



## **Water 2017 - Devon Energy Corporation**

### **Module: Introduction**

### **Page: W0. Introduction**

#### **W0.1**

#### **Introduction**

#### **Please give a general description and introduction to your organization**

Devon Energy Corp. (NYSE: DVN) is an independent energy company engaged in natural gas and oil exploration. Devon is among the largest U.S.-based independent oil and gas producers and is included in the S&P 500 index. The company is based in Oklahoma City and also has corporate offices in Calgary. Devon's operations are focused onshore in the United States and Canada. The company's portfolio of oil and natural gas properties provides stable, environmentally responsible production and a platform for future growth. Devon's mission is to be a results-oriented oil and natural gas company that builds value for shareholders through employees by creating an atmosphere of optimism, teamwork, creativity and resourcefulness and by doing business in an open and ethical manner. Our vision is to be the premier independent oil and natural gas company in North America. For more information about Devon, please visit [www.dvn.com](http://www.dvn.com).

#### **W0.2**

#### **Reporting year**

#### **Please state the start and end date of the year for which you are reporting data**

**Period for which data is reported**

Fri 01 Jan 2016 - Sat 31 Dec 2016

### W0.3

#### Reporting boundary

Please indicate the category that describes the reporting boundary for companies, entities, or groups for which water-related impacts are reported

Companies, entities or groups over which financial control is exercised

### W0.4

#### Exclusions

Are there any geographies, facilities or types of water inputs/outputs within this boundary which are not included in your disclosure?

Yes

#### W0.4a

#### Exclusions

Please report the exclusions in the following table

Exclusion	Please explain why you have made the exclusion
Only wells completed and operated by Devon in 2016 are included.	Devon owns interests in oil and gas wells drilled, completed and operated by other companies to drill, complete, and operate oil wells. Where Devon is not overseeing the drilling and completion or operations, water use is not included because the data may not be readily available. Where readily available, data from recently acquired wells was also included.
Water supplied to Devon offices.	Reporting efforts will focus on water resources required for direct completions operations.
Waterflood operations.	These operations typically are using produced water. Produced water originates from the deep geological formations from which oil and gas are produced. This water contains high concentrations of chlorides, salts and other compounds that make it non-potable.

Exclusion	Please explain why you have made the exclusion
Water disposal.	Water disposal data is reported to state/provincial regulatory agencies and is available through these agencies.

**Further Information**

**Module: Current State**

**Page: W1. Context**

**W1.1**

**Please rate the importance (current and future) of water quality and water quantity to the success of your organization**

Water quality and quantity	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Important	Neutral	Fresh water is important for drilling wells, for plant utilities, and for providing water supply, adequate sanitation and hygiene (WASH) facilities at our operational camps. Water quality requirements have become more flexible for some completion operations and in some areas recycled, brackish and/or produced water can be utilized.
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Neutral	In the U.S., where feasible, brackish and/or recycled produced water is utilized for some completion operations. In Canada, 100% saline water and recycled produced water is used to generate steam used for the production of heavy oil at the Devon Jackfish Projects in northern Alberta.

**W1.2**

**For your total operations, please detail which of the following water aspects are regularly measured and monitored and provide an explanation as to why or why not**

Water aspect	% of sites/facilities/operations	Please explain
Water withdrawals- total volumes	76-100	In the U.S., measurement of water withdrawals is performed to meet requirements of regulations and for the purpose of making payment to water rights holders. In Canada, measurement of fresh water withdrawal volumes is conducted as a requirement of the water diversion licenses issued by the Province. Measurement of saline groundwater withdrawal volumes is performed to meet regulatory requirements.
Water withdrawals- volume by sources	76-100	In the U.S., water withdrawals are tracked by source to meet requirements of regulations and for the purpose of making payment to water rights holders. In Canada, all water withdrawals are tracked by source as required by their individual licenses.
Water discharges- total volumes	76-100	Discharges are tracked to meet requirements of regulations.
Water discharges- volume by destination	76-100	In the U.S. discharges are tracked to meet requirements of regulations. Typically the location of the discharge is specified by the permit. In Canada, discharges are tracked as a requirement of applicable licenses and regulations.
Water discharges- volume by treatment method	76-100	In the U.S., very limited volumes of water are discharged to the surface. This water, which is produced from coal bed methane and water alternating gas (WAG) flood operations in Wyoming, is very high quality and does not require significant treatment prior to discharge.
Water discharge quality data- quality by standard effluent parameters	76-100	In U.S., water quality data required by regulation is measured and tracked. In Canada, water discharge quality data required by regulations or approvals is collected and measured for surface release of water.
Water consumption- total volume	76-100	By tracking water withdrawals and discharges by source and destination, water consumption can be determined.

