

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF NORTH DAKOTA**

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<b>TransCanada Keystone Pipeline, LP</b>	:	<b>OAH File No. 20070181</b>
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<b>30-Inch Crude Oil Pipeline</b>	:	<b>Case No. PU-06-421</b>
<b>Cavalier to Sargent Counties</b>	:	
<b>Siting Application</b>	:	
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**RESPONSE OF JOINT INTERVENORS TO DOCKET NOS. 372-373**

COME NOW the Joint Intervenors Dakota Resource Council, Janie and John Capp, Ramona Klein, Linette and Merle Kratochvil, and Mark Novak (Joint Intervenors) with this response to the information filed by the Applicant TransCanada Keystone Pipeline, LP (TransCanada Keystone) on January 17, 2008 and January 22, 2008 and identified as Docket Nos. 372 and 373 in the Commission’s January 23, 2008 Notice of Intent to Consider Information Not Presented at Hearing.

**Docket No. 372**

Letter and drawing filed January 17, 2008 by TransCanada Keystone, indicating that the horizontal directional drilling method will be used where the proposed pipeline crosses the Sheyenne River.

**Response of Joint Intervenors to Docket No. 372**

As a general principle, the Joint Intervenors support any offer on the part of TransCanada Keystone to mitigate harmful impacts to scenic areas along the proposed pipeline route. Using the horizontal directional drilling (HDD) method at the proposed Sheyenne River crossing would avoid the need to clear-cut trees and create an aesthetic blight in the middle of a federal and state

designated scenic byway. However, adverse visual impacts at the proposed Sheyenne River crossing are not the only adverse impacts that concern the Joint Intervenors, nor is this the only category of impacts to be considered by the Commission. The most visually pleasing option is not necessarily the least risk option for this ecologically sensitive area, and the Commission must be fully informed of and weigh all the benefits and risks of this proposal prior to incorporating any water crossing method into a final routing decision. In light of the relative benefits and risks of this proposal and other available water crossing methods, the Joint Intervenors continue to urge the Commission to consider a re-route of the pipeline away from the Sheyenne River scenic byway as the most appropriate measure to protect this sensitive area over the lifetime of the proposed pipeline.

**First**, the Commission must consider what impact TransCanada Keystone's proposal to use HDD at the Sheyenne River crossing will have on the structural integrity of this segment of the pipeline. This issue was raised on the record in hearings by witnesses for TransCanada Keystone and members of the Commission. It has not been addressed in any of the information filed by TransCanada Keystone as part of Docket No. 372. At the time of the formal hearings in this matter in September 2007, TransCanada Keystone had not considered using HDD at the Sheyenne River crossing. It was the testimony of TransCanada Keystone witness L. A. Gray that the width of the crossing amounted to "an extremely long and risky directional drill" that approached and perhaps surpassed the limits of technological feasibility for that particular crossing method. (Transcript, pp. 230-31) TransCanada Keystone ultimately agreed, at the express request of the Commission, to undertake an analysis of the HDD method for the Sheyenne River crossing. As part of this analysis, the Commission directed TransCanada Keystone to examine impacts on the structural integrity of the pipeline if HDD is used at this

particular water crossing. (Transcript, p. 281) TransCanada Keystone failed to address this question in its January 17, 2008 filing, stating only that “[t]he testing has been completed for the Sheyenne River crossing. Based on the results, Keystone can now confirm that it will HDD the crossing as stated in prior testimony that was presented at the hearings.” The Commission should require that TransCanada Keystone supplement its January 17, 2008 filing with data indicating in detail how using HDD will impact the structural integrity of the pipeline at the Sheyenne River crossing, in particular relative to the open-cut crossing method that had previously been proposed and taking into account the width and other physical characteristics of the crossing. Without this more detailed information, neither the Commission nor the Joint Intervenors can adequately determine whether the crossing method now being proposed by TransCanada Keystone is in fact the preferred option in terms of relative risk and safety.

