

Welcome to your CDP Water Security Questionnaire 2020

W0. Introduction

W0.1

(W0.1) Give a general description of and introduction to your organization.

Enerplus Corporation (Enerplus) has a diversified portfolio of oil and gas properties throughout Western Canada and the United States. Throughout 2019, Enerplus produced an average of approximately 101,042 BOE/day, with 54% of the total production from crude oil and natural gas liquids, and 46% of the total production originating from natural gas.

We have corporate offices located in Calgary, Alberta, and Denver, Colorado. Enerplus has nine offices located throughout Alberta, British Columbia, Saskatchewan, Colorado, Montana and North Dakota. As of December 31, 2019, Enerplus employed a total of 383 people, including full-time benefit and payroll consultants, 234 of whom were in Canada and 149 of whom were in the United States.

Enerplus strives to continuously improve the efficiency of its energy consumption, reduce our greenhouse gas emissions intensity and provide resources, training and technology to meet our environmental objectives. We have several ongoing environmental initiatives in this regard, including:

- greenhouse gas (GHG) emissions and small pneumatic venting equipment inventory;
- site environmental inspection and audit program;
- water management planning including chemical analysis and reuse studies;
- waste management and recycling programs;
- fugitive emissions management program; and
- the remediation and reclamation of decommissioned landscapes.

In 2019, Enerplus reported its key environmental and safety metrics in its fifth Sustainability Report. Enerplus' efforts in key performance indicator disclosure and stakeholder engagement demonstrate our commitment to responsible resource development and to continuous improvement in environment, health, safety and social performance.

W-OG0.1a

(W-OG0.1a) Which business divisions in the oil & gas sector apply to your organization?

Upstream

W0.2

(W0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date
Reporting year	January 1, 2019	December 31, 2019

W0.3

(W0.3) Select the countries/areas for which you will be supplying data.

- Canada
- United States of America

W0.4

(W0.4) Select the currency used for all financial information disclosed throughout your response.

- CAD

W0.5

(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.

- Companies, entities or groups over which operational control is exercised

W0.6

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?

- No

W1. Current state

W1.1

(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater	Vital	Important	Water is vital for drilling, completions, operations and maintenance. Often non-freshwater can be used in place of freshwater, however it must be chemically compatible with the operational equipment, formation and be economically viable. Early in development

available for use			<p>stages, the primary use of freshwater is for drilling and completions (i.e. hydraulic fracturing), because recycled/brackish/produced water is usually not economical or readily available. The Direct Use Importance Rating of Vital was chosen because without sufficient freshwater, development would no longer be economically viable (i.e. increased costs would lead to capital spent elsewhere for greater potential returns on investment). Indirectly, freshwater is important to Enerplus' supply chain. For example, steel is used in oil and gas well construction, pipelines and facilities, and steel manufacturing requires freshwater. Therefore, sufficient amounts of economically viable, good quality freshwater are important for the production of steel.</p>
Sufficient amounts of recycled, brackish and/or produced water available for use	Vital	Vital	<p>Sufficient volumes of recycled, brackish and produced water are vital for operations. Enerplus' primary use of recycled, brackish and produced water is for Enhanced Oil Recovery (EOR) waterfloods. Water is vital to maintain voidage replacement ratio (VRR) in the reservoir. For every barrel of oil removed from the reservoir, a barrel of water must be added to the reservoir. If water was not available to maintain VRR, waterflood operations would no longer be possible. In 2019, Enerplus began investigating through chemical analysis the possibility of introducing produced water into its North Dakota completions operations, with the intent of utilizing less freshwater. From an indirect use perspective, sufficient amounts of recycled, brackish and produced water are important to Enerplus' supply chain as well. For example, steel manufacturing uses large amounts of recycled, brackish and produced water for once through cooling. Sufficient amounts of economically viable, recycled, brackish and produced water are important for the production of steel for equipment such as pipelines.</p>

W1.2

(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations	Please explain
Water withdrawals – total volumes	100%	In most operational jurisdictions, water use reporting is a regulatory requirement. Standard practice dictates that 100% of water volumes withdrawn, purchased and received from third-parties are measured, monitored and tracked internally. All water volumes are measured either with meters for continuous flows (i.e. pipelines) or by volumetric calculations (by volume per load multiplied by number of loads) for trucked water. Water metrics are used internally to evaluate performance and are also reported externally to regulators.
Water withdrawals – volumes by source	100%	As a standard practice, 100% of water withdrawal sources are measured, monitored and classified as surface water, ground water, produced water and third-party water from another organization or municipal water source.
Produced water associated with your oil & gas sector activities - total volumes [only oil and gas sector]	100%	Associated water produced along with oil and gas must be included with regulatory volumetric accounting (i.e. production accounting). All water volumes are measured either with meters for continuous flows (i.e. pipelines) or volumetric calculations (by volume per load multiplied by number of loads) for trucked water.
Water withdrawals quality	100%	The chemical composition and compatibility of all withdrawn water must be determined for operational purposes. Some parameters are metered continuously (temperature, hydrogen sulfide content, pressure, etc.) while other parameters are measured through laboratory analytical analysis initially and again at periodic or set intervals to ensure any material changes are detected (i.e. salinity, radioactive ions, scale forming bacteria, etc.).
Water discharges – total volumes	100%	Discharge of industrial use water to surface environment or receiving water body is not permitted. All water is discharged deep underground (greater than 600 meters depth) to maintain reservoir pressure in waterflood

