



20:10:01:01.02. Keystone's answers are based on the requirements of SDCL §§ 15-6-26, 15-6-33, 15-6-34, and 15-6-36.

### INTERROGATORIES

1. In your February 6, 2015 Answer to the Tribe's First Set of Interrogatories and Request for Production of Documents, you state that the witnesses listed at number three will offer opinions. Please state specifically what information was furnished to these witnesses by you and what information was gathered by the witnesses themselves. As to any books or publications upon which the witnesses opinions are based, state the title, author, publisher and edition of each such publication, together with the page and paragraph utilized by the witness in the formation of any opinion or conclusion.

ANSWER: Other than a copy of the discovery requests, Keystone has not furnished any information to its fact witnesses for purposes of providing testimony in this proceeding. The witnesses have provided information used in answering discovery based on their work on the Keystone XL project.

2. Identify all exhibits you or any of the witnesses listed in your February 6, 2015 Answer intend to introduce in the evidentiary hearing scheduled for May 5-8, 2015.

ANSWER: Keystone has not yet identified its hearing exhibits, but will disclose them as required by order of the Commission.

3. Pursuant to Fact Paragraph Seventeen, detail the current construction

schedule for the South Dakota portion of the Keystone Pipeline.

ANSWER: Keystone has not determined a construction schedule in South Dakota and will not do so before it has been granted a Presidential Permit.

4. Pursuant to Fact Paragraph Fourteen and Twenty-Four, what is the current projected date of completion for the South Dakota portion of the Keystone Pipeline?

ANSWER: Keystone has not determined a construction schedule in South Dakota.

5. Pursuant to Fact Paragraph Fourteen, Twenty-Four, and Forty-One, what is the projected date for initiation of construction in and around the Cheyenne River and Bridger Creek areas?

ANSWER: Keystone has not determined a construction schedule in South Dakota.

6. Pursuant to Fact Paragraph Fourteen, Twenty-Four, and Forty-One, what is the projected date for completion of construction in and around the Cheyenne River and Bridger Creek areas?

ANSWER: Keystone has not determined a construction schedule in South Dakota.

7. Condition Six of the Commission's Amended Final Decision and Order requires Keystone to notify affected utilities and local governmental as soon as



practicable if material deviations are proposed to the Project's route. The table of changes contained in Appendix C of Keystone's Petition of Certification reports such a material change to Finding of Fact Forty-One; namely, that the Project's route has been diverted to run beneath Bridger Creek via a Horizontal Directional Drilling (HDD). As such, has Keystone:

A. Made any attempt to notify the Mni Waste Water Company, or its predecessors, or any of its officers, attorneys, or agents of Keystone's route diversion through Bridger Creek?

B. Made any attempt to notify the Cheyenne River Sioux tribe, including any of its agencies, or any of its officers, attorneys, or agents of Keystone's route diversion through Bridger Creek?

C. If Keystone did not make such required notification please provide the following:

- i. Name(s) of the person(s) notified;
- ii. Title of the person(s) notified;
- iii. The physical address of the person(s) notified;
- iv. The telephone number(s) of the person(s) notified; and
- v. The means by which Keystone made notification, i.e. written,

oral, electronic, etc.

ANSWER:

7a). Keystone does not believe that the Mni Waste Water Company is affected by a “material deviation” in the project route.

7b). Keystone does not believe that the planned horizontal directional drill beneath Bridger Creek is a material deviation to the route and accordingly has not notified local governments and agencies.

7c). Not applicable.

8. Pursuant to Condition Six, is Keystone aware that the Mni Waste Water Company is a tribally chartered entity of the Cheyenne River Sioux Tribe?

ANSWER: Keystone is aware that the Mni Waste Water Company was created in response to federal legislation authorizing the construction of the Mni Waste Rural Water System.

9. Pursuant to Condition Six, is Keystone aware that all persons, tribal members and non-tribal members, residing within the exterior boundaries of the Cheyenne River Sioux Reservation obtain their potable water from the Mni Waste Water Company?

ANSWER: Keystone is aware that a portion of the population of the area encompassed by the Cheyenne River Sioux Reservation is served by the Mni Waste Water Company.

