LICENCE TO DIVERT WATER
ALBERTA ENERGY REGULATOR
WATER ACT, R.S.A. 2000, c.W-3, as amended

LICENCE NO.: 00433041-00-00
APPLICATION NO.: 001-00433041
FILE NO.: 00433041
PRIORITY NO.: 2018-12-24-002
EFFECTIVE DATE: October 1, 2019
EXPIRY DATE: September 30, 2029
SOURCE OF WATER: Medicine River
POINT OF DIVERSION: NW 29-040-03 W5M
POINT OF USE: As shown in Schedule 2
LICENSEE: Repsol Oil and Gas Canada Inc.

Pursuant to the Water Act, R.S.A. 2000, c.W-3, as amended and the Approved Water Management Plan for the South Saskatchewan River Basin, a licence is issued to the Licensee to:

operate a works and to divert up to 800,000 cubic metres of water annually at a maximum rate of diversion of 0.2 cubic metres per second from the source of water for the purposes of drilling and hydraulic fracturing and associated operations

subject to the attached terms and conditions.

Rieanne Graham, P. Biol
Manager, Authorizations Branch
Alberta Energy Regulator

October 1, 2019
DEFINITIONS

1.0 All definitions from the Act and the Regulations apply except where expressly defined in this licence.

1.1 In all parts of this licence:

(a) “Act” means the Water Act, RSA 2000, c. W-3, as amended;

(b) “Application” means the written submissions to the Director in respect of application number 001-00433041 and any subsequent applications for amendments of Licence No. 00433041-00-00;

(c) “Associated Operations” means directly related ancillary surface operations/activities which include, but are not limited to, access roads and lease site construction and maintenance, dust suppression, and operation of infrastructure related to hydraulic fracturing;

(d) “Cumulative Diversion Rate” means the total combined rate of diversion for active licences under the management of the Licensee on the source of water;

(e) “Director” means an authorized employee of the Alberta Energy Regulator;

(f) “Point of diversion” means the location where water is diverted from the source of water;

(g) “Point of use” means the location(s) in which the diverted water is used by the Licensee for the licenced purpose;

(h) “Point of Use Area” means the area identified in Schedule 2 and includes the Sub-surface Mineral Lease Area(s) with a surface buffer and existing permanent water management infrastructure including but not limited to reservoirs and freshwater pipelines;

(i) “Regulations” means the regulations, as amended, enacted under the authority of the Act;

(j) “Sub-surface Mineral Lease Area” means the area of the mineral lease(s) issued under the Mines and Minerals Act that grants the right to remove a Crown mineral as identified in Schedule 2;

(k) “Volume Estimate” means a technical evaluation including but not limited to pump capabilities, water metres, or volume per truck load multiplied by number of loads; and

(l) “Water Use Reporting System” means the secure internet website provided by Alberta Environment at [https://www.alberta.ca/water-use-reporting-system.aspx](https://www.alberta.ca/water-use-reporting-system.aspx) for submitting measuring and monitoring results electronically to the Director.
GENERAL

2.0 The Licensee shall immediately report to the Director by telephone any contravention of the terms and conditions of this licence at 1-780-422-4505.

2.1 The terms and conditions of this licence are severable. If any term or condition of this licence is held invalid, the application of such term or condition to other circumstances and the remainder of this licence shall not be affected thereby.

2.2 The Licensee shall not deposit or cause to be deposited any substance in, on or around the source of water that has or may have the potential to adversely affect the source of water.

2.3 Within six months after permanently ceasing operation of the works or diversion of the water, the licensee shall submit to the Director:

(a) an application for the decommissioning of the works; or

(b) a proposal and justification for continued use of the works.

2.4 The licensee shall comply with the terms and conditions of the “Water Use Reporting System User Consent”.

2.5 The Director may amend this Water Act licence to:

(a) reduce the volume of the allocation;

(b) change the rate of the diversion;

(c) change the timing of the diversion; or

(d) shorten the expiry date of the licence

upon a minimum of 60 days written notice to the Licensee, if the licensed allocation of water is not being used as stated in the Application or in accordance with the authorized purpose in this licence.