		operations or disposed via deep well injection. As a standard practice, 100% of water discharge volumes are continuously metered.
Water discharges – volumes by destination	100%	All withdrawn water is discharged to deep groundwater, either through use in waterflood operations or disposed via deep well injection. As a standard practice, 100% of water discharge volumes are continuously metered and monitored.
Water discharges – volumes by treatment method	100%	All withdrawn water is released to deep groundwater, either through use in waterflood operations or a deep disposal well. Treatment may be required prior to discharge. All treatment methods and volumes of water treated are documented. As a standard practice, 100% of treated water discharge volumes are continuously metered and monitored to track treatment efficiency and costs.
Water discharge quality – by standard effluent parameters	100%	Water discharge quality is analyzed to ensure chemical compatibility between discharged water and the receiving reservoir. As a standard practice, 100% of water volumes discharged are measured and monitored to ensure quality within acceptable parameters to avoid adverse effects within injection systems. Some parameters are metered continuously (temperature, hydrogen sulfide content, pressure, etc.) while other parameters are measured through laboratory analysis initially and again at periodic or set intervals to ensure any material changes are detected (i.e. salinity, radioactive ions, scale forming bacteria, etc.).
Water discharge quality – temperature	100%	All oil and gas facilities and pipelines have minimum and maximum water temperature requirements. It is necessary to know that water temperature is within the specified temperature window at all times. Water discharge temperature is metered continuously and monitored through the use of automated alarms.
Water consumption – total volume	100%	Detailed water volumetric accounting is a regulatory requirement and this data is crucial

		for reservoir engineers to understand the fluid dynamics and VRR implications to production. As a standard practice, 100% of water volumes consumed are measured and monitored through continuous metering.
Water recycled/reused	100%	As a standard practice, 100% of water that is recycled and reused is measured and monitored through continuous metering or volumetric calculations.
The provision of fully-functioning, safely managed WASH services to all workers	100%	All Enerplus facilities supply appropriate WASH services to ensure that the quality and quantity of water provided meets the safety standards for all workers and the communities where we operate.

W1.2b

(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, and how do these volumes compare to the previous reporting year?

	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Total withdrawals	15,470	About the same	Withdrawal volumes were 2% higher than 2018 due to a slight decrease in water production in Canada and small increase in our US operations.
Total discharges	13,582	Lower	Discharge volumes were 7% lower due to a decrease in water usage resulting from the divestment of assets and closure of some facilities in Canada.
Total consumption	1,888	Higher	The calculation is based on company wide withdrawal volumes minus discharge volumes. The 2018 consumption should have been 661 megaliters to align with CDP guidance on consumption calculation. While consumption volumes were higher, volumes are within the expected range.

W-OG1.2c

(W-OG1.2c) In your oil & gas sector operations, what are the total volumes of water withdrawn, discharged, and consumed – by business division – and what are the trends compared to the previous reporting year?

	Volume (megaliters/year)	Comparison with previous reporting year %	Please explain
Total withdrawals - upstream	15,470	About the same	Withdrawal volumes were 2% higher than 2018 due to a slight decrease in water production in Canada and small increase in our US operations.
Total discharges – upstream	13,582	Lower	Discharge volumes were 7% lower due to a decrease in water usage resulting from the divestment of assets and closure of some facilities in Canada.
Total consumption – upstream	1,888	Much higher	The calculation is based on company wide withdrawal volumes minus discharge volumes. The 2018 consumption should have been 661 megaliters to align with CDP guidance on consumption calculation. While consumption volumes were higher, volumes are within the expected range.

W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress and provide the proportion.

	Withdrawals are from areas with water stress	Identification tool	Please explain
Row 1	No		

W1.2h

(W1.2h) Provide total water withdrawal data by source.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	1,775	Much higher	Fresh surface water withdrawals increased by 49% compared to 2018. In our Canadian operations, borrow pits are utilized to supply water for activities such as creating and maintaining winter ice roads

				and for decommissioning wells and pipelines.
Brackish surface water/Seawater	Not relevant			Enerplus does not have operations in areas where brackish surface water/seawater as an available source.
Groundwater – renewable	Relevant	173	Lower	Renewable groundwater withdrawals decreased by 6% compared to 2018. Our 2018 calculations should have stated 185 megaliters/year. For example, in our Ante Creek field, Enerplus utilizes water collected in borrow pits from snow melt and rain. In years where the volumes from the borrow pits (fresh surface water is higher), there is a decrease in need for groundwater.
Groundwater – non-renewable	Relevant	214	Higher	Non-renewable groundwater withdrawals increased by 11% compared to 2018. Our 2018 calculations did not break out groundwater and should have stated 193 megaliters/year. As the operational fields age, more water is needed to maintain the pressure in the reservoir. Deep saline water source wells are used in waterflood oil production operations. Use of non-renewable groundwater is considered to be relevant as this is a more an environmentally benign category of water when compared to fresh surface water. Use of this water type has less availability risk, reputational risk and stakeholder