10. Pursuant to Condition Six of the Commission's Amended Final Decision and Order and Changed Finding of Fact Forty-One, is Keystone aware that the Mni Waste Water Company's raw water intake for all potable water is located along the Cheyenne River downstream from the proposed Bridger Creek HDD confluence with the Cheyenne River?

ANSWER: Keystone is aware that the Mni Waste Water Company's rural water intake is located on the Oahe Reservoir downstream from the confluence of the Cheyenne River and the Oahe Reservoir, and correspondingly downstream from the confluence of Bridger Creek and the Cheyenne River.

11. Pursuant to Condition Six of the Commission's Amended Final Decision and Order and Changed Finding of Fact Forty-One, does Keystone admit that a spill at or near the Cheyenne River or the proposed Bridger Creek crossing could potentially contaminate the area's hydrologically connected bodies of water, including those located downstream from the Cheyenne River or the proposed Bridger Creek HDD crossing?

ANSWER: The probability of a spill event affecting either the Cheyenne River HDD crossing or the Bridger Creek HDD crossing is extremely low. While future events cannot be known with absolute certainty, historic incident frequencies can be used to estimate the number of events that might occur over a period of time. Based on available PHMSA data, the spill frequency analysis determines the occurrence interval by spill



volume for each of the HDD crossings. The typical spill volumes and spill probabilities for each of the HDD crossings are presented in the following table. The occurrence interval estimates that the probability of a spill occurring for a certain volume will occur in the number of years indicated (e.g., for the Cheyenne River, a 3 barrel spill has the probably of occurring once every 2,395 years).

Occurrence Interval (years) by Spill Size

	3 barrels	50 barrels	1,000 barrels	10,000 barrels
Cheyenne River	2,395	5,988	23,951	239,505
Bridger Creek	1,332	3,330	13,318	133,181

Based on the occurrence intervals, a spill occurring at or near either of the two HDD crossings is very low. Despite the low probability, if a spill did occur, the characteristics of the HDD, including the depth of the HDD, setback distances, and soil layers are important features that reduce the possibility of the spill reaching either waterbody. The Cheyenne River HDD crossing is designed to be approximately 133 feet below the river bottom, while the Bridger Creek HDD crossing is designed to be approximately 50 feet below the river. In addition, the HDD for both crossings would be located in a layer of claystone which serves as a natural barrier to water movement. By using the HDD method, most (if not all) spills would be prevented from reaching the river since the burial depth often can prevent a release from reaching the waterbody. Both crossings will also have thicker pipe wall for the length of the HDD crossing.

The HDD exit and entry points, respectively, for the Cheyenne River are approximately 1,895 feet and 3,099 feet from the river; and for Bridger Creek is approximately 3,844 feet and 5,183 feet from the river. Most surface spills would not be expected to reach either waterbody, as the entry and exit points for the HDD are located over 1,000 feet away from the surface water at each crossing.

The assessment then evaluated what would occur if the entire volume of the release were to reach the waterbody despite expectations to the contrary. In the 2009 Keystone XL Risk Assessment, Table 4-1 from the 2009 Keystone XL Risk Assessment describes stream categories based on stream flows. Based on USGS stream flow data, the Cheyenne River is classified according to the 2009 Keystone XL Risk Assessment stream categories as high flow stream. Flow data is unavailable for Bridger Creek; however as a tributary to the Cheyenne River, it would most likely fall into the low or moderate flow stream category. Based on those stream flow categories, impacts to water quality and aquatic biota can be identified in 2009 Keystone XL Risk Assessment text in Section 4.2.3.4 and Tables 4.2, and 4.3 and 4.7 to 4.10. As discussed in the 2009 Keystone XL Risk Assessment, there is a very small probability of a spill reaching the Cheyenne River and Bridger Creek HDD crossings.

Despite the factors limiting the possibility of a spill reaching the river, if a spill were to reach either waterbody, leak detection and emergency response procedures would



help reduce the potential for impacts to surface water sources, human health, and the environment.

“In order to reduce the risk of spills, if permitted Keystone has agreed to incorporate additional mitigation measures in the design, construction, and operation of the proposed Keystone XL Project, in some instances above what is normally required, including:

- 59 Special Conditions recommended by PHMSA;
- 25 mitigation measures recommended in the Battelle and Exponent risk reports; and
- 11 additional mitigation measures.