2.6 Upon receiving notice from the Director pursuant to 2.5, the Licensee shall provide to the Director, within 30 days or the time period specified by the Director’s notice;

(a) information on the current and future water needs;

(b) an overview of the Licensee’s development plan including any updates or changes that have occurred or are planned that were not included in the application; and

(c) any other information requested by the Director.
2.7 The Director may amend this Water Act licence to:

(a) reduce the volume of the allocation;
(b) change the rate of the diversion;
(c) change the timing of diversion; or
(d) modify Schedule 1: Water Conservation Objective

Upon a minimum of 60 days written notice to the Licensee, if the diversion of water authorized by this Water Act Licence results in an adverse effect to the aquatic environment or to other users and Licensees under the Water Act, that was not reasonably foreseeable at the time the licence was issued or the diversion restriction values in Schedule 1: Water Conservation Objective are updated by the Government of Alberta.

2.8 The Sub-surface Mineral Lease Area cannot be modified, unless modified by the Director by written authorization or by licence amendment.

2.9 The Licensee shall provide written notice to the Director of any changes to the Schedule 2 map and the associated permanent water management infrastructure to allow the Director to update the licence by written authorization or licence amendment.

DIVERSION OF WATER

3.0 This licence is appurtenant to the following land:

(a) the point of diversion described as the actual point of removal from Medicine River in NW 29-040-03 W5M.

3.1 The Licensee shall divert water only for the purposes of drilling and hydraulic fracturing of oil and gas wells and associated operations.

3.2 The Licensee shall divert water only from the source of water specified in this licence.

3.3 The Licensee shall divert water only from the following point of diversion:

(a) Medicine River in NW 29-040-03 W5M

3.4 The Licensee shall divert water only to the Point of Use Area shown in Schedule 2.

3.5 The works used to divert the water authorized by this licence shall include, at a minimum, all of the following:

(a) the temporary pumps and hoses/pipelines used to divert water from the sources of water, including lay flat hoses;
(b) the fish screen on the source of water pump intake that meets the criteria in the *Interim Code of Practice: End-of-pipe fish protection screens for small water intakes in freshwater*, as amended from time to time (Department of Fisheries and Oceans Canada [http://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html](http://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html)).

3.6 The Licensee shall cause any water entering a pump, located on source of water, to first pass through the screen required in 3.5 (c).

3.7 The Licensee shall clean and maintain the fish screen to ensure it meets the ‘Screen Maintenance and Cleaning’ criteria in the *Interim Code of Practice: End-of-pipe fish protection screens for small water intakes in freshwater*, as amended from time to time (Department of Fisheries and Oceans Canada [http://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html](http://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html)).

3.8 The Licensee must follow the Decontamination Instructions for Industrial and Construction Operations in the “Decontamination Protocol for Watercraft and Equipment,” as amended from time to time, for all equipment that are used within the bed of the source of water.

(c) prior to operations;

(d) during operations when moving equipment across a Hydrological Unit Code (HUC) Level 6 watershed boundary indicated on the “Decontamination Risk Map” or the “Hydrological Unit Code Level 6 (HUC 6) Shape File,” and

(e) upon completions of operations;

or as otherwise authorised in writing by the Director.

3.9 The Licensee must provide a complete Decontamination Record to the Director upon request.

3.10 The Licensee shall not divert more than 800,000 cubic metres of water per calendar year for the purpose of this licence.

3.11 The Licensee shall not divert from the source of water at a rate of diversion greater than

(a) 0.2 cubic metres per second from April 1 until October 31; and

(b) 0.03 cubic meters per second from November 1 until March 31.

3.12 Notwithstanding Condition 3.11, the Licensee shall ensure that the cumulative diversion rate of Licence 00433041-00-00 and Licence No. 00428548-00-00 does not exceed:

(a) 0.2 cubic metres per second from April 1 until October 31; and

(b) 0.05 cubic meters per second from November 1 until March 31.
3.13 Prior to diverting any water from the source of water, the Licensee shall equip the point of diversion with a meter, which measures:

(a) cumulatively, the quantity of all water diverted during the reporting period; and

(b) the instantaneous rate of diversion.

3.14 The Licensee shall maintain each measuring device referred to in 3.13 when diverting any water.

3.15 The Licensee shall calibrate each measuring device referred to in 3.13 in accordance with manufacturer’s specifications.

3.16 The Licensee shall divert the water authorized by this licence only when there is sufficient water flow in:

(a) the Red Deer River, to meet or exceed the Water Conservation Objective specified in Schedule 1; and

(b) the Medicine River, upstream of the confluence with Lasthill Creek to meet or exceed the In-stream Objective (IO) set out in Schedule 1 for the periods of time specified.

