utilized for temporary crossing of any regulated watercourse;
- ( 23 ) that temporary watercourse crossings shall be constructed with a minimum of 2 temporary bed logs or abutments (one on each bank) to support the decking structure, minimum distance 1 metre outside the shoulder of the watercourse bank;
- ( 24 ) that temporary watercourse crossings shall be constructed in such a manner that bridge decks do not permit debris from falling through into the watercourse below;
- ( 25 ) that all temporary watercourse crossings and all temporary swamp mats or similar wetland crossing structures shall be removed and disturbed wetland and regulated buffer areas stabilized with straw mulch and slash upon completion of the operations. Temporary crossing structures must be disposed of outside of regulated watercourse and wetland areas or dismantled if raw timber is used and disposed of in a manner where it will not enter a watercourse during high flows;
- ( 26 ) that all newly cut crossings within regulated watercourse, wetlands and buffer areas shall be safely deactivated by whatever means available to discourage future off road vehicle use in these sensitive areas.