				relations/ reputational risk, and is generally considered to be an industry best practice.
Produced/Entrained water	Relevant	13,159	Lower	Produced water volumes decreased by 3% compared to 2018.
Third party sources	Relevant	149	Higher	Third party water withdrawal increased by 12% compared to 2018. For example, in our Medicine Hat operational field, water needs are sourced from the City of Medicine Hat's wastewater treatment plant. Reusing this water for industrial purposes is more environmentally friendly as it reduces the need for freshwater withdrawals.

W1.2i

(W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water	Not relevant			Discharge of oil field water to fresh surface water is not permitted by regulations in any jurisdictions Enerplus operates. All withdrawn water is released into deep groundwater formations either through use in waterflood operations or deep disposal wells. Unusable water would be sent to third party disposal sites.
Brackish surface water/seawater	Not relevant			Enerplus does not use this category of water.
Groundwater	Relevant	13,582	Lower	Discharge to groundwater decreased by 7% compared to 2018, mostly due to decreased

				volumes of produced water being withdrawn. This category of water discharge is relevant as an important component of water accounting and the largest category of water discharge for enhanced oil recovery. Discharge to deep saline groundwater is considered environmentally benign as the receiving water quality will not be adversely affected.
Third-party destinations	Relevant	9.4	Lower	Total water discharged to third party destinations decreased by 6% compared to 2018. As production decreases in Canada due to divestments, the associated water to be disposed of will also decrease.

W-OG1.3

(W-OG1.3) Do you calculate water intensity for your activities associated with the oil & gas sector?

Yes

W-OG1.3a

(W-OG1.3a) Provide water intensity information associated with your activities in the oil & gas sector.

Business division

Upstream

Water intensity value (m3)

0.07

Numerator: water aspect

Freshwater withdrawals

Denominator

Barrel of oil equivalent

Comparison with previous reporting year

Higher

Please explain

Enerplus' water intensity increased from 0.06 to 0.07, which is an increase of 17% compared to 2018. In Canada, more water was utilized from borrow pits (dugouts that hold snow melt and rainwater). In the US, the increase was due to increased drilling and completion activities.

W1.4

(W1.4) Do you engage with your value chain on water-related issues?

Yes, our suppliers

W1.4a

(W1.4a) What proportion of suppliers do you request to report on their water use, risks and/or management information and what proportion of your procurement spend does this represent?

Row 1

% of suppliers by number

Less than 1%

% of total procurement spend

1-25

Rationale for this coverage

We focus on suppliers who provide services such as bulk water, water pumping, water transfer, or water disposal services. We do not currently ask all suppliers to routinely or consistently disclose a standard set of information or data. It is done on a case-by-case or situational basis.

When required, we ask suppliers to report on specific items such as the source, the supply/availability, the disposal methods, volumes/usage, etc. In these situations, the reporting is a critical part of the scope of work as it may be required for regulatory reporting. In addition, reporting would be part of supplier performance and poor reporting is viewed as poor performance which may influence supplier selection.

Impact of the engagement and measures of success

Water reporting may be critical to meet business and regulatory demand requirements. In addition, it allows us to identify areas of technical or commercial improvement.

Success is measured through the competent and accurate reporting of our suppliers as requested and the compliance of meeting applicable regulatory reporting deadlines.

Comment

NA

W1.4b

(W1.4b) Provide details of any other water-related supplier engagement activity.

Type of engagement

Innovation & collaboration

Details of engagement

Encourage/incentivize innovation to reduce water impacts in products and services

% of suppliers by number

Less than 1%

% of total procurement spend

1-25

Rationale for the coverage of your engagement

Engagement with suppliers to reduce the usage of water is important to Enerplus. Although we do not have formal water specific criteria as part of supplier selection, supply chain management plays a role in communicating the importance of decreased water usage and adherence to reporting and regulatory requirements. We look to further enhance our business relationships with suppliers who show innovation in this space as it helps decrease costs and improve sustainability.

Impact of the engagement and measures of success

Stronger knowledge and awareness, reduced risk of unintended use or improper disposal or treatment and decreased costs from less water use.

Comment

NA

W2. Business impacts

W2.1

(W2.1) Has your organization experienced any detrimental water-related impacts?

No

W2.2

(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

No

W3. Procedures

W-OG3.1

(W-OG3.1) How does your organization identify and classify potential water pollutants associated with its activities in the oil & gas sector that may have a detrimental impact on water ecosystems or human health?

All products used for oil and gas activities on Enerplus locations have associated Safety Data Sheets (SDS) that identify and classify potential water pollutants and the potential impacts to ecosystems and human health if released into a water system. These SDS's are reviewed prior to any product use and are kept on file for future reference. All personnel are trained in the proper use of chemicals, how to read an SDS, and adhere to the proper handling and safety precautions. SDS's conform with ISO Standard 11014:2009.