Many of these mitigation measures relate to reductions in the likelihood of a release occurring. Other measures provide mitigation that reduces the consequences and impact of a spill should such an event occur. Mitigation measures are compiled in Appendix Z, Compiled Mitigation Measures, of this Supplemental EIS. Mitigation measures are actions that, if the proposed Project is determined to be in the national interest, Keystone would comply with as conditions of a Presidential Permit.” (FSEIS Executive Summary, pg. ES-19)

12. Pursuant to Condition Six of the Commission's Amended Final Decision and Order and Changed Finding of Fact Forty-One, does Keystone admit that a public drinking water utility with an intake located downstream from any pipeline might be

"affected" (as defined by the PUC's Final Decision and Order) if a spill were to occur?

ANSWER: "Any pipeline" includes all products that can be transported by a pipeline including natural gas, crude oil, water, and other gas and liquid products. The effect of spills from any pipelines cannot be categorized as the same on public drinking water intakes. For the Keystone XL pipeline, potential impacts to downstream public drinking water utilities are discussed in the 2009 Keystone XL Risk Assessment, and the FSEIS, Section 4.3 Water Resources, and Section 4.13 Potential Release.

River crossings by pipelines are very common, the number of incidents is low, and safety is not affected by material transported. When the Keystone XL pipeline crosses channels and flood plains, any spill scenarios would be dictated by stream flow rate (discharge), which are discussed in Section 4.2.3.4 of 2009 Keystone XL Risk Assessment. Impacts are described in Section 4.2.3.4 of the 2009 Keystone XL Risk Assessment for channels. The worst case scenario would be spill into low flow stream (Table 4-2 in 2009 Keystone XL Risk Assessment).

Predicted Project-specific incident frequencies are provided in Section 3.0 of the 2009 Keystone XL Risk Assessment. Most spills are less than 3 barrels. Spills at individual river crossings are rare with occurrence interval of 1/22,000 years to 1/830,000 years based on representative crossing distances (2009 Keystone XL Risk Assessment).

Floodplain crossings are covered in the FEIS Section 4.3.3.3. The FSEIS also

specifically evaluated “surface water intakes, diversions, or Wellhead Protection Areas for municipal water supplies within 1 mile of the proposed pipeline centerline.”

“The Missouri River in Montana and South Dakota is a source for two rural/tribal water systems: the Fort Peck Assiniboine & Sioux Rural Water Supply System (ASRWSS) and the Mni Wiconi Rural Water Supply System (MWRWSS).”

“The possibility of a spill reaching either the ASRWSS intake near Poplar, Montana, or the MWRWSS intake in Pierre, South Dakota, is exceptionally remote due to the following factors: Based on the risk assessment in Appendix P of the FEIS and the consequence analysis by Exponent 2013, a distance of at least 10 miles downstream from the proposed pipeline was recommended for the identification of sensitive resources that could be affected by a release from the proposed pipeline. A buffer distance of 10 miles downstream has been selected for impact evaluation in the FEIS and Final Supplemental EIS process. Residual crude oil spill materials such as tar balls could travel farther than 10 miles but would not have a widespread effect on surface water resources. The distance from the pipeline crossing to the ASRWSS intake is over 70 miles, and the MWRWSS intake is over 100 miles, both of which are significantly beyond the proposed Project impact assessment buffer. Additionally, depending upon the width of the individual stream crossing and including an additional 500-foot buffer distance from each stream bank, a release event probability is estimated to be one in 18,000 years to one in 47,500



years.

Conditions specific to the MWRWSS are:

- The Lake Oahe reservoir and dam are upstream of the intake and provide a significant barrier to a spill plume or residual material reaching the MWRWSS intake.
- The distance from the pipeline crossing to the Bad River confluence with the Missouri River is 44 miles. The MWRWSS intake is on the Missouri River and more than 3 miles upstream from the confluence with the Bad River.”

FSEIS 4.13 Water Resources pg. 4.3-19

In the unlikely event of a leak, petroleum hydrocarbons generally do not move more than 300 feet through the subsurface and substantive movement takes months to years offering ample time for emergency response and containment. Therefore, impacts to private and public wells are not anticipated. Further, in the unlikely event of a spill occurring, Keystone will comply with the South Dakota Public Utilities Commission order (Condition of Permit #46):

"In the event that a person's well is contaminated as a result of construction or pipeline operation, Keystone shall pay all costs associated with finding and providing a permanent water supply that is at least of similar quality and quantity; and any other related damages, including but not limited to any consequences, medical or otherwise,

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related to water contamination.”