**Second**, the Commission must consider what impact TransCanada Keystone’s proposal to use HDD at the Sheyenne River crossing will have on the ability to detect and respond to future leaks and ruptures along this segment of the pipeline. To the extent that burying the pipeline under a forested river valley actually decreases the likelihood of timely detection of a leak or rupture in the pipeline, in addition to decreasing ready access for emergency response and clean-up crews, TransCanada Keystone’s proposal simply trades one set of harms for another. The May 2006 Frequency-Volume Study of the Keystone Pipeline conducted for TransCanada Keystone by DNV Consulting (Joint Intervenors’ Exhibit I-1) predicts that more than one-half of all pipeline leaks will consist of “non-reported” leak events - those leaks likely to occur without any person present to witness and report the event (including leaks from corrosion, mechanical defect, washout and flange, seal and fitting leaks). For small non-reported leaks, the DNV study estimates a period of up to 90 days for detection. Although TransCanada Keystone witness

Meera Kothari offered testimony that the company would perform flyovers of the pipeline every two to three weeks (a factor that was specifically noted and accounted for in the DNV analysis), the ability to detect a leak during a flyover would be negatively impacted by the pipeline being buried under a forested river valley. (Transcript, pp. 404-05) No evidence on the record suggests that there would be adequate alternate means of detecting a small non-reported leak along this pipeline segment. A small leak that goes undetected for a period of days, weeks or even months could release a significant amount of oil into the soil underlying the river and the root systems of the forest before anyone is aware of it. Using HDD at the proposed Sheyenne River crossing would obviously mitigate the need to clear-cut a scenic river valley – an impact that the Commission, the Joint Intervenors and the siting criteria of the North Dakota Century Code all seek to avoid – but it would also mean that there is no exposed right-of-way for the purpose of monitoring the pipeline and accessing the pipeline for the purpose of emergency response and clean-up in the event of a leak or rupture. Although a leak in this segment of the pipeline is a potential future harm – compared with the certain present harm that would result from clear-cutting a path through the trees in the valley – it nevertheless poses a real risk of substantial harm to the ecological health of the river and surrounding vegetation that must be considered by the Commission. To the extent that using the HDD method at the Sheyenne River crossing would negatively impact the detection, mitigation and clean-up of any leaks along this segment of the pipeline, the Commission must factor this into any final routing decision that is conditioned on the use of a particular crossing method for the Sheyenne River.

**Third**, the Commission must consider TransCanada Keystone’s proposal to use HDD at the Sheyenne River crossing in light of the fact that this portion of the Sheyenne River valley is an officially designated scenic byway and therefore a statutory avoidance area. Using HDD at

this crossing will preserve the present appearance of the valley, but at an unknown price to the future ecological health of the valley. As has already been argued above, the information provided by TransCanada Keystone does not provide any analysis of the structural integrity of this pipeline segment if the HDD method is used. Similarly, the information provided by TransCanada Keystone does not provide any analysis of the impact that using the HDD method will have on leak detection and emergency response and clean-up. The information available in the record indicates that an already problematic detection system for small leaks would only be exacerbated by burying the pipeline under a forested river valley, and the lack of a cleared right-of-way over the pipeline could only impede emergency response and clean-up efforts in the event of a leak or rupture. In essence, the Commission is being asked by TransCanada Keystone to weigh the present visual integrity of a valuable scenic area against the future ecological health of that same scenic area in the event of a pipeline leak or rupture. The Commission must consider an alternative conclusion – that the proposal by TransCanada to route its pipeline through an officially designated scenic byway is simply a bad one, regardless of any design concessions made by the company. While the Commission has the option of conditioning a route permit on certain design and safety requirements for pipeline segments that run through sensitive areas, in the case of avoidance areas, the statutorily preferred option is to completely avoid that area if at all possible. TransCanada Keystone has not attempted to show that the presently proposed route across the Sheyenne River is the only reasonably available option. Therefore, the Commission should consider as the statutorily preferred option moving the pipeline elsewhere, rather than burying it under the trees and hoping that nothing happens in the future to damage the scenic river valley that the Commission now rightly seeks to protect.

## **DOCKET NO. 373**

A letter filed by TransCanada Keystone Pipeline, LP on January 22, 2008, indicating that a 0.72 design factor will be used where the pipeline crosses certain tributaries of the Forest River (mile posts 45.6 to 47.9) and certain intermittent streams in the area of Lake Ashtabula (mile posts 126.7 and 128.1), notwithstanding a waiver from the federal Pipeline and Hazardous Material Safety Administration (PHMSA) that allows the use of a 0.80 design factor.