Enerplus also identifies water quality by performing water chemical analysis tests taken from various points along the operational process. Water approvals issued by regulators often mandate regular testing, monitoring and reporting requirements

W-OG3.1a

(W-OG3.1a) For each business division of your organization, describe how your organization minimizes the adverse impacts on water ecosystems or human health of potential water pollutants associated with your oil & gas sector activities.

Potential water pollutant	Business division	Description of water pollutant and potential impacts	Management procedures	Please explain
Chemicals	Upstream	For example, a potential impact of chemicals used within the hydraulic fracturing process, including biocides, is the contamination of shallow groundwater aquifers. The pathway would be through the wellbore if a cement barrier were to leak. The scale would be relatively minimal as the loss of pressure would be detected and	Compliance with effluent quality standards Measures to prevent spillage, leaching and leakages Community/stakeholder engagement Emergency preparedness	Wellbore cement is x-rayed and gamma-logged to ensure integrity. Once hydraulic fracturing operations begin the injection pressure is monitored closely for anomalies. Any unexpected pressure reading leads to an immediate halt of operations. Prior to fracturing operations, any existing water wells in the vicinity are

		<p>the operation would be halted limiting the potential impacts. The magnitude would be difficult to determine as detailed monitoring, chemical decomposition modelling and sampling would be required to quantify impacts.</p>		<p>sampled and tested for routine parameters. If any impacts to groundwater are thought to have occurred, a follow-up sampling event occurs to conduct before/after water sample comparisons. No detectable changes in groundwater chemical composition indicates success.</p>
Hydrocarbons	Upstream	<p>Depending on the quantity and substance of the particular hydrocarbons, the release of pollutants into a nearby waterbody could potentially cause impacts to surrounding vegetation and contaminate downstream water sources.</p>	<p>Compliance with effluent quality standards Measures to prevent spillage, leaching and leakages Community/stakeholder engagement Emergency preparedness</p>	<p>Enerplus takes a variety of preventative measures that focuses on the prevention of accidental releases of any produced materials into the environment. Our proactive program incorporates risk rating assets on potential impacts to the environment, regular inspections, training, maintenance on the pipelines and facilities and installation of emergency shut down systems and alarms to limit released volumes in the event of a release. Site specific Emergency Response Plans (ERPs) are developed for all operating areas. In the event of a release, Enerplus will activate</p>

				the ERP and spill response strategies to control and contain the source to mitigate impacts to people and the environment (land, air, water and wildlife).
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W3.3

(W3.3) Does your organization undertake a water-related risk assessment?

Yes, water-related risks are assessed

W3.3a

(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.

Direct operations

Coverage

Full

Risk assessment procedure

Water risks are assessed as part of an enterprise risk management framework

Frequency of assessment

More than once a year

How far into the future are risks considered?

More than 6 years

Type of tools and methods used

Enterprise Risk Management

Tools and methods used

Other, please specify

External consultants, internal company personnel

Comment

NA

Supply chain

Coverage

Full

Risk assessment procedure

Water risks are assessed as part of an enterprise risk management framework

Frequency of assessment

Annually

How far into the future are risks considered?

More than 6 years

Type of tools and methods used

Enterprise Risk Management

Tools and methods used

Other, please specify

External consultants, internal company personnel

Comment

NA

Other stages of the value chain

Coverage

None

Comment

W3.3b

(W3.3b) Which of the following contextual issues are considered in your organization’s water-related risk assessments?

	Relevance & inclusion	Please explain
Water availability at a basin/catchment level	Relevant, always included	Water availability is assessed for each project to ensure that an adequate water supply of chemically compatible water is available. Internal company knowledge of our asset areas is combined with third party resource consultant information to determine if water demand will be met by local supply. Adequate water supply is fundamental to project feasibility. Asset teams are required to have this knowledge to determine if a project can succeed economically. Long-term internal company knowledge of asset areas allows trends in water supply to be incorporated into project planning. If water source risk is expected, alternative water supply types are secured prior to the supply risk causing business impacts.
Water quality at a basin/catchment level	Relevant, always included	Water quality is assessed for each project to ensure that adequate water supply of chemically compatible water is available. Internal company knowledge of our asset areas is combined with third party resource consultant information to