13. Pursuant to Conditions Eight, Thirty-Four, Thirty-Five, and Thirty-Nine, describe Keystone's spill plan with regard to crude oil in and around the proposed Cheyenne River and Bridger Creek HDD crossings.

ANSWER: Please refer to the FSEIS Appendix I Spill Prevention Control and Countermeasure Plan and Emergency Response Plan; Emergency Response Plan. Site specific Emergency Response Plan has not been updated to include KXL.

14. Pursuant to Conditions Eight, Thirty-Four, Thirty-Five, and Thirty-Nine, describe Keystone's spill plan with regard to Benzine in and around the proposed Cheyenne River and Bridger Creek HDD crossings.

ANSWER: Please refer to the FSEIS Appendix I Spill Prevention Control and Countermeasure Plan and Emergency Response Plan; Emergency Response Plan. Site specific Emergency Response Plan has not been updated to include KXL.

15. Pursuant to Conditions Eight, Thirty-Four, Thirty-Five, and Thirty Nine, has Keystone consulted with or notified the Mini Waste Water Company or the Cheyenne River Sioux Tribe's Environmental Protection Department regarding an emergency spill response?

ANSWER: Condition 8, condition 34, condition 35, and condition 39 of the Amended Final Decision and Order do not contemplate consultation with or notice to the

Mni Waste Water Company or the Cheyenne River Sioux Tribe.

16. Pursuant to Condition Eight, Thirty-Four, Thirty-Five, and Thirty-Nine, identify all local emergency spill response agencies or assets in or around the proposed Cheyenne River and Bridger Creek HDD crossing areas.

ANSWER: Please refer to the FSEIS Appendix I Spill Prevention Control and Countermeasure Plan and Emergency Response Plan; Emergency Response Plan. Site specific Emergency Response Plan has not been updated to include KXL.

17. Pursuant to Conditions Eight, Thirty-Four, Thirty-Five, and Thirty-Nine, what would be the approximate detection time for a spill in or around the proposed Cheyenne River and Bridger Creek HDD crossing areas? From the time a spill is detected, how long before the pipeline would be shut down?

ANSWER: The Real Time Transient model is capable of detecting a leak down to 25% to 30% of pipeline flow rate in less than 2 minutes. The SCADA system, in conjunction with Computational Pipeline Monitoring or model-based leak detection systems, would detect leaks to a level of approximately 1.5 to 2 percent of the pipeline flow rate within 102 minutes. [DOS FEIS Chapter 4 section 4.13.2]. If pressure, flow, and temperature sensors, in combination with software, detected a deviation exceeding a threshold, an alarm would sound and the control room would enter a 10-minute evaluation window. No later than 10 minutes, if the evaluation is indeterminate at the



end of the window or a potential leak is confirmed, the control room would shut down the pipeline. [DOS FEIS Chapter 4 section 4.13.2].

18. Pursuant to Conditions Eight, Thirty-Four, Thirty-Five, and Thirty-Nine, what non-local emergency spill response agencies or assets might be required should there be a spill in or around the proposed Cheyenne River and Bridger Creek HDD crossing areas? If there are any required non-local emergency spill response agencies or assets, what would be the approximate on-site response time to a spill in or around the proposed Cheyenne River and Bridger Creek HDD crossing areas, from the time the leak is first detected?

ANSWER: Please refer to the FSEIS Appendix I Spill Prevention Control and Countermeasure Plan and Emergency Response Plan; Emergency Response Plan. Site specific Emergency Response Plan has not been updated to include KXL.

19. Pursuant to Condition Ten, describe Keystone's plans to train local emergency responders.

ANSWER: Keystone will conduct Emergency Response Training prior to commencing operations. After the pipeline is operational, TransCanada reaches out to first responders at least annually via our public awareness program which includes as a baseline our contact info, where our pipeline is, and how to respond. Additionally, we conduct exercises and training sessions annually to which first responders are invited to

attend and participate. Training and exercises include ICS, table top, deployment and full scale exercises. Our exercise planners are required to invite first responders to full scale exercises, which includes the development of an incident management team and the simultaneous deployment of equipment resources to proximate a real event. These exercises are conducted in various locations along the pipeline system.

