

APPENDIX

To the Appellee’s Reply Brief

In Response to Brief of Appellant Yankton Sioux Tribe

Supreme Court #28332

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**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

IN THE MATTER OF THE APPLICATION BY)	
TRANSCANADA KEYSTONE PIPELINE, LP)	AMENDED FINAL DECISION
FOR A PERMIT UNDER THE SOUTH DAKOTA)	AND ORDER; NOTICE OF
ENERGY CONVERSION AND TRANSMISSION)	ENTRY
FACILITIES ACT TO CONSTRUCT THE)	
KEYSTONE XL PROJECT)	HP09-001

PROCEDURAL HISTORY

On March 12, 2009, TransCanada Keystone Pipeline, LP ("Applicant" or "Keystone") filed an application with the South Dakota Public Utilities Commission ("Commission") for a permit as required by SDCL Chapter 49-41B to construct the South Dakota portion of the Keystone XL Pipeline ("Project")¹. The originally filed application described the Project as proposed to be an approximately 1,702 mile pipeline for transporting crude oil from Alberta, Canada, to the greater Houston area in Texas, with approximately 1,375 miles to be located in the United States and 313 miles located in South Dakota.

On April 6, 2009, the Commission issued its Notice of Application; Order for and Notice of Public Input Hearings; and Notice of Opportunity to Apply for Party Status. The notice provided that pursuant to SDCL 49-41 B-17 and ARSD 20:10:22:40, each municipality, county, and governmental agency in the area where the facility is proposed to be sited; any nonprofit organization, formed in whole or in part to promote conservation or natural beauty, to protect the environment, personal health or other biological values, to preserve historical sites, to promote consumer interests, to represent commercial and industrial groups, or to promote the orderly development of the area in which the facility is to be sited; or any interested person, may be granted party status in this proceeding by making written application to the Commission on or before May 11, 2009.

Pursuant to SDCL 49-41B-15 and 49-41B-16, and its Notice of Application; Order for and Notice of Public Hearings and Notice of Opportunity to Apply for Party Status, the Commission held public hearings on Keystone's application as follows: Monday, April 27, 2009, 12:00 noon CDT at Winner Community Playhouse, 7th and Leahy Boulevard, Winner, SD, at which 26 persons presented comments or questions; Monday, April 27, 2009, 7:00 p.m. MDT at Fine Arts School, 330 Scottie Avenue, Philip, SD, at which 17 persons presented comments or questions; and Tuesday, April 28, 2009, 6:00 p.m. MDT at Harding County Recreation Center, 204 Hodge Street, Buffalo, SD, at which 16 persons presented comments or questions. The purpose of the public input hearings was to hear public comment regarding Keystone's application. At the public input hearings, Keystone presented a brief description of the project, following which interested persons appeared and presented their views, comments and questions regarding the application.

On April 29, 2009, Mary Jasper (Jasper) filed an Application for Party Status. On May 4, 2009, Paul F. Seamans (Seamans) filed an Application for Party Status. On May 5, 2009, Darrell Iversen (D. Iversen) filed an Application for Party Status. On May 8, 2009, the City of Colome (Colome) and Glen Iversen (G. Iversen) filed Applications for Party Status. On May 11, 2009, Jacqueline Limpert (Limpert), John H. Harter (Harter), Zona Vig (Vig), Tripp County Water User District (TCWUD), Dakota Rural Action (DRA) and David Niemi (David Niemi) filed Applications for

¹The Commission's Orders in the case and all other filings and documents in the record are available on the Commission's web page for Docket HP09-001 at: <http://puc.sd.gov/dockets/hydrocarbonpipeline/2009/hp09-001.aspx>

Party Status. On May 11, 2009, the Commission received a Motion for Extension of Time to File Application for Party Status from DRA requesting that the intervention deadline be extended to June 10, 2009. On May 12, 2009, Debra Niemi (Debra Niemi) and Lon Lyman (Lyman) filed Applications for Party Status. On May 15, 2009, the Commission received a Response to Motion to Extend Time from DRA and a Motion to Establish a Procedural Schedule from the Commission's Staff ("Staff").

At its regularly scheduled meeting of May 19, 2009, the Commission voted unanimously to grant party status to Jasper, Seamans, D. Iversen, Colome, G. Iversen, Limpert, Harter, Vig, TCWUD, DRA, David Niemi, Debra Niemi and Lyman. The Commission also voted to deny the Motion for Extension of Time to File Application for Party Status, and in the alternative, the Commission extended the intervention deadline to May 31, 2009. On May 29, 2009, Ruth M. Iversen (R. Iversen) and Martin R. Lueck (Lueck) filed Applications for Party Status. At its regularly scheduled meeting of June 9, 2009, the Commission voted unanimously to grant the Motion to Establish a Procedural Schedule and granted intervention to R. Iversen and Lueck.

On August 26, 2009, the Commission received a revised application from Keystone. On September 3, 2009, the Commission received a Motion for Extension of Time to Submit Testimony from DRA. At its regularly scheduled meeting of September 8, 2009, the Commission voted unanimously to grant the Motion for Extension of Time to Submit Testimony to extend DRA's time for filing and serving testimony until September 22, 2009.

On September 18, 2009, Keystone filed Applicant's Response to Dakota Rural Action's Request for Further Discovery. On September 21, 2009, DRA filed a Motion to Compel Responses and Production of Documents Addressed to TransCanada Keystone Pipeline, LP Propounded by Dakota Rural Action. At an ad hoc meeting on September 23, 2009, the Commission considered DRA's Motion to Compel and on October 2, 2009, issued its Order Granting in Part and Denying in Part Motion to Compel Discovery. By letter filed on September 29, 2009, Chairman Johnson requested reconsideration of the Commission's action with respect to DRA's Request 6 regarding Keystone documents pertaining to development of its Emergency Response Plan for the Project. At its regularly scheduled meeting on October 6, 2009, the Commission voted two to one, with Commissioner Hanson dissenting, to require Keystone to produce to DRA via email the References for the Preparation of Emergency Response Manuals before the close of business on October 6, 2009, that DRA communicate which documents on the list it wished Keystone to produce on or before the close of business on October 8, 2009, and that Keystone produce such documents to DRA on or before October 15, 2009.

On October 2, 2009, Staff filed a letter requesting the Commission to render a decision as to whether the hearing would proceed as scheduled commencing on November 2, 2009. Staff's letter stated that rescheduling the hearing would result in significant scheduling complications for Staff's expert witnesses whose scheduling and travel arrangements had been made months earlier based on the Commission's Order Setting Procedural Schedule issued on June 30, 2009. At its regular meeting on October 6, 2009, the Commission considered Staff's request. At the meeting, all parties agreed that the hearing could proceed on the scheduled dates. DRA requested that its date for submission of pre-filed testimony be extended from October 14, 2009, until October 22, if possible, or at least until October 20, 2009. After discussion, the parties agreed on an extension for DRA's pre-filed testimony until October 20, 2009, with Applicant's rebuttal to be filed by October 27, 2009. The Commission voted unanimously to approve such dates and issued its Order Setting Amended Procedural Schedule on October 8, 2009.

On October 15, 2009, the Commission issued its Order for and Notice of Hearing setting the matter for hearing on November 2-6, 2009, and its Order for and Notice of Public Hearing for an

additional informal public input hearing to be held in Pierre on November 3, 2009, commencing at 7:00 p.m. CST. On October 19, 2009, DRA requested that the time for commencement of the public hearing be changed from 7:00 p.m. CST to 6:00 p.m. CST to better accommodate the schedules of interested persons. On October 21, 2009, the Commission issued an Amended Order for and Notice of Public Hearing amending the start time for the public hearing to 6:00 p.m. CST.

On October 19, 2009, Keystone filed a second revised application ("Application") containing minor additions and amendments reflecting refinements to the route and facility locations and the most recent environmental and other planning evaluations.

In accordance with the scheduling and procedural orders in this case, Applicant, Staff and Intervenor David and Debra Niemi filed pre-filed testimony. The hearing was held as scheduled on November 2-4, 2009, at which Applicant, DRA and Staff appeared and participated. The informal hearing was held as scheduled on the evening of November 3, 2009, at which 23 persons presented comments and/or questions. A combined total of 326 persons attended the public input hearings in Winner, Phillip, Buffalo and Pierre. As of February 26, 2009, the Commission had received 252 written comments regarding this matter from the public.

On December 31, 2009, the Commission issued its Amended Order Establishing Briefing Schedule setting the following briefing schedule: (i) initial briefs and proposed findings of fact and conclusions of law from all parties wishing to submit them due by January 20, 2010; and (ii) reply briefs and objections and revisions to proposed findings of fact and conclusions of law due from all parties wishing to submit them on or before February 2, 2010.

On January 13, 2009, Intervenor David Niemi filed a letter with the Commission requesting and recommending a series of conditions to be included in the order approving the permit, if granted. On January 20, 2010, initial briefs were filed by the Applicant and Staff. On January 20, 2010, Applicant also filed and served proposed findings of fact and conclusions of law. On January 21, 2010, DRA filed an initial brief and Motion to Accept Late-Filed Brief. On January 21 and 26, 2010, respectively, Keystone and Staff filed letters of no objection to acceptance of DRA's late-filed initial brief. On February 2, 2010, reply briefs were filed and served by Applicant, DRA and Staff, and Keystone filed Applicant's Response to David Niemi's Letter filed on January 13, 2010.

At an ad hoc meeting on February, 18, 2010, after separately considering each of a set of draft conditions prepared by Commission Counsel from inputs from the individual Commissioners and a number of Commissioner motions to amend the draft conditions, the Commission voted unanimously to approve conditions to which a permit to construct the Project would be subject, if granted, and to grant a permit to Keystone to construct the Project, subject to the approved conditions.

On April 14, 2010, Keystone filed Applicant's Motion for Limited Reconsideration of Certain Permit Conditions ("Motion"). On April 19, 2010, intervenors David Niemi and Seamans filed responses to the Motion. On April 19, 2010, Peter Larson ("Larson") filed two comments responsive to the Motion. On April 27, 2010, Keystone filed Applicant's Reply Brief In Support of Motion for Limited Reconsideration responding to the responses and comments filed by Niemi, Seamans and Larson. On April 28, 2010, Staff filed a response to the Motion. On April 29, 2010, DRA filed the Answer of Dakota Rural Action in Opposition to Applicant's Motion for Limited Reconsideration of Certain Permit Conditions.

At its regularly scheduled meeting on May 4, 2010, the Commission considered the Motion and the responses and comments filed by the parties and Larson. Applicant, Staff, intervenor John

H. Harter, DRA and Larson appeared and participated in the hearing on the Motion. After an extensive discussion among the Commission and participants, the Commission made rulings on the specific requests in the Motion and voted to grant the Motion in part and deny in part and amend certain of the Conditions as set forth in the Commission's Order Granting in Part Motion to Reconsider and Amending Certain Conditions In Final Decision And Order, which was issued by the Commission on June 29, 2010.

Having considered the evidence of record, applicable law and the arguments of the parties, the Commission makes the following Findings of Fact, Conclusions of Law and Decision:

FINDINGS OF FACT

Parties

1. The permit applicant is TransCanada Keystone Pipeline, LP, a limited partnership, organized under the laws of the State of Delaware, and owned by affiliates of TransCanada Corporation ("TransCanada"), a Canadian public company organized under the laws of Canada. Ex TC-1, 1.5, p. 4.

2. On May 19, 2009, the Commission unanimously voted to grant party status to all persons that had requested party status prior to the commencement of the meeting. On June 9, 2009, the Commission unanimously voted to grant party status to all persons that had requested party status after the commencement of the meeting on May 19, 2009, through the intervention deadline of May 31, 2009. Fifteen persons intervened, including: Mary Jasper, Paul F. Seamans, Darrell Iversen, the City of Colome, Glen Iversen, Jacqueline Limpert, John H. Harter, Zona Vig, Tripp County Water User District ("TCWUD"), Dakota Rural Action, David Niemi, Debra Niemi, Ruth M. Iversen, Martin R. Lueck, and Lon Lyman. Minutes of May 19, 2009, and June 9, 2009, Commission Meetings; Applications for Party Status.

3. The Staff also participated in the case as a full party.

Procedural Findings

4. The application was signed on behalf of the Applicant on February 26, 2009, in Calgary, Alberta, Canada, and was filed with the Commission on March 12, 2009. Ex TC -1, 9.0, p. 116.

5. The Commission issued the following notices and orders in the case as described in greater detail in the Procedural History above, which is hereby incorporated by reference in these Findings of Fact and Conclusions of Law:

- Order of Assessment of Filing Fee
- Notice of Application; Order for and Notice of Public Input Hearings; and Notice of Opportunity to Apply for Party Status
- Order Granting Party Status; Order Denying Motion for Extension of Time to File Application for Party Status; Order Extending Intervention Deadline
- Order Granting Motion to Establish Procedural Schedule and Order Granting Party Status
- Order Setting Procedural Schedule
- Order Granting Motion for Extension of Time to Submit Testimony

- Order Granting in Part and Denying in Part Motion to Compel Discovery
- Order Amending Order Granting in Part and Denying in Part Motion to Compel Discovery
- Order Setting Amended Procedural Schedule
- Order for and Notice of Hearing
- Order for and Notice of Public Hearing
- Amended Order for and Notice of Public Hearing
- Order Establishing Briefing Schedule
- Amended Order Establishing Briefing Schedule
- Order Granting in Part Motion to Reconsider and Amending Certain Conditions In Final Decision And Order

6. Pursuant to SDCL 49-41B-15 and 49-41B-16 and its Notice of Application; Order for and Notice of Public Hearings; and Notice of Opportunity to Apply for Party Status, the Commission held public hearings on Keystone's application at the following times and places (see Public Hearing Transcripts):

- Monday, April 27, 2009, 12:00 noon CDT at Winner Community Playhouse, 7th and Leahy Boulevard, Winner, SD
- Monday, April 27, 2009, 7:00 p.m. MDT at Fine Arts School, 330 Scottie Avenue, Philip, SD
- Tuesday, April 28, 2009, 6:00 p.m. MDT at Harding County Recreation Center, 204 Hodge Street, Buffalo, SD.

7. The purpose of the public hearings was to afford an opportunity for interested persons to present their views and comments to the Commission concerning the Application. At the hearings, Keystone presented a brief description of the project after which interested persons presented their views, comments and questions regarding the application. Public Hearing Transcripts.

8. The following testimony was prefiled in advance of the formal evidentiary hearing held November 2, 3 and 4, 2009, in Room 414, State Capitol, Pierre, South Dakota:

- A. Applicant's March 12, 2009, Direct Testimony.
 - Robert Jones
 - John Phillips
 - Richard Gale
 - Jon Schmidt
 - Meera Kothari
 - John Hayes
 - Donald Scott
 - Heidi Tillquist
 - Tom Oster
- B. Supplemental Direct Testimony of August 31, 2009.
 - John Phillips
- C. Intervenor's Direct Testimony of September 11, 2009.
 - David Niemi
 - Debra Niemi

- D. **Staff's September 25, 2009, Direct Testimony.**
- Kim McIntosh
 - Brian Walsh
 - Derric Iles
 - Tom Kirschenmann
 - Paige Hoskinson Olson
 - Michael Kenyon
 - Ross Hargrove
 - Patrick Robblee
 - James Arndt
 - William Walsh
 - Jenny Hudson
 - David Schramm
 - William Mampre
 - Michael K. Madden
 - Tim Binder
- E. **Applicant's Updated Direct and Rebuttal Testimony.**
- Robert Jones Updated Direct (10/23/09)
 - Jon Schmidt Updated Direct and Rebuttal (10/19/09)
 - Meera Kothari Updated Direct and Rebuttal (10/19/09)
 - Donald M. Scott Updated Direct (10/19/09)
 - John W. Hayes Updated Direct (10/19/09)
 - Heidi Tillquist Updated Direct (10/20/09)
 - Steve Hicks Direct and Rebuttal (10/19/09)
- F. **Staff's Supplemental Testimony of October 29, 2009.**
- William Walsh
 - William Mampre
 - Ross Hargrove

9. As provided for in the Commission's October 21, 2009, Amended Order for and Notice of Public Hearing, the Commission held a public input hearing in Room 414 of the State Capitol beginning at 6:00 p.m. on November 3, 2009, at which 23 members of the public presented comments and/or questions. Transcript of November 3, 2009 Public Input Hearing.

Applicable Statutes and Regulations

10. The following South Dakota statutes are applicable: SDCL 49-41B-1 through 49-41B-2.1, 49-41B-4, 49-41B-11 through 49-41B-19, 49-41B-21, 49-41B-22, 49-41B-24, 49-41B-26 through 49-41B-38 and applicable provisions of SDCL Chs. 1-26 and 15-6.

11. The following South Dakota administrative rules are applicable: ARSD Chapter 20:10:01, ARSD 20:10:22:01 through ARSD 20:10:22:25 and ARSD 20:10:22:36 through ARSD 20:10:22:40.

12. Pursuant to SDCL 49-41B-22, the Applicant for a facility construction permit has the burden of proof to establish that:

- (1) The proposed facility will comply with all applicable laws and rules;

- (2) The facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area;
- (3) The facility will not substantially impair the health, safety or welfare of the inhabitants; and
- (4) The facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

The Project

13. The Project will be owned, managed and operated by the Applicant, TransCanada Keystone Pipeline, LP. Ex TC-1, 1.5 and 1.7, p. 4.

14. The purpose of the Project is to transport incremental crude oil production from the Western Canadian Sedimentary Basin ("WCSB") to meet growing demand by refineries and markets in the United States ("U.S."). This supply will serve to replace U.S. reliance on less stable and less reliable sources of offshore crude oil. Ex TC-1, 1.1, p. 1; Ex TC-1, 3.0 p. 23; Ex TC-1, 3.4 p. 24.

15. The Project will consist of three segments: the Steele City Segment, the Gulf Coast Segment, and the Houston Lateral. From north to south, the Steele City Segment extends from Hardisty, Alberta, Canada, southeast to Steele City, Nebraska. The Gulf Coast Segment extends from Cushing, Oklahoma south to Nederland, in Jefferson County, Texas. The Houston Lateral extends from the Gulf Coast Segment in Liberty County, Texas southwest to Moore Junction, Harris County, Texas. It will interconnect with the northern and southern termini of the previously approved 298-mile-long, 36-inch-diameter Keystone Cushing Extension segment of the Keystone Pipeline Project. Ex TC-1, 1.2, p. 1. Initially, the pipeline would have a nominal capacity to transport 700,000 barrels per day ("bpd"). Keystone could add additional pumping capacity to expand the nominal capacity to 900,000 bpd. Ex TC-1, 2.1.2, p. 8.

16. The Project is an approximately 1,707 mile pipeline with about 1,380, miles in the United States. The South Dakota portion of the pipeline will be approximately 314 miles in length and will extend from the Montana border in Harding County to the Nebraska border in Tripp County. The Project is proposed to cross the South Dakota counties of Harding, Butte, Perkins, Meade, Pennington, Haakon, Jones, Lyman and Tripp. Ex TC-1, 1.2 and 2.1.1, pp. 1 and 8. Detailed route maps are presented in Ex TC-1, Exhibits A and C, as updated in Ex TC-14.

17. Construction of the Project is proposed to commence in May of 2011 and be completed in 2012. Construction in South Dakota will be conducted in five spreads, generally proceeding in a north to south direction. The Applicant expects to place the Project in service in 2012. This in-service date is consistent with the requirements of the Applicant's shippers who have made the contractual commitments that underpin the viability and need for the project. Ex TC-1, 1.4, pp. 1 and 4; TR 26.

18. The pipeline in South Dakota will extend from milepost 282.5 to milepost 597, approximately 314 miles. The pipeline will have a 36-inch nominal diameter and be constructed using API 5L X70 or X80 high-strength steel. An external fusion bonded epoxy ("FBE") coating will be applied to the pipeline and all buried facilities to protect against corrosion. Cathodic protection will be provided by impressed current. The pipeline will have batching capabilities and will be able to transport products ranging from light crude oil to heavy crude oil. Ex TC-1, 2.2, 2.2.1, 6.5.2, pp. 8-9, 97-98; Ex TC-8, ¶ 26.

19. The pipeline will operate at a maximum operating pressure of 1,440 psig. For location specific low elevation segments close to the discharge of pump stations, the maximum operating pressure will be 1,600 psig. Pipe associated with these segments of 1,600 psig MOP are excluded from the Special Permit application and will have a design factor of 0.72 and pipe wall thickness of 0.572 inch (X-70) or 0.500 inch (X-80). All other segments in South Dakota will have a MOP of 1,440 psig. Ex TC-1, 2.2.1, p. 9.

20. The Project will have seven pump stations in South Dakota, located in Harding (2), Meade, Haakon, Jones and Tripp (2) Counties. TC-1, 2.2.2, p. 10. The pump stations will be electrically driven. Power lines required for providing power to pump stations will be permitted and constructed by local power providers, not by Keystone. Initially, three pumps will be installed at each station to meet the nominal design flow rate of 700,000 bpd. If future demand warrants, pumps may be added to the proposed pump stations for a total of up to five pumps per station, increasing nominal throughput to 900,000 bpd. No additional pump stations will be required to be constructed for this additional throughput. No tank facilities will be constructed in South Dakota. Ex TC-1, 2.1.2, p.8. Sixteen mainline valves will be located in South Dakota. Seven of these valves will be remotely controlled, in order to have the capability to isolate sections of line rapidly in the event of an emergency to minimize impacts or for operational or maintenance reasons. Ex TC-1, 2.2.3, pp. 10-11.

21. The pipeline will be constructed within a 110-foot wide corridor, consisting of a temporary 60-foot wide construction right-of-way and a 50-foot permanent right-of-way. Additional workspace will be required for stream, road, and railroad crossings, as well as hilly terrain and other features. The Applicant committed to reducing the construction right-of-way to 85 feet in certain wetlands to minimize impacts. Ex TC-1, 2.2.4, pp. 11-12; Ex TC-7, ¶ 20. FERC guidelines provide that the wetland construction right-of-way should be limited to 75 feet except where conditions do not permit, and Staff witness Hargrove's Construction, Mitigation and Reclamation Plan Review states that industry practice is to reduce the typical construction right-of-way width to 75 feet in non-cultivated wetlands, although exceptions are sometimes made for larger-diameter pipelines or where warranted due to site-specific conditions. Ex S-5, p. 2 and Attachment 2, 6.2; TR 335, 353. The Commission finds that the construction right-of-way should be limited to 75 feet, except where site-specific conditions require use of Keystone's proposed 85-foot right-of-way or where special circumstances are present, and the Commission accordingly adopts Condition 22(a), subject to the special circumstance provisions of Condition 30.

22. The Project will be designed, constructed, tested, and operated in accordance with all applicable requirements, including the U.S. Department of Transportation, Pipeline Hazardous Materials and Safety Administration (PHMSA) regulations set forth at 49 CFR Part 195, as modified by the Special Permit requested for the Project from PHMSA (see Finding 71). These federal regulations are intended to ensure adequate protection for the public and the environment and to prevent crude oil pipeline accidents and failures. Ex TC-1, 2.2, p. 8.

23. The current estimated cost of the Keystone Project in South Dakota is \$921.4 million. Ex TC-1, 1.3, p. 1.

Demand for the Facility

24. The transport of additional crude oil production from the WCSB is necessary to meet growing demand by refineries and markets in the U.S. The need for the project is dictated by a number of factors, including increasing WCSB crude oil supply combined with insufficient export pipeline capacity; increasing crude oil demand in the U.S. and decreasing domestic crude supply;

the opportunity to reduce U.S. dependence on foreign off-shore oil through increased access to stable, secure Canadian crude oil supplies; and binding shipper commitments to utilize the Keystone Pipeline Project. Ex TC-1, 3.0, p. 23.

25. According to the U.S. Energy Information Administration ("EIA"), U.S. demand for petroleum products has increased by over 11 percent or 2,000,000 bpd over the past 10 years and is expected to increase further. The EIA estimates that total U.S. petroleum consumption will increase by approximately 10 million bpd over the next 10 years, representing average demand growth of about 100,000 bpd per year (EIA Annual Energy Outlook 2008). Ex TC-1, 3.2, pp. 23-24.