		<p>determine if water demand will be met by local supply. Adequate water quality and supply is fundamental to project feasibility. Asset teams are required to have this knowledge to determine if a project can succeed economically.</p>
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	<p>Enerplus proactively builds strong relationships with stakeholders in local communities. Our operations employees are active members of the communities in which they live and work. Long term internal company knowledge of asset areas aids in a high level of understanding regarding stakeholder sentiment and potential conflicts. If stakeholder concerns regarding water require further consultation beyond our capabilities, they will be addressed through the regulatory approval process.</p>
Implications of water on your key commodities/raw materials	Relevant, always included	<p>An adequate supply of economically viable water is required for our operations. Internal company knowledge includes a detailed forecast of the water quality required for each operational stage: exploration, development and production.</p> <p>In the future, implications on water are expected to be the same. Alternatives to water such as oil use for completions or CO2 for enhanced oil recovery are considered during project planning and review. Currently, the use of water is more economically viable than alternatives. Long term internal company knowledge allows for the ongoing comparison of water versus non-water alternatives leading to economic viability determinations.</p>
Water-related regulatory frameworks	Relevant, always included	<p>All regulatory frameworks must be understood to ensure compliance. Internal company knowledge includes awareness of all relevant regulations that must be complied with in all of our operating areas.</p> <p>All pending and published regulatory amendments are reviewed to determine potential business and operational impacts. Enerplus sits on several industrial associations (i.e. Canadian Association of Petroleum Producers, Colorado Oil & Gas Association, North Dakota Petroleum Council, Western Energy Alliance) that routinely provide feedback on pending legislation. Potential regulatory changes are summarized and disseminated internally to heighten internal company knowledge and to aid in providing informed feedback to regulators.</p>

Status of ecosystems and habitats	Relevant, always included	<p>In all of the jurisdictions where we operate, regulatory agencies ensure that ecosystems and habitats are not adversely impacted through strict legislation and regulations. Enerplus complies with all regulations, acquires all relevant approvals required and follows industry best practices for all developments and operations.</p> <p>Regulators are responsible for monitoring current state and modeling future potential changes. Through compliance with all regulations, and supporting industry funded government monitoring initiatives, the requirement to maintain internal company knowledge of ecosystems and habitats is unnecessary.</p>
Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	<p>Access to sufficient potable water and sanitation services are not a concern within the jurisdictions Enerplus operates. All facilities have WASH services in place.</p>
Other contextual issues, please specify	Relevant, always included	<p>Adequate water availability and estimated cost is always included in Enerplus' water-related risk assessment.</p>

W3.3c

(W3.3c) Which of the following stakeholders are considered in your organization's water-related risk assessments?

	Relevance & inclusion	Please explain
Customers	Relevant, always included	<p>The customers of Enerplus' produced oil and gas are midstream and/or refining companies. Long term sales contracts are agreed upon early in project development.</p>
Employees	Relevant, always included	<p>Environmental stewardship is a company value for which all Enerplus employees are responsible.</p> <p>Employees are interviewed as part of the water risk assessment process. In addition, employees are engaged through our sustainability reporting, risk registry analysis and employee engagement surveys.</p>
Investors	Relevant, always included	<p>Financial impacts related to water risks are relevant and included. Economic performance can be affected by water risks and reflected in stock prices. Investors are engaged through our corporate website, investor presentations, one-on-one conversations and Enerplus' sustainability report.</p>

Local communities	Relevant, always included	Local communities are included within water risk assessments. Potential impacts to local communities are identified and mitigated. Enerplus proactively builds strong relationships with stakeholders in local communities. Engagement methods include personal communications with our corporate and field personnel, our corporate website and our sustainability report.
NGOs	Relevant, always included	NGOs active in our operational areas are included in the water risk assessment. Reputational risk as related to NGOs is assessed. Engagement methods include our corporate website and our sustainability report.
Other water users at a basin/catchment level	Relevant, always included	Other water users are included in the water risk assessment. Potential collaboration opportunities are identified and pursued where feasible. Engagement methods include direct dialogue, business agreements and our sustainability report.
Regulators	Relevant, always included	Regulators are included in water risk assessments. Regulatory compliance and awareness of new and developing regulations are critical factors related to water risk. Engagement methods include direct dialogue, official correspondence, applications and the receipt of approvals.
River basin management authorities	Relevant, always included	If present, river basin management authorities are included for water risk assessments. Understanding and complying with management goals is relevant to water risk. Engagement methods include meeting participation and reading relevant published documents.
Statutory special interest groups at a local level	Relevant, always included	If present, statutory special interest groups are included for water risk assessments. Potential impacts to these groups are identified and mitigation strategies are developed. Engagement methods include discussions with regulators, meeting attendance and reviewing relevant published documents.
Suppliers	Relevant, always included	Suppliers are included for water risk assessments. Supply of key goods and services is crucial for both development and operations. Potential risks of supply disruptions are identified and contingency plans developed. Engagement methods include discussion, service agreements, proposal requests and receipts.
Water utilities at a local level	Relevant, always included	Local water utilities and suppliers are included in water risk assessments. Water supply is crucial for both development and operations. Engagement methods include discussion, service agreements, proposal requests and receipts.
Other stakeholder, please specify	Not relevant, explanation provided	No additional relevant stakeholders are present in Enerplus' operating areas. If this determination changes, appropriate consultations will take place.

W3.3d

(W3.3d) Describe your organization's process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.

A comprehensive risk assessment is completed for all of Enerplus' operational areas. This approach has been taken as an in-depth understanding of all potential risks is necessary to quantify the likelihood and severity of the risks, and to develop mitigation strategies to bring the risks within acceptable levels. The risk assessment includes risks to direct operations and the potential risk for interruption within the supply chain. These risk assessments include water related risks, as access to economically viable water is vital.