<b>Water aspect</b>	<b>% of sites/facilities/operations</b>	<b>Please explain</b>
Facilities providing fully-functioning WASH services for all workers	76-100	In the U.S., WASH water consumption is tracked through public water service billing records. In Canada, water is tracked as a requirement of Provincial Licenses for the facilities owned and operated by Devon.

**W1.2a**

**Water withdrawals: for the reporting year, please provide total water withdrawal data by source, across your operations**

<b>Source</b>	<b>Quantity (megaliters/year)</b>	<b>How does total water withdrawals for this source compare to the last reporting year?</b>	<b>Comment</b>
Fresh surface water	2993	Much lower	In the U.S., surface water made up the majority of source water for the Anadarko business unit. In Canada, surface water is used for oilsands exploration programs, dust control, construction, drilling and well completions
Brackish surface water/seawater	0	Not applicable	Some surface water utilized by Devon in the past could be categorized as brackish but this was not differentiated.
Rainwater	0	Not applicable	Some surface water could be characterized as rainwater but this was not differentiated.
Groundwater - renewable	0	Not applicable	Most groundwater utilized could be considered renewable in that the demands are short term, allowing the aquifer to recharge, however, this was not differentiated.

Source	Quantity (megaliters/year)	How does total water withdrawals for this source compare to the last reporting year?	Comment
Groundwater - non-renewable	2441	Much lower	In U.S., the volume of groundwater utilized decreased due to reduced activity level. Groundwater is typically used in Delaware, Midland, Southern, North Texas, and Rockies business units. Much of the groundwater we use is brackish. In Canada, groundwater reported in this category is deep aquifer brackish water not connected to surface water or fresh groundwater.
Produced/process water	356	Much lower	In the U.S. a portion of the produced water we collect from our oil and natural gas wells is used in the fracture completions of subsequent wells. Recycled water was utilized in the Delaware Basin Business Unit. The total was lower than 2015.
Municipal supply	0	Not applicable	Not utilized.
Wastewater from another organization	0	Not applicable	Wastewater from another organization was not used directly.
Total	5790	Much lower	Total water withdrawals were much less than last year.

**W1.2b**

**Water discharges: for the reporting year, please provide total water discharge data by destination, across your operations**

<b>Destination</b>	<b>Quantity (megaliters/year)</b>	<b>How does total water discharged to this destination compare to the last reporting year?</b>	<b>Comment</b>
Fresh surface water	0	Not applicable	Devon discharges small volumes of high quality produced water to the surface in the Rockies Business Unit.
Brackish surface water/seawater	0	Not applicable	
Groundwater	0	Not applicable	Devon discharges produced water into deep disposal wells below useable groundwater in all business units.
Municipal/industrial wastewater treatment plant	0	Not applicable	
Wastewater for another organization	0	Not applicable	
Total	0	Not applicable	Discharge volumes were much lower due to the reduction in activity level for 2016.

**W1.2c**

**Water consumption: for the reporting year, please provide total water consumption data, across your operations**

Consumption (megaliters/year)	How does this consumption figure compare to the last reporting year?	Comment
5434	Much lower	Water consumption was calculated as total volume withdrawn from a natural source. Recycled water (treated produced water) was not included.

**W1.3**

**Do you request your suppliers to report on their water use, risks and/or management?**

No

**W1.3b**

**Please choose the option that best explains why you do not request your suppliers to report on their water use, risks and/or management**

Primary reason	Please explain
Assessed risk but no risk found	Devon receives goods and services from a variety of suppliers with access to materials from around the world mitigating risks associated with regional water stress. The most water intensive aspect of Devon's business is well completions and this is evaluated directly.