3.17 Unless otherwise authorized in writing by the Director, the Red Deer River Water Conservation Objective is to be met

(a) at the Water Survey of Canada stations indicated on Schedule 1, and

(b) when diverting any water.

3.18 Unless otherwise authorized in writing by the Director, the Medicine River In-stream Objective is to be met

(a) at the Water Survey of Canada station indicated on Schedule 1, during open water season, or

(b) at the point of diversion during winter (ice-cover) season; and

(c) when diverting any water.

3.19 The Licensee shall not divert water if the water temperature in the Medicine River exceeds 22 degrees Celsius.
MONITORING AND REPORTING

4.0 Unless otherwise authorized in writing by the Director, the Licensee shall:

(a) measure the total volume of water diverted each month, from the source of water, using the meter specified in 3.13(a);

(b) measure the rate of diversion on a continuous basis, from the source of water, using the meter specified in 3.13(b);

(c) measure or provide a volume estimate of the total volume of water used for each associated operation and the water use per well licenced under the *Oil and Gas Conservation Act*;

(d) record the surface legal land location(s) where diverted water is being used, and the purpose/operation for which it is being used;

(e) monitor the rate of flow of water in the source of water, at the Water Survey of Canada stations indicated on the Schedule 1 daily during diversion;

(f) when the recorded rate of flow in 4.0(e) is not available, measure the rate of flow of water in the source of water, at the Water Survey of Canada stations indicated on the Schedule 1 at least once every two weeks during diversion using acceptable measuring standards used by Water Survey of Canada;

(g) when applicable, measure the total volume of water released to the environment;

(h) for the calendar year, compare the water diversion and usage as per 4.0(a) to the estimates submitted with the application and any previous reporting;

(i) for the upcoming calendar year, prepare an overall estimate of the monthly water diversion and usage that is expected under this Licence;

(j) document any changes to the Sub-surface Mineral Lease Area(s) and well density plan; and

(k) prepare an assessment of any changes to the original schedule of development and the timelines required to complete the project.

4.1 Between June 1 and October 1, the Licensee shall measure the temperature of the source of water at the point of diversion, at a minimum of the following:

(a) prior to commencing diversion of water; and

(b) a minimum of once every day during diversion when the previous temperature measurement is less than 19 degrees Celsius; and
(c) a minimum of once every hour during diversion if the previous temperature measurement is greater than 19 degrees Celsius.

4.2 The Licensee shall record and retain all of the following information for a minimum of 5 years after being collected:

(a) the place, date and time of all monitoring and measuring;

(b) the results obtained pursuant to 4.0 and 6.1; and

(c) the name of the individual who conducted, or who was responsible for, the monitoring, measuring and sampling stipulated in (a) and (b) and 6.1.

4.3 The Licensee shall report to the Director the results of the measuring and monitoring required in 4.0 (a) using the “Water Use Reporting System” and any other information required in writing by the Director.

4.4 The Licensee shall submit the information in 4.3 on or before the end of the month following the month in which the information is based upon was collected.

4.5 The Licensee shall report to the Director the results of the measuring and monitoring required in 4.0 (c) to (k) and 6.1 using the “Water Use Reporting System” and any other information required in writing by the Director.

4.6 The Licensee shall submit the information in 4.5 on or before March 31st of the year following the year in which the information was obtained.

COMPLAINT INVESTIGATION

5.0 The Licensee shall:

(a) investigate all written complaints accepted by the Director relating to allegations of surface water and groundwater interference as a result of the diversion of the water or operation of the works; and

(b) provide a written report to the Director, within a time specified in writing by the Director, detailing the results of the investigation relating to the complaint accepted by the Director in 5.0(a).

5.1 The Licensee shall satisfy the Director that the report submitted pursuant to 5.0(b) has identified remedial and/or mitigative measures relating to the alleged interference.
WATER RELEASE

6.0 The Licensee shall not release any diverted water from the works if any substances from any source have been added or co-mingled in the diverted water, unless authorized in writing by the Director.