Risk-response is translated into economic metrics for the purpose of comparing project risks across varied jurisdictions and operational areas. For example, risk of adequate water supply would be assigned a cost that would represent the risk of using an alternative source of water if supply disruption were to occur with the primary source. If the risk cost were greater than potential project profits, the project would have to be de-risked prior to implementation.

Annual project risk assessments are conducted to assess the short (1-3 years), medium (3-10 years) and long-term (10+ years) time horizons. While project risk assessments are typically conducted annually, special circumstances can lead to risk assessments being conducted more frequently than annually.

W4. Risks and opportunities

W4.1

(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?

No

W4.1a

(W4.1a) How does your organization define substantive financial or strategic impact on your business?

Substantive impact is defined as impacting the economic viability of an operational area or facility, triggering a new evaluation of whether the facility is a net asset or liability. For instance, if the cash flows no longer exceed the anticipated abandonment or the cumulative positives are less than the book value (up front capital), there may be net loss.

Metrics used to determine substantive impact include: proved reserves, annual production, net income, cashflow, fixed and variable operational costs, finding and development costs and

capital efficiencies. These metrics are reviewed annually. Due to variable economic parameters, specific thresholds used to determine if substantive vary by operational area.

Enerplus defines substantive as applicable to direct operations only.

One example of substantive impact considered would be the lack of economically viable freshwater for hydraulic operations. If regional water shortages led to surface water withdrawal curtailments, water may have to be purchased from alternative vendors at additional costs. At some tipping point the economics of the well might no longer make business sense. These evaluations are done throughout the project lifecycle.

W4.2b

(W4.2b) Why does your organization not consider itself exposed to water risks in its direct operations with the potential to have a substantive financial or strategic impact?

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	During annual asset area reviews, the likelihood and potential severity of water risks are assessed using internal company knowledge and conversations with vendors and regulators. While the risk of water supply disruption exists, in all cases the water risks were deemed to be temporary in nature and limited in geographic scale. During a disruption to water supply a contingency water source would be used. During the annual reviews, no risks with potential business impacts greater than the assigned thresholds were identified. Risk assessments are completed annually, with ad hoc assessments completed as required.

W4.2c

(W4.2c) Why does your organization not consider itself exposed to water risks in its value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact?

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	Supplier water risk was assessed but no substantive risk was identified. By using available databases and conversations with vendors, Enerplus conducted a risk assessment of supply chain water risk and concluded these risks are not substantive, with no potential business impact greater than \$10M. Individual areas of increased water risk were identified, however these areas were seasonal and limited in geographic scale to specific river basins. Adequate project planning would mitigate these risks to acceptable levels. Geographically diversified operations reduce our water related risks to acceptable levels that are not likely to cause significant business impacts. In the event that a supply disruption occurs,

		alternative supply would be secured, minimizing business impacts. Risk assessments are completed annually, with additional assessments taking place throughout the year as required.
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W4.3

(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes, we have identified opportunities, and some/all are being realized

W4.3a

(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

Type of opportunity

Efficiency

Primary water-related opportunity

Cost savings

Company-specific description & strategy to realize opportunity

In North Dakota, we use temporary above ground pipelines to move water from the water source to the wellsite for our hydraulic fracturing operations. Typically, water is hauled to the site by water tankers. We saw many positive results including cost savings, a significant reduction in the number of trucks using local roads, decreased road noise, decreased dust, a reduction in vehicle emissions (since inception 900,000 less vehicle miles have been travelled) and reduced impacts to wildlife.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact

The financial impact was derived by comparing inclusive costs of moving water by means of pipeline and trucking. Depending on site location, the reduction cost of conveying water is realized based on 10-mile distance. Temporary surface pipeline costs is \$0.63/bbl (USD), while trucking costs is \$1.15/bbl (USD).

W6. Governance

W6.1

(W6.1) Does your organization have a water policy?

Yes, we have a documented water policy that is publicly available

W6.1a

(W6.1a) Select the options that best describe the scope and content of your water policy.

	Scope	Content	Please explain
Row 1	Company-wide	Description of business dependency on water Description of business impact on water Description of water-related performance standards for direct operations Company water targets and goals Commitments beyond regulatory compliance Commitment to water-related innovation Commitment to stakeholder awareness and education Commitment to safely managed Water, Sanitation and Hygiene (WASH) in the workplace Acknowledgement of the human right to water and sanitation	Enerplus is committed to proactively mitigating our impacts on water resources. Although we require water to explore and produce oil and natural gas, we always comply with all regulations to extract and dispose of water appropriately. Additionally, wherever possible, we use non-potable water and we recycle water to reduce the amount of water we use. We continue to work with communities to do all we can to mitigate regional water issues. In addition to this, we had produced water from our North Dakota operations chemically tested to determine feasibility of reuse throughout our hydraulic fracturing operations.

