Executive Summary

There is growing interest in environmental, social, and governance (ESG) reporting and pressure on industries to report on their ESG performance and risk management. In recognition of this, the Canadian Association of Petroleum Producers (CAPP) is developing an ESG strategy for reporting publicly on a number of metrics including water use performance of Canada's oil and gas industry. WaterSMART Solutions Ltd. (WaterSMART) has been retained by CAPP to explore the availability of water use data to prepare performance metrics, how well these metrics can be compared across sectors and regions within Canada, and how these metrics compare to those being reported in other oil and gas producing jurisdictions around the world. This work updates and expands the Water Use Data Sources for Western Canada report, commissioned by CAPP in 2016.

Updates to water use data reporting were identified throughout Western Canada. Minor changes include updates to Alberta's Directive 081: Water Disposal Limits and Reporting Requirements for Thermal In Situ Oil Sands Schemes to encourage the use of alternative water sources. In Saskatchewan, the Directive R01: Volumetric Valuation and Infrastructure Reporting in Petrinex was renumbered to Directive PNG032, but reporting requirements within the directive remain unchanged since 2016. More notably, both Manitoba and British Columbia (B.C.) have transitioned regulatory reporting to the Petrinex database, which is also utilized in Alberta and Saskatchewan. There is no evidence that the nature of reporting changed in either province as a result of the change in reporting system.

Water use data reported within Canada was assessed to determine whether water use performance metrics of interest to CAPP could be calculated and whether these could be compared across oil and gas sectors and regions within Canada. The data within subscription based databases was not reviewed, but associated metadata and training materials were considered.

Opportunities exist to compare water use performance metrics across oil and gas producing regions and sectors in Canada. However, caution should be exercised when comparing these metrics, since precise definitions and company inputs can vary. In regions with flexibility in regulatory reporting requirements, data inputs can be particularly variable.

In Alberta, Saskatchewan, and British Columbia (B.C.), the regulatory reporting requirements are quite structured and the Petrinex database is utilized, which encourages better reporting and enables comparison of water use performance metrics. Data to support calculation of water use performance metrics are not publicly available in Manitoba or the Northwest Territories.

Alberta and Saskatchewan use the same definition for non-saline water (< 4000 ppm total dissolved solids), meaning non-saline water make-up and intensity metrics can be compared across sectors in these regions, assuming production data is equivalent. B.C. does not apply the 4,000 ppm limit to differentiate water sources. In B.C., the base of fish scales geological marker (below 300-600 m depth) is applied to determine useable groundwater, but this limit is not explicitly applied to other water sources. Useable

groundwater data in B.C. may be comparable to data for Alberta water use below the base of groundwater protection, from a definitional perspective. However, water quality in these data sets may not be comparable.

Caution should also be exercised when comparing the alternative water use performance metric across regions. Even within a single region, such as Alberta, the definitions for alternative water sources may vary by sector. Furthermore, although Alberta, Saskatchewan, B.C., and Manitoba (as of May 2020) all use Petrinex, only Alberta mandates the reporting of alternative water use with distinctions between various alternative water sources. Companies may report on a voluntary basis, which would enable comparison to Alberta if reporting is extensive. The extent of voluntary reporting is unknown because Petrinex data access in all provinces requires separate subscriptions. The comparability of recycled water use is similar; Alberta and Saskatchewan mandate reporting on recycled water use for oil and gas, but B.C. and Manitoba do not, although voluntarily reported data may exist.

There are parallels between the availability and comparability of water use data across Canada and in oil and gas producing jurisdictions around the world. Several common themes exist globally, but each jurisdiction researched has unique definitions and reporting systems, with nuanced differences. The quality of reported water use data and transparency of the reporting process is generally a reflection of the reporting requirements in the legislative framework in each jurisdiction, together with the use of structured reporting systems and tools. Jurisdictions with the highest quality data and best availability tend to be those that give clear reporting direction to operators and use highly structured reporting tools, such as SONRIS in Louisiana and DISKOS in Norway. Public dissemination of water use data was found to be limited in most jurisdictions; data held in online databases is not always viewable by the public and regulators did not often release public reports using the data available.

There is an opportunity for CAPP to demonstrate leadership in water use performance reporting by working with industry, regulators, and policy makers to encourage and leverage the implementation of structured regulatory systems and the use of consistent and accessible reporting tools. CAPP can also engage with industry to explore and develop best practices for preparing data inputs, to encourage consistency across companies and understand more deeply potential variations amongst companies. Making the reported data more broadly available to the public should also be encouraged to increase transparency and build credibility as external parties utilize and vet the data. As the conversation evolves around ESG reporting, particularly for water use performance, it will be important to CAPP to continue staying abreast of global best practices in this space.