### **Response of Joint Intervenors to Docket No. 373**

First, regarding the assertion by TransCanada Keystone that the design specifications for the proposed pipeline fall within the sole purview of the PHMSA and therefore may not be considered or addressed by the Commission, the Joint Intervenors urge the Commission to remember that the safe routing of the pipeline and the statutory obligation to minimize risk to the citizens and natural resources of the State of North Dakota fall within the sole purview of the Commission. This responsibility cannot be abdicated to federal regulators. Indeed, the same code section cited by TransCanada Keystone in support of its pre-emption argument explicitly states that “[t]his Chapter does not authorize the Secretary of Transportation to prescribe the location or routing of a pipeline facility.” 49 U.S.C. § 60104(e). The Commission is not obligated, either by federal law or the laws of the State of North Dakota, to accept the route proposed by TransCanada Keystone. Indeed, the Commission is not obligated to approve any route for the Keystone pipeline in the State of North Dakota. If PHMSA has deemed it appropriate to modify the minimum design requirements for the Keystone pipeline, it is fully within the power of the Commission to decide whether it is appropriate to route an incrementally less safe hazardous material pipeline through ecologically sensitive areas of the state. This does not infringe upon the authority of PHMSA, and the PHMSA waiver did not consider the

proposed pipeline route or the nature of the resources and risks along that route. In considering the design factor that TransCanada Keystone intends to use along these two specific segments of the pipeline, the Commission is considering pipeline design only in the context of the particular route chosen by TransCanada Keystone and the risk to important water resources adjacent to that route. This does not infringe upon the regulatory power of the federal government, but rather falls within the authority of the Commission to designate the safest possible route for the proposed pipeline.

In general, the Joint Intervenors support any offer on the part of TransCanada Keystone to increase relative safety levels along the proposed pipeline route. Although TransCanada Keystone has maintained that the 0.80 design factor allowed by the PHMSA waiver will not actually affect the relative safety levels along the pipeline, the Joint Intervenors will accept for the purpose of this response that using a 0.72 design factor may contribute – albeit to an unknown extent – to an incremental increase in safety levels along these two pipeline segments. However, the Commission has a clear statutory obligation to approve a pipeline route that minimizes the risks to the health and safety of the citizens and natural resources of the State of North Dakota. In the context of important water resources such as the Fordville Aquifer and the Lake Ashtabula reservoir, the Commission must consider all available options to minimize risk and choose the route that best protects the public and the vital resources on which the public depends. To the extent that the 0.72 design factor along these two pipeline segments is considered by the Commission in lieu of other risk mitigation options – such as a pipeline re-route – the Commission must be fully informed of what the 0.72 design factor actually does to mitigate risk and how that compares quantitatively to other available options. The Joint Intervenors continue to urge this Commission to consider a re-route of the pipeline away from

the Fordville Aquifer and the Lake Ashtabula reservoir as the most appropriate and effective measure to mitigate the risk posed by the pipeline to these important water resources.

**First**, no evidence now in the record demonstrates the quantitative impact the 0.72 design factor will actually have on risk levels along these segments of the pipeline. The only evidence offered for the record by TransCanada Keystone has been to assert that the PHMSA waiver and the 0.80 design factor will have no effect on the overall safety level of the pipeline. (Transcript, p. 1016; see also, Response of TransCanada Keystone to Docket No. 203) Whether this assertion is true or not, the Commission has not been offered any evidence by TransCanada Keystone to indicate the extent to which the use of a 0.72 design factor would actually decrease risk levels for the pipeline segments adjacent to the Fordville Aquifer and the Lake Ashtabula reservoir. Because there is no basis in the record for the Commission to make a quantitative analysis regarding the impact of this proposal, there is no basis to properly judge whether this proposal is preferable to other options for mitigating risk along these segments of the pipeline route and therefore no basis to properly judge whether this proposal renders this route the least risk option. Any decision to use the 0.72 design factor as a primary risk mitigation measure would therefore be per se arbitrary. The Joint Intervenors are willing to accept that, contrary to the assertions made by TransCanada Keystone, a 0.72 design factor would in fact incrementally increase relative safety levels for these pipeline segments. However, the Joint Intervenors are not willing to accept on the basis of so little information that a 0.72 design factor would mitigate risk at a level equal to or greater than re-routing the pipeline away from these important water resources. If the 0.72 design factor is considered in addition to other available risk mitigation measures, in particular moving the pipeline route further away from the Fordville Aquifer and Lake Ashtabula, then it clearly would serve the purpose of minimizing risk to public and

environmental health. If the 0.72 design factor is considered in lieu of other available risk mitigation measures, it is not clear what the quantitative impact would be to the overall level of risk, and the Commission must consider that other available risk mitigation measures would be more appropriate means to minimize risk along these segments of the pipeline.