		Recognition of environmental linkages, for example, due to climate change	
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W6.2

(W6.2) Is there board level oversight of water-related issues within your organization?

Yes

W6.2a

(W6.2a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for water-related issues.

Position of individual	Please explain
Board-level committee	The Enerplus Board of Directors Safety and Social Responsibility (S&SR) Committee was established to guide the development and implementation of an effective S&SR management system and to ensure activities are planned and executed safely and responsibly. Additionally, the committee is tasked with ensuring environmental and regulatory compliance, safety performance and emergency response plans, stakeholder engagement activities and associated ESG performance metrics. The S&SR Committee reviews the corporation's performance related to S&SR quarterly to ensure that long-range preventative programs are in place to limit or mitigate future liability. The S&SR Committee is comprised of three independent directors, at a minimum, which are appointed annually following the annual general meeting of the Corporation. Enerplus' Chief Executive Officer is responsible for the board liaison role. The S&SR board committee chair presents verbal and/or written reports regarding the corporation's S&SR performance, committee meetings and discussions at quarterly meetings of the board of directors.

W6.2b

(W6.2b) Provide further details on the board's oversight of water-related issues.

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - all meetings	Monitoring implementation and performance	The manager of the S&SR department briefs the board on relevant matters related to water risks, such as potential water short areas due to regional climate trends. The board oversees all new capital projects,

		<p>Overseeing acquisitions and divestiture</p> <p>Overseeing major capital expenditures</p> <p>Reviewing and guiding annual budgets</p> <p>Reviewing and guiding business plans</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding strategy</p> <p>Reviewing and guiding corporate responsibility strategy</p> <p>Reviewing innovation/R&D priorities</p> <p>Setting performance objectives</p>	<p>major capital expenditures, guides business plans and risk management policies. If water risks are deemed substantive, mitigations must be put in place to bring the water related risks within acceptable risk tolerances.</p>
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W6.3

(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).

Name of the position(s) and/or committee(s)

Chief Executive Officer (CEO)

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

More frequently than quarterly

Please explain

The CEO is ultimately responsible for all financial business decisions within the company.

Any substantive risks including water-related issues that arise that may affect a projects economic viability will be reported to the CEO during recurring monthly meetings when

asset managers provide updates to the senior leadership team.

Name of the position(s) and/or committee(s)

Chief Financial Officer (CFO)

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

More frequently than quarterly

Please explain

Any substantive risks including water-related issues that arise that may affect a projects economic viability will be reported to the CFO during recurring monthly meetings when asset managers provide updates to the senior leadership team.

Name of the position(s) and/or committee(s)

Safety, Health, Environment and Quality committee

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

More frequently than quarterly

Please explain

To oversee, review and guide risk management policies, guide annual budgets, guide business plans, oversee major capital expenditures, monitor and oversee progress against goals and targets for addressing climate and water related issues.

Name of the position(s) and/or committee(s)

Environmental health and safety manager

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

More frequently than quarterly

Please explain

To understand and report water-related risks and opportunities to the executive team at a minimum of monthly , or as new risks and opportunities present themselves.

Name of the position(s) and/or committee(s)

Business unit manager

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

More frequently than quarterly

Please explain

To understand and report water-related risks and opportunities to the executive team at a minimum of monthly, or as new risks and opportunities present themselves.

Name of the position(s) and/or committee(s)

Facilities manager

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

More frequently than quarterly

Please explain

To understand and report water-related risks and opportunities to the executive team at a minimum of monthly, or as new risks and opportunities present themselves.

W6.4

(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

	Provide incentives for management of water-related issues	Comment
Row 1	No, not currently but we plan to introduce them in the next two years	Operational goals and targets pertaining to water management and freshwater use reduction are being determined in 2019 and will be introduced in 2020 and they will align to the organization's compensation structure and scorecard.

W6.5

(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

Yes, trade associations

W6.5a

(W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?


The process used to ensure consistency between activities to influence public policy and our own water policy is to communicate with a single point of contact that is well versed on our water policy. In Canada, the communication path between industry and government is primarily managed by the Canadian Association of Petroleum Producers (CAPP), the main trade association for our industry. CAPP engages with individual organizations and compiles response letters that go directly to the government. These response letters must align with industry best practices, water policies, and commitments prior to being signed off on by member companies. In the US, one communication path between industry and government is through the Colorado Oil & Gas Association (COGA). COGA is at the forefront of the legal, legislative, and regulatory issues facing its member companies and is continually setting the benchmark for innovation and creativity in our education and outreach strategy. Another engagement channel we are a member company of is the Western Energy Alliance (WEA) which is a nonprofit trade association engaged in all aspects of environmentally responsible exploration and production of oil and natural gas in the western US. The WEA is considered to be an expert on federal legislative, regulatory, environmental, public lands and other policy issues affecting the oil and natural gas industry.

W6.6

(W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?