26. At the same time, domestic U.S. crude oil supplies continue to decline. For example, over the past 10 years, domestic crude production in the United States has declined at an average rate of about 135,000 bpd per year, or 2% per year. Ex TC-1, 3.3, p. 24. Crude and refined petroleum product imports into the U.S. have increased by over 3.3 million bpd over the past 10 years. In 2007, the U.S. imported over 13.4 million bpd of crude oil and petroleum products or over 60 percent of total U.S. petroleum product consumption. Canada is currently the largest supplier of imported crude oil and refined products to the U.S., supplying over 2.4 million bpd in 2007, representing over 11 percent of total U.S. petroleum product consumption (EIA 2007). Ex TC-1, 3.4, p. 24.

27. The Project will provide an opportunity for U.S. refiners in Petroleum Administration for Defense District III, the Gulf Coast region, to further diversify supply away from traditional offshore foreign crude supply and to obtain direct access to secure and growing Canadian crude supplies. Access to additional Canadian crude supply will also provide an opportunity for the U.S. to offset annual declines in domestic crude production and, specifically, to decrease its dependence on other foreign crude oil suppliers, such as Mexico and Venezuela, the top two heavy crude oil exporters into the U.S. Gulf Coast. Ex TC-1, 3.4, p. 24.

28. Reliable and safe transportation of crude oil will help ensure that U.S. energy needs are not subject to unstable political events. Established crude oil reserves in the WCSB are estimated at 179 billion barrels (CAPP 2008). Over 97 percent of WCSB crude oil supply is sourced from Canada's vast oil sands reserves located in northern Alberta. The Alberta Energy and Utilities Board estimates there are 175 billion barrels of established reserves recoverable from Canada's oil sands. Alberta has the second largest crude oil reserves in the world, second only to Saudi Arabia. Ex TC-1, 3.1, p. 23.

29. Shippers have already committed to long-term binding contracts, enabling Keystone to proceed with regulatory applications and construction of the pipeline once all regulatory, environmental, and other approvals are received. These long-term binding shipper commitments demonstrate a material endorsement of support for the Project, its economics, proposed route, and target market, as well as the need for additional pipeline capacity and access to Canadian crude supplies. Ex TC-1, 3.5, p. 24.

Environmental

30. In order to construct the Project, Keystone is required to obtain a Presidential Permit from the U.S. Department of State ("DOS") authorizing the construction of facilities across the international border. Ex TC-1, 1.8, pp. 4-5; 5.1, p. 30.

31. Because Keystone is required to obtain a Presidential Permit from the DOS, the National Environmental Policy Act requires the DOS to prepare an Environmental Impact Statement

("EIS"). Ex TC-1, 1.8, pp. 4-5; Ex TC-4; Ex S-3. In support of its Presidential Permit application, Keystone has submitted studies and other environmental information to the DOS. Ex TC-1, 1.8, pp. 4-5; 5.1, p. 30.

32. Table 6 to the Application summarizes the environmental impacts that Keystone's analysis indicates could be expected to remain after its Construction Mitigation and Reclamation Plan is implemented. Ex TC-1, pp. 31-37.

33. The pipeline will cross the Unglaciaded Missouri Plateau. This physiographic province is characterized by a dissected plateau where river channels have incised into the landscape. Elevations range from just over 3,000 feet above mean sea level in the northwestern part of the state to around 1,800 feet above mean sea level in the White River valley. The major river valleys traversed include the Little Missouri River, Cheyenne River, and White River. Ex TC-1, 5.3.1, p. 30; Ex TC-4, ¶15. Exhibit A to the Application includes soil type maps and aerial photograph maps of the Keystone pipeline route in South Dakota that indicate topography, land uses, project mileposts and Section, Township, Range location descriptors. Ex TC-1, Exhibit A. Updated versions of these maps were received in evidence as Exhibit TC-14.

34. The surficial geologic deposits along the proposed route are primarily composed of Quaternary alluvium, colluvium, alluvial terraces, and eolian deposits (sand dunes). The alluvium primarily occurs in modern stream channels and floodplains, but also is present in older river terraces. The bedrock geology consists of Upper Cretaceous and Tertiary rocks. The Upper Cretaceous units include the Pierre Shale, Fox Hills Formation, and the Hell Creek Formation. The Ogallala Group, present in the far southern portion of the Project in South Dakota, was deposited as a result of uplift and erosion of the Rocky Mountains. Material that was eroded from the mountains was transported to the east by streams and wind. Ex TC-1, 5.3.2, p. 37.

35. Sand, gravel, crushed stone, oil, natural gas, coal and metallic ore resources are mineral resources existing along the proposed route. The route passes through the Buffalo Field in Harding County. Construction will have very minor and short-term impact on current mineral extraction activities due to the temporary and localized nature of pipeline construction activities. Several oil and gas wells were identified within or close to the Project construction ROW. Prior to construction, Keystone will identify the exact locations of active, shut-in, and abandoned wells and any associated underground pipelines in the construction ROW and take appropriate precautions to protect the integrity of such facilities. Ex TC-1, 5.3.3, pp. 38-39.

36. Soil maps for the route are provided in Exhibit A to Ex TC-1. In the northwestern portions of South Dakota, the soils are shallow to very deep, generally well drained, and loamy or clayey. Soils such as the Assiniboine series formed in fluvial deposits that occur on fans, terraces, and till plains. Soils such as the Cabbart, Delridge, and Blackhall series formed in residuum on hills and plains. Fertile soils and smooth topography dominate Meade County. The soils generally are shallow to very deep, somewhat excessively drained to moderately well drained, and loamy or clayey. Cretaceous Pierre Shale underlies almost all of Haakon, Jones, and portions of Tripp counties. This shale weathers to smectitic clays. These clays shrink as they dry and swell as they get wet, causing significant problems for road and structural foundations. From central Tripp County to the Nebraska state line, soils typically are derived from shale and clays on the flatter to moderately sloping, eroded tablelands. In southern Tripp County, the route also crosses deep, sandy deposits on which the Doger, Dunday, and Valentine soils formed. These are dry, rapidly permeable soils. Topsoil layers are thin and droughty, and wind erosion and blowouts are a common hazard. Ex TC-1, 5.3.4, p. 40.

37. Grading and excavating for the proposed pipeline and ancillary facilities will disturb a variety of agricultural, rangeland, wetland and forestland soils. Prime farmland soils may be altered temporarily following construction due to short-term impact such as soil compaction from equipment traffic, excavation and handling. However, potential impacts to soils will be minimized or mitigated by the soil protection measures identified in the Construction Mitigation and Reclamation Plan (CMR Plan) to the extent such measures are fully implemented. The measures include procedures for segregating and replacing top soil, trench backfilling, relieving areas compacted by heavy equipment, removing surface rock fragments and implementing water and wind erosion control practices. Ex TC-1, 5.3.4, p. 41; TC-1 Ex. B.

38. To accommodate potential discoveries of contaminated soils, Keystone made a commitment in the Application to develop, in consultation with relevant agencies, procedures for the handling and disposal of unanticipated contaminated soil discovered during construction. These procedures will be added to the CMR Plan. If hydrocarbon contaminated soils are encountered during trench excavation, the appropriate federal and state agencies will be contacted immediately. A remediation plan of action will be developed in consultation with that agency. Depending on the level of contamination found, affected soil may be replaced in the trench or removed to an approved landfill for disposal. Ex TC-1, 5.3.4, p. 42.

39. The USGS ground motion hazard mapping indicates that potential ground motion hazard in the Project area is low. South Dakota historically has had little earthquake activity. No ground subsidence or karst hazards are present in the vicinity of the route. Ex TC-1, 5.3.6, p. 43.

40. Cretaceous and Tertiary rocks in the Missouri River Plateau have high clay content and upon weathering can be susceptible to instability in the form of slumps and earth flows. Landslide potential is enhanced on steeper slopes. Formations that are especially susceptible are the Cretaceous Hell Creek and Pierre Shale as well as shales in the Tertiary Fort Union Formation mainly on river banks and steep slopes. These units can contain appreciable amounts of bentonite, a rock made up of montmorillonite clay that has deleterious properties when exposed to moisture. The bentonite layers in the Pierre Shale may present hazards associated with swelling clays. These formations are considered to have "high swelling potential." Bentonite has the property whereby when wet, it expands significantly in volume. When bentonite layers are exposed to successive cycles of wetting and drying, they swell and shrink, and the soil fluctuates in volume and strength. Ex TC-1, 5.3.4, pp. 43.

41. Fifteen perennial streams and rivers, 129 intermittent streams, 206 ephemeral streams and seven man-made ponds will be crossed during construction of the Project in South Dakota. Keystone will utilize horizontal directional drilling ("HDD") to cross the Little Missouri, Cheyenne and White River crossings. Keystone intends to use open-cut trenching at the other perennial streams and intermittent water bodies. The open cut wet method can cause the following impacts: loss of in-stream habitat through direct disturbance, loss of bank cover, disruption of fish movement, direct disturbance to spawning, water quality effects and sedimentation effects. Alternative techniques include open cut dry flume, open cut dam-and-pump and horizontal directional drilling. Exhibit C to the Application contains a listing of all water body crossings and preliminary site-specific crossing plans for the HDD sites. Ex TC-14. Permitting of water body crossings, which is currently underway, will ultimately determine the construction method to be utilized. Keystone committed to mitigate water crossing impacts through implementation of procedures outlined in the CMR Plan. Ex TC-1, 5.4.1, pp. 45-46.

42. The pipeline will be buried at an adequate depth under channels, adjacent flood plains and flood protection levees to avoid pipe exposure caused by channel degradation and lateral scour. Determination of the pipeline burial depth will be based on site-specific channel and hydrologic investigations where deemed necessary. Ex TC-1, 5.4.1, p. 46.

43. Although improvements in pipeline safety have been made, the risk of a leak cannot be eliminated. Keystone's environmental consulting firm for the Project, AECOM, estimated the chances of and the environmental consequences of a leak or spill through a risk assessment. Ex TC-1, 6.5.2, pp. 96-102; Table 6; TC-12, 10, 24.

44. Keystone's expert estimated the chance of a leak from the Project to be not more than one spill in 7,400 years for any given mile of pipe. TR 128-132, 136-137; Ex TC-12, ¶10; TC-1, 5.5.1, p. 54; 6.1.2.1, p. 87. The frequency calculation found the chance to be no more than one release in 24 years in South Dakota. TR 137.

45. Keystone's spill frequency and volume estimates are conservative by design, overestimating the risk since the intent is to use the assessment for planning purposes. The risk assessment overestimates the probable size of a spill to ensure conservatism in emergency response and other planning objectives. If a spill were to occur on the Keystone pipeline, PHMSA data indicate that the spill is likely to be three barrels or less. Ex TC-12, ¶10; TR 128-132, 137; TC-1, 6.1.2.1, p. 87.

46. Except for a few miles in the far southern reach of the Project in southern Tripp County which will be located over the permeable Sand Hills and shallow High Plains Aquifer, the Project route in South Dakota does not cross geologic units that are traditionally considered as aquifers. TR 440. Where aquifers are present, at most locations they are more than 50 feet deep, which significantly reduces the chance of contamination reaching the aquifer. Additionally, the majority of the pipeline is underlain by low permeability confining materials (e.g., clays, shales) that inhibit the infiltration of released crude oil into aquifers. TR 158; Ex TC-12, ¶13, EX TC-1, 5.4.2, pp. 47-48. Keystone consulted with the DENR during the routing process to identify and subsequently avoid sensitive aquifers and recharge areas, e.g., Source Water Protection Areas (SWPAs) in order to minimize risk to important public groundwater resources, and no groundwater SWPAs are crossed by the Project in South Dakota. EX TC-1, 5.4.2, pp. 47-48. Except for the Sand Hills area, no evidence was offered of the existence of a shallow aquifer (i.e. less than 50 feet in depth) crossed by the Project.

47. Because of their high solubility and their very low Maximum Contaminant Levels ("MCLs"), the constituents of primary concern in petroleum, including crude oil, are benzene, toluene, ethyl benzene and xylene. These constituents are commonly referred to as BTEX. TR 142, 146. The crude oil to be shipped through the Project will be similar in composition to other crude oils produced throughout the world and currently shipped in the United States. TR 155-56. The BTEX concentration in the crude oil to be shipped through the Project is close to 1 % to 1.5%. TR 151.

48. The Project will pass through areas in Tripp County where shallow and surficial aquifers exist. Since the pipeline will be buried at a shallow depth, it is unlikely that the construction or operation of the pipeline will alter the yield from any aquifers that are used for drinking water purposes. Keystone will investigate shallow groundwater when it is encountered during construction to determine if there are any nearby livestock or domestic wells that might be affected by construction activities. Appropriate measures will be implemented to prevent groundwater contamination and steps will be taken to manage the flow of any ground water encountered. Ex TC-

1, 5.4.2, pp. 47-48. The Tripp County Water User District is up-gradient of the pipeline and therefore would not be affected by a spill. TR 441, 449-50.

49. The risk of a spill affecting public or private water wells is low because the components of crude oil are unlikely to travel more than 300 feet from the spill site. TR 142-43. There are no private or public wells within 200 or 400 feet, respectively, of the right of way. TC-16, Data Response 3-46.

50. The total length of Project pipe with the potential to affect a High Consequence Area ("HCA") is 34.3 miles. A spill that could affect an HCA would occur no more than once in 250 years. TC-12, ¶ 24.

51. In the event that soils and groundwater are contaminated by a petroleum release, Keystone will work with state agency personnel to determine what type of remediation process would be appropriate. TR 148. Effective emergency response can reduce the likelihood and severity of contamination. TC-12, ¶ 10, 14, 24. Soils and groundwater contaminated by a petroleum release can be remediated. TR 499-500. The experience of DENR is that pipeline facilities have responded immediately to the incident in every case. TR 502.

52. The Commission finds that the risk of a significant release occurring is low and finds that the risk that a release would irretrievably impair a water supply is very low and that it is probable that Keystone, in conjunction with state and federal response agencies, will be able to and will be required to mitigate and successfully remediate the effects of a release.

53. The Commission nevertheless finds that the Sand Hills area and High Plains Aquifer in southeastern Tripp County is an area of vulnerability that warrants additional vigilance and attention in Keystone's integrity management and emergency response planning and implementation process. The evidence demonstrates that the shallow Sand Hills groundwater or High Plains Aquifer is used by landowners in the Project area, that many wells are developed into the aquifer, including TCWUD 's, that the very high permeability of both the sandy surficial soils and deeper soils render the formation particularly vulnerable to contamination and that rapid discovery and response can significantly lessen the impact of a release on this vulnerable groundwater resource. The Commission further finds that if additional surficial aquifers are discovered in the course of pipeline construction, such aquifers should have similar treatment. The Commission accordingly finds that Condition 35 shall be adopted.

54. Of the approximately 314-mile route in South Dakota, all but 21.5 miles is privately owned. 21.5 miles is state-owned and managed. The list is found in Table 14. No tribal or federal lands are crossed by the proposed route. Ex TC-1, 5.7.1, p. 75.

55. Table 15 of the Application identifies the land uses affected by the pipeline corridor. Among other things, it shows that the project will not cross or be co-located with any major industrial sites, the pipeline will not cross active farmsteads, but may cross near them and the pipeline will not cross suburban and urban residential areas. The project will not cross municipal water supplies or water sources for organized rural water districts. Ex TC-1, 5.7.1, pp. 76-78.

56. The pipeline will be compatible with the predominant land use, which is rural agriculture, because the pipeline will be buried to a depth of four feet in fields and will interfere only minimally with normal agricultural operations. In most locations, the pipeline will be placed below agricultural drain tiles, and drain tiles that are damaged will be repaired. The only above-ground

facilities will be pump stations and block valves located at intervals along the pipeline. Ex TC-1, 5.7.3, pp.78-79.

57. The Project's high strength X70 steel will have a puncture resistance of 51 tons of digging force. Ex TC-8, ¶ 28. Keystone will have a public awareness program in place and an informational number to call where landowners and others can obtain information concerning activities of concern. TC-1, 6.3.4, pp. 93-94. The Commission finds that the risk of damage by ordinary farming operations is very low and that problems can be avoided through exercise of ordinary common sense.

58. If previously undocumented sites are discovered within the construction corridor during construction activities, all work that might adversely affect the discovery will cease until Keystone, in consultation with the appropriate agencies such as the SHPO, can evaluate the site's eligibility and the probable effects. If a previously unidentified site is recommended as eligible to the National Registry of Historic Places, impacts will be mitigated pursuant to the Unanticipated Discovery Plan submitted to the SHPO. Treatment of any discovered human remains, funerary objects, or items of cultural patrimony found on federal land will be handled in accordance with the Native American Grave Protection and Repatriation Act. Construction will not resume in the area of the discovery until the authorized agency has issued a notice to proceed. If human remains and associated funerary objects are discovered on state or private land during construction activities, construction will cease within the vicinity of the discovery and the county coroner or sheriff will be notified of the find. Treatment of any discovered human remains and associated funerary objects found on state or private land will be handled in accordance with the provisions of applicable state laws. TR 40; Ex TC-1, 6.4, pp. 96; Ex TC-16, 3-54. In accordance with these commitments, the Commission finds that Condition 43 should be adopted.

59. Certain formations to be crossed by the Project, such as the Fox Hills, Ludlow and particularly the Hell Creek Formation are known to contain paleontological resources of high scientific and monetary value. TR 438-439, 442-444. In northwest South Dakota, the Hell Creek Formation has yielded valuable dinosaur bones including from a triceratops, the South Dakota State fossil. Ex TC-1, 5.3.2, p. 38. Protection of paleontological resources was among the most frequently expressed concerns at the public input hearings held by the Commission. There is no way for anyone to know with any degree of certainty whether fossils of significance will be encountered during construction activities. TR 439. Because of the potential significance to landowners of the encounter by construction activities with paleontological resources and the inability to thoroughly lessen the probability of such encounter through pre-construction survey and avoidance, the Commission adopts Condition 44 to require certain special procedures in high probability areas, including the Hell Creek formation, such as the presence of a monitor with training in identification of a paleontological strike of significance.

Design and Construction

60. Keystone has applied for a special permit ("Special Permit") from PHMSA authorizing Keystone to design, construct, and operate the Project at up to 80% of the steel pipe specified minimum yield strength at most locations. TC-1, 2.2, p. 8; TR 62. In Condition 2, the Commission requires Keystone to comply with all of the conditions of the Special Permit, if issued.

61. TransCanada operates approximately 11,000 miles of pipelines in Canada with a 0.8 design factor and requested the Special Permit to ensure consistency across its system and to reduce costs. PHMSA has previously granted similar waivers adopting this modified design factor for natural gas pipelines and for the Keystone Pipeline. Ex TC-8, ¶¶ 13, 17.

62. The Special Permit is expected to exclude pipeline segments operating in (i) PHMSA-defined HCAs described as high population areas and commercially navigable waterways in 49 CFR Section 195.450; (ii) pipeline segments operating at highway, railroad, and road crossings; (iii) piping located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities; and (iv) areas where the MOP is greater than 1,440 psig. Ex TC-8, ¶ 16.

63. Application of the 0.8 design factor and API 5L PSL2 X70 high-strength steel pipe results in use of pipe with a 0.463 inch wall thickness, as compared with the 0.512 inch wall thickness under the otherwise applicable 0.72 design factor, a reduction in thickness of .050 inches. TR 61. PHMSA previously found that the issuance of a waiver is not inconsistent with pipeline safety and that the waiver will provide a level of safety equal to or greater than that which would be provided if the pipeline were operated under the otherwise applicable regulations. Ex TC-8, ¶ 15.

64. In preparation for the Project, Keystone conducted a pipeline threat analysis, using the pipeline industry published list of threats under ASME B31.8S and PHMSA to determine threats to the pipeline. Identified threats were manufacturing defects, construction damage, corrosion, mechanical damage and hydraulic event. Safeguards were then developed to address these threats. Ex TC-8, ¶ 22.

65. Steel suppliers, mills and coating plants were pre-qualified using a formal qualification process consistent with ISO standards. The pipe is engineered with stringent chemistry to ensure weldability during construction. Each batch of pipe is mechanically tested to prove strength, fracture control and fracture propagation properties. The pipe is hydrostatically tested. The pipe seams are visually and manually inspected and also inspected using ultrasonic instruments. Each piece of pipe and joint is traceable to the steel supplier and pipe mill shift during production. The coating is inspected at the plant with stringent tolerances on roundness and nominal wall thickness. A formal quality surveillance program is in place at the steel mill and at the coating plant. Ex TC-8, ¶ 24; TR 59-60.

66. All pipe welds will be examined around 100 percent of their circumferences using ultrasonic or radiographic inspection. The coating is inspected and repaired if required prior to lowering into the trench. After construction the pipeline is hydrostatically tested in the field to 125 percent of its maximum operating pressure, followed by caliper tool testing to check for dents and ovality. Ex TC-8, ¶ 25.

67. A fusion-bonded epoxy ("FBE") coating will be applied to the external surface of the pipe to prevent corrosion. Ex TC- 8, ¶ 26.

68. TransCanada has thousands of miles of this particular grade of pipeline steel installed and in operation. TransCanada pioneered the use of FBE, which has been in use on its system for over 29 years. There have been no leaks on this type of pipe installed by TransCanada with the FBE coating and cathodic protection system during that time. When TransCanada has excavated pipe to validate FBE coating performance, there has been no evidence of external corrosion. Ex TC-8, ¶ 27.

69. A cathodic protection system will be installed comprised of engineered metal anodes, which are connected to the pipeline. A low voltage direct current is applied to the pipeline, resulting in corrosion of the anodes rather than the pipeline. Ex TC-8, ¶ 27. FBE coating and cathodic protection mitigate external corrosion. Ex TC-8, ¶ 26.

70. A tariff specification of 0.5 percent solids and water by volume will be utilized to minimize the potential for internal corrosion. This specification is half the industry standard of one percent. In Condition 32, the Commission requires Keystone to implement and enforce its crude oil specifications in order to minimize the potential for internal corrosion. Further, the pipeline is designed to operate in turbulent flow to minimize water drop out, another potential cause of internal corrosion. During operations, the pipeline will be cleaned using in-line inspection tools, which measure internal and external corrosion. Keystone will repair areas of pipeline corrosion as required by federal regulation. Ex TC-8, ¶ 26. Staff expert Schramm concluded that the cathodic protection and corrosion control measures that Keystone committed to utilize would meet or exceed applicable federal standards. TR 407-427; Ex S-12.

71. To minimize the risk of mechanical damage to the pipeline, it will be buried with a minimum of four feet of cover, one foot deeper than the industry standard, reducing the likelihood of mechanical damage. The steel specified for the pipeline is high-strength steel with engineered puncture resistance of approximately 51 tons of force. Ex TC-8, ¶ 28.

72. Hydraulic damage is caused by over-pressurization of the pipeline. The risk of hydraulic damage will be minimized through the SCADA system's continuous, real-time pressure monitoring systems and through operator training. Ex TC-8, ¶ 29.

73. The Applicant has prepared a detailed CMR Plan that describes procedures for crossing cultivated lands, grasslands, including native grasslands, wetlands, streams and the procedures for restoring or reclaiming and monitoring those features crossed by the Project. The CMR Plan is a summary of the commitments that Keystone has made for environmental mitigation, restoration and post-construction monitoring and compliance related to the construction phase of the Project. Among these, Keystone will utilize construction techniques that will retain the original characteristics of the lands crossed as detailed in the CMR Plan. Keystone's thorough implementation of these procedures will minimize the impacts associated with the Project. A copy of the CMR Plan was filed as Exhibit B to Keystone's permit application and introduced into evidence as TC-1, Exhibit B.

74. The CMR Plan establishes procedures to address a multitude of construction-related issues, including but not limited to the following:

- Training
- Advance Notice of Access
- Depth of Cover
- Noise Control
- Weed Control
- Dust Control
- Fire Prevention and Control
- Spill Prevention and Containment
- Irrigation Systems
- Clearing
- Grading
- Topsoil Removal and Storage
- Temporary Erosion and Sediment Control
- Clean-Up
- Reclamation and Revegetation
- Compaction Relief

- Rock Removal
- Soil Additives
- Seeding
- Construction in Residential and Commercial/Industrial Areas
- Drain Tile Damage Mitigation and Repair

Ex TC-1, Exhibit B.