**W1.4**

**Has your organization experienced any detrimental impacts related to water in the reporting year?**

No

**Further Information**

**Module: Risk Assessment**

**Page: W2. Procedures and Requirements**

**W2.1**

**Does your organization undertake a water-related risk assessment?**

Water risks are assessed

**W2.2**

**Please select the options that best describe your procedures with regard to assessing water risks**

Risk assessment procedure	Coverage	Scale	Please explain
Water risk assessment undertaken independently of other risk assessments	Direct operations	All facilities	Water management plans are being developed for all business units. Water risk is being assessed for each area as part of this planning. In Canada, Devon conducts a regional risk assessment of Steam Assisted Gravity Drainage (SAGD) operations to ensure sustainability of the saline source water for steam generation and water disposal. A numerical model is calibrated to past water production histories to help ensure accurate forecasts to support water risk assessment.

**W2.3**

**Please state how frequently you undertake water risk assessments, at what geographical scale and how far into the future you consider risks for each assessment**

Frequency	Geographic scale	How far into the future are risks considered?	Comment
Annually	Business unit	3 to 6 years	Water management plans are updated annually with a 5-year planning horizon. Devon re-visits original risk assessments to ensure that measures are in place to mitigate changing and developing risks. In Canada, Devon regularly re-visits original risk assessments to ensure that measures are in place to mitigate changing and developing risks.

**W2.4**

**Have you evaluated how water risks could affect the success (viability, constraints) of your organization's growth strategy?**

Yes, evaluated over the next 5 years

**W2.4a**

**Please explain how your organization evaluated the effects of water risks on the success (viability, constraints) of your organization's growth strategy?**

Risks of water shortages are identified and alternative sources and recycling are evaluated to quantify the economic impact to our operations. Thermal heavy oil operations rely heavily on saline source water supply and water disposal capacity for growth. Therefore it is imperative that these aquifers are sustainable and support long-term growth. A forward looking water supply forecast is established. Reservoir simulation is performed to ensure supply capacity is sustainable and risked appropriately.

**W2.5**

**Please state the methods used to assess water risks**

<b>Method</b>	<b>Please explain how these methods are used in your risk assessment</b>
Internal company knowledge	In the U.S., Devon has a Water Management Team that leads planning efforts related to water management including evaluation of potential risks to the operations. In Canada, Devon relies on water specialists and uses a regional numerical groundwater model (FEFLOW) to assess water related risks. Modeling assessments include the cumulative effects of all water users within the basin.

**W2.6**

**Which of the following contextual issues are always factored into your organization's water risk assessments?**

Issues	Choose option	Please explain
Current water availability and quality parameters at a local level	Relevant, included	In U.S., the ability and decision on whether to use fresh water is highly dependent on availability, stakeholder needs and water quality. In Canada, we seek suitable sources of saline water to conduct our operations.
Current water regulatory frameworks and tariffs at a local level	Relevant, included	In the U.S., water use is permitted on the state level although some is managed locally. Many states have existing water management plans that quantify water availability as well as possess water curtailment plans in the event of drought. In Alberta, Canada, the provincial Water Act protects all water. Government agencies administer policies and regulations that Devon complies with.
Current stakeholder conflicts concerning water resources at a local level	Relevant, included	Water is an important resource, not only for the energy industry, but for all stakeholders at a local level. Our success relies on executing a sustainable water management strategy that heavily weights social criteria.
Current implications of water on your key commodities/raw materials	Relevant, not yet included	We obtain our commodities and raw materials through a market that can expand across the global economy. Gaps can develop with any supplier for a variety of reasons, including water. We are in a position to adjust to supply gaps through working within the market to obtain the materials required by our ongoing operations.
Current status of ecosystems and habitats at a local level	Relevant, included	Ecosystems and habitats are assessed during our Environmental Impact Assessments for major projects. In Canada, Devon conducts annual groundwater, surface water and wetland monitoring to identify if impacts to water are occurring.
Current river basin management plans	Relevant, included	In the US, river basin management plan constraints and opportunities are evaluated as part of the water management planning process. In Alberta, Canada, the Lower Athabasca Regional Plan is committed to managing cumulative effects and