**Second**, there is insufficient evidence in the record to demonstrate that only these two small segments of the pipeline pose a risk to the Fordville Aquifer and the Lake Ashtabula reservoir. TransCanada witness Heidi Tillquist offered testimony in September 2007 and November 2007 regarding the risk of a leak or spill along the pipeline impacting the Fordville Aquifer and the Lake Ashtabula reservoir. In both instances, this testimony concentrated on “viable” transport routes, eliminating routes judged to be too far away or insufficiently sloped or those appearing in satellite photos to be blocked by a road or other obstruction. (Transcript, pp. 304-10; 363-66) In all cases, the analysis offered by Ms. Tillquist and other witnesses for TransCanada Keystone failed to take into account historical drainage patterns of the territory in question, how water has actually flowed over the land in the past and what impact events such as spring flooding or heavy rainfall would be likely to have on water flow and drainage routes. The analysis presented by TransCanada Keystone was based on viewing images of drainage channels on Google Earth and conducting a cursory walkover of the territory near Lake Ashtabula once in November 2007. (Transcript, pp. 987-89) The evidence offered for the record by TransCanada Keystone witnesses demonstrates little familiarity with the historical drainage and water flow patterns of the territory involved and ignores local knowledge of how certain pieces of land drain under certain conditions and where water has tended to flow in the past. Examples of precisely this type of first-hand knowledge were offered by local landowners Terril Borgeson and Merle Kratochvil at the July 2007 Park River hearings. (Transcript, pp. 90, 142) TransCanada

Keystone's analysis also failed to take into account the location of numerous private wells along these portions of the route. (Transcript, p. 371) This artificially limited risk picture constructed by TransCanada Keystone was in turn relied upon to derive the 2.3 mile segment along the Fordville Aquifer and the 1.4 mile segment along the Lake Ashtabula reservoir that are the subject of the present proposal. In fact, substantially longer segments of the pipeline are sited unnecessarily close to both of these water resources. Placing a petroleum pipeline several miles from a major water source, on top of permanent and intermittent stream channels that can flow with great volume and velocity under conditions of spring flooding and heavy rainfall, is not acceptable when that risk can be mitigated merely by re-routing the pipeline further away from the water source. Whether or not a slightly stricter design factor would in fact increase relative safety for the two designated segments of the pipeline, it would not increase safety to the same extent that could be achieved by a re-route and would do nothing to increase safety for adjoining segments of the pipeline that have been ignored in TransCanada's risk analysis but that are nevertheless routed unacceptably close to these water resources.

**Third**, there is uncontroverted evidence in the record that the Fordville Aquifer would be safer if the pipeline was simply moved to the west. (Transcript pp. 381, 530-32) A western re-route near the Fordville Aquifer would have the added benefit of placing the pipeline behind a series of retention dams meant to protect the watershed from the most severe impacts of flooding. See **Attachment 1** (NRCS map of Forest River Watershed). There is also uncontroverted evidence in the record that moving the pipeline a short distance to the east where it runs adjacent to the Lake Ashtabula reservoir would move the pipeline out of the watershed that drains into the Sheyenne River and the Lake Ashtabula, meaning simply that the lake would be safer if the pipeline was simply moved to the east. (Transcript, pp. 1045-46) Although

TransCanada Keystone has argued that this re-route away from the Lake Ashtabula reservoir would place the pipeline in the Maple River watershed – and indeed, by necessity, the pipeline will be located in some watershed regardless of where it is sited – the pipeline would be substantially further away from the Maple River than it would be from Lake Ashtabula in its presently proposed location. Both of these potential re-routes would have known positive effects on the relative safety levels of these two segments of the pipeline route. In comparison, approving a 0.72 design factor in lieu of a re-route would have an unknown incremental impact on relative safety while foregoing the available option to simply move the pipeline from the precarious location being proposed by TransCanada Keystone.