75. The fire prevention and containment measures outlined in the CMR Plan will provide significant protection against uncontrolled fire in the arid region to be crossed by the Project. The Commission finds, however, that these provisions are largely centered on active construction areas and that certain additional fire prevention and containment precautions are appropriate as well for vehicles performing functions not in proximity to locations where fire suppression equipment will be based, such as route survey vehicles and vehicles involved in surveillance and inspection activities whether before, during and after construction. The Commission accordingly adopts Conditions 16(p) and the last sentence of Condition 30 to address these situations.

76. Keystone's CMR Plan includes many mitigation steps designed to return the land to its original production. These include topsoil removal and replacement, compaction of the trench line, decompaction of the working area, and tilling the topsoil after replacement. Ex TC-1, Exhibit B; Ex TC-6, ¶ 27; Ex TC-1, 6.1.2.2, pp. 87-88.

77. In areas where geologic conditions such as ground swelling, or slope instability, could pose a potential threat, Keystone will conduct appropriate pre-construction site assessments and subsequently will design facilities to account for various ground motion hazards as required by federal regulations. The main hazard of concern during construction of the pipeline will be from unintentional undercutting of slopes or construction on steep slopes resulting in instability that could lead to landslides. Other hazards may result from construction on Cretaceous shales that contain bentonite beds. The high swelling hazard may cause slope instability during periods of precipitation. Ex TC-1, 5.3.6, p. 44.

78. When selecting the proposed pipeline route, Keystone has attempted to minimize the amount of steep slopes crossed by the pipeline. Special pipeline construction practices described in the CMR Plan will minimize slope stability concerns during construction. Landslide hazards can be mitigated by:

- Returning disturbed areas to pre-existing conditions or, where necessary, reducing steep grades during construction;
- Preserving or improving surface drainage;
- Preserving or improving subsurface drainage during construction;
- Removing overburden where necessary to reduce weight of overlying soil mass; and
- Adding fill at toe of slope to resist movement.

Ex TC-1, 5.3.6, pp. 43-44.

79. Slope instability poses a threat of ground movement responsible for approximately 1 percent of liquid pipeline incidents (PHMSA 2008). Keystone will monitor slope stability during routine surveillance. Areas where slope stability poses a potential threat to the pipeline will be incorporated into Keystone's Integrity Management Plan. If ground movement is suspected of having caused abnormal movement of the pipeline, federal regulations (49 CFR Part 195) require

Keystone to conduct an internal inspection. Consequently, damage to the pipeline would be detected quickly and spills would be averted or minimized. Ex TC-1, 5.3.6, p. 44

80. Keystone is in the process of preparing, in consultation with the area National Resource Conservation Service, construction/reclamation unit ("Con/Rec Unit") mapping to address differing construction and reclamation techniques for different soils conditions, slopes, vegetation, and land use along the pipeline route. This analysis and mapping results in the identification of segments called Con/Rec Units. Ex. TC-5; TC-16, DR 3-25.

81. The Applicant will use special construction methods and measures to minimize and mitigate impacts where warranted by site specific conditions. These special techniques will be used when constructing across paved roads, primary gravel roads, highways, railroads, water bodies, wetlands, sand hills areas, and steep terrain. These special techniques are described in the Application. Ex TC-1, 2.2.6, p. 17; TC-6, ¶ 11.

82. Of the perennial streams that are crossed by the proposed route, the Cheyenne River is the largest water body and is classified as a warm water permanent fishery. Of the other streams that have been classified, habitat is considered more limited as indicated by a warm water semi-permanent or warm water marginal classification. Ex TC-1, 5.6.2, pp. 71-72, Table 13.

83. Keystone will utilize HDD for the Little Missouri, Cheyenne and White River crossings, which will aid in minimizing impacts to important game and commercial fish species and special status species. Open-cut trenching, which can affect fisheries, will be used at other perennial streams. Keystone will use best practices to reduce or eliminate the impact of crossings at the perennial streams other than the Cheyenne and White Rivers. Ex TC-1, 5.4.1, p. 46; 5.6.2, p. 72; TC-16, DR 3-39.

84. Water used for hydrostatic testing during construction and subsequently released will not result in contamination of aquatic ecosystems since the pipe is cleaned prior to testing and the discharge water is monitored and tested. Ex TC-1, 5.4.3.1, pp. 48-50. In Conditions 1 and 2, the Commission has required that Keystone comply with DENR's regulations governing temporary use and discharge of water and obtain and comply with the DENR General Permits for these activities.

85. During construction, Keystone will have a number of inspectors on a construction spread, including environmental inspectors, who will monitor erosion control, small spills, full tanks, and any environmental issues that arise. TR. 37-38. In Condition 14, the Commission requires that Keystone incorporate such inspectors into the CMR Plan.

86. The Pipeline corridor will pass through areas where shallow and surficial aquifers exist. Appropriate measures will be implemented to prevent groundwater contamination and steps will be taken to manage the flow of any ground water encountered. Ex TC-1, 5.4.2, p. 47-48.

87. In addition to those recommendations of Staff and its expert witnesses referenced specifically in these Findings, Staff expert witnesses made a number of recommendations which the Commission has determined will provide additional protections for affected landowners, the environment and the public, and has included Conditions in this Order requiring certain of these measures. These recommendations encompassed matters such as sediment control at water body crossings, soil profile analysis, topsoil, subsoil and rock segregation and replacement, special procedures in areas of bentenitic, sodic, or saline soils, noise, etc. Staff's final recommendations are set forth in its Brief. See also Staff Exhibits and testimony in Transcript Vols. II and III.

88. Keystone will be required to acquire permits authorizing the crossing of county roads and township roads. These permits will typically require Keystone to restore roads to their pre-construction condition. If its construction equipment causes damage to county or township roads, Keystone will be responsible for the repair of those roads to pre-construction condition. Pursuant to SDCL 49-41B-38, Keystone will be required to post a bond to ensure that any damage beyond normal wear to public roads, highways, bridges or other related facilities will be adequately compensated. Staff witness Binder recommended that the bond amount under SDCL 49-41B-38 for damage to highways, roads, bridges and other related facilities be set at \$15,600,000 for 2011 and \$15,600,000 for 2012. TR 224. Keystone did not object to this requirement.

89. The Commission finds that the procedures in the CMR Plan and the other construction plans and procedures that Keystone has committed to implement, together with the Conditions regarding construction practices adopted by the Commission herein, will minimize impacts from construction of the Project to the environment and social and economic condition of inhabitants and expected inhabitants in the Project area.

Operation and Maintenance

90. The Keystone pipeline will be designed constructed, tested and operated in accordance with all applicable requirements, including the PHMSA regulations set forth at 49 CFR Parts 194 and 195, as modified by the Special Permit. These federal regulations are intended to ensure adequate protection for the public and the environment and to prevent crude oil pipeline accidents and failures. Ex TC-8, ¶ 2.

91. The safety features of Keystone's operations are governed by 49 CFR Part 195 and include aerial inspection 26 times per year, with any interval not to exceed three weeks, right-of-way maintenance for accessibility, and continual monitoring of the pipeline to identify potential integrity concerns. A Supervisory Control and Data Acquisition ("SCADA") system will be used to monitor the pipeline at all times. Ex TC-8, ¶ 9.

92. The Project will have a SCADA system to remotely monitor and control the pipeline. The SCADA system will include: (i) a redundant, fully functional back-up Operational Control Center available for service at all times; (ii) automatic features within the system to ensure operation within prescribed limits; and (iii) additional automatic features at the pump stations to provide pipeline pressure protection in the event that communications with the SCADA host are interrupted. Ex TC-10, ¶ 8.

93. The pipeline will have a control center manned 24 hours per day. A backup control center will also be constructed and maintained. A backup communications system is included within the system design and installation. Keystone's SCADA system should have a very high degree of reliability. TR 82-83.

94. Keystone will use a series of complimentary and overlapping SCADA-based leak detection systems and methods at the Operational Control Center, including: (i) remote monitoring; (ii) software-based volume balance systems that monitor injection and delivery volumes; (iii) Computational Pipeline Monitoring or model-based leak detection systems that break the pipeline into smaller segments and monitor each segment on a mass balance basis; and (iv) computer-based, non-real-time, accumulated gain/(loss) volume trending to assist in identifying low rate or seepage releases below the 1.5 percent by volume detection threshold. The SCADA and other monitoring and control systems to be implemented by Keystone for the Project are state of the art

and consistent with the best commercially available technology. Ex TC-10, ¶ 8. Staff witness, William Mampre, testified that Keystone's SCADA system was one he probably would have selected himself. TR 431.

95. Additionally, Keystone will implement and utilize direct observation methodologies, which include aerial patrols, ground patrols and public and landowner awareness programs designed to encourage and facilitate the reporting of suspected leaks and events that may suggest a threat to the integrity of the pipeline. Ex TC10, ¶ 8. Remote sensing technologies that could be employed in pipeline surveillance such as aerial surveillance are in their infancy and practical systems are not currently available. Keystone would consider using such technology if it becomes commercially available. TR 89-90.

96. Keystone will implement abnormal operating procedures when necessary and as required by 49 CFR 195.402(d). Abnormal operating procedures will be part of the written manual for normal operations, maintenance activities, and handling abnormal operating and emergencies. Ex TC-1, 2.3.2, p. 20.

97. As required by US DOT regulations, Keystone will prepare an emergency response plan ("ERP") for the system. Ex TC-11, ¶ 13. The ERP will be submitted to PHMSA for review prior to commencement of pipeline operations. Ex TC-11, ¶ 13. The Commission finds that the ERP and manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies as required under 49 CFR195.402 should also be submitted to the Commission at the time it is submitted to PHMSA to apprise the Commission of its details. Keystone has agreed to do this. The Commission has so specified in Condition 36.

98. Keystone will utilize the ERP approved by PHMSA for the Keystone Pipeline as the basis for its ERP for the Project. Under the ERP, Keystone will strategically locate emergency response equipment along the pipeline route. The equipment will include trailers, oil spill containment and recovery equipment, boats, and a communication office. Keystone will also have a number of local contractors available to provide emergency response assistance. Ex TC-11, ¶ 15. Keystone's goal is to respond to any spill within six hours. TR 102-103. Additional details concerning the ERP and the ERP process are set forth in the Application at Section 6.5.2 and in the pre-filed and hearing testimony of John Hayes. Ex TC-11; EX TC-1, 6.5.2, pp. 96-101. Keystone has consulted with DENR in developing its ERP. TR 111-12.

99. If the Keystone pipeline should experience a release, Keystone would implement its ERP. TC-11, ¶ 10; S-18, p. 4. DENR would be involved in the assessment and abatement of the release, and require the leak to be cleaned up and remediated. S-18, p. 5. DENR has been successful in enforcing remediation laws to ensure the effects of any pipeline releases are mitigated. TR 488-89, 497, 502-03.

100. Local emergency responders may be required to initially secure the scene and ensure the safety of the public, and Keystone will provide training in that regard. Ex TC-11, ¶ 17; TR 105-107.

101. If ground movement is suspected of having caused abnormal movement of the pipeline, federal regulations (49 CFR Part 195) require Keystone to conduct an internal inspection. Consequently, damage to the pipeline would be detected quickly and spills would be averted or minimized. Ex TC-1, 5.3.6, p. 44.

102. In addition to the ERP, hazardous materials pipeline segments through High Consequence Areas ("HCAs") are subject to the Integrity Management Rule. 49 CFR 195.452. Pipeline operators are required to develop a written Integrity Management Plan ("IMP") that must include methods to measure the program's effectiveness in assessing and evaluating integrity and protecting HCAs. Keystone will develop and implement an IMP for the entire pipeline including the HCAs. The overall objective of the IMP is to establish and maintain acceptable levels of integrity and having regard to the environment, public and employee safety, regulatory requirements, delivery reliability, and life cycle cost. The IMP uses advanced in-line inspection and mitigation technologies applied with a comprehensive risk-based methodology. 49 CFR Part 195 also requires pipeline operators to develop and implement public awareness programs consistent with the API's Recommended Practice 1162, Public Awareness Programs for Pipeline Operators. Staff witness Jenny Hudson testified that Keystone's planning and preparation of the IMP were fully compliant with the PHMSA regulations and had no recommendations for conditions. Ex S-9, p.5.

103. The Commission finds that the threat of serious injury to the environment or inhabitants of the State of South Dakota from a crude oil release is substantially mitigated by the integrity management, leak detection and emergency response processes and procedures that Keystone is continuing to plan and will implement.

Rural Water Crossings

104. The route crosses through two rural water system districts, the West River/Lyman-Jones Rural Water District and the Tripp County Water User District. Keystone met with these rural water districts to discuss the Project and will continue to coordinate with these districts. During construction and maintenance, Keystone will coordinate with the One Call system to avoid impacts to underground utilities, including water lines. Ex TC-4.

Alternative Routes

105. The proposed Project route was developed through an, iterative process. TC-1, 4.1, p. 25. During the course of the route evaluation process, Keystone held public meetings, open houses, and one-on-one meetings with stakeholders to discuss and review the proposed routing through South Dakota. TC-1, 4.1.5, p. 27. The route was refined in Mellette County to avoid environmentally sensitive areas and reduce wetland crossings, and near Colome to avoid groundwater protection areas. Ex TC-3; TC-1, 4.2.1-4.2.2, p. 28.

106. SDCL 49-41B-36 explicitly states that Chapter 49-41B "shall not be construed as a delegation to the Public Utilities Commission of the authority to route a facility." The Commission accordingly finds and concludes that it lacks authority to compel the Applicant to select an alternative route or to base its decision on whether to grant or deny a permit for a proposed facility on whether the selected route is the route the Commission itself might select.

Socio-Economic Factors

107. Socio-economic evidence offered by both Keystone and Staff demonstrates that the welfare of the citizens of South Dakota will not be impaired by the Project. Staff expert Dr. Michael Madden conducted a socio-economic analysis of the Keystone Pipeline, and concluded that the positive economic benefits of the project were unambiguous, while most if not all of the social impacts were positive or neutral. S-2, Madden Assessment at 21. The Project, subject to compliance with the Special Permit and the Conditions herein, would not, from a socioeconomic standpoint: (i) pose a threat of serious injury to the socioeconomic conditions in the project area; (ii)

substantially impair the health, safety, or welfare of the inhabitants in the project area; or (iii) unduly interfere with the orderly development of the region.

108. The Project will pay property taxes to local governments on an annual basis estimated to be in the millions of dollars. Ex TC-2, ¶ 24, TC-13, S-13; TR 584. An increase in assessed, taxable valuation for school districts is a positive development. TR 175.

109. The Project will bring jobs, both temporary and permanent, to the state of South Dakota and specifically to the areas of construction and operation. Ex TC-1 at 6.1.1, pp. 85-86.

110. The Project will have minimal effect in the areas of agriculture, commercial and industrial sectors, land values, housing, sewer and water, solid waste management, transportation, cultural and historical resources, health services, schools, recreation, public safety, noise, and visual impacts. Ex TC-1. It follows that the project will not substantially impair the health, safety, or welfare of the inhabitants.

General

111. Applicant has provided all information required by ARSD Chapter 20:10:22 and SDCL Chapter 49-41B. S-1.

112. The Commission finds that the Conditions attached hereto as Exhibit A and incorporated herein by reference are supported by the record, are reasonable and will help ensure that the Project will meet the standards established for approval of a construction permit for the Project set forth in SDCL 49-41B-22 and should be adopted.

113. The Commission finds that subject to the conditions of the Special Permit and the Conditions set forth as Exhibit A hereto, the Project will (i) comply with all applicable laws and rules; (ii) not pose an unacceptable threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area; (iii) not substantially impair the health, safety or welfare of the inhabitants; and (iv) not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

114. The Commission finds that a permit to construct the Project should be granted subject to the Conditions set forth in Exhibit A.

115. To the extent that any Conclusion of Law set forth below is more appropriately a finding of fact, that Conclusion of Law is incorporated by reference as a Finding of Fact.

Based on the foregoing Findings of Fact, the Commission hereby makes the following:

CONCLUSIONS OF LAW

1. The Commission has jurisdiction over the subject matter and parties to this proceeding pursuant to SDCL Chapter 49-41B and ARSD Chapter 20:10:22. Subject to the findings made on the four elements of proof under SDCL 49-41B-22, the Commission has authority to grant,

deny or grant upon reasonable terms, conditions or modifications, a permit for the construction, operation and maintenance of the TransCanada Keystone Pipeline.

2. The TransCanada Keystone Pipeline Project is a transmission facility as defined in SDCL 49-41B-2.1(3).

3. Applicant's permit application, as amended and supplemented through the proceedings in this matter, complies with the applicable requirements of SDCL Chapter 49-41B and ARSD Chapter 20:10:22.

4. The Project, if constructed and operated in accordance with the terms and conditions of this decision, will comply with all applicable laws and rules, including all requirements of SDCL Chapter 49-41B and ARSD 20:10:22.

5. The Project, if constructed and operated in accordance with the terms and conditions of this decision, will not pose an unacceptable threat of serious injury to the environment nor to the social and economic conditions of inhabitants or expected inhabitants in the siting area.

6. The Project, if constructed and operated in accordance with the terms and conditions of this decision, will not substantially impair the health, safety or welfare of the inhabitants in the siting area.

7. The Project, if constructed and operated in accordance with the terms and conditions of this decision, will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

8. The standard of proof is by the preponderance of evidence. The Applicant has met its burden of proof pursuant to SDCL 49-41B-22 and is entitled to a permit as provided in SDCL 49-41B-25.

9. The Commission has authority to revoke or suspend any permit granted under the South Dakota Energy Facility Permit Act for failure to comply with the terms and conditions of the permit pursuant to SDCL 49-41B-33 and must approve any transfer of the permit granted by this Order pursuant to SDCL 49-41B-29.

10. To the extent that any of the Findings of Fact in this decision are determined to be conclusions of law or mixed findings of fact and conclusions of law, the same are incorporated herein by this reference as a Conclusion of Law as if set forth in full herein.

11. Because a federal EIS will be required and completed for the Project and because the federal EIS complies with the requirements of SDCL Chapter 34A-9, the Commission appropriately exercised its discretion under SDCL 49-41B-21 in determining not to prepare or require the preparation of a second EIS.

12. PHMSA is delegated exclusive authority over the establishment and enforcement of safety-orientated design and operational standards for hazardous materials pipelines. 49 U.S.C. 60101, et seq.

13. SDCL 49-41B-36 explicitly states that SDCL Chapter 49-41B "shall not be construed as a delegation to the Public Utilities Commission of the authority to route a facility." The

Commission accordingly concludes that it lacks authority (i) to compel the Applicant to select an alternative route or (ii) to base its decision on whether to grant or deny a permit for a proposed facility on whether the selected route is the route the Commission might itself select.

14. The Commission concludes that it needs no other information to assess the impact of the proposed facility or to determine if Applicant or any Intervenor has met its burden of proof.

15. The Commission concludes that the Application and all required filings have been filed with the Commission in conformity with South Dakota law and that all procedural requirements under South Dakota law, including public hearing requirements, have been met or exceeded.

16. The Commission concludes that it possesses the authority under SDCL 49-41B-25 to impose conditions on the construction, operation and maintenance of the Project, that the Conditions set forth in Exhibit A are supported by the record, are reasonable and will help ensure that the Project will meet the standards established for approval of a construction permit for the Project set forth in SDCL 49-41B-22 and that the Conditions are hereby adopted.

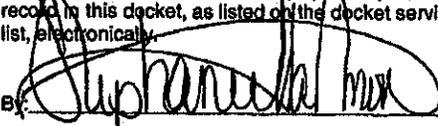
It is therefore

ORDERED, that a permit to construct the Keystone Pipeline Project is granted to TransCanada Keystone Pipeline, LP, subject to the Conditions set forth in Exhibit A.

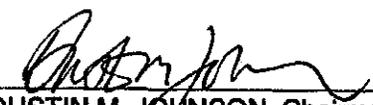
NOTICE OF ENTRY AND OF RIGHT TO APPEAL

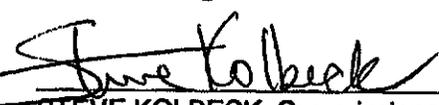
PLEASE TAKE NOTICE that this Amended Final Decision and Order was duly issued and entered on the ____ day of June, 2010. Pursuant to SDCL 1-26-32, this Final Decision and Order will take effect 10 days after the date of receipt or failure to accept delivery of the decision by the parties. Pursuant to ARSD 20:10:01:30.01, an application for a rehearing or reconsideration may be made by filing a written petition with the Commission within 30 days from the date of issuance of this Final Decision and Order; Notice of Entry. Pursuant to SDCL 1-26-31, the parties have the right to appeal this Final Decision and Order to the appropriate Circuit Court by serving notice of appeal of this decision to the circuit court within thirty (30) days after the date of service of this Notice of Decision.

Dated at Pierre, South Dakota, this 29th of June, 2010.

CERTIFICATE OF SERVICE
The undersigned hereby certifies that this document has been served today upon all parties of record in this docket, as listed on the docket service list, electronically.
By: 
Date: <u>06/29/10</u>
(OFFICIAL SEAL)

BY ORDER OF THE COMMISSION:


DUSTIN M. JOHNSON, Chairman


STEVE KOLBECK, Commissioner


GARY HANSON, Commissioner

Exhibit A

AMENDED PERMIT CONDITIONS

I. Compliance with Laws, Regulations, Permits, Standards and Commitments

1. Keystone shall comply with all applicable laws and regulations in its construction and operation of the Project. These laws and regulations include, but are not necessarily limited to: the federal Hazardous Liquid Pipeline Safety Act of 1979 and Pipeline Safety Improvement Act of 2002, as amended by the Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006, and the various other pipeline safety statutes currently codified at 49 U.S.C. § 60101 et seq. (collectively, the "PSA"); the regulations of the United States Department of Transportation implementing the PSA, particularly 49 C.F.R Parts 194 and 195; temporary permits for use of public water for construction, testing or drilling purposes, SDCL 46-5-40.1 and ARSD 74:02:01:32 through 74:02:01:34.02 and temporary discharges to waters of the state, SDCL 34A-2-36 and ARSD Chapters 74:52:01 through 74:52:11, specifically, ARSD § 74:52:02:46 and the General Permit issued thereunder covering temporary discharges of water from construction dewatering and hydrostatic testing.

2. Keystone shall obtain and shall thereafter comply with all applicable federal, state and local permits, including but not limited to: Presidential Permit from the United States Department of State, Executive Order 11423 of August 16, 1968 (33 Fed. Reg. 11741) and Executive Order 13337 of April 30, 2004 (69 Fed. Reg. 25229), for the construction, connection, operation, or maintenance, at the border of the United States, of facilities for the exportation or importation of petroleum, petroleum products, coal, or other fuels to or from a foreign country; Clean Water Act § 404 and Rivers and Harbors Act Section 10 Permits; Special Permit if issued by the Pipeline and Hazardous Materials Safety Administration; Temporary Water Use Permit, General Permit for Temporary Discharges and federal, state and local highway and road encroachment permits. Any of such permits not previously filed with the Commission shall be filed with the Commission upon their issuance. To the extent that any condition, requirement or standard of the Presidential Permit, including the Final EIS Recommendations, or any other law, regulation or permit applicable to the portion of the pipeline in this state differs from the requirements of these Conditions, the more stringent shall apply.

3. Keystone shall comply with and implement the Recommendations set forth in the Final Environmental Impact Statement when issued by the United States Department of State pursuant to its Amended Department of State Notice of Intent To Prepare an Environmental Impact Statement and To Conduct Scoping Meetings and Notice of Floodplain and Wetland Involvement and To Initiate Consultation Under Section 106 of the National Historic Preservation Act for the Proposed Transcanada Keystone XL Pipeline; Notice of Intent--Rescheduled Public Scoping Meetings in South Dakota and extension of comment period (FR vol. 74, no. 54, Mar. 23, 2009). The Amended Notice and other Department of State and Project Documents are available on-line at: <http://www.keystonepipeline-xl.state.gov/clientsite/keystonexl.nsf?Open>.