Issues	Choose option	Please explain
		environmental management at a regional level including a groundwater management framework. Devon supports the goals of this regional planning.
Current access to fully-functioning WASH services for all employees	Relevant, included	Drinking water safety plans are required by the facilities operating under a Code of Practice in Alberta. These water safety plans include an appropriate risk assessment.
Estimates of future changes in water availability at a local level	Relevant, included	In the U.S., most states we operate in have updated water availability projections along with corresponding permit availability. Because of that, it is necessary to conduct risk assessments and water management plans. In Canada, a regional numerical model is used to evaluate cumulative effects of all water users and assess future changes in water availability. These assessments are updated with every new phase of development..
Estimates of future potential regulatory changes at a local level	Relevant, included	In the U.S., state and local trade associations help in staying engaged with future regulatory changes. In Canada, our membership and involvement with Canadian Association of Petroleum Producers (CAPP) provides increased awareness of regulatory changes and guidelines.
Estimates of future potential stakeholder conflicts at a local level	Relevant, included	As development in our operational areas expands, so does our engagement with potential stakeholders.
Estimates of future implications of water on your key commodities/raw materials	Relevant, not yet included	We obtain our commodities and raw materials through a variety of vendors in a market that can expand across the global economy. Gaps can develop with any supplier for a variety of reasons, including water. We are in a position to adjust to supply gaps through working within the market to obtain the materials required by our ongoing operations.
Estimates of future potential changes in the status of ecosystems and habitats at a local level	Relevant, included	This is studied and documented as part of Devon's environmental impact assessment. Local and regional monitoring programs assess future potential changes in the status of ecosystems and habitats.

Issues	Choose option	Please explain
Scenario analysis of availability of sufficient quantity and quality of water relevant for your operations at a local level	Relevant, included	Detailed hydrogeological and reservoir modelling assist Devon in developing scenario analysis related to the availability of water
Scenario analysis of regulatory and/or tariff changes at a local level	Relevant, included	Devon monitors for potential regulatory changes and anticipates potential impacts those issues might have. However, Devon does not develop formal scenario analysis based on long-term speculation.
Scenario analysis of stakeholder conflicts concerning water resources at a local level	Relevant, not yet included	We monitor stakeholder issues and anticipate potential impacts those issues might have. However, we do not develop formal scenario analysis based on long-term speculation.
Scenario analysis of implications of water on your key commodities/raw materials	Relevant, not yet included	We obtain our commodities and raw materials through a vendors in a market that can expand across the global economy. Gaps can develop with any supplier for a variety of reasons, including water. We are in a position to adjust to supply gaps through working within the market to obtain the materials required by our ongoing operations.
Scenario analysis of potential changes in the status of ecosystems and habitats at a local level	Relevant, not yet included	We monitor ecosystems and habitats surrounding operations and anticipate potential impacts those issues might have through our environmental impact assessment program. However, we do not develop analysis beyond the information produced by our EIA program.
Other		

**W2.7**

**Which of the following stakeholders are always factored into your organization's water risk assessments?**

Stakeholder	Choose option	Please explain
Customers	Not relevant, explanation provided	As an upstream exploration and production company, we sell our product into the commodities market. Therefore, we have no customers. However, we have many other stakeholders, which we consider through the course of our business.
Employees	Relevant, included	Our employees are engaged with water issues as they pertain to our business and our industry.
Investors	Relevant, included	We take opportunities to answer questions and communicate on water issues to the investment community.
Local communities	Relevant, included	Our water management plan considers the needs of the communities that surround our operations.
NGOs	Relevant, included	While NGOs are not directly factored into Devon's water risk assessments, we do address issues they raise as part of our assessments.
Other water users at a local level	Relevant, included	Our water management plan considers the needs of the communities that surround our operations
Regulators	Relevant, included	Meeting regulatory requirements and working with regulators is necessary for our business. Devon meets or exceeds all applicable regulatory guidelines.
River basin management authorities	Relevant, included	
Statutory special interest groups at a local level	Relevant, included	Our water management plan considers the needs of the communities that surround our operations.