20. Pursuant to Condition Ten, does Keystone include the Cheyenne River Sioux Tribe and/or the Mni Waste Water Company on its list of first notification of each spill from the Base Keystone Pipeline?

ANSWER: Parties that are affected by a spill will be notified.

21. Pursuant to Conditions One and Two and Keystone's Answer to number thirty-four of the Tribe's First Set of Interrogatories, does Keystone admit that a spill in or around the proposed Bridger Creek HDD crossing area might interfere with the Tribe's federal water rights, guaranteed by *Winters v. The United States*, 207 U.S. 564 (1908) and its progeny?

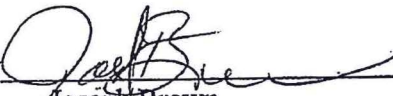
ANSWER: The question cannot be answered in the manner posed. *Winters v. The United States*, 207 U.S. 564 (1908) and its progeny establish the principle that the United States impliedly reserved, for the benefit of the Cheyenne River Sioux Tribe, rights to waters within and riparian to the boundaries of the reservation, without regard to state law. The Winters Doctrine assures the tribe of the beneficial use of those waters.

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Dated this 10 day of March, 2015.

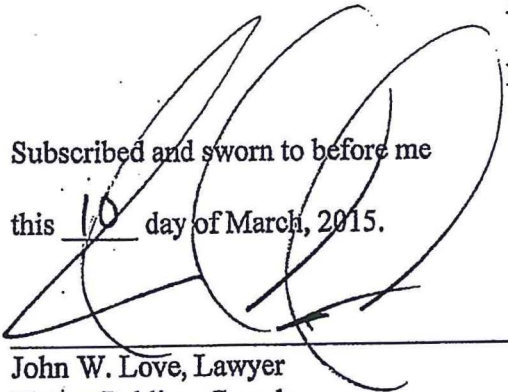
TRANSCANADA KEYSTONE PIPELINE, LP  
by its agent, TC Oil Pipeline Operations, Inc.

By

  
Joseph Brown  
Its Director, Authorized Signatory

Subscribed and sworn to before me

this 10 day of March, 2015.

  
John W. Love, Lawyer  
Notary Public – Canada



## REQUESTS FOR PRODUCTION OF DOCUMENTS

1. All documents relied upon by the witnesses listed in Keystone's Answer in forming their opinions.

OBJECTION AND RESPONSE: This request is overlybroad and unduly burdensome. Keystone identified responsive documents in its earlier answers, many of which are available online. Keystone produced other responsive documents. This request does not ask for any specific documents other than documents identified as part of these responses.

2. All non-privileged documents regarding emergency spill response plans, assets, agencies, or training regarding the proposed Bridger Creek HDD crossing area. Conditions Eight, Thirty-Four, Thirty-Five, and Thirty-Nine.

OBJECTION AND RESPONSE: This request is overlybroad, unduly burdensome, and seeks information that is confidential and proprietary. Without waiving the objection, please refer to the FSEIS Appendix I Spill Prevention Control and Countermeasure Plan and Emergency Response Plan; Emergency Response Plan. Site specific Emergency Response Plan has not been updated to include KXL.

3. All non-privileged documents relating to communication(s) between Keystone and the Mni Waste Water Company. Condition Six.

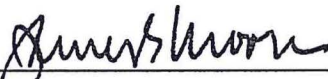
RESPONSE: Keystone has not been able to locate any documents responsive to this request.

### OBJECTIONS

The objections stated to Cheyenne River Sioux Tribe's Interrogatories and Request for Production of Documents were made by James E. Moore, one of the attorneys for Applicant TransCanada herein, for the reasons and upon the grounds stated therein.

Dated this 10<sup>th</sup> day of March, 2015.

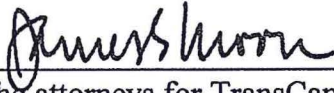
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**CERTIFICATE OF SERVICE**

I hereby certify that on the 10<sup>th</sup> day of March, 2015, I sent by e-mail transmission, a true and correct copy of Keystone's Responses to Cheyenne River Sioux Tribe's Second Interrogatories and Request for Production of Documents, to the following:

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One of the attorneys for TransCanada