4. The permit granted by this Order shall not be transferable without the approval of the Commission pursuant to SDCL 49-41B-29.

5. Keystone shall undertake and complete all of the actions that it and its affiliated entities committed to undertake and complete in its Application as amended, in its testimony and

exhibits received in evidence at the hearing, and in its responses to data requests received in evidence at the hearing.

II. Reporting and Relationships

6. The most recent and accurate depiction of the Project route and facility locations is found on the maps in Exhibit TC-14. The Application indicates in Section 4.2.3 that Keystone will continue to develop route adjustments throughout the pre-construction design phase. These route adjustments will accommodate environmental features identified during surveys, property-specific issues, and civil survey information. The Application states that Keystone will file new aerial route maps that incorporate any such route adjustments prior to construction. Ex TC-1.4.2.3, p. 27. Keystone shall notify the Commission and all affected landowners, utilities and local governmental units as soon as practicable if material deviations are proposed to the route. Keystone shall notify affected landowners of any change in the route on their land. At such time as Keystone has finalized the pre-construction route, Keystone shall file maps with the Commission depicting the final pre-construction route. If material deviations are proposed from the route depicted on Exhibit TC-14 and accordingly approved by this Order, Keystone shall advise the Commission and all affected landowners, utilities and local governmental units prior to implementing such changes and afford the Commission the opportunity to review and approve such modifications. At the conclusion of construction, Keystone shall file detail maps with the Commission depicting the final as-built location of the Project facilities.

7. Keystone shall provide a public liaison officer, approved by the Commission, to facilitate the exchange of information between Keystone, including its contractors, and landowners, local communities and residents and to promptly resolve complaints and problems that may develop for landowners, local communities and residents as a result of the Project. Keystone shall file with the Commission its proposed public liaison officer's credentials for approval by the Commission prior to the commencement of construction. After the public liaison officer has been approved by the Commission, the public liaison officer may not be removed by Keystone without the approval of the Commission. The public liaison officer shall be afforded immediate access to Keystone's on-site project manager, its executive project manager and to contractors' on-site managers and shall be available at all times to the Staff via mobile phone to respond to complaints and concerns communicated to the Staff by concerned landowners and others. Keystone shall also implement and keep an up-dated web site covering the planning and implementation of construction and commencement of operations in this state as an informational medium for the public. As soon as the Keystone's public liaison officer has been appointed and approved, Keystone shall provide contact information for him/her to all landowners crossed by the Project and to law enforcement agencies and local governments in the vicinity of the Project. The public liaison officer's contact information shall be provided to landowners in each subsequent written communication with them. If the Commission determines that the public liaison officer has not been adequately performing the duties set forth for the position in this Order, the Commission may, upon notice to Keystone and the public liaison officer, take action to remove the public liaison officer.

8. Until construction of the Project, including reclamation, is completed, Keystone shall submit quarterly progress reports to the Commission that summarize the status of land acquisition and route finalization, the status of construction, the status of environmental control activities, including permitting status and Emergency Response Plan and Integrity Management Plan development, the implementation of the other measures required by these conditions, and the overall percent of physical completion of the project and design changes of a substantive nature. Each report shall include a summary of consultations with the South Dakota Department of Environment and Natural Resources and other agencies concerning the issuance of permits. The

reports shall list dates, names, and the results of each contact and the company's progress in implementing prescribed construction, land restoration, environmental protection, emergency response and integrity management regulations, plans and standards. The first report shall be due for the period ending June 30, 2010. The reports shall be filed within 31 days after the end of each quarterly period and shall continue until the project is fully operational.

9. Until one year following completion of construction of the Project, including reclamation, Keystone's public liaison officer shall report quarterly to the Commission on the status of the Project from his/her independent vantage point. The report shall detail problems encountered and complaints received. For the period of three years following completion of construction, Keystone's public liaison officer shall report to the Commission annually regarding post-construction landowner and other complaints, the status of road repair and reconstruction and land and crop restoration and any problems or issues occurring during the course of the year.

10. Not later than six months prior to commencement of construction, Keystone shall commence a program of contacts with state, county and municipal emergency response, law enforcement and highway, road and other infrastructure management agencies serving the Project area in order to educate such agencies concerning the planned construction schedule and the measures that such agencies should begin taking to prepare for construction impacts and the commencement of project operations.

11. Keystone shall conduct a preconstruction conference prior to the commencement of construction to ensure that Keystone fully understands the conditions set forth in this order. At a minimum, the conference shall include a Keystone representative, Keystone's construction supervisor and Staff.

12. Once known, Keystone shall inform the Commission of the date construction will commence, report to the Commission on the date construction is started and keep the Commission updated on construction activities as provided in Condition 8.

III. Construction

13. Except as otherwise provided in the conditions of this Order and Permit, Keystone shall comply with all mitigation measures set forth in the Construction Mitigation and Reclamation Plan (CMR Plan) as set forth in Exhibit TC-1, Exhibit B. If modifications to the CMR Plan are made by Keystone as it refines its construction plans or are required by the Department of State in its Final EIS Record of Decision or the Presidential Permit, the CMR Plan as so modified shall be filed with the Commission and shall be complied with by Keystone.

14. Keystone shall incorporate environmental inspectors into its CMR Plan and obtain follow-up information reports from such inspections upon the completion of each construction spread to help ensure compliance with this Order and Permit and all other applicable permits, laws, and rules.

15. Prior to construction, Keystone shall, in consultation with area NRCS staff, develop specific construction/reclamation units (Con/Rec Units) that are applicable to particular soil and subsoil classifications, land uses and environmental settings. The Con/Rec Units shall contain information of the sort described in response to Staff Data Request 3-25 found in Exhibit TC-16.

a) In the development of the Con/Rec Units in areas where NRCS recommends, Keystone shall conduct analytical soil probing and/or soil boring and analysis in areas of

particularly sensitive soils where reclamation potential is low. Records regarding this process shall be available to the Commission and to the specific land owner affected by such soils upon request.

b) Through development of the Con/Rec Units and consultation with NRCS, Keystone shall identify soils for which alternative handling methods are recommended. Alternative soil handling methods shall include but are not limited to the "triple-lift" method where conditions justify such treatment. Keystone shall thoroughly inform the landowner regarding the options applicable to their property, including their respective benefits and negatives, and implement whatever reasonable option for soil handling is selected by the landowner. Records regarding this process shall be available to the Commission upon request.

c) Keystone shall, in consultation with NCRS, ensure that its construction planning and execution process, including Con/Rec Units, CMR Plan and its other construction documents and planning shall adequately identify and plan for areas susceptible to erosion, areas where sand dunes are present, areas with high concentrations of sodium bentonite, areas with sodic, saline and sodic-saline soils and any other areas with low reclamation potential.

d) The Con/Rec Units shall be available upon request to the Commission and affected landowners. Con/Rec Units may be evaluated by the Commission upon complaint or otherwise, regarding whether proper soil handling, damage mitigation or reclamation procedures are being followed.

e) Areas of specific concern or of low reclamation potential shall be recorded in a separate database. Action taken at such locations and the results thereof shall also be recorded and made available to the Commission and the affected property owner upon request.

16. Keystone shall provide each landowner with an explanation regarding trenching and topsoil and subsoil/rock removal, segregation and restoration method options for his/her property consistent with the applicable Con/Rec Unit and shall follow the landowner's selected preference as documented on its written construction agreement with the landowner, as modified by any subsequent amendments, or by other written agreement(s).

a) Keystone shall separate and segregate topsoil from subsoil in agricultural areas, including grasslands and shelter belts, as provided in the CMR Plan and the applicable Con/Rec Unit.

b) Keystone shall repair any damage to property that results from construction activities.

c) Keystone shall restore all areas disturbed by construction to their preconstruction condition, including their original preconstruction topsoil, vegetation, elevation, and contour, or as close thereto as is feasible, except as is otherwise agreed to by the landowner.

d) Except where practicably infeasible, final grading and topsoil replacement and installation of permanent erosion control structures shall be completed in non-residential areas within 20 days after backfilling the trench. In the event that seasonal or other weather conditions, extenuating circumstances, or unforeseen developments beyond Keystone's control prevent compliance with this time frame, temporary erosion controls shall be maintained until conditions allow completion of cleanup and reclamation. In the event

Keystone can not comply with the 20-day time frame as provided in this Condition, it shall give notice of such fact to all affected landowners, and such notice shall include an estimate of when such restoration is expected to be completed.

e) Keystone shall draft specific crop monitoring protocols for agricultural lands. If requested by the landowner, Keystone shall provide an independent crop monitor to conduct yield testing and/or such other measurements of productivity as he shall deem appropriate. The independent monitor shall be a qualified agronomist, rangeland specialist or otherwise qualified with respect to the species to be restored. The protocols shall be available to the Commission upon request and may be evaluated for adequacy in response to a complaint or otherwise.

f) Keystone shall work closely with landowners or land management agencies to determine a plan to control noxious weeds. Landowner permission shall be obtained before the application of herbicides.

g) Keystone's adverse weather plan shall apply to improved hay land and pasture lands in addition to crop lands.

h) The size, density and distribution of rock within the construction right-of-way following reclamation shall be similar to adjacent undisturbed areas. Keystone shall treat rock that cannot be backfilled within or below the level of the natural rock profile as construction debris and remove it for disposal offsite except when the landowner agrees to the placement of the rock on his property. In such case, the rock shall be placed in accordance with the landowner's directions.

i) Keystone shall utilize the proposed trench line for its pipe stringing trucks where conditions allow and shall employ adequate measures to decompact subsoil as provided in its CMR Plan. Topsoil shall be decompacted if requested by the landowner.

j) Keystone shall monitor and take appropriate mitigative actions as necessary to address salinity issues when dewatering the trench, and field conductivity and/or other appropriate constituent analyses shall be performed prior to disposal of trench water in areas where salinity may be expected. Keystone shall notify landowners prior to any discharge of saline water on their lands or of any spills of hazardous materials on their lands of one pint or more or of any lesser volume which is required by any federal, state, or local law or regulation or product license or label to be reported to a state or federal agency, manufacturer, or manufacturer's representative.

k) Keystone shall install trench and slope breakers where necessary in accordance with the CMR Plan as augmented by Staff's recommendations in Post Hearing Commission Staff Brief, pp. 26-27.

l) Keystone shall apply mulch when reasonably requested by landowners and also wherever necessary following seeding to stabilize the soil surface and to reduce wind and water erosion. Keystone shall follow the other recommendations regarding mulch application in Post Hearing Commission Staff Brief, p. 27.

m) Keystone shall reseed all lands with comparable crops to be approved by landowner in landowner's reasonable discretion, or in pasture, hay or native species areas with comparable grass or forage crop seed or native species mix to be approved by landowner in

landowner's reasonable discretion. Keystone shall actively monitor revegetation on all disturbed areas for at least two years.

n) Keystone shall coordinate with landowners regarding his/her desires to properly protect cattle, shall implement such protective measures as are reasonably requested by the landowner and shall adequately compensate the landowner for any loss.

o) Prior to commencing construction, Keystone shall file with the Commission a confidential list of property owners crossed by the pipeline and update this list if route changes during construction result in property owner changes.

p) Except in areas where fire suppression resources as provided in CMR Plan 2.16 are in close proximity, to minimize fire risk, Keystone shall, and shall cause its contractor to, equip each of its vehicles used in pre-construction or construction activities, including off-road vehicles, with a hand held fire extinguisher, portable compact shovel and communication device such as a cell phone, in areas with coverage, or a radio capable of achieving prompt communication with Keystone's fire suppression resources and emergency services.

17. Keystone shall cover open-bodied dump trucks carrying sand or soil while on paved roads and cover open-bodied dump trucks carrying gravel or other materials having the potential to be expelled onto other vehicles or persons while on all public roads.

18. Keystone shall use its best efforts to not locate fuel storage facilities within 200 feet of private wells and 400 feet of municipal wells and shall minimize and exercise vigilance in refueling activities in areas within 200 feet of private wells and 400 feet of municipal wells.

19. If trees are to be removed that have commercial or other value to affected landowners, Keystone shall compensate the landowner for the fair market value of the trees to be cleared and/or allow the landowner the right to retain ownership of the felled trees. Except as the landowner shall otherwise agree in writing, the width of the clear cuts through any windbreaks and shelterbelts shall be limited to 50 feet or less, and the width of clear cuts through extended lengths of wooded areas shall be limited to 85 feet or less. The environmental inspection in Condition 14 shall include forested lands.

20. Keystone shall implement the following sediment control practices:

a) Keystone shall use floating sediment curtains to maintain sediments within the construction right of way in open water bodies with no or low flow when the depth of non-flowing water exceeds the height of straw bales or silt fence installation. In such situations the floating sediment curtains shall be installed as a substitute for straw bales or silt fence along the edge or edges of each side of the construction right-of-way that is under water at a depth greater than the top of a straw bale or silt fence as portrayed in Keystone's construction Detail #11 included in the CMR Plan.

b) Keystone shall install sediment barriers in the vicinity of delineated wetlands and water bodies as outlined in the CMR Plan regardless of the presence of flowing or standing water at the time of construction.

c) The Applicant should consult with South Dakota Game, Fish and Parks (SDGFP) to avoid construction near water bodies during fish spawning periods in which in-stream

construction activities should be avoided to limit impacts on specific fisheries, if any, with commercial or recreational importance.

21. Keystone shall develop frac-out plans specific to areas in South Dakota where horizontal directional drilling will occur. The plan shall be followed in the event of a frac-out. If a frac-out event occurs, Keystone shall promptly file a report of the incident with the Commission. Keystone shall also, after execution of the plan, provide a follow-up report to the Commission regarding the results of the occurrence and any lingering concerns.

22. Keystone shall comply with the following conditions regarding construction across or near wetlands, water bodies and riparian areas:

a) Unless a wetland is actively cultivated or rotated cropland or unless site specific conditions require utilization of Keystone's proposed 85 foot width and the landowner has agreed to such greater width, the width of the construction right-of-way shall be limited to 75 feet in non-cultivated wetlands unless a different width is approved or required by the United States Army Corps of Engineers.

b) Unless a wetland is actively cultivated or rotated cropland, extra work areas shall be located at least 50 feet away from wetland boundaries except where site-specific conditions render a 50-foot setback infeasible. Extra work areas near water bodies shall be located at least 50 feet from the water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land or where site-specific conditions render a 50-foot setback infeasible. Clearing of vegetation between extra work space areas and the water's edge shall be limited to the construction right-of-way.

c) Water body crossing spoil, including upland spoil from crossings of streams up to 30 feet in width, shall be stored in the construction right of way at least 10 feet from the water's edge or in additional extra work areas and only on a temporary basis.

d) Temporary in-stream spoil storage in streams greater than 30 feet in width shall only be conducted in conformity with any required federal permit(s) and any applicable federal or state statutes, rules and standards.

e) Wetland and water body boundaries and buffers shall be marked and maintained until ground disturbing activities are complete. Keystone shall maintain 15-foot buffers where practicable, which for stream crossings shall be maintained except during the period of trenching, pipe laying and backfilling the crossing point. Buffers shall not be required in the case of non-flowing streams.

f) Best management practices shall be implemented to prevent heavily silt-laden trench water from reaching any wetland or water body directly or indirectly.

g) Erosion control fabric shall be used on water body banks immediately following final stream bank restoration unless riprap or other bank stabilization methods are utilized in accordance with federal or state permits.

h) The use of timber and slash to support equipment crossings of wetlands shall be avoided.

i) Subject to Conditions 37 and 38, vegetation restoration and maintenance adjacent to water bodies shall be conducted in such manner to allow a riparian strip at least 25 feet wide as measured from the water body's mean high water mark to permanently re-vegetate with native plant species across the entire construction right-of way.

23. Keystone shall comply with the following conditions regarding road protection and bonding:

a) Keystone shall coordinate road closures with state and local governments and emergency responders and shall acquire all necessary permits authorizing crossing and construction use of county and township roads.

b) Keystone shall implement a regular program of road maintenance and repair through the active construction period to keep paved and gravel roads in an acceptable condition for residents and the general public.

c) Prior to their use for construction, Keystone shall videotape those portions of all roads which will be utilized by construction equipment or transport vehicles in order to document the pre-construction condition of such roads.

d) After construction, Keystone shall repair and restore, or compensate governmental entities for the repair and restoration of, any deterioration caused by construction traffic, such that the roads are returned to at least their preconstruction condition.

e) Keystone shall use appropriate preventative measures as needed to prevent damage to paved roads and to remove excess soil or mud from such roadways.

f) Pursuant to SDCL 49-41B-38, Keystone shall obtain and file for approval by the Commission prior to construction in such year a bond in the amount of \$15.6 million for the year in which construction is to commence and a second bond in the amount of \$15.6 million for the ensuing year, including any additional period until construction and repair has been completed, to ensure that any damage beyond normal wear to public roads, highways, bridges or other related facilities will be adequately restored or compensated. Such bonds shall be issued in favor of, and for the benefit of, all such townships, counties, and other governmental entities whose property is crossed by the Project. Each bond shall remain in effect until released by the Commission, which release shall not be unreasonably denied following completion of the construction and repair period. Either at the contact meetings required by Condition 10 or by mail, Keystone shall give notice of the existence and amount of these bonds to all counties, townships and other governmental entities whose property is crossed by the Project.

24. Although no residential property is expected to be encountered in connection with the Project, in the event that such properties are affected and due to the nature of residential property, Keystone shall implement the following protections in addition to those set forth in its CMR Plan in areas where the Project passes within 500 feet of a residence:

a) To the extent feasible, Keystone shall coordinate construction work schedules with affected residential landowners prior to the start of construction in the area of the residences.

- b) Keystone shall maintain access to all residences at all times, except for periods when it is infeasible to do so or except as otherwise agreed between Keystone and the occupant. Such periods shall be restricted to the minimum duration possible and shall be coordinated with affected residential landowners and occupants, to the extent possible.
- c) Keystone shall install temporary safety fencing, when reasonably requested by the landowner or occupant, to control access and minimize hazards associated with an open trench and heavy equipment in a residential area.
- d) Keystone shall notify affected residents in advance of any scheduled disruption of utilities and limit the duration of such disruption.
- e) Keystone shall repair any damage to property that results from construction activities.
- f) Keystone shall separate topsoil from subsoil and restore all areas disturbed by construction to at least their preconstruction condition.
- g) Except where practicably infeasible, final grading and topsoil replacement, installation of permanent erosion control structures and repair of fencing and other structures shall be completed in residential areas within 10 days after backfilling the trench. In the event that seasonal or other weather conditions, extenuating circumstances, or unforeseen developments beyond Keystone's control prevent compliance with this time frame, temporary erosion controls and appropriate mitigative measures shall be maintained until conditions allow completion of cleanup and reclamation.

25. Construction must be suspended when weather conditions are such that construction activities will cause irreparable damage, unless adequate protection measures approved by the Commission are taken. At least two months prior to the start of construction in South Dakota, Keystone shall file with the Commission an adverse weather land protection plan containing appropriate adverse weather land protection measures, the conditions in which such measures may be appropriately used, and conditions in which no construction is appropriate, for approval of or modification by the Commission prior to the start of construction. The Commission shall make such plan available to impacted landowners who may provide comment on such plan to the Commission.

26. Reclamation and clean-up along the right-of-way must be continuous and coordinated with ongoing construction.

27. All pre-existing roads and lanes used during construction must be restored to at least their pre-construction condition that will accommodate their previous use, and areas used as temporary roads during construction must be restored to their original condition, except as otherwise requested or agreed to by the landowner or any governmental authority having jurisdiction over such roadway.

28. Keystone shall, prior to any construction, file with the Commission a list identifying private and new access roads that will be used or required during construction and file a description of methods used by Keystone to reclaim those access roads.

29. Prior to construction, Keystone shall have in place a winterization plan and shall implement the plan if winter conditions prevent reclamation completion until spring. The plan shall be provided to affected landowners and, upon request, to the Commission.

30. Numerous Conditions of this Order, including but not limited to 16, 19, 24, 25, 26, 27 and 51 relate to construction and its effects upon affected landowners and their property. The Applicant may encounter physical conditions along the route during construction which make compliance with certain of these Conditions infeasible. If, after providing a copy of this order, including the Conditions, to the landowner, the Applicant and landowner agree in writing to modifications of one or more requirements specified in these conditions, such as maximum clearances or right-of-way widths, Keystone may follow the alternative procedures and specifications agreed to between it and the landowner.

IV. Pipeline Operations, Detection and Emergency Response

31. Keystone shall construct and operate the pipeline in the manner described in the application and at the hearing, including in Keystone's exhibits, and in accordance with the conditions of this permit, the PHMSA Special Permit, if issued, and the conditions of this Order and the construction permit granted herein.

32. Keystone shall require compliance by its shippers with its crude oil specifications in order to minimize the potential for internal corrosion.

33. Keystone's obligation for reclamation and maintenance of the right-of-way shall continue throughout the life of the pipeline. In its surveillance and maintenance activities, Keystone shall, and shall cause its contractor to, equip each of its vehicles, including off-road vehicles, with a hand held fire extinguisher, portable compact shovel and communication device such as a cell phone, in areas with coverage, or a radio capable of achieving prompt communication with emergency services.

34. In accordance with 49 C.F.R. 195, Keystone shall continue to evaluate and perform assessment activities regarding high consequence areas. Prior to Keystone commencing operation, all unusually sensitive areas as defined by 49 CFR 195.6 that may exist, whether currently marked on DOT's HCA maps or not, should be identified and added to the Emergency Response Plan and Integrity Management Plan. In its continuing assessment and evaluation of environmentally sensitive and high consequence areas, Keystone shall seek out and consider local knowledge, including the knowledge of the South Dakota Geological Survey, the Department of Game Fish and Parks and local landowners and governmental officials.

35. The evidence in the record demonstrates that in some reaches of the Project in southern Tripp County, the High Plains Aquifer is present at or very near ground surface and is overlain by highly permeable sands permitting the uninhibited infiltration of contaminants. This aquifer serves as the water source for several domestic farm wells near the pipeline as well as public water supply system wells located at some distance and upgradient from the pipeline route. Keystone shall identify the High Plains Aquifer area in southern Tripp County as a hydrologically sensitive area in its Integrity Management and Emergency Response Plans. Keystone shall similarly treat any other similarly vulnerable and beneficially useful surficial aquifers of which it becomes aware during construction and continuing route evaluation.

36. Prior to putting the Keystone Pipeline into operation, Keystone shall prepare, file with PHMSA and implement an emergency response plan as required under 49 CFR 194 and a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies as required under 49 CFR 195.402. Keystone shall also prepare and implement a written integrity management program in the manner and at such time as required under 49 CFR 195.452. At such time as Keystone files its Emergency Response Plan and

Integrity Management Plan with PHMSA or any other state or federal agency, it shall also file such documents with the Commission. The Commission's confidential filing rules found at ARSD 20:10:01:41 may be invoked by Keystone with respect to such filings to the same extent as with all other filings at the Commission. If information is filed as "confidential," any person desiring access to such materials or the Staff or the Commission may invoke the procedures of ARSD 20:10:01:41 through 20:10:01:43 to determine whether such information is entitled to confidential treatment and what protective provisions are appropriate for limited release of information found to be entitled to confidential treatment.

37. To facilitate periodic pipeline leak surveys during operation of the facilities in wetland areas, a corridor centered on the pipeline and up to 15 feet wide shall be maintained in an herbaceous state. Trees within 15 feet of the pipeline greater than 15 feet in height may be selectively cut and removed from the permanent right-of-way.

38. To facilitate periodic pipeline leak surveys in riparian areas, a corridor centered on the pipeline and up to 10 feet wide shall be maintained in an herbaceous state.