6.1 The Licensee can release water, diverted under this licence, back to the environment if the following criteria are met:

(a) the Licensee has investigated the potential to use the excess water diverted under this licence in other oil and gas operations and documented the uses investigated and the reasons why these were not feasible;

(b) the return is made to a watershed where the original diversion took place;

(c) consent is obtained from the landowner or land manager at the point of release location;

(d) an assessment of the potential impacts to downstream stakeholders is conducted, and those stakeholders are notified, when appropriate;

(e) any excess fresh water that is discharged onto a land surface (frozen or unfrozen soil conditions) shall be in a controlled fashion that does not result in flooding or erosion, or uncontrolled direct flow into a water body or road ditch;

(f) erosion prevention and other environmentally precautionary measures are implemented;

(g) water must not be released to land that has the following characteristics:

   (i.) soil with an electrical conductivity greater than 4 dS/m; or

   (ii.) soil with a sodium adsorption ratio greater than 9.

(h) all applicable protocols and recommended practices to prevent the spread of aquatic invasive species are implemented;

(i) water must meet acceptable surface water quality and groundwater quality guidelines as indicated in Schedule 3: Excess Water Release Criteria; and

(j) any other information required by the Alberta Energy Regulator is provided.
6.2 If the excess water is not suitable for surface water discharge, alternative disposal options must be met according to existing procedures and guidelines.

Rieanne Graham, P. Biol
Manager, Authorizations Branch
Alberta Energy Regulator

October 1, 2019
SCHEDULE 1

Water Conservation Objective

Environmental Criteria

Tributary IO
The following tributaries in sub-basin 05CC have a minimum IO flow below which no abstractions are permitted:

- The Medicine River and its tributaries: upstream of the confluence with Lasthill Creek a flow in the Medicine River of 0.09 m$^3$/s,
- The Medicine River and its tributaries: downstream of the confluence with Lasthill Creek a flow in the Medicine River of 0.19 m$^3$/s.

Red Deer River Mainstem WCO
The Red Deer River WCO applies to the Red Deer River tributaries within sub-basin 05CC:

- A rate of flow in the Red Deer River that is 45% of the natural rate of flow or 16 m$^3$/s whichever is greater at any point in time

Environmental Flow Monitoring

Summer (Open Water) Season
The summer open water season typically runs from March 1 to October 31 however the dates may vary annually.

- The Medicine River and its tributaries upstream of Lasthill Creek subtract the flow for Lasthill Creek near Eckville (05CC013) from the Medicine River near Eckville (05CC007) Water Survey Canada hydrometric stations.
- The Medicine River and its tributaries downstream of Lasthill Creek use the Medicine River near Eckville (05CC007) Water Survey Canada hydrometric station.

Please note that a computation of WCO is available during the open water season at the Alberta River basis website. In the absence of WCO computation follow winter procedures.

https://rivers.alberta.ca/
Source of Water: Medicine River
Red Deer River Tributary
Reach: Sub-Basin 05CC

SCHEDULE 1
Water Conservation Objective

**Winter (Ice-Cover) Season**

- For the Medicine River a manual flow measurement is required prior to diverting. Any flow measurement is only valid for a period of 14 days from the date of measurement.

- During the winter ice cover season near real-time natural flows for the Red Deer River and recorded flows for the Red Deer River tributaries are unavailable therefore a minimum flow of 16 m$^3$/s is to be met at the Dickson Dam Tunnel Outlet (05CB007) Water Survey Canada hydrometric station.

Please note that this can be monitored using the Alberta River Basins Website

[https://rivers.alberta.ca/](https://rivers.alberta.ca/)
Schedule 2: Point of Use Map
Licence No.: 00433041-00-00

Existing Water Diversion
Source: Surface Run-Off
SE-27-41-5W5
Total: 150,000m³/y

Operational Water Reservoir
NE-26-40-4W5
Volume: 240,000m³

Water Diversion POD1
Source: Medicine River
NW-29-40-3W5
Requesting: 800,000m³/y

Red Deer River Watershed
SCHEDULE 3: Excess Water Release Criteria

Ensure a representative sample of the excess water diverted under this licence meets the following criteria prior to release, or as otherwise authorized in writing by the Director for cases where natural levels are above the release criteria:

(a) pH between 6 and 9;

(b) electrical conductivity (EC) \(\leq\) 2 dS/m;

(c) for land application cases only, sodium adsorption ratio (SAR) < 4;

(d) for receiving water body cases only, total suspended solids < 50 mg/l;

(e) chloride \(\leq\) 120 mg/L;

(f) sulphate \(\leq\) 500 mg/L;

(g) nitrate \(\leq\) 3 mg/L; and

(h) no visible hydrocarbon sheen.