Stakeholder	Choose option	Please explain
Suppliers	Not relevant, explanation provided	We obtain our commodities and raw materials through a market that can expand across the global economy. Gaps can develop with any supplier for a variety of reasons, including water. We are in a position to adjust to supply gaps through working within the market to obtain the materials required by our ongoing operations.
Water utilities at a local level	Relevant, included	Our water management plan considers the needs of the communities that surround our operations.
Other		

#### Further Information

#### Module: Implications

#### Page: W3. Water Risks

#### W3.1

**Is your organization exposed to water risks, either current and/or future, that could generate a substantive change in your business, operations, revenue or expenditure?**

No

#### W3.2

**Please provide details as to how your organization defines substantive change in your business, operations, revenue or expenditure from water risk**

From an operational perspective, substantive change to our business from water risk would be defined according to disrupted operations or lost production due to the unavailability of water. Devon has been effective in its proactive evaluation of risks and opportunities to ensure continuing operations.

**W3.2e**

Please choose the option that best explains why you do not consider your organization to be exposed to water risks in your direct operations that could generate a substantive change in your business, operations, revenue or expenditure

Primary reason	Please explain
Risks exist, but no substantive impact anticipated	Through water management planning, Devon evaluates primary and backup water supply options for all operations.

**W3.2f**

Please choose the option that best explains why you do not consider your organization to be exposed to water risks in your supply chain that could generate a substantive change in your business, operations, revenue or expenditure

Primary reason	Please explain
Risks exist, but no substantive impact anticipated	Most equipment, material, etc. is available from multiple vendors mitigating risks associated with supply chain disruptions.

**Further Information**

**Page: W4. Water Opportunities**

**W4.1**

Does water present strategic, operational or market opportunities that substantively benefit/have the potential to benefit your organization?

Yes

**W4.1a**

Please describe the opportunities water presents to your organization and your strategies to realize them

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Comment
Company-wide	Improved community relations Increased shareholder value Improved water efficiency Innovation Regulatory changes R&D Social licence to operate	Actively seek out new technologies to improve water management efficiency. Actively plan for future water use. Engage with peers and stakeholders to keep up with industry best practices related to water.	1-3 years	Devon is drawing on technological advances to open new pathways to water conservation. These advances are allowing us to use produced water for our well completion operations in the United States, which reduces our need for fresh water. The initiatives we take to manage our water and limit our demand for fresh water enhances the trust we receive from communities that surround us. It also can help lower our operating costs and puts us in a better position to comply with future regulatory mandates designed to limit fresh water use. In Canada, Devon is a member of the Canada's Oil Sands Innovation Alliance (COSIA). Water is one of four Environmental Priority Areas that Devon participates in as part of COSIA in Alberta. Through the water EPA, members are working toward innovative and sustainable solutions to reduce water use and increase recycling rates.

**Further Information**

**Module: Accounting**

**Page: W5. Facility Level Water Accounting (I)**

**Further Information**

**Page: W5. Facility Level Water Accounting (II)**

**Further Information**

**Module: Response**

**Page: W6. Governance and Strategy**

**W6.1**

**Who has the highest level of direct responsibility for water within your organization and how frequently are they briefed?**

Highest level of direct responsibility for water issues	Frequency of briefings on water issues	Comment
Senior Manager/Officer	Sporadic-as important matters arise	In the U.S., the production managers and completion managers are accountable for ensuring that water management activities are conducted within the Business Units. This includes approval of field development plans which include water management plans. The Water Management Coordinator oversees development of Water Management Plans, leads evaluation of technologies, and collects and documents best practices as they relate to water. In Canada, the production managers and completion managers are accountable for ensuring that water management activities are conducted within the Business Units. Devon Canada's Technology Manager is responsible for evaluation and implementation of new water conservation technologies including within COSIA which actively and collaboratively investigates such technologies.