V. Environmental

39. Except to the extent waived by the owner or lessee in writing or to the extent the noise levels already exceed such standard, the noise levels associated with Keystone's pump stations and other noise-producing facilities will not exceed the L10=55dbA standard at the nearest occupied, existing residence, office, hotel/motel or non-industrial business not owned by Keystone. The point of measurement will be within 100 feet of the residence or business in the direction of the pump station or facility. Post-construction operational noise assessments will be completed by an independent third-party noise consultant, approved by the Commission, to show compliance with the noise level at each pump station or other noise-producing facility. The noise assessments will be performed in accordance with applicable American National Standards Institute standards. The results of the assessments will be filed with the Commission. In the event that the noise level exceeds the limit set forth in this condition at any pump station or other noise producing facility, Keystone shall promptly implement noise mitigation measures to bring the facility into compliance with the limits set forth in this condition and shall report to the Commission concerning the measures taken and the results of post-mitigation assessments demonstrating that the noise limits have been met.

40. At the request of any landowner or public water supply system that offers to provide the necessary access to Keystone over his/her property or easement(s) to perform the necessary work, Keystone shall replace at no cost to such landowner or public water supply system, any polyethylene water piping located within 500 feet of the Project with piping that is resistant to permeation by BTEX. Keystone shall not be required to replace that portion of any piping that passes through or under a basement wall or other wall of a home or other structure. At least forty-five (45) days prior to commencing construction, Keystone shall publish a notice in each newspaper of general circulation in each county through which the Project will be constructed advising landowners and public water supply systems of this condition.

41. Keystone shall follow all protection and mitigation efforts as identified by the US Fish and Wildlife Service ("USFWS") and SDGFP. Keystone shall identify all greater prairie chicken and greater sage and sharp-tailed grouse leks within the buffer distances from the construction right of way set forth for the species in the FEIS and Biological Assessment (BA) prepared by DOS and USFWS. In accordance with commitments in the FEIS and BA, Keystone shall avoid or restrict

construction activities as specified by USFWS within such buffer zones between March 1 and June 15 and for other species as specified by USFWS and SDGFP.

42. Keystone shall keep a record of drain tile system information throughout planning and construction, including pre-construction location of drain tiles. Location information shall be collected using a sub-meter accuracy global positioning system where available or, where not available by accurately documenting the pipeline station numbers of each exposed drain tile. Keystone shall maintain the drain tile location information and tile specifications and incorporate it into its Emergency Response and Integrity Management Plans where drains might be expected to serve as contaminant conduits in the event of a release. If drain tile relocation is necessary, the applicant shall work directly with landowner to determine proper location. The location of permanent drain tiles shall be noted on as-built maps. Qualified drain tile contractors shall be employed to repair drain tiles.

VI. Cultural and Paleontological Resources

43. In accordance with Application, Section 6.4, Keystone shall follow the "Unanticipated Discoveries Plan," as reviewed by the State Historical Preservation Office ("SHPO") and approved by the DOS and provide it to the Commission upon request. Ex TC-1.6.4, pp. 94-96; Ex S-3. If during construction, Keystone or its agents discover what may be an archaeological resource, cultural resource, historical resource or gravesite, Keystone or its contractors or agents shall immediately cease work at that portion of the site and notify the DOS, the affected landowner(s) and the SHPO. If the DOS and SHPO determine that a significant resource is present, Keystone shall develop a plan that is approved by the DOS and commenting/signatory parties to the Programmatic Agreement to salvage avoid or protect the archaeological resource. If such a plan will require a materially different route than that approved by the Commission, Keystone shall obtain Commission and landowner approval for the new route before proceeding with any further construction. Keystone shall be responsible for any costs that the landowner is legally obligated to incur as a consequence of the disturbance of a protected cultural resource as a result of Keystone's construction or maintenance activities.

44. Keystone shall implement and comply with the following procedures regarding paleontological resources:

a) Prior to commencing construction, Keystone shall conduct a literature review and records search, and consult with the BLM and Museum of Geology at the S.D. School of Mines and Technology ("SDSMT") to identify known fossil sites along the pipeline route and identify locations of surface exposures of paleontologically sensitive rock formations using the BLM's Potential Fossil Yield Classification system. Any area where trenching will occur into the Hell Creek Formation shall be considered a high probability area.

b) Keystone shall at its expense conduct a pre-construction field survey of each area identified by such review and consultation as a known site or high probability area within the construction ROW. Following BLM guidelines as modified by the provisions of Condition 44, including the use of BLM permitted paleontologists, areas with exposures of high sensitivity (PFYC Class 4) and very high sensitivity (PFYC Class 5) rock formations shall be subject to a 100% pedestrian field survey, while areas with exposures of moderately sensitive rock formations (PFYC Class 3) shall be spot-checked for occurrences of scientifically or economically significant surface fossils and evidence of subsurface fossils. Scientifically or economically significant surface fossils shall be avoided by the Project or mitigated by collecting them if avoidance is not feasible. Following BLM guidelines for the assessment

and mitigation of paleontological resources, scientifically significant paleontological resources are defined as rare vertebrate fossils that are identifiable to taxon and element, and common vertebrate fossils that are identifiable to taxon and element and that have scientific research value; and scientifically noteworthy occurrences of invertebrate, plant and trace fossils. Fossil localities are defined as the geographic and stratigraphic locations at which fossils are found.

c) Following the completion of field surveys, Keystone shall prepare and file with the Commission a paleontological resource mitigation plan. The mitigation plan shall specify monitoring locations, and include BLM permitted monitors and proper employee and contractor training to identify any paleontological resources discovered during construction and the procedures to be followed following such discovery. Paleontological monitoring will take place in areas within the construction ROW that are underlain by rock formations with high sensitivity (PFYC Class 4) and very high sensitivity (PFYC Class 5), and in areas underlain by rock formations with moderate sensitivity (PFYC Class 3) where significant fossils were identified during field surveys.

d) If during construction, Keystone or its agents discover what may be a paleontological resource of economic significance, or of scientific significance, as defined in subparagraph (b) above, Keystone or its contractors or agents shall immediately cease work at that portion of the site and, if on private land, notify the affected landowner(s). Upon such a discovery, Keystone's paleontological monitor will evaluate whether the discovery is of economic significance, or of scientific significance as defined in subparagraph (b) above. If an economically or scientifically significant paleontological resource is discovered on state land, Keystone will notify SDSMT and if on federal land, Keystone will notify the BLM or other federal agency. In no case shall Keystone return any excavated fossils to the trench. If a qualified and BLM-permitted paleontologist, in consultation with the landowner, BLM, or SDSMT determines that an economically or scientifically significant paleontological resource is present, Keystone shall develop a plan that is reasonably acceptable to the landowner(s), BLM, or SDSMT, as applicable, to accommodate the salvage or avoidance of the paleontological resource to protect or mitigate damage to the resource. The responsibility for conducting such measures and paying the costs associated with such measures, whether on private, state or federal land, shall be borne by Keystone to the same extent that such responsibility and costs would be required to borne by Keystone on BLM managed lands pursuant to BLM regulations and guidelines, including the BLM Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources, except to the extent factually inappropriate to the situation in the case of private land (e.g. museum curation costs would not be paid by Keystone in situations where possession of the recovered fossil(s) was turned over to the landowner as opposed to curation for the public). If such a plan will require a materially different route than that approved by the Commission, Keystone shall obtain Commission approval for the new route before proceeding with any further construction. Keystone shall, upon discovery and salvage of paleontological resources either during pre-construction surveys or construction and monitoring on private land, return any fossils in its possession to the landowner of record of the land on which the fossil is found. If on state land, the fossils and all associated data and documentation will be transferred to the SDSM; if on federal land, to the BLM.

e) To the extent that Keystone or its contractors or agents have control over access to such information, Keystone shall, and shall require its contractors and agents to, treat the locations of sensitive and valuable resources as confidential and limit public access to this information.

VII. Enforcement and Liability for Damage

45. Keystone shall repair or replace all property removed or damaged during all phases of construction and operation of the proposed transmission facility, including but not limited to, all fences, gates and utility, water supply, irrigation or drainage systems. Keystone shall compensate the owners for damages or losses that cannot be fully remedied by repair or replacement, such as lost productivity and crop and livestock losses or loss of value to a paleontological resource damaged by construction or other activities.

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, related to water contamination.

47. Any damage that occurs as a result of soil disturbance on a persons' property shall be paid for by Keystone.

48. No person will be held responsible for a pipeline leak that occurs as a result of his/her normal farming practices over the top of or near the pipeline.

49. Keystone shall pay commercially reasonable costs and indemnify and hold the landowner harmless for any loss, damage, claim or action resulting from Keystone's use of the easement, including any resulting from any release of regulated substances or from abandonment of the facility, except to the extent such loss, damage claim or action results from the gross negligence or willful misconduct of the landowner or its agents.

50. The Commission's complaint process as set forth in ARSD 20:10:01 shall be available to landowners, other persons sustaining or threatened with damage or the consequences of Keystone's failure to abide by the conditions of this permit or otherwise having standing to obtain enforcement of the conditions of this Order and Permit.

Exhibit B

RULINGS ON PROPOSED FINDINGS OF FACT

Rulings on Applicants' Proposed Findings of Fact

As Applicant is the prevailing party, most of Applicant's Proposed Findings of Fact have been accepted in their general substance and incorporated in the Findings of Fact, with additions and modifications to reflect the Commission's understanding of the record.

Sierra Club, Joyce Braun, 350.org, Yankton Sioux Tribe, Dakota Rural Action (DRA), Chastity Jewett, Indigenous Environmental Network, Dallas Goldtooth, RoxAnn Boettcher, Bonny Kilmurry, Ronald Fees, and Intertribal Council on Utility Policy (collectively, Intervenor). On March 4, 2015, the Commission issued an Order Granting Request to Withdraw Party Status allowing the South Dakota Wildlife Federation and the Sierra Club to withdraw as parties, and on April 21, 2015, the Commission issued an Order Granting Request to Withdraw Party Status allowing Jeff Jensen to withdraw as a party.

On October 30, 2014, Keystone filed Keystone's Motion to Define the Scope of Discovery under SDCL §49-41B-27 (Motion to Define Scope). On November 4, 2014, the Commission issued a Prehearing Scheduling Conference Order setting a telephonic scheduling conference to be conducted by General Counsel John Smith on November 13, 2014. On November 5, 2014, the Commission issued an Order for and Notice of Motion Hearing setting the Motion to Define Scope for hearing on November 25, 2014. The prehearing scheduling conference was held as scheduled on November 13, 2014. On November 14, 2014, a number of motions for extension of time to respond to the Motion to Define Scope were filed by Intervenor. Keystone did not object to the extension. On November 14, 2014, the Commission issued an Order Changing Motion Hearing Date and Order for and Notice of Scheduling Hearing setting the Motion to Define Scope and to establish a procedural schedule for hearing on December 9, 2014. Responses to the Motion to Define Scope and setting forth procedural schedule recommendations were filed by the Commission's staff (Staff) and many of the Intervenor. After hearing from the parties regarding the Motion to Define Scope and the procedural schedule, on December 17, 2014, the Commission issued an Order Granting Motion to Define Issues and Setting Procedural Schedule. In this order, the Commission decided that the scope of discovery would be limited to any matter relevant to: (1) whether the Project continues to meet the 50 conditions in Exhibit A to the Amended Final Decision; and (2) the changes in the Findings of Fact identified in the Tracking Table of Changes attached to Keystone's Certification Petition as Appendix C. The Commission also established the following deadlines: January 6, 2015, for serving initial discovery; February 6, 2015, for responding to initial discovery; February 20, 2015, for a second round of discovery; March 10, 2015, for responding to the second round of discovery; April 2, 2015, for submitting pre-filed direct testimony; April 23, 2015, for submitting pre-filed rebuttal testimony; and May 5-8, 2015, for an evidentiary hearing.

On December 2, 2014, Yankton Sioux Tribe (Yankton) filed Yankton Sioux Tribe's Motion to Dismiss, and on December 29, 2014, Rosebud Sioux Tribe (Rosebud) filed Rosebud Sioux Tribe's Motion to Dismiss and Request for Oral Argument. The motions contended that the Certification Petition on its face established that the Project was a different project than the one permitted in the Amended Final Decision in Docket HP09-001 and that Keystone could therefore not prove that it could continue to meet the conditions on which the permit was issued. A number of Intervenor filed motions to join in Yankton Sioux Tribe's Motion to Dismiss. On December 29, 2014, Keystone filed Applicant's Opposition to Yankton Sioux Tribe's Motion to Dismiss, and Staff filed Commission Staff's Response to Yankton Sioux Tribe's Motion to Dismiss. On January 2, 2015, Yankton Sioux Tribe filed Yankton Sioux Tribe's Reply in Support of Its Motion to Dismiss. After hearing from the parties at the hearing on the motions to join and dismiss on January 6, 2015, on January 8, 2015, the Commission issued an Order Granting Motions to Join and Denying Motions to Dismiss which granted the Intervenor's motions to join and to consider Rosebud's motion to dismiss together with Yankton's but denied the motions to dismiss.

On March 17, 2015, Staff filed a Motion to Amend Procedural Schedule to add to the procedural schedule a deadline by which parties must file a witness list and an exhibit list. On April 2, 2015, the Commission issued an Order Amending Procedural Schedule (Witness and Exhibit Lists) requiring that witness lists and exhibit lists must be filed and served by all parties no later than 5:00 p.m. CDT, on April 21, 2015. On March 25, 2015, Rosebud Sioux Tribe filed a Motion to Amend Order Setting Procedural Schedule requesting that the Commission amend the procedural schedule in the Order Setting Procedural Schedule to delay the date set for pre-filed testimony. The Commission heard Rosebud's motion to amend on March 31, 2015, and on April 3 issued an Order Granting in Part Motion to Amend Procedural Schedule extending the date for the filing of pre-filed rebuttal testimony to April 27, 2015, and allowing testimony regarding new information acquired as a result of any motion to compel granted by the Commission to be included in rebuttal testimony. On April 8, 2014, Rosebud Sioux Tribe filed Rosebud Sioux Tribe's Motion for Reconsideration. After hearing the Motion to Reconsider on April 9, 2015, on April 10 the Commission issued an Order Granting Motion to Reconsider and Amending In Part Procedural Schedule which granted reconsideration with respect to expert testimony, extended the deadline for Rosebud's pre-filed testimony for its expert witnesses to April 24, 2015, except to the extent it qualifies for later filing on April 27, 2015, pursuant to the Amended Scheduling Order, and extended the deadline for Keystone to file its rebuttal testimony with respect to the pre-filed testimony of Rosebud's expert witnesses to May 5, 2015. On March 27, 2015, Standing Rock Sioux Tribe (Standing Rock) filed a Motion to Amend Order Setting Procedural requesting that the Commission amend the procedural schedule to delay the dates set for close of discovery, pre-filed testimony, rebuttal testimony, filing of exhibits, and the evidentiary hearing. The Commission heard Standing Rock's motion to amend on March 31, 2015, and on April 2 issued an Order Denying Motion to Amend Order Setting Procedural Schedule as requested by Standing Rock.

The Commission decided a number of discovery-related motions. Dakota Rural Action, Standing Rock Sioux Tribe, Yankton Sioux Tribe, Gary Dorr, and Rosebud Sioux Tribe filed motions to compel discovery against Keystone and Staff. The Commission entered orders dated April 17, 2015, granting in part and denying in part the motions filed by Dakota Rural Action, Standing Rock Sioux Tribe, and Yankton Sioux Tribe, and compelling Keystone to answer certain discovery requests by April 17, 2015. The Commission denied the motions filed by Gary Dorr and Rosebud Sioux Tribe by orders dated April 22, 2015, and April 23, 2015.

On March 23, 2015, Keystone filed a Motion to Preclude Certain Intervenors (John Harter, BOLD Nebraska, Carolyn Smith, Gary Dorr, and Yankton Sioux Tribe) from Offering Evidence or Witnesses at Hearing (Motion to Preclude). On March 25, 2015, Keystone filed an Amended Motion to Preclude Certain Intervenors from Offering Evidence or Witnesses at Hearing and to Compel Discovery requesting: (1) that certain Intervenors be precluded from offering any evidence or witnesses at the hearing based on their complete failure to respond to Keystone's discovery requests (Rosebud Sioux Tribe-Tribal Utility Commission, Viola Wain, Cheryl & Terry Frisch, Louis Grass Rope, Robert Allpress, Jeff Jensen, Louis Genung, Jerry Jones, Debbie Tripp, Gina Parkhurst, Joye Braun, 350.org, Chastity Jewett, Dallas Goldtooth, and Ronald Fees); and (2) that certain Intervenors (John Harter, BOLD Nebraska, Carolyn Smith, Gary Dorr, and Yankton Sioux Tribe) be prohibited from offering evidence or witnesses at the hearing because of their failure to respond fully to Keystone's discovery requests. On April 17, 2015, the Commission issued an Order Granting In Part Keystone's Motion for Discovery Sanctions precluding the seventeen intervenors who did not respond at all to Keystone's requests for discovery from presenting evidence or witnesses at the evidentiary hearing, precluding John Harter, BOLD Nebraska, and Carolyn Smith from presenting evidence or witnesses at the evidentiary hearing for not sufficiently responding to Keystone's discovery

requests, but not precluding Yankton Sioux Tribe and Gary Dorr from presenting evidence or witnesses at the evidentiary hearing.

On April 2, 2015, Dakota Rural Action filed a Statement and Objections on behalf of Dakota Rural Action with respect to Submission of Written Testimony arguing that the Commission's pre-filed testimony rule, ARSD 20:10:01:06, violates SDCL 15-6-43(a) and 49-1-11. Several Intervenors filed statements in support of DRA's Statement and Objections. In Staff's Brief in Response to Motion to Preclude Witnesses from Offering Testimony Who Did Not File Pre-Filed Testimony filed on April 10, 2015, Staff pointed out that pre-filed testimony does not become evidence in the case unless and until it is received in evidence as an exhibit upon proper foundation by a live witness or stipulation and that ARSD 20:10:01:06 is not therefore violative of SDCL 15-6-43(a). In complex contested case proceedings, it is normal practice for the Commission to require pre-filed testimony as part of the discovery and hearing preparation process, and no court has ever ruled that such requirement is unlawful.

On April 6, 2015, Keystone filed Keystone's Motion to Preclude Witnesses from Testifying at Hearing Who Did Not File Prefile Testimony asking that the Commission preclude testimony from any witness who did not pre-file testimony as required by the Commission's procedural order. Responses to this motion were filed by Staff and numerous Intervenors. On April 23, 2015, the Commission issued an Order Granting Motion to Preclude Witnesses from Testifying at Hearing Who Did Not File Prefiled Testimony, precluding persons for whom pre-filed testimony was not filed from testifying at the hearing, subject to the condition that pre-filed rebuttal testimony would be allowed to be filed by all parties until the April 27, 2015, deadline, including testimony and exhibits addressing information obtained as a result of any order to compel discovery granted by the Commission.

On April 7, 2015, the Commission received Dakota Rural Action's, Rosebud Sioux Tribe's, Cheyenne River Sioux Tribe's and Indigenous Environmental Network's Joint Motion for Appointment of Special Master to oversee the discovery process in this docket (Special Master Motion). Responses in opposition to the Special Master Motion were filed by Staff and Keystone on April 8 and April 9, 2015, respectively. On April 22, 2015, the Commission issued an Order Denying Motion for Special Master, finding that the Commission has sufficient resources and is competent to hear and act on the discovery issues presented in this proceeding.

On April 7, 2015, the Commission received Dakota Rural Action's, Rosebud Sioux Tribe's, Standing Rock Sioux Tribe's, Cheyenne River Sioux Tribe's and Indigenous Environmental Network's Joint Motion for Stay of Proceedings (Motion for Stay) requesting a stay pending the Presidential Permit decision and the conclusion of the investigation initiated by the Canadian National Energy Board regarding allegations of pipeline safety violations. Keystone and Staff filed responses in opposition to the Motion for Stay on April 9 and 10, 2015, respectively. On April 22, 2015, the Commission issued an Order Denying Motion for Stay.

At a motion hearing on April 14, 2015, the Commission considered a number of discovery related motions filed by Keystone and a number of Intervenors. In response to objections raised by Keystone based on the confidential nature of many documents requested by intervenor parties, on April 17, 2015, the Commission issued a Protective Order imposing protective provisions on parties' discovery of materials deemed confidential, subject to the provisions of ARSD 20:10:01:40 through 20:10:01:44. On April 24, 2015, Dakota Rural Action, Rosebud Sioux Tribe, Standing Rock Sioux Tribe, Cheyenne River Sioux Tribe (Cheyenne River), Yankton Sioux Tribe, Indigenous Environmental Network, and BOLD Nebraska filed a Joint Motion to Vacate or, in the Alternative, to Clarify or Amend Protective Order. On April 27,

2015, Keystone filed Applicant's Opposition to Joint Motion to Vacate or Amend the Protective Order arguing that Keystone had in fact allowed intervenors to provide access to confidential materials to co-counsel and experts. On April 28, 2015, Staff filed Staff's Brief in Response to Joint Motion to Vacate or, in the Alternative, to Clarify or Amend Protective Order. In response to intervenors' motion, on May 13, 2015, the Commission issued an Amended Protective Order authorizing disclosure of confidential information to co-counsel, professional staff, and experts, in addition to attorneys of record, provided that notice of such disclosure is provided by the disclosing party and the persons receiving the information sign the non-disclosure agreement.

On April 24, 2015, Dakota Rural Action, Rosebud Sioux Tribe, Yankton Sioux Tribe, BOLD Nebraska, Cheyenne River Sioux Tribe, and Standing Rock Sioux Tribe filed a Joint Motion for Continuance and Relief from Scheduling Order requesting a later date for the evidentiary hearing to allow additional time for consideration of discovery documents and preparation for hearing. Indigenous Environmental Network joined the motion on April 27, 2015. On April 24, 2015, the Commission received Keystone's Opposition to Joint Motion for Continuance. On April 27, 2015, the Commission issued an Order Granting Joint Motion for Continuance and Relief from Scheduling Order in which the Commission granted the Joint Motion for Continuance and instructed Staff to propose a revised schedule at the next regularly scheduled Commission meeting. On May 5, 2015, the Commission issued an Order Amending Procedural Schedule establishing the following deadlines and dates: (1) substantive motions filed by May 26, 2015; (2) responses to substantive motions filed by June 2, 2015; (3) hearing on substantive motions on June 11, 2015; (4) rebuttal testimony filed by June 26, 2015; (5) witness and exhibit lists filed by July 7, 2015; (6) motions *in limine* filed by July 10, 2015; (7) responses to motions *in limine* filed by July 17, 2015; (8) motion hearing on motions *in limine* on July 21, 2015; and (5) an evidentiary hearing from July 27-31, and continuing August 3-4, 2015.

On April 27, 2015, the Commission received Standing Rock, Cheyenne River, Rosebud Sioux, and Yankton Sioux Tribes, Dakota Rural Action, Indigenous Environmental Network, Intertribal COUP and BOLD Nebraska Motion to Exclude Evidence and Testimony by TransCanada seeking to preclude Keystone from offering testimony or witnesses at the hearing based on its alleged failure to comply with discovery. On May 1, 2015, Intervenor Gary Dorr filed Gary Dorr's Motion to Join Joint Motion by Standing Rock, Cheyenne River, Rosebud, and Yankton Sioux Tribes, Dakota Rural Action, Indigenous Environmental Network, Intertribal COUP, and BOLD Nebraska to Exclude Evidence and Testimony by TransCanada. On April 27, 2015, Keystone filed Keystone's Opposition to Joint Motion to Exclude Evidence and Testimony. On May 18, 2015, Staff filed Staff's Brief in Response to Joint Motion to Exclude Evidence and Testimony. On May 19, 2015, Keystone filed Keystone's Supplemental Opposition to Joint Motion to Exclude Testimony and Evidence. Finding that TransCanada had produced a very large volume of documents in response to intervenor discovery requests and the Commission's Orders to Compel and that movants had not demonstrated that TransCanada had acted in bad faith or with willfulness or fault, on May 28, 2015, the Commission issued an Order Granting Motion to Join and Denying Joint Motion to Exclude Evidence and Testimony by TransCanada, granting Gary Dorr's motion to join and denying the joint motion to exclude.