### **CONCLUSION**

In the context of risk mitigation in for the Sheyenne River valley, the Fordville Aquifer and the Lake Ashtabula reservoir (and any other ecologically sensitive areas along the proposed pipeline route), the Joint Intervenors request that the Commission consider the possible leak scenarios that could be mitigated by routing the pipeline away from these important resources. The following is a simple mathematical calculation, based on DNV risk analysis for the Keystone pipeline, of possible leak volumes given the anticipated daily throughput rate for the pipeline. These scenarios consider the possibility of a 0.5 percent leak (one-third of the minimum leak rate considered in the DNV study) and a 0.1 percent leak (one-fifteenth of the minimum leak rate considered in the DNV study).

#### **If the pipeline operates at 435,000 barrels per day:**

A **0.5 percent leak** in the pipeline would release 2,175 barrels (91,350 gallons) of crude each day that the leak goes undetected – this is the equivalent of 91 barrels (3,806 gallons) per hour.

- A leak of this size that goes undetected for two weeks would release 30,450 barrels (1,278,900 gallons) of crude into the environment.
- A leak of this size that goes undetected for 90 days could release as much as 195,750 barrels (8,221,500 gallons) of crude into the environment.

A **0.1 percent leak** in the pipeline would release 435 barrels (18,270 gallons) of crude each day that the leak goes undetected – this is the equivalent of 18 barrels (761 gallons) per hour.

- A leak of this size that goes undetected for two weeks would release 6,090 barrels (255,780 gallons) of crude into the environment.
- A leak of this size that goes undetected for 90 days could release as much as 39,150 barrels (1,644,300 gallons) of crude into the environment.

**If the pipeline operates at 591,000 barrels per day:**

A **0.5 percent leak** in the pipeline would release 2,955 barrels (124,110 gallons) of crude each day that the leak goes undetected – this is the equivalent of 123 barrels (5,171 gallons) per hour.

- A leak of this size that goes undetected for two weeks would release 41,370 barrels (1,737,540 gallons) of crude into the environment.
- A leak of this size that goes undetected for up to 90 days could release as much as 265,950 barrels (11,169,900 gallons) of crude into the environment.

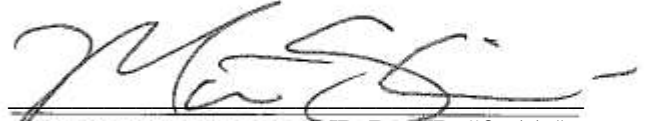
At **0.1 percent leak** in the pipeline would release 591 barrels (24,822 gallons) of crude each day that the leak goes undetected – this is the equivalent of 25 barrels (1,034 gallons) per hour

- A leak of this size that goes undetected for two weeks would release 8,274 barrels (347,508 gallons) of crude into the environment
- A leak of this size that goes undetected for up to 90 days could release up to 53,190 barrels (2,233,980 gallons) of crude into the environment

TransCanada Keystone is asking this Commission to gamble with the health of the public and the environment of North Dakota on the basis of risk probabilities. The company's own risk analysis shows that a major leak of 50 barrels or more will occur along the pipeline an average of once every 7 years. Maybe the leaks will be less frequent than that, or maybe they will be more frequent. Maybe all the leaks will occur in other states, or maybe they will all occur in North Dakota. The nature of probability is that it does not determine what actually happens once the pipeline is in operation – it merely provides the general parameters of the risk. In the context of the three specific areas addressed in the two new filings by TransCanada Keystone – the Sheyenne River, the Fordville Aquifer and the Lake Ashtabula reservoir – it is inappropriate for the Commission to roll the dice and hope that what the Applicant has alleged is unlikely simply will never come to pass. There is specific evidence on the record that re-routes in the area of the Fordville Aquifer and Lake Ashtabula would decrease the risk to those important water sources. TransCanada Keystone does not dispute this. It is a matter of public record that the proposed Sheyenne River crossing falls within a statutorily designated avoidance area. TransCanada Keystone has not disputed this, nor has any evidence been provided as to the feasibility of alternate routes. A design modification here and there does not relieve the Commission of its statutory obligation to