**W6.2**

**Is water management integrated into your business strategy?**

Yes

**W6.2a**

**Please choose the option(s) below that best explains how water has positively influenced your business strategy**

Influence of water on business strategy	Please explain
Introduction of water management KPIs	Implementing water principles has guided Devon in reducing the use of fresh water in numerous core areas of production and has driven down cost and risk related to water.
Publicly demonstrated our commitment to water	Water is an important resource for the communities that surround us. Communities benefit from understanding our efforts. We publish information about our water initiatives in Devon's Corporate Social Responsibility report and on Devon's external website: <a href="http://www.dvn.com">www.dvn.com</a>

**W6.2b**

**Please choose the option(s) below that best explains how water has negatively influenced your business strategy**

Influence of water on business strategy	Please explain
No measurable influence	Water is a critical part of our business requiring active management. We do not believe water has had a negative impact on our business.

**W6.3**

**Does your organization have a water policy that sets out clear goals and guidelines for action?**

Yes

**W6.3a**

**Please select the content that best describes your water policy (tick all that apply)**

Content	Please explain why this content is included
Company-wide	The Water Team in collaboration with other corporate groups and business units promotes a uniform approach to water management across business units. It also promotes sharing of best practices and efficiencies that can improve our company's overall performance as an energy producer and an environmental steward.

**W6.4**

**How does your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) during the most recent reporting year compare to the previous reporting year?**

Water CAPEX (+/- % change)	Water OPEX (+/- % change)	Motivation for these changes
		The price of oil has declined, requiring a reduction in water related costs. We have not disclosed our capital costs for water.

**Further Information**

**Page: W7. Compliance**

**W7.1**

**Was your organization subject to any penalties, fines and/or enforcement orders for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations in the reporting year?**

No

**Further Information**

**Page: W8. Targets and Initiatives**

**W8.1**

**Do you have any company wide targets (quantitative) or goals (qualitative) related to water?**

Yes, goals only

**W8.1b**

**Please describe any company wide qualitative goals (ongoing or reached completion during the reporting period) and your progress in achieving these**

<b>Goal</b>	<b>Motivation</b>	<b>Description of goal</b>	<b>Progress</b>
Strengthen links with local community	Water stewardship	Conserve and protect water resources and look for alternatives to fresh water wherever possible for use in our projects to avoid negative impacts to local community.	Devon has engaged with local researchers to educate and share experiences related to recycling produced water for the purpose of expanding the practice.
Engagement with public policy makers to advance sustainable water policies and management	Water stewardship	Engage with policy makers to improve policies allowing Devon to conserve and protect our water resources and to look for alternatives to fresh water wherever possible.	Devon has engaged with policy makers and regulators to educate and share experiences related to recycling produced water resulting in regulatory changes which make recycling economically and technically feasible in areas where it was not previously.

**Further Information**

**Module: Linkages/Tradeoff**

**Page: W9. Managing trade-offs between water and other environmental issues**

**W9.1**

**Has your organization identified any linkages or trade-offs between water and other environmental issues in its value chain?**

Yes

**W9.1a**

**Please describe the linkages or trade-offs and the related management policy or action**

<b>Environmental issues</b>	<b>Linkage or trade-off</b>	<b>Policy or action</b>
Greenhouse gas management	Trade-off	In Canadian Steam Assisted Gravity Drainage (SAGD) operations, technology used to decrease water consumption and increase water recycle rates can cause an increase in the generation of greenhouse gas emissions. Net environmental effects assessments are considered in the evaluation of new technology implementation.
Energy consumption	Trade-off	In the US where produced water is treated for reuse, energy and materials are consumed, generally at a higher rate than what would be necessary to simply dispose and obtain additional water.

**Further Information**

**Module: Sign Off**

**Page: Sign Off**

**W10.1**

**Please provide the following information for the person that has signed off (approved) your CDP water response**

<b>Name</b>	<b>Job title</b>	<b>Corresponding job category</b>
Loc Cao	Water Management Engineer	Other: Water Subject Matter Expert