On April 27, 2015, Intertribal Council on Utility Policy (COUP) filed a Notice of Request for a Time Certain for an Expert Rebuttal Witness for the Intertribal Council on Utility Policy asking for a time certain for testimony of three of its experts, namely Dr. James Hansen, Dr. George Seielstad, and Dr. Robert Oglesby. On April 27, 2015, Keystone filed Keystone's Objection to Coup's Request for a Time Certain and Motion to Preclude Witnesses. Keystone opposed Intertribal COUP's motion on the grounds that Intertribal COUP had not submitted pre-filed testimony for these experts and their proposed testimony was not rebuttal testimony. On

May 18, 2015, Intertribal COUP filed Intertribal COUP's Response to Keystone's Objection to COUP's Request for a Time Certain and Motion to Preclude Witnesses. On May 18, 2015, Staff filed Staff's Brief in Response to Keystone's Objection to COUP's Request for a Time Certain and Motion to Preclude Witness. In its brief, Staff argued that denial of a time certain and preclusion were appropriate, but for the reasons that the hearing dates have changed so the time certain is no longer at issue and that the testimony of Intertribal COUP's three witnesses is not relevant to the issues before the Commission in this proceeding. On May 19, 2015, Intertribal COUP filed Intertribal COUP's Amended Response to Keystone's Objection to COUP's Request for a Time Certain and Motion to Preclude Witnesses. On May 28, 2015, the Commission issued an Order Granting TransCanada's Motion to Preclude Witnesses on the grounds that the testimony of COUP's proposed witnesses was beyond the scope of the certification proceeding and took no action on COUP's Request for a Time Certain for an Expert Witness, finding that such issue was moot given the Commission's April 27, 2015 Order Granting Joint Motion for Continuance and Relief from Scheduling Order.

On May 26, 2015, the Commission received Yankton Sioux Tribe's and Indigenous Environmental Network's Motion to Preclude Improper Relief or, in the Alternative, to Amend Findings of Fact seeking to have certain findings of fact contained in the Amended Final Decision amended. Alternatively, the motion asked that the Commission amend Findings of Fact numbers 113 and 114. On May 26, 2015, Staff filed Staff's Brief in Response to Motion to Preclude Improper Relief or, in the Alternative, to Amend Findings of Fact. On June 2, 2015, DRA filed Dakota Rural Action's Joinder of Yankton Sioux Tribe's Motion to Preclude Improper Relief. On June 2, 2015, Keystone filed Keystone's Opposition to Joint Motion to Preclude Improper Relief. On June 6, 2015, the Commission received Yankton Sioux Tribe's And Indigenous Environmental Network's Reply in Support of Motion to Preclude Improper Relief or, in the Alternative, to Amend Findings of Fact. Finding that TransCanada did not seek to amend the Findings of Fact in the Amended Final Decision and that there exists no legal authority for the Commission to amend the Amended Final Decision at this time, on June 15, 2015, the Commission issued an Order Denying Yankton Sioux Tribe's and Indigenous Environmental Network's Motion to Preclude Improper Relief or, in the Alternative, to Amend Findings Of Fact.

On May 26, 2015, Keystone filed Keystone's Motion to Exclude Testimony of Richard Kuprewicz requesting that the Commission exclude all of Kuprewicz's testimony except for his opinion on pages 2-3 of Exhibit 9 that the Project will not pose a substantial risk to the Rosebud Sioux Tribe's water supply. On June 2, 2015, Staff filed a Corrected Staff's Brief in Response to Applicant's Motion to Exclude Testimony of Richard Kuprewicz. On June 2, 2015, the Commission received Rosebud Sioux Tribe's Response to Keystone's Motion to Exclude Testimony of Richard Kuprewicz. On June 2, 2015, DRA filed Dakota Rural Action's Joinder of Rosebud Sioux Tribe's Response to TransCanada's Motion to Exclude Testimony of Richard Kuprewicz, and Cheyenne River Sioux Tribe filed Cheyenne River Sioux Tribe's Response to Keystone's Motion to Exclude the Testimony of Richard Kuprewicz. On June 10, 2015, the Commission received Rosebud Sioux Tribe's Supplemental Response to Motion to Exclude Testimony of Richard Kuprewicz. On June 8, 2015, Keystone filed Applicant's Reply in Support of Motion to Limit Testimony of Richard Kuprewicz. On June 15, 2015 the Commission issued an Order Granting in Part and Denying in Part Keystone's Motion to Exclude Testimony of Richard Kuprewicz, in which the Commission ordered the exclusion of that portion of the testimony dealing with re-routing the Project as beyond the Commission's jurisdiction pursuant to SDCL 49-41B-36 and denying the motion with respect to the rest of Mr. Kuprewicz's testimony.

On May 26, 2015, Keystone filed a Motion to Preclude Testimony Regarding Mni Wiconi Pipeline Easements, on the grounds that Keystone has already entered into easement agreements for such crossings from the U.S. Bureau of Reclamation and the affected landowners. On June 2, 2015, Intervenor Gary Dorr filed Gary Dorr's Response to Motion by TransCanada to Preclude Testimony Regarding Mni Wiconi Pipeline Easements. On June 9, 2015, Keystone filed a Reply Brief in Support of TransCanada's Motion to Preclude Testimony Regarding Mni Wiconi Pipeline Easements and up-dated supporting documentation. On June 15, 2015, the Commission issued an Order Granting Motion to Preclude Testimony Regarding Mni Wiconi Pipeline Easements, finding that tribal consent to the proposed Keystone XL Pipeline's crossing of the Mni Wiconi pipeline(s) is not relevant to this proceeding, because the Commission does not have jurisdiction over property rights.

On May 26, 2015, Keystone filed Applicant's Motion to Preclude Consideration of Aboriginal Title or Usufructuary Rights as beyond the Commission's jurisdiction and the scope of this proceeding. On June 2, 2015, the Commission received Standing Rock Sioux Tribe Opposition to Motion to Preclude Consideration of Aboriginal Title or Usufructuary Rights, Yankton Sioux Tribe's Response to Applicant's Motion to Preclude Consideration of Aboriginal Title or Usufructuary Rights, and Cheyenne River Sioux Tribe's Response to Keystone's Motion to Preclude Consideration of Aboriginal Title or Usufructuary Rights. On June 8, 2015, Keystone filed Applicant's Reply Brief - Motion to Preclude Consideration of Aboriginal Title or Usufructuary Rights. Finding that the Commission does not have jurisdiction over aboriginal title or usufructuary rights, on June 15, 2015, the Commission issued an Order Granting Motion to Preclude Consideration of Aboriginal Title or Usufructuary Rights.

On or before July 7, 2015, exhibit and/or witness lists were filed by Keystone, Staff, and Intervenor Cindy Myers, Cheyenne River Sioux Tribe, Dakota Rural Action, Standing Rock Sioux Tribe, Yankton Sioux Tribe, Chastity Jewett, and Rosebud Sioux Tribe.

On July 9, 2015, Staff filed a Motion for Judicial Notice requesting that the Commission take judicial notice of: the evidentiary record in Docket No. HP09-001; the Department of State's Final Environmental Impact Statement involving the Project; the Final Supplemental Environmental Impact Statement; and SDCL Chapter 49-41B in its entirety. On July 22, 2015, the Commission issued an Order Granting Judicial Notice of these documents.

On July 10, 2015, the Rosebud Sioux Tribe filed Rosebud Sioux Tribe's Motion *in Limine* asking that certain rebuttal testimony filed by Keystone in response to Rosebud's expert witnesses Richard Kuprewicz, Ian Goodman, and Brigid Rowan be excluded because it had elected not to call these persons as witnesses. At the hearing on the motion on July 21, 2015, Keystone and Rosebud agreed that the issue was moot because Kuprewicz, Goodman, and Rowan would not be called as witnesses at the hearing. On July 22, 2015, the Commission accordingly issued an Order Denying Rosebud Sioux Tribe's Motion to Exclude Testimony.

On July 10, 2015, Staff filed a Motion for Time Certain for Witness Testimony requesting that August 3, 2015, or such time as necessary on such date be set aside for the testimony of at least one of Staff's witnesses, Dan Flo, and witnesses for Standing Rock Sioux Tribe who will be traveling some distance from out of town. On July 22, 2015, the Commission issued an Order Granting Motion for Time Certain for Witness Testimony. On July 16, Diana Steskal filed a request for time certain for her testimony on either July 29 or 30, 2015. On July 22, 2015, the Commission issued an Order Granting Motion for Time Certain for Witness Testimony as requested by Ms. Steskal.

On July 10, 2015, Keystone filed the following motions *in limine*: (1) to strike the proposed testimony of Linda Black Elk, consisting of an article on Native American plants; (2) to strike Paula Antoine's rebuttal testimony; (3) to exclude the testimony of Kevin E. Cahill, Ph.D.; (4) to restrict the testimony of Leonard Crow Dog; (5) to preclude the testimony of Dr. Hansen and Dr. Oglesby; (6) to restrict the testimony of Faith Spotted Eagle and an unnamed member of the Yankton Sioux Tribe Business and Claims Committee; (7) to preclude the testimony of Chris Saucosi; (8) to preclude the rebuttal testimony of Jennifer Galindo and Waste Win Young; and (9) to preclude the rebuttal testimony of Ian Goodman and Brigid Rowan. Staff and intervenors filed responses. With respect to these motions, the Commission by separate orders dated July 22, 2015, granted the motions concerning Linda Black Elk, Kevin Cahill, Leonard Crow Dog, Dr. Hansen and Dr. Oglesby, Faith Spotted Eagle and an unnamed member of the Business and Claims Committee, Chris Saucosi, and Jennifer Galindo and Waste Win Young. The Commission granted in part the motion to strike Paula Antoine's testimony as it related to the Spirit Camp located in Tripp County, but otherwise denied the motion in its July 22, 2015 Order Granting in Part and Denying in Part Motion *in Limine* to Strike Paula Antoine's Rebuttal Testimony. Also on July 22, 2015, the Commission issued an Order Denying Motion *in Limine* to Preclude Rebuttal Testimony of Ian Goodman and Brigid Rowan finding the issue to be moot.

On July 24, 2015, Standing Rock Sioux Tribe filed motions for reconsideration of the orders excluding the testimony of Kevin E. Cahill and Jennifer Galindo and Waste Win Young. On August 31, 2015, the Commission issued an Order Denying Motion for Reconsideration of Order Granting Motion *in Limine* to Preclude Rebuttal Testimony of Jennifer Galindo and Waste Win Young. On September 1, 2015, the Commission issued an Order Granting in Part Motion for Reconsideration of Order Granting Motion to Exclude Testimony of Kevin E. Cahill, Ph.D. allowing that part of Cahill's testimony responsive to the testimony of Staff witness Brian Walsh.

On July 10, 2015, Keystone filed Keystone's Protective Motion *in Limine* Regarding Dakota Rural Action's Exhibit List Dated July 7, 2015, seeking to preclude those documents or portions of documents on DRA's Exhibit List that were not timely disclosed to Keystone in DRA's responses to Keystone's discovery requests. After considering Keystone's motion at an ad hoc meeting, on July 17, 2015, the Commission issued an Order Granting in Part and Denying in Part Motion *in Limine* (DRA Exhibits) precluding exhibits 29-37, 39-65, 67-128, 397-409, 1058-1062, and 1063-1073. On July 21, 2015, DRA filed Dakota Rural Action's Motion and Memorandum for Reconsideration of Partial Granting of Motion *in Limine* to Exclude Exhibits. On July 23, 2015, the Commission issued an Order Granting in Part Motion for Reconsideration of Partial Granting of Motion *in Limine* to Exclude Exhibits, allowing exhibits 29-37, 39-65, and 1058-1062 to be offered in evidence.

On July 10, 2015, Yankton Sioux Tribe, Cheyenne River Sioux Tribe, BOLD Nebraska, Rosebud Sioux Tribe, Indigenous Environmental Network, and Dakota Rural Action filed a Joint Motion *in Limine* to Exclude Evidence Pertaining to Keystone's Proposed Changes to Findings of Fact requesting that Keystone be prohibited from submitting any evidence related to changes in facts as reflected in the Tracking Table of Changes attached as Appendix C to its Certification Petition. On July 17, 2015, Keystone filed Applicant's Response to Joint Motion *in Limine* arguing that the Tracking Table of Changes is merely a reference to minor changes in facts that have occurred since the issuance of the Amended Final Decision in 2010. Finding that the testimony at issue is relevant to the proceeding and that amending the findings of fact in Docket HP09-001 is not requested, on July 23, 2015, the Commission issued an Order Denying Joint Motion *in Limine* to Exclude Evidence Pertaining to Keystone's Proposed Changes to Findings of Fact.

On July 10, 2015, Keystone filed Applicant's Motion Concerning Procedural Issues at the Evidentiary Hearing (Procedural Motion) requesting that the Commission issue several directives to expedite the evidentiary hearing and ensure that it operates efficiently given the number of parties and witnesses involved, namely: (1) limiting Intervenors with a common interest to one lawyer conducting cross-examination; (2) requiring written rather than oral opening statements; (3) precluding friendly cross examination; (4) limiting cross-examination to counsel if a party was represented by counsel; (5) limiting cross examination to the scope of direct examination; and (6) precluding argument on evidentiary objections unless requested by the Hearing Examiner. Responses to the Procedural Motion were filed by Staff and several Intervenors. On July 22, 2015, the Commission issued Order Denying in Part and Granting in Part Applicant's Motion Concerning Procedural Issues at the Evidentiary Hearing denying all of Keystone's requests except for limiting cross examination to the scope of direct examination and matters affecting the credibility of a witness and limiting cross-examination to counsel if a party was represented by counsel.

On July 6, 2015, a public input hearing was held before the Commission beginning at 5:30 p.m. in Room 414 of the State Capitol Building. The Commission heard public comment from 52 persons. The Commission also received written comments from a number of persons, which are included in the docket.

An evidentiary hearing was held beginning on Monday, July 27, 2015, in Room 414 of the State Capitol Building. On July 30, 2015, the Commission issued a Notice of Additional Hearing dates extending the hearing to include Saturday, August 1, 2015, and then continuing from August 3-5 and 6-7, 2015, if necessary. The hearing concluded near the end of the business day on August 5, 2015. The evidentiary hearing was conducted by Commission General Counsel John J. Smith, who acted as Hearing Examiner. Commissioners Chris Nelson and Gary Hanson attended the hearing in person. Due to medical treatment, Commissioner Kristie Fiegen elected to participate by reviewing the hearing transcript as allowed under SDCL § 1-26-24. TR 46-50.³ On October 5, 2015, Commissioner Fiegen filed a Certification attesting to the fact that she had read the entirety of the hearing transcripts.

At the conclusion of the hearing, the Commission established a briefing schedule. TR 2502-2503. On August 12, 2015, the Commission issued an Order Establishing Post-Hearing Briefing Schedule in conformity with the action taken at the hearing with simultaneous initial post-hearing briefs due October 1, 2015, and simultaneous reply briefs due October 31, 2015, with reply briefs limited to parties who submitted initial briefs.

At the evidentiary hearing, non-attorney Intervenor Cindy Myers testified on her own behalf. Keystone objected to much of Ms. Myers's testimony and exhibits; however, in the interest of time, it was agreed at the hearing that Keystone would submit its objections in writing to be ruled on at a later date. On September 21, 2015, Keystone filed Applicant's Motion to Strike Testimony and Exhibits of Cindy Myers requesting that the Commission issue an order striking certain portions of Intervenor Cindy Myers's hearing testimony and exhibits. The motion was heard on October 29, 2015. During the discussion on the motion, the following clarifications were made involving Keystone's references to specific items identified in the motion: 1) TransCanada's request to strike transcript testimony 1659:6-1660:13 should be 1659:6-

³ References to the June 10-11, 2014, Hearing Transcript are in the format "TR" followed by the Hearing Transcript page number(s) referenced, and references to Hearing Exhibits are in the format Ex followed by the exhibit number and, where applicable, the page number(s) referenced or other identifying reference and, where applicable, the appendix, attachment or sub-exhibit identifier and page number(s) referenced.

1660:15; 2) TransCanada's request to strike the first paragraph under "Aquifers" applies to the entire paragraph; the request to strike the second paragraph under "Aquifers" excludes the first sentence of the second paragraph; 3) the request to strike the third paragraph under "Aquifers" refers to the entire paragraph; and 4) the request to strike the third paragraph under "Waterways" should be the second paragraph. Chairman Chris Nelson moved to grant TransCanada's Motion to Strike, subject to the clarifications made during the hearing. Commissioner Gary Hanson moved to amend the motion to exclude Exhibit 6001 from the Motion to Strike, which motion failed. The Commission then voted unanimously to grant Keystone's motion subject to the clarifications made at the hearing. On November 4, 2015, Commissioner Hanson filed a request for reconsideration of the Commission action taken on October 29, 2015, in order to separately address Exhibit 6001. On November 6, 2015, the Commission issued an Order Granting Keystone's Motion to Strike Testimony and Exhibits of Cindy Myers. In response to Commissioner Hanson's request for reconsideration, on November 19, 2015, the Commission issued an Order Granting Reconsideration of Order Granting Keystone's Motion to Strike Testimony and Exhibits of Cindy Myers in which the Commission bifurcated the Motion to Strike in order to consider Exhibit 6001 separately. With Commissioner Hanson dissenting, a majority of the Commission voted to exclude Exhibit 6001. The Commission then voted unanimously to exclude the remaining testimony and exhibits addressed in the October 29 Commission action.

On November 4, 2015, Yankton Sioux Tribe, Rosebud Sioux Tribe, Cheyenne River Sioux Tribe, Standing Rock Sioux Tribe, Indigenous Environmental Network, Dakota Rural Action, Intertribal Council on Utility Policy, and BOLD Nebraska submitted a Joint Motion to Strike Proposed Findings of Fact and Conclusions of Law requesting that the Commission strike Keystone's Proposed Findings of Fact and Conclusions of law submitted as an attachment to Applicant's Post-Hearing Brief on the grounds that ARSD 20:10:01:25 states that "[i]f requested by the commission, the parties shall file proposed findings of fact." Finding that nothing in the statutes or rules precludes a party from filing proposed findings of fact and conclusions of law, on November 18, 2015, the Commission issued an Order Denying Joint Motion to Strike Proposed Findings of Fact and Conclusions of Law.

On November 9, 2015, John H. Harter, Elizabeth Lone Eagle, Paul F. Seamans, Cindy Myers, Diana L. Steskal, Byron T. Steskal, Arthur R. Tanderup, Lewis GrassRope, Carolyn P. Smith, Nancy Hilding, Gary F. Dorr, Wrexie L. Bardaglio, Joye Braun, Chastity Jewett, Dallas Goldtooth, Bonny J. Kilmurry, Viola Waln, Louis T. Genung, Terry Frisch, Cheryl Frisch, Dakota Rural Action, Indigenous Environmental Network, Intertribal Council on Utility Policy, BOLD Nebraska, Rosebud Sioux Tribe, Yankton Sioux Tribe, Cheyenne River Sioux Tribe, and Standing Rock Sioux Tribe filed Intervenor's Joint Motion to Dismiss requesting that the Commission enter an order (a) dismissing the petition for certification filed by TransCanada Keystone Pipeline, LP, and (b) revoking the permit for construction of the proposed Keystone XL Pipeline through South Dakota which was granted by the Commission on June 29, 2010, in the Amended Final Decision. On December 29, 2015, the Commission issued an Order Denying Motion to Dismiss denying both of these requests.

On December 9, 2015, Yankton Sioux Tribe filed Yankton Sioux Tribe's Proposed Findings of Fact and Conclusions of Law and Objections to Applicant's Proposed Findings of Fact and Conclusions of Law. On December 21, 2015, Keystone filed Applicant's Objections to Yankton Sioux Tribe's Proposed Findings of Fact and Conclusions of Law.

On December 18, 2015, the Commission received Dakota Rural Action's Motion to Supplement Administrative Record. In its motion, DRA asks the Commission to take

administrative notice of a Notice of Probable Violation, Proposed Civil Penalty, and Proposed Compliance Order filed by the United States Pipeline and Hazardous Materials Safety Administration (PHMSA) on November 20, 2015, and supplement the administrative record with the same. On December 21, 2015, Keystone filed Applicant's Response to DRA's Motion to Supplement the Record in which Keystone requests that the Commission also supplement the record with Keystone's response to the Notice of Probable Violation. On December 29, 2015, the Commission issued an Order Granting Motion for Administrative Notice and Supplementing the Administrative Record taking administrative notice of the Notice of Probable Violation, Proposed Civil Penalty, and Proposed Compliance Order as official documents of PHMSA, an agency of the government of the United States, and supplementing the record with these documents, but denying Keystone's request to supplement the record with its response on the grounds that such response is not an official record of a governmental agency and would therefore be hearsay without an opportunity for adjudicatory challenge by other parties.

At its regular meeting on January 5, 2016, the Commission took this matter up for decision. Commissioner Fiegen moved to accept Keystone's Certification in accordance with SDCL 49-41B-27 and find that the Certification is valid. After discussion by the Commissioners, the Commission voted unanimously in favor of the motion.

Having considered the evidence of record, applicable law, and the briefs and arguments of the parties, the Commission makes the following Findings of Fact, Conclusions of Law, and Decision.

FINDINGS OF FACT

Parties

1. The permit holder and Applicant in this docket is TransCanada Keystone Pipeline, LP, a limited partnership organized under the laws of the State of Delaware and owned by affiliates of TransCanada Corporation, a Canadian public company organized under the laws of Canada. Amended Final Decision, Finding of Fact 1.

2. On November 4, 2014, the Commission issued an Order Granting Intervention and Party Status granting intervention and party status to all persons who had requested party status, namely: John H. Harter, Rosebud Sioux Tribe-Tribal Utility Commission, Elizabeth Lone Eagle, Paul F. Seamans, Viola Waln, Cindy Myers, RN, BOLD Nebraska, Diana L. Steskal, Cheryl Frisch, Terry Frisch, Standing Rock Sioux Indian Tribe, Byron T. Steskal, Arthur R. Tanderup, Lewis GrassRope, Carolyn P. Smith, Robert G. Allpress, Jeff Jensen, Amy Schaffer, Louis T. Genung, Nancy Hilding, Gary F. Dorr, Bruce Boettcher, Rosebud Sioux Tribe, Wrexie Lainson Bardaglio, South Dakota Wildlife Federation, Cheyenne River Sioux Tribe, Jerry D. Jones, Cody Jones, Debbie J. Trapp, Gena M. Parkhurst, Sierra Club, Joye Braun, 350.org, Yankton Sioux Tribe, Dakota Rural Action, Chastity Jewett, Indigenous Environmental Network, Dallas Goldtooth, RoxAnn Boettcher, Bonny Kilmurry, Ronald Fees, and Intertribal Council on Utility Policy. On March 4, 2015, the Commission issued an Order Granting Request to Withdraw Party Status allowing the South Dakota Wildlife Federation and the Sierra Club to withdraw as parties, and on April 21, 2015, the Commission entered an Order Granting Request to Withdraw Party Status allowing Jeff Jensen to withdraw as a party.

3. Staff participated fully as a party, represented by Kristen Edwards and Karen Cremer.

Procedural Findings

4. The Procedural History set forth above is hereby incorporated by reference in its entirety in these Procedural Findings. The procedural findings set forth in the Procedural History are a substantially complete and accurate description of the material documents filed in this docket and the proceedings conducted and orders issued by the Commission in this matter. In addition to the procedural findings set forth in the Procedural History, the following Procedural Findings deal with the hearing process itself.