Yes (you may attach the report - this is optional)

 2019_Annual_Information_Form.pdf

 2019_Financial_Summary.pdf

 2019_Financial_Summary.pdf

W7. Business strategy

W7.1

(W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain

Long-term business objectives	Yes, water-related issues are integrated	21-30	The availability of an economically viable water source is integrated into long-term project reviews. All risks including water related risks that could impact the economic viability of a project are reviewed annually as part of the long range planning review. Risks deemed not acceptable will be mitigated to a point where they are deemed acceptable risk.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	21-30	Enerplus does not operate in any water short areas. Looking forward as per our long range plans, we do not believe we will be operating in water short areas based upon our current assets. The strategy for addressing water related issues in the long range plan will be the same as addressing all individual risks - to identify them and mitigate them to an acceptable level before proceeding.
Financial planning	Yes, water-related issues are integrated	5-10	To date, no water specific financial planning aspects have been required as no substantive risks to water availability have been identified.

W7.2

(W7.2) What is the trend in your organization’s water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

Row 1

Water-related CAPEX (+/- % change)

3

Anticipated forward trend for CAPEX (+/- % change)

61

Water-related OPEX (+/- % change)

51

Anticipated forward trend for OPEX (+/- % change)

10

Please explain

Water related OPEX increased by 51% in 2019 compared to 2018 due to greater volumes of water associated with oil production from new wells. In 2019, the rates for trucking water and disposal handling increased. In 2020, the expected trend for OPEX would be a 10% decrease due to overall lower water volumes in addition to renegotiated trucking rates for 2020.

Water related CAPEX decreased by 3% in 2019 compared to 2018 due to a lower cost of trucking water in the last six months of 2019. In 2020, the expected trend would be a 61% decrease in CAPEX due to a 19% decrease in well completions, lower costs in water handling due to the current economic situation and a target to reuse increasing amounts of produced water (15%) in hydraulic fracturing operations.

W7.3

(W7.3) Does your organization use climate-related scenario analysis to inform its business strategy?

	Use of climate-related scenario analysis	Comment
Row 1	Yes	High level climate-related scenario analysis is included within ongoing project review and long range planning project risk assessments. This consists mainly in relation to climate-related water scarcity causing water availability concerns.

W7.3a

(W7.3a) Has your organization identified any water-related outcomes from your climate-related scenario analysis?

No

W7.4

(W7.4) Does your company use an internal price on water?

Row 1

Does your company use an internal price on water?

Yes

Please explain

Enerplus develops an internal price on water based on the cost of water procurement. The internal price can vary for each project and is based on a number of factors including the location, water source and transportation method (pipeline vs. trucking, etc.).

W8. Targets

W8.1

(W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.

	Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
Row 1	Company-wide targets and goals Business level specific targets and/or goals Activity level specific targets and/or goals Country level targets and/or goals Basin specific targets and/or goals	Goals are monitored at the corporate level	The goal is to use alternatives to freshwater whenever economically viable and technically feasible. For all projects, the economic viability and technical feasibility assessments comparing alternatives to fresh surface water have been completed. In cases where economics allow, freshwater alternatives are used. In 2019 Enerplus began investigating through chemical analysis the maximum feasibility of introducing treated produced water into our completions operations in our North Dakota asset which aligns to our goal of utilizing less freshwater. Spending 2019 in this investigative phase allowed us to test this strategy to determine feasibility, ultimately allowing Enerplus to set its first public freshwater reduction target in 2020, which is targeting a 15% reduction in freshwater use per well completion, on average, in North Dakota.

W8.1b

(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.

Goal

Other, please specify
Use alternatives to freshwater

Level

Company-wide

Motivation

Recommended sector best practice

Description of goal

Using alternatives to freshwater when economically feasible is an industry best practice. This goal also aligns with Enerplus' social responsibility beliefs. When water is sourced, alternatives to freshwater are prioritized over freshwater when economically viable. In 2019 Enerplus began an investigative study into the feasibility of treating its produced water to include it in completion operations in our North Dakota assets, thereby reducing our use of freshwater.

Baseline year

2012

Start year

2016

End year

2026

Progress

The indicators used to gauge progress is the volume of freshwater withdrawn. A decrease in the volume of freshwater usage would indicate success in meeting this goal. Enerplus' surface water usage in Canada contributes to less than 1% of total Canadian water consumption, while corporately it contributes to 11%.

In Medicine Hat, Alberta, Enerplus reuses water from the City of Medicine Hat's Wastewater Treatment plant for our operations. In 2019, 149,000 m3 of recycled water was sourced from the plant.

W9. Verification

W9.1

(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?

No, we do not currently verify any other water information reported in our CDP disclosure

W10. Sign off

W-FI

(W-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

Qualitative goals and quantitative targets have been established and published in February 2020. 2019 was used as a formative year to establish baseline measurements and source chemical analysis to determine the feasibility of our objectives going forward.

W10.1

(W10.1) Provide details for the person that has signed off (approved) your CDP water response.

	Job title	Corresponding job category
Row 1	Manager, Corporate Sustainability	Environment/Sustainability manager

W10.2

(W10.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate’s Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].

Yes

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission
I am submitting my response	Investors	Public

Please confirm below

I have read and accept the applicable Terms