5. The following testimony was pre-filed on April 2, 2015, April 23, 2015, April 24, 2015, June 25, 2015, June 26, 2015, and August 4, 2015 in advance of the formal evidentiary hearing held July 27 through August 1, and August 3-5, 2015, in Room 414 of the State Capitol Building in Pierre, South Dakota:

Pre-filed Direct Testimony and Exhibits

Keystone

Heidi Tillquist's Testimony and Exhibit A - Resume
Corey Goulet's Testimony and Exhibit A - Resume
Jon Schmidt, Ph.D.'s Testimony and Exhibit A - Resume
Meera Kothari, P.E.'s Testimony and Exhibits A and B – Resume and Media Advisory
(August 5, 2010)
David Diakow's Testimony and Exhibit A - Resume

Staff

Brian Walsh's Testimony and Exhibit ___BW-1
Derric Iles' Testimony and Exhibit ___DI-1
Kimberly McIntosh's Testimony and Exhibit ___KM-1
Tom Kirschenmann's Testimony and Exhibit ___TK-1
Daniel Flo's Testimony and Exhibit ___DF-1, Exhibit ___DF-2, and Exhibit ___DF-2
Revised
David Schramm's Testimony and Exhibit ___DS-1
Jenny Hudson's Testimony and Exhibit ___JH-1
Christopher Hughes' Testimony and Exhibit ___CH-1
Supplemental Pre-filed Testimony of Christopher Hughes
Paige Olson's Testimony and Exhibit ___PO-1
Darren Kearney's Testimony and Exhibit ___DK-1
Darren Kearney's Testimony (Amended July 23, 2015)

Intervenors

Gary F. Dorr's Testimony and Exhibit
Wayne Frederick's Testimony and Exhibit A - Resume
Cindy Myers' Testimony
Diana Steskal's Testimony (will file exhibits later)
Paul F. Seamans' Testimony
Dakota Rural Action's Testimony
Evan Vokes' Testimony

- Dr. Arden D. Davis, Ph.D, P.E.'s Testimony and Attachment (Figures 1, 2, 3, 4, 5, 6, 7, 8, and 9)
- Sue Sibson's Testimony
- Cheyenne River Sioux Tribe's Testimony
 - Carlyle Ducheneaux's Testimony
 - Steve Vance's Testimony
- Yankton Sioux Tribe's Testimony
 - Faith Spotted Eagle's Testimony
 - Supplement to Faith Spotted Eagle Pre-filed Testimony and Attachment – International Treaty to Protect the Sacred From Tar Sands Projects
- Standing Rock Sioux Tribe's Testimony
 - Waste Win Young's Testimony
 - Phyllis Young's Testimony
 - Doug Crow Ghost's Testimony
 - Linda Black Elk's Testimony
- Rosebud Sioux Tribe's Testimony
 - Richard Kuprewicz's Testimony Confidential (removed at the request of the party)
 - RST Exhibit 8 - Richard B. Kuprewicz's Resume Confidential (removed at the request of the party)
 - RST Exhibit 9 - Accufacts Inc.'s Letter to Rosebud Sioux Tribe Confidential (removed at the request of the party)
 - RST Exhibit 10 - Figure 1 - South Dakota Elevation Profile with Valves and Additional Information Confidential (removed at the request of the party)
 - Ian Goodman's Testimony Confidential (removed at the request of the party)
 - RST Exhibit 1 – Ian Goodman's Resume Confidential (removed at the request of the party)
 - RST Exhibit 3 – Changes to the Economic Costs and Benefits of the Keystone XL Pipeline for South Dakota Confidential (removed at the request of the party)
 - Brigid Rowan's Testimony Confidential (removed at the request of the party)
 - RST Exhibit 2 – Brigid Rowan's Resume (removed at the request of the party)
 - RST Exhibit 3 – Changes to the Economic Costs and Benefits of the Keystone XL Pipeline for South Dakota (removed at the request of the party)
 - RST Exhibit 4 – Landslide Hazard Areas Confidential (removed at the request of the party)
 - RST Exhibit 5 – Spill Costs Per Barrel from Comparable Crude Pipelines Confidential (removed at the request of the party)
 - RST Exhibit 6 – Range of Worst-Case Scenario Costs for Keystone XL Using Spill Costs for Comparable Crude Oil Pipelines (with 15-minute valve shutoff) Confidential (removed at the request of the party)
 - RST Exhibit 7 - Range of Worst-Case Scenario Costs for Keystone XL Using Spill Costs for Comparable Crude Oil Pipelines (with 30-minute valve shutoff) Confidential (removed at the request of the party)

Pre-Filed Rebuttal Testimony and Exhibits

Staff

Darren Kearney's Rebuttal Testimony

Standing Rock Sioux Tribe

**Kevin E. Cahill, Ph.D.'s Rebuttal Testimony and Rebuttal Expert Report of Economist
Kevin E. Cahill, PH.D. on Behalf of the Standing Rock Sioux Tribe**

Rosebud Sioux Tribe

Jennifer Galindo's Rebuttal Testimony

Exhibit 11 - Curriculum Vitae Jennifer Galindo Archeologist

Exhibit 12 - Map from Programmatic Agreement

Exhibit 13 - RST Email and Letter to Paige Olson

Exhibit 14 - TransCanada's Policy regarding Native American Relations

Ian Goodman and Brigid Rowan's Rebuttal Testimony Confidential (removed at the request of the party)

Exhibit 15 - Changes to the Economic Costs and Benefits of the Keystone XL Pipeline for South Dakota Confidential (removed at the request of the party)

Paula Antoine's Rebuttal Testimony

Exhibit 16 - Rosebud Sioux Tribe's Resolution No. 2014-42 - Amended: Petition

Exhibit 17 - South Dakota Codified Laws 49-41B-1, 49-41B-11 and 49-41B-22

Amended Rebuttal Testimony of Paula Antoine

Chief Leonard Crow Dog's Rebuttal Testimony

Keystone

Corey Goulet's Rebuttal Testimony

Dan King's Rebuttal Testimony and Resume

F.J. (Rick) Perkins' Rebuttal Testimony and Resume

Meera Kothari's Rebuttal Testimony

Jon Schmidt's Rebuttal Testimony

Heidi Tillquist's Rebuttal Testimony

Exhibit List

Exhibit 1: Diluted Bitumen-Derived Crude Oil: Relative Pipeline Impacts (Battelle 2012)

Exhibit 2: Comparison of the Corrosivity to Dilbit and Conventional Crude (Been 2011) Confidential (not available to the public)

Exhibit 3: Effects of Diluted Bitumen on Crude Oil Pipelines (National Academy of Sciences 2013)

Exhibit 4: Crude Oil at the Bemidji Site: 25 Years of Monitoring, Modeling, and Understanding (Essaid et al. 2011)

Exhibit 5: Use of Long-Term Monitoring Data to Evaluate Benzene, MTBE and TBA Plume Behavior in Groundwater at Retail Gasoline Sites (Kamath et al. 2012)

- Exhibit 6: Review of Quantitative Surveys of the Length and Stability of MTBE, TBA, and Benzene Plumes in Groundwater at UST Sites (Connor et al. 2015)
- Exhibit 7: Characteristics of Dissolved Petroleum Hydrocarbon Plumes: Results from Four Studies (Newell and Connor 1998)
- Exhibit 8: A Comparison of Benzene and Toluene Plume Lengths for Sites Contaminated with Regular vs. Ethanol-Amended Gasoline (Ruiz-Aguilar et al. 2003)
- Exhibit 9: Evaluation of the Impact of Fuel Hydrocarbons and Oxygenates on Groundwater Resources (Shih et al. 2004)
- Exhibit 10: Leukemia Risk Associated With Low-Level Benzene Exposure (Glass et al. 2003)
- Exhibit 11: United States Department of State 12.1: Keystone XL Project, Risk Analysis (Kothari, Bajnok, Tillquist)

Jeff Mackenzie's Rebuttal Testimony

- Appendix A - Jeff Mackenzie's Resume
- Appendix B - Final EIS 3.13.5.3 and 3.13.5.4

Amended Rebuttal Testimony of Heidi Tillquist

Exhibit List

- Exhibit 1: Comparison of the Corrosivity of Dilbit and Conventional Crude
- Exhibit 2: Effects of Diluted Bitumen on Crude Oil Pipelines
- Exhibit 3: Leukemia Risk Associated With Low-Level Benzene Exposure
- Exhibit 4: Characteristics of Dissolved Petroleum Hydrocarbon Plumes
- Exhibit 5: Use of Long-Term Monitoring Data to Evaluate Benzene, MTBE, and TBA Plume Behavior in Groundwater at Retail Gasoline Sites
- Exhibit 6: Review of Quantitative Surveys of the Length and Stability of MTBE, TBA, and Benzene Plumes in Groundwater at UST Sites
- Exhibit 7: A Comparison of Benzene and Toluene Plume Lengths for Sites Contaminated with Regular vs. Ethanol-Amended Gasoline
- Exhibit 8: Evaluation of the Impact of Fuel Hydrocarbons and Oxygenates on Groundwater Resources
- Exhibit 9: United States Department of State 12.1 -Keystone XL Project Risk Analysis

Amended Rebuttal Testimony of Meera Kothari

Dakota Rural Action

- Evan Vokes' Rebuttal Testimony
- John Harter's Rebuttal Testimony

Yankton Sioux Tribe

Member of the Yankton Sioux Tribe Business & Claims Committee Consisting of Elected Members: Robert Flying Hawk, Quentin JB Brugier, Jr., Mona Wright, Justin Songhawk, Leo O'Conner, Jean Archambeau, Glenford Sam Sully, Jason Cooke, and Everdale Song Hawk's Rebuttal Testimony

- Exhibit A - Keystone's Responses to Yankton Sioux Tribe's First Interrogatories and Request for Production of Documents
- Exhibit B - Appendix S - Programmatic Agreement and Record of Tribal Contact

Exhibit C - Appendix E - Amended Programmatic Agreement and Record of Consultation
Faith Spotted Eagle's Rebuttal Testimony
Exhibit A - Appendix S - Programmatic Agreement and Record of Tribal Contact
Exhibit B - Appendix E - Amended Programmatic Agreement and Record of Consultation
Chris Saucosi's Rebuttal Testimony

Intertribal Council On Utility Policy

Prefiled Testimony of Dr. Robert Oglesby
- Comments of Dr. James E. Hansen
Appendix: James E. Hansen Comments Charts
Exhibit 1 - James E. Hansen's Resume
Exhibit 2 - Assessing "Dangerous Climate Change": Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature

Surrebuttal Testimony

Cindy Myers' Surrebuttal Testimony

Keystone

Surrebuttal Testimony of Corey Goulet
Surrebuttal Testimony of Dan King and Certificate of Service

6. A nine-day evidentiary hearing was held on July 27 through August 1 and August 3 through August 5, 2015. In addition to Keystone and Staff, the following intervenors attended and participated in the hearing: Dakota Rural Action, BOLD Nebraska, Standing Rock Sioux Tribe, Rosebud Sioux Tribe, Yankton Sioux Tribe, Intertribal COUP, Cheyenne River Sioux Tribe, Indigenous Environmental Network, Paul Seamans, Cindy Myers, Elizabeth Lone Eagle, John Harter, Gary Dorr, Joye Braun, Louis GrassRope, Diana Steskal, Carolyn Smith, Dallas Goldtooth, Chastity Jewett, Wrexie Lainsou Bardaglio, and Bonny Kilmurry. Dakota Rural Action, BOLD Nebraska, Intertribal COUP, Indigenous Environmental Network, and the Tribes were all represented by counsel.

7. The following witnesses testified at the hearing and were subject to cross examination: Corey Goulet, Meera Kothari, Rick Perkins, Jon Schmidt, Heidi Tillquist, Dan King, Diana Steskal, Carlyle Ducheneaux, David Schramm, Steve Vance, Evan Vokes, Cindy Myers, Kevin Cahill, Phyllis Young, Arden Davis, Faith Spotted Eagle, Jon Schmidt, Christopher Hughes, Jenny Hudson, Sue Sibson, Doug Crow Ghost, Daniel Flo, Wayne Frederick, Paula Antoine, Brian Walsh, and John Harter.

Applicable Statute

8. The governing statute is SDCL § 49-41B-27, which requires that if construction has not started within four years of the permit being granted, then the permittee must "certify to the Public Utilities Commission that such facility continues to meet the conditions upon which the permit was issued."

9. There are no other statutes, regulations, or South Dakota cases directly addressing SDCL § 49-41B-27 and its application in this docket.

Updates to the Project since June 29, 2010

10. On March 12, 2009, Keystone filed an application for a permit pursuant to SDCL Chapter 49-41B to construct the South Dakota portion of the Project. The application was docketed as HP09-001. On June 29, 2010, after a three-day hearing, the Commission entered an Amended Final Decision and Order; Notice of Entry granting Keystone a permit to construct and operate the project subject to 50 conditions attached to the Decision as Exhibit A.

11. The Project, as proposed in Keystone's application for a permit in Docket HP09-001, was delayed. A Presidential Permit required by Executive Order 11423 of August 16, 1968, and Executive Order 13337 of April 30, 2004, allowing the pipeline to cross the border between Canada and the United States, was still under review by the United States Department of State at the time of the hearing. On November 6, 2015, the Presidential Permit was denied.

12. As originally proposed, the Project was to be developed in three segments: the Steele City Segment from Hardisty, Alberta, to Steele City, Nebraska; the Gulf Coast Segment from Cushing, Oklahoma, to Liberty County, Texas; and the Houston Lateral Segment from Liberty County, Texas, to refinery markets near Houston, Texas.

13. The Gulf Coast Segment has been constructed and was placed into operation as a stand-alone project on January 22, 2014. The Houston Lateral Segment has also been constructed as a stand-alone project. Ex 2001, ¶ 15. The Project therefore currently consists of only the Steele City segment. The Steele City Segment extends from Hardisty, Alberta, Canada, southeast to Steele City, Nebraska. It will interconnect with the previously-approved and constructed Keystone Cushing Extension segment of the Keystone Pipeline. The route in South Dakota has not changed in any material respect. Ex 2001, ¶ 7; Ex 2013.

14. The maximum capacity of the Project is 830,000 barrels per day. TR 186; Ex 2001, ¶ 6.

15. The Bakken Marketlink project was developed after Keystone's permit application in HP09-001. Ex 2001, ¶ 5. It includes a five-mile pipeline, pumps, meters, and storage tanks near Baker, Montana, to deliver light sweet crude oil from the Williston Basin in Montana and North Dakota for transportation through the Project. Bakken Marketlink will deliver up to 100,000 bpd of domestically-produced crude oil into the Keystone XL Pipeline. TR 184-187; 241-248.

16. Because the Project is only the Steele City segment, the mileage has decreased from approximately 1,707 miles to 1,202 miles with about 876 miles in the United States. Ex 2001, ¶ 7. The South Dakota portion of the Project will be approximately 315 miles in length and

crosses the South Dakota counties of Harding, Butte, Perkins, Meade, Pennington, Haakon, Jones, Lyman, and Tripp. TR 291; Ex. 2005, ¶ 9; Petition, App. C, Finding 16.

17. There is no current construction schedule for the Project, pending issuance of a Presidential Permit. Ex 2001, ¶ 8.

18. The Pipeline will be constructed using API 5L X70M high-strength steel. This was one of the design options presented in the original permit application. Petition, App. C, ¶ 18; Ex. 2003, ¶ 5. Keystone withdrew its application to PHMSA for a special permit and adopted 59 special conditions developed by PHMSA as set forth in Appendix Z to the Department of State Final Supplemental Environmental Impact Statement (FSEIS). Petition ¶¶ 60, 90; TR 215, 302. As a result of this change, Keystone will construct the Pipeline using the as-proposed stronger steel, but will operate the Pipeline at a lower maximum pressure, 1,307 psig. Ex. 2003, ¶ 8; Petition, App. C, ¶¶ 18, 19, 63.

19. As part of the 59 special conditions, valves on the Pipeline must be located based on the worst-case discharge as calculated by 49 CFR 195.260 and by taking into consideration elevation, population, and environmentally-sensitive locations, or no more than 20 miles apart, whichever is less. As a result of this change, the number of mainline valves in South Dakota will be 20 instead of 16. Petition, App. C, ¶ 20; Ex. 2001, ¶ 9, 10, 11; FSEIS, App. Z, Condition 32; TR 215.

20. Keystone has committed to meet the 59 special conditions proposed by PHMSA as set forth in Appendix Z to the FSEIS. TR 215; Ex. 2001, ¶ 12.

21. The estimated cost of the Project in South Dakota has increased from \$921.4 million to \$1.974 billion due to new technical requirements, inflation, and additional costs due to the delay in receipt of federal approval and commencing construction. Ex. 2001, ¶ 13.

22. Keystone has continued to update its Construction, Mitigation, and Reclamation Plan (CMR Plan). A current, redlined version of the CMR Plan is attached to the Petition as Appendix C, Attachment A. Ex. 2005, ¶ 5; Petition, App. C, Attachment A.

23. In Docket HP09-001, Keystone submitted soil type maps as Exhibit TC-14. The maps are still generally consistent with the Project, but Keystone has committed to submit updated maps before construction begins as required by Condition No. 6. TR 575-640; Ex 2005, ¶ 6; Petition, App. C, ¶ 33.

24. Keystone will use horizontal directional drilling (HDD) to cross two additional rivers or streams—Bridger Creek and the Bad River. TR 335-336, 531, 537-538, 545, 547, 588-589, 633-634, 870, 1205, 1286-1287, 1886; Ex 2003 ¶ 10; Ex. 2005, ¶ 7; Ex. 2009 ¶ 6; Petition, App. C., ¶¶ 41, 83. The preliminary site-specific crossing plans for these additional HDD crossings are included with the Petition as Attachment B to Appendix C.

25. The projected total length of Project pipe with the potential to affect a High Consequence Area (HCA) is 15.8 miles, which is less than the 34.3 miles stated in the Amended Final Decision's findings of fact. TR 670, 1119; Ex. 2005 ¶ 4; Petition, App. C, ¶ 50. As a result of the change in mileage, it is estimated that a spill that could affect an HCA would occur no more than once in 460 years, rather than once in 250 years. TR 670.

26. Due to minor route refinements, all but 27.9 miles of the Project route in South Dakota are privately owned, an increase from 21.5 miles in the original application. Ex. 2005, ¶ 9; Petition, App. C, ¶ 54.

27. No Indian reservation or trust lands are crossed by the Project route. TR 394; Petition, App. C, ¶ 54.

28. TransCanada has thousands of miles of the same grade of pipeline steel, which has been coated with fusion bonded epoxy (FBE) installed and in operation. There has been no evidence of external corrosion except for one instance in Missouri in which an adjacent foreign utility interfered with the active cathodic protection system. Ex. 2003, ¶ 9; Petition, App. C, ¶ 68. The corrosion incident in Missouri was detected by Keystone during an in-line inspection of the pipe. TR 293-94, 2315-16. Keystone has since then started installing passive anodes to protect the pipeline during construction, which goes beyond what is required by federal regulation. TR 265, 309-310.

29. Since the Amended Final Decision was issued in 2010, Keystone has completed the process of consulting with the National Resource Conservation Service to create construction/reclamation units for the different soils along the pipeline route. TR 617; Petition, App. C, ¶ 80.

30. Other than these updates stated in Appendix C to the Petition, the parties did not present evidence of any other factual changes to the Project.

Keystone's Ability to Meet the Permit Conditions

31. None of the updates identified in Appendix C to Keystone's Certification Petition affects Keystone's ability to meet the conditions on which the permit was issued. As identified in Petition Appendix C, Conditions 1-3, 5, 6.a-6.f, 11-14, 16.a-16.p, 17, 18, 19.a, 20-34.a, 35-40, 41.b, and 42-48 are prospective. No evidence was presented that Keystone cannot satisfy any of these conditions in the future.

32. Condition 4 provides that the permit is not transferable without the consent of the Commission. No evidence was presented that Keystone cannot continue to comply with this condition.

33. Conditions 7-9 require that Keystone appoint a public liaison officer, which has been done, and submit quarterly reports to the Commission, which has also been done and is ongoing. No evidence was introduced that Keystone cannot continue to meet these conditions.

34. Condition 10 requires that not later than six months before construction, Keystone, must commence a program of contacts with local emergency responders. Keystone presented evidence that it has already started making such contacts and will continue. TR 317-318. No evidence was introduced that Keystone cannot continue to meet this condition.

35. Condition 10 does not specifically refer to Tribal governments or officials. To the extent that Tribes may be affected by construction and operation of the Project, Keystone presented evidence that it will contact Tribal emergency responders as well. TR 317-318.

36. Condition 15 requires consultation with the NRCS to develop the con/rec units, which Keystone established has been done. TR 617; Petition, App. C, ¶ 80; FSEIS, App. R.

37. Condition 19 requires that landowners be compensated for tree removal, which Keystone indicated is done as part of the process of acquiring easements. Petition, App. B, Condition 19. No evidence was presented that Keystone cannot continue to meet this condition.

38. Condition 34 requires that Keystone continue to evaluate and perform assessment activities regarding high consequence areas. Keystone presented evidence that this process is ongoing. TR 662-663. No witness testified to the contrary.

39. Condition 41 requires that Keystone follow all protection and mitigation efforts recommended by the U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish, and Parks (SDGFP). Keystone presented evidence that this process is ongoing. TR 630, 636-637; Petition, App. B, Condition 19. No witness testified to the contrary.

40. Condition 41 requires that Keystone consult with SDGFP to identify greater prairie chicken and greater sage and sharp-tailed grouse leks. In support of its Certification, Keystone submitted its Quarterly Report stating that this process is ongoing. Petition, App. B, Condition 41.a. No witness testified to the contrary.

41. Condition 16(m) requires that Keystone must re-seed all lands with comparable crops to be approved by the landowner, or with comparable grass or native species mix to be approved by the landowner for pasture, and that Keystone must actively monitor revegetation on all disturbed areas for at least two years. Condition 49 provides that Keystone must pay commercially reasonable costs and indemnify and hold harmless landowners for any loss or damage resulting from Keystone's use of the easement. The only evidence related to these conditions came from Sue Sibson, who testified that reclamation on her property after construction of the Keystone Pipeline has not been satisfactory. TR 1965. Sibson's testimony does not, however, establish that Keystone cannot meet these conditions with Keystone XL. She testified that it takes "quite a while" for native grasses to re-establish, and that her property has been reseeded at her request four or five times since 2009. TR 1977. She also testified that she has been paid damages for loss of use of the easement area, and she did not state that Keystone has failed to pay reasonable damages. The process of reclaiming her property is ongoing, and it is undisputed that Keystone has continued to work with Sibson. TR 1975, 1978, 306-307. Corey Goulet testified that Keystone was committed to continue reclamation efforts on the Sibson property until the Sibsons were satisfied. He also testified that out of 535 tracts on the Keystone Pipeline, all but 9 had been reclaimed to the satisfaction of the landowner. TR 306.

42. Condition 50 provides that the Commission's complaint process be available to landowners threatened with damage or the consequences of Keystone's failure to comply with any of the conditions. No evidence was presented that Keystone cannot comply with this condition.

43. Multiple Intervenors testified to their concerns about the possible adverse effects of the pipeline on groundwater resources, shallow aquifers, rivers, and streams. None of this testimony related to Keystone's ability to meet any permit condition. Rather, this testimony related to Keystone's burden of proof under SDCL § 49-41B-22.

44. Dr. Arden Davis testified to concerns that the Project right of way crosses the recharge areas of several shallow aquifers, including the Ogallala aquifer, Sand Hills-type material, gravel aquifers, eolian and alluvial aquifers, and the Fox Hills aquifer. Ex. 1003, p. 1.

Dr. Davis also testified that the Project right of way would cross the Little Missouri River, the Grand River and its tributaries, the Moreau River, the Cheyenne River, the Bad River, and the White River, and that dissolved hydrocarbon contaminants could be transported downgradient in surface water, in groundwater within the aquifers, or both. Dr. Davis also testified that the Cheyenne River, which drains much of the Black Hills, flows into the Missouri River and has exposed Pierre Shale along steep sides that are prone to slope failures. Ex. 1003, p. 2. These concerns do not specifically address any permit condition.

45. Heidi Tillquist testified on behalf of Keystone that adverse impacts to all of these areas are highly unlikely. Ex. 2017, ¶¶ 4-8. Dr. Davis did not respond to Tillquist, address the likelihood of adverse impacts, or conduct an independent risk assessment related to the Project. TR 1808-1809. The Commission addressed the likelihood of such adverse impacts in the Amended Final Decision in Findings of Fact 43-45 and 52. Dr. Davis's testimony is insufficient to warrant any change to those findings.

46. With respect to Dr. Davis's testimony about the Ogallala aquifer in Tripp County and the wind-blown Sand Hills type material crossed by the Project right of way, the Commission has required Keystone to treat that area as a hydrologically sensitive area. Amended Final Decision, Finding of Fact 53 and Condition 35; Ex. 2017, ¶ 9. Dr. Davis did not testify that such treatment was inappropriate or insufficient or that Keystone could not meet the condition.

47. Dr. Davis testified to his concern about possible benzene exposures from a leak or spill, especially since benzene is soluble in water and can be transported downstream, potentially affecting water intakes. Ex. 1003, pp. 3-4. Tillquist testified, however, that benzene exposures at a level that would cause health concerns would not be expected following a crude oil spill due to the low persistence of benzene and expected emergency response measures, and that a potential release would likely not threaten groundwater sources or public water intakes. Ex. 2017, ¶¶ 11-12. This testimony was undisputed.

48. Dr. Davis relied in his testimony on the Stansbury report from 2011 that was considered by the Department of State in connection with the FSEIS. Ex. 1003, p. 5. In her rebuttal testimony, Heidi Tillquist addressed flaws in Stansbury's analysis. Ex. 2017, ¶¶ 13-14. Dr. Davis did not address the Stansbury report in his hearing testimony, and Tillquist was not cross-examined about the Stansbury report.

49. John Harter testified to his concerns about the location of the Project right of way in relation to the City of Colome's water wells. TR 2209-2210. The proximity of the Project to the City of Colome's wells was addressed in Docket HP09-001. The Commission found that the risk of a spill affecting public or private water wells is low because the components of crude oil are unlikely to travel more than 300 feet from the spill site and there are no private or public wells within 200 or 400 feet, respectively, of the right of way and that the route was refined near Colome to avoid a groundwater protection area. Amended Final Decision, Findings 49 and 105. In this proceeding, Brian Walsh from the South Dakota Department of Environment and Natural Resources (DENR) testified that the route had been moved at DENR's request before the Amended Final Decision, and that the current route had been determined in consultation with DENR. TR 2155-2156. The route was moved 175 feet from the edge of the surface water protection area and 1,000 feet from the wellhead itself. TR 1323. Keystone also met at the time the route was changed with the mayor and an engineer for the City of Colome. TR 1384. This is not an issue that affects Keystone's ability to meet any permit condition.

50. Doug Crow Ghost, the Director of the Department of Water Resources for the Standing Rock Sioux Tribe, testified about the Winters Doctrine, tribal water rights, and his concern that the Keystone XL Pipeline presented a threat to tribal water supplies given long-term drought. TR 2015-2020. He testified that the Tribe is working with the State to quantify the Tribe's water rights. TR 2016-2017. His testimony was rebutted by Dr. Jon Schmidt, who explained in his rebuttal testimony that Keystone cannot use water if the use would adversely affect prior appropriations or vested rights, and that SDCL 46-5-40.1, which governs temporary water use permits for construction purposes, protects the Tribe, even in cases of long-term drought. Ex. 2009, ¶¶ 4-5, 7. Crow Ghost's testimony did not establish that Keystone is unable to meet any permit conditions.

51. Carlyle Ducheneaux is the Section 106 Coordinator for the Cheyenne River Sioux Tribe. TR 990. He testified that construction of the pipeline would disturb contaminated sediments in the Cheyenne River and its tributaries and that pipeline failure was likely to occur because of the sloughing of river banks and the movement of highly erodible soils. Ex. 7001, ¶¶ 8-14. Jon Schmidt testified that construction would not cause any disturbance of contaminated sediments in the Cheyenne River because Keystone will use HDD for the crossing. Schmidt also testified that sloughing of river banks is not an issue for the same reason and because Keystone can take other mitigation measures during construction. Ex. 2009, ¶¶ 8-9. Ducheneaux's testimony did not establish that Keystone is unable to meet any permit condition.

52. Cindy Myers testified to her concerns: (1) that emergency responders may not have adequate information about the chemical composition of the crude oil in case of a spill, TR 1658-1660; (2) the dangers of exposure to benzene, TR 1661-1663; (3) her opinion that benzene can permeate polyethylene and polyvinyl chloride water pipe and waterlines like the Mni Wiconi water pipeline, TR 1663-1664; (4) that, according to her, 62% of South Dakotans get their drinking water from the Missouri River, which is at risk from a spill, TR 1666-1667; and (5) because of the threat to drinking water resources, the Project "could substantially impair the health, safety, and welfare of South Dakotans." TR 1673. Tillquist's testimony established that the risks posed by possible benzene exposure due to a spill are low, and the Commission previously determined that the risk of any significant pipeline release was low. Amended Final Decision, Findings 43-45 and 52; Ex. 2017, ¶¶ 4, 6, 7, 8, 11, 12. Corey Goulet testified that studies have established that the amount of benzene present in crude oil is not a threat to PVC pipe. TR 950-951. Myers' testimony does not establish that Keystone is unable to meet any permit condition and essentially addresses SDCL 49-41B-22, the permitting statute, not SDCL 49-41B-27.

53. Faith Spotted Eagle testified to concerns about safe drinking water and the availability of water from the Missouri River for spiritual ceremonies. Ex. 9011, ¶¶ 21-23; TR 1855-1857. Spotted Eagle's testimony does not contain any factual basis for the Commission to find either that the Project poses a threat to the Tribe's drinking water or that water will not be available from the Missouri River for the Tribe's spiritual ceremonies.

54. Two intervenors testified about their concerns that Keystone had not consulted with Tribal officials about the Project. Phyllis Young testified on behalf of the Standing Rock Sioux Tribe as an at-large Tribal Council Member that Keystone did not consult with the Tribe and, similarly, that the Department of State failed to consult with the Tribe in preparing the FSEIS. Ex. 8001, last page; TR 1722, 1732-1733. The Honorable Wayne Frederick testified on behalf of the Rosebud Sioux Tribe as a member of the Council that the Rosebud Sioux Tribe was not consulted by TransCanada. TR 2088. This testimony does not establish that Keystone

cannot meet any permit conditions because, as stated in the conclusions of law, it is not Keystone's legal obligation to consult with the Tribes in connection with the FSEIS.

55. No permit condition requires that Keystone consult with the Tribes about the Project. Condition 6 refers to "local governmental units," but does not specify Tribes. Condition 34 requires that Keystone must "consider local knowledge" in assessing and evaluating environmentally sensitive and high consequence areas. In support of its Certification, Keystone submitted its Quarterly Report in which Keystone's public liaison officer stated that Keystone has sought out local knowledge. Petition, App. B, Condition 34(b).

56. None of the Tribes who intervened in this proceeding were parties to Docket HP09-001, although all could have been.

57. Appendix E to the FSEIS, which is a matter of public record of which the Commission has taken judicial notice, contains the record of consultation between the Department of State and various Tribes under Section 106 of the National Historic Preservation Act. On page 11 of the record of consultation, all of the meetings, e-mails, telephone calls, and letters between the Department of State and the Standing Rock Sioux Tribe are listed. The record of consultation establishes that the Standing Rock Sioux Tribe was consulted by the Department of State.

58. Multiple witnesses testified that the Tribes in South Dakota passed resolutions opposing the Project and that Keystone representatives were not welcome on Tribal land. TR 1745-1746, 1873, 2084, 2096-2097, 2104-2105.

59. John Harter testified that Keystone acquired an easement on his property through the use of eminent domain. TR 2199. The court file in *TransCanada v. Harter*, Civ. 11-62 (6th Jud. Cir.), of which the Commission takes judicial notice, demonstrates that Keystone acquired an easement pursuant to a judgment entered by the court that enforces a settlement agreement between Keystone and Harter. TR 2214. Even if Keystone had acquired an easement on Harter's property by eminent domain, that would not establish that Keystone is unable to meet any permit condition.

60. Kevin E. Cahill, Ph.D., is an economist with ECONorthwest from Portland, Oregon. TR 1681-1682. Cahill testified that in his opinion the socio-economic analysis that was done as part of the FSEIS was "seriously flawed" because it was supposed to be a cost-benefit analysis, but it failed to consider any costs or potential indirect costs of the Project. TR 1685-1688. He testified that any benefits of the Project had not been measured against the costs as part of the analysis done in the FSEIS. TR 1690. The socioeconomic analysis in the FSEIS was conducted by the Department of State, not Keystone. No permit condition relates to the socioeconomic analysis in the FSEIS. Dr. Cahill's testimony does not establish that Keystone does not, or is unable to, meet any permit condition.

61. Paula Antoine testified about socioeconomic issues as a rebuttal witness on behalf of the Rosebud Sioux Tribe. Ex. 11000. Ms. Antoine is the Director of the Sicangu Oyate Land Office. TR 2131. She testified that in her opinion Keystone failed to present sufficient evidence related to Amended Final Decision Findings of Fact 107, 108, 109, and 110. Ex. 11000, pp. 2-4; TR 2133. Antoine's testimony is not based on her personal knowledge and does not relate to any permit condition.

62. Faith Spotted Eagle testified on behalf of the Yankton Sioux Tribe. Ex. 9011; TR 1848. She is a counselor and a PTSD therapist. TR 1848-1849. She testified as to her concerns about the proposed work camps in South Dakota and the effect they might have on the safety of Native American communities and tribal members. Ex. 9011, ¶¶ 14, 18, 19; TR 1850-1852. Spotted Eagle testified that the Commission should "anticipate a surge in crime, especially violent crime, in the communities near the man camps" and that because the camps are inhabited by young and single men who have financial means and are away from their families, "[t]he result is easy to predict and does not require any scientific analysis." Ex. 9011, ¶¶ 14, 18. Spotted Eagle cited no studies of crime associated with work camps, no crime statistics from work camps, and no personal experience with either work camps like those proposed for the Keystone XL Pipeline or with Target Logistics, Keystone's contractor.

63. Rick Perkins testified on behalf of Keystone about the work camps, and testified that Target Logistics, the contractor that will operate the camps, does not have a documented history of behavior problems associated with the camps. Ex. 2007, ¶¶ 5-6, 12-13; TR 2400. Perkins testified that Keystone expects no increase in crime associated with the camps. TR 2409. Workers who live in the camps must sign a code of conduct and may be expelled if they violate the code. TR 2413.

64. There are three proposed work camps in South Dakota - one in Harding County near Buffalo, one in Meade County near Howes, and one in Tripp County near Colome. Ex. 2007, ¶4. Keystone has talked to local law enforcement about the camps and is willing to supplement local law enforcement officers at Keystone's expense. Ex. 2007, ¶ 14; TR 2406. Keystone has obtained a conditional use permit from Harding County for the Buffalo camp. No such permit is required in Meade County or Tripp County, although Keystone will obtain an occupancy permit for the camp in Meade County. Ex. 2007, ¶ 15.

65. There is no permit condition related to the work camps. The testimony of Faith Spotted Eagle does not establish either that the work camps pose any particular threat to any South Dakota citizens, or that Keystone cannot meet any permit condition.

66. The Keystone XL pipeline route does not cross any reservation land or land held in trust for Indians. TR 254.

67. Steve Vance testified on behalf of the Cheyenne River Sioux Tribe. He is the Tribal Historic Preservation Officer. Ex. 7002, ¶ 2; TR 1524. Vance testified to his concern that the Project falls within the view shed of several cultural sites, like the Slim Buttes; that during construction, access to cultural and historic sites could be hindered; that operation and maintenance of the pipeline could disrupt spiritual practitioners requiring solitude; and that the Project will have long term negative effects emotionally and spiritually on many Tribal members. Ex. 7002, ¶¶ 7-10.

68. Vance's testimony is insufficient to establish that Keystone cannot meet any permit condition. Permit Condition 43 addresses the protection of cultural resources and provides that Keystone must follow the Unanticipated Discoveries Plan as approved by the Department of State. If Keystone finds any cultural resources during construction, Keystone must notify the Department of State and the State Historic Preservation Office, and, if appropriate, develop a plan to address the resource. Vance offered no testimony that Keystone cannot or will not comply with this condition.

69. Dakota Rural Action called Evan Vokes, a former TransCanada employee, to testify about welding and other safety issues that he perceived from his tenure. TR 1768; Ex. 1003-A. Vokes, who is no longer a licensed professional engineer, was employed by TransCanada from 2007 until May, 2012, although he did not actively work at TransCanada after October 26, 2011. TR 1544-1554. He started in the welding group as an engineer in training, and became a professional engineer in 2009. His rank from 2009 until October, 2011, was junior engineer. TR 1549-1552. When he started at TransCanada, he had no previous experience with pipeline welding. TR 1572.

70. Vokes testified that TransCanada inspects 100% of the welds in its mainline pipe, even though applicable federal regulations require that only 15% of the welds be inspected. TR 1578.

71. Vokes testified that he thought that TransCanada had problems with automated ultrasonic testing (AUT) of welds on the Cutbank Project in Canada. Vokes testified that he found defects in welding procedures used by TransCanada and that he notified his superiors. TR 1594-1597. He testified that the National Energy Board in Canada (NEB) sent a letter related to nine welding procedures not meeting minimum qualifications. TR 1594. Vokes testified that he thought that a pipeline rupture that occurred near Otterburne, Manitoba, was an example of a problem caused by a defective weld. TR 1598-9159. Dan King, TransCanada's Chief Engineer and Vice President for Asset Reliability, testified that the concerns that the NEB raised about AUT on the Cutbank Project were administrative in nature, not technical. He testified that they did not affect the safety of any welds. TR 2264-2265. He testified that the rupture on a natural gas pipeline near Otterburne was caused by a failure on a weld that was completed in 1960 under different procedures and standards. TR 2265-2266. In addition, he testified that TransCanada worked with the NEB to look at the other welds on the same pipeline and found no issues. TR at 2266-2267.

72. Vokes testified that he was aware of pipe intended for the Keystone Pipeline that had manufacturing defects. TR 1602-1603. Dan King testified that there was pipe manufactured for the Canadian portion of the project that had problems, and it was rejected by TransCanada and never shipped or installed. TR 2267-2268.

73. Vokes testified that he was involved in testing the integrity of the welds along a segment of the Keystone Pipeline. TR at 1600-1601. There were issues with peaked pipe, which is the result of a manufacturing problem. TR 1610-1611. Vokes thought that the pipe should not have been used because it could fatigue over time. TR 1611-1614. He thought, however, that "[w]e did a very good job, actually very good pipe, other than the fact of the peaking." TR 1613. Dan King testified that there was no pipe installed on the Keystone Pipeline that was inspected in a manner that did not come within the tolerances permitted by code, and that the pipe met TransCanada's tolerances, which are stricter than code. TR 2269-2270.

74. Vokes testified that he thought there were problems with gas metal arc welding causing lack-of-fusion defects. TR 1603-1605. Dan King testified that lack-of-fusion defects can occur with gas metal arc welding, which is typically used with larger diameter pipe, but that the defects are generally found during the inspection process, and then removed or repaired. TR 2271-2272.

75. Vokes testified that he worked on the Bison Project, that there were problems with the welding, and that while TransCanada wanted to use AUT for the welds, it was technically a problem. TR 1614-1619. As a result of the problems, Vokes testified that there

were 1,200 or 1,300 welds on the project that went into the ground that never had a code inspection. TR 1621. Vokes also testified that there were dents associated with welds on the Bison project. TR 1623-1624. Dan King testified that there was an in-service failure on the Bison Pipeline, which is a natural gas line. The failure was caused by some external force, but the source of the external force, which appeared to be some sort of heavy equipment strike, could not be determined. TR 2273-2274. PHMSA was involved in the investigation and, after investigation and a corrective action order, allowed the project back into service and cleared the corrective action order. TR 2274. As a result of the failure, TransCanada increased the number of inspectors on projects and improved inspector training. TR 2274-2275. King also testified that he disagreed with Vokes's testimony that there could be 1,200 to 1,300 welds in the ground that have not been subject to an inspection that meets code on the Bison project. He testified that PHMSA's involvement and inspection of 100% of the welds was thorough and complete. TR 2275-2276.

76. Vokes testified that in connection with the Keystone XL Pipeline, he worked on one section in Canada and maybe the Gulf Coast Project in the United States. TR 1754. He testified that he was concerned that TransCanada was using Weldsonix, a nondestructive examination company to inspect welds, because there had been issues with Weldsonix in the past. TR 1754-1756. He testified that he was told to qualify Weldsonix. TR 1756. Dan King testified that TransCanada was dissatisfied with the performance of Weldsonix on a project in 2004, but that Weldsonix U.S.A., which did work on the Keystone Pipeline, passed a qualification process and performed very well on that project. TR 2276-2277. After an anonymous person raised issues about inspection on the Keystone Pipeline, TransCanada did a 100% audit and found no issues with the work that Weldsonix had done. TR 2277.

77. Vokes's testimony is insufficient to establish that Keystone cannot meet any permit condition. His testimony did not directly relate to any permit condition. Moreover, it is undisputed that Vokes has no first-hand knowledge of any welding or inspection defects on the Keystone Pipeline, the Gulf Coast Project, or the Houston Lateral Project. It is also undisputed that he has no knowledge of any welding or inspection defects in South Dakota. TR 1773, 1775, 1777-1778.

Conclusion

78. At its regularly scheduled meeting on January 5, 2016, the Commission considered this matter. The Commission unanimously voted to approve the Company's request for an order accepting its certification. The Commission finds that the Company certified that it remains eligible to construct the project under the terms of 2010 permit, subject to the provisions of 49-41B. The Commission finds that the Company certified that the Project continues to meet the conditions upon which the 2010 permit was issued.

CONCLUSIONS OF LAW

1. The Commission has jurisdiction over the subject matter and parties to this proceeding under SDCL Chapter 49-41B and ARSD Chapter 20:10:22. The Commission has the legal authority to decide whether to accept Keystone's Certification under SDCL § 49-41B-27.

2. The Amended Final Decision and Order dated June 30, 2010, in Docket HP09-001 was not appealed and constitutes a final order of the Commission.

3. Even though more than four years have elapsed since the permit was issued in Docket HP09-001, the permit has not lapsed or expired. Keystone therefore has no legal obligation to again prove that it meets the requirements of SDCL § 49-41B-22, which the Commission concluded in the Amended Final Decision entered in Docket HP09-001 it had met. Keystone's burden of proof under SDCL § 49-41B-27 is distinct from its burden under SDCL § 49-41B-22.

4. Under SDCL § 49-41B-27, Keystone has the burden of proof to show that its certification is valid.

5. "Conditions" as used in SDCL § 49-41B-27 means the 50 Conditions attached as Exhibit A to the Decision.

6. The Commission has no authority over condemnation or eminent domain. SDCL 21-35-1 requires that these issues be brought before the circuit court.

7. The Keystone XL pipeline route does not cross any reservation land or land held in trust for Indian Tribes. The Commission has no jurisdiction to adjudicate aboriginal or usufructory rights with respect to lands that were formerly Indian country under the Treaties of 1851 or 1868 prior to diminishment.

8. Keystone met its burden of proof through the Certification signed by Corey Goulet, the documents filed with its Certification Petition, and the direct testimony of its witnesses establishing that despite some updates related to the Project since June 30, 2010, none of these updates affects Keystone's ability to meet the conditions on which the permit was granted.

9. With respect to prospective conditions that are unaffected by the updates since June 29, 2010, Keystone is as able today to meet the conditions as it was when the permit was issued as certified to in the Certification signed by Corey Goulet. No evidence was offered demonstrating that Keystone will be unable to meet the conditions in the future. Keystone offered sufficient evidence to establish that Keystone can continue to meet the conditions.

10. The Intervenor failed to establish any reason why Keystone cannot continue to meet the conditions on which the permit was issued.

11. Under Section 106 of the National Historic Preservation Act, it is the legal obligation of the Department of State to consult with the Tribes in South Dakota. 16 U.S.C. § 470f; 36 C.F.R. Part 800.

12. The Commission granted party status to every person or entity who sought it. The Intervenor was afforded a full and fair opportunity to be heard. The proceedings in this docket were substantially longer, more in-depth, and more involved than in HP09-001, even though Keystone's burden of proof was more limited in scope. The Commission needs no additional information to determine whether to accept Keystone's Certification under SDCL § 49-41B-27.

13. The Commission concludes that the Certification and all required filings have been filed with the Commission in conformity with South Dakota law and that all procedural

requirements under South Dakota law, including public hearing requirements, notice, and an opportunity to be heard, have been met.

It is therefore

ORDERED that Keystone's Certification under SDCL § 49-41B-27 is accepted by the Commission and found to be valid and Keystone is authorized to proceed with the construction and operation of the Keystone XL Pipeline subject to the conditions attached as Exhibit A to the Amended Final Decision and Order dated June 30, 2010.

NOTICE OF ENTRY AND OF RIGHT TO APPEAL

PLEASE TAKE NOTICE that this Final Decision and Order was duly issued and entered on the 21st day of January, 2016. Pursuant to SDCL 1-26-32, this Final Decision and Order will take effect 10 days after the date of receipt or failure to accept delivery of the decision by the parties. Pursuant to ARSD 20:10:01:30.01, an application for a rehearing or reconsideration may be made by filing a written petition with the Commission within 30 days from the date of issuance of this Final Decision and Order, Notice of Entry. Pursuant to SDCL 1-26-31, the parties have the right to appeal this Final Decision and Order to the appropriate Circuit Court by serving notice of appeal of this decision to the circuit court within thirty (30) days after the date of service of this Notice of Decision.

Dated at Pierre, South Dakota, this 21st day of January, 2016.

CERTIFICATE OF SERVICE
The undersigned hereby certifies that this document has been served today upon all parties of record in this docket, as listed on the docket service list, electronically or by mail.
By: <u>Karen E. Bremer</u>
Date: <u>1-21-16</u>
(OFFICIAL SEAL)

BY ORDER OF THE COMMISSION:

Chris Nelson

CHRIS NELSON, Chairman

Kristie Fiegen

KRISTIE FIEGEN, Commissioner

Gary Hayson

GARY HAYSON, Commissioner

1-26-36. Weight given to agency findings--Disposition of case--Grounds for reversal or modification--Findings and conclusions--Costs. The court shall give great weight to the findings made and inferences drawn by an agency on questions of fact. The court may affirm the decision of the agency or remand the case for further proceedings. The court may reverse or modify the decision if substantial rights of the appellant have been prejudiced because the administrative findings, inferences, conclusions, or decisions are:

- (1) In violation of constitutional or statutory provisions;
- (2) In excess of the statutory authority of the agency;
- (3) Made upon unlawful procedure;
- (4) Affected by other error of law;
- (5) Clearly erroneous in light of the entire evidence in the record; or
- (6) Arbitrary or capricious or characterized by abuse of discretion or clearly unwarranted exercise of discretion.

A court shall enter its own findings of fact and conclusions of law or may affirm the findings and conclusions entered by the agency as part of its judgment. The circuit court may award costs in the amount and manner specified in chapter 15-17.

Source: SL 1966, ch 159, § 15 (7); SL 1972, ch 8, § 29; SL 1977, ch 13, § 16; SL 1978, ch 13, § 10; SL 1978, ch 17; SL 1983, ch 6, § 2.

49-41B-24. Permit for energy conversion facilities, AC/DC conversion facilities, or transmission facilities--Complete findings by commission required within year of application. Within twelve months of receipt of the initial application for a permit for the construction of energy conversion facilities, AC/DC conversion facilities, or transmission facilities, the commission shall make complete findings in rendering a decision regarding whether a permit should be granted, denied, or granted upon such terms, conditions or modifications of the construction, operation, or maintenance as the commission deems appropriate.

Source: SL 1977, ch 390, § 18; SL 1980, ch 328, § 2; SL 1981, ch 341; SL 2006, ch 242, § 5; SL 2009, ch 243, § 3; SL 2015, ch 235, § 2.

49-41B-27. Construction, expansion, and improvement of facilities. Utilities which have acquired a permit in accordance with the provisions of this chapter may proceed to improve, expand, or construct the facility for the intended purposes at any time, subject to the provisions of this chapter; provided, however, that if such construction, expansion and improvement commences more than four years after a permit has been issued, then the utility must certify to the Public Utilities Commission that such facility continues to meet the conditions upon which the permit was issued.

Source: SL 1977, ch 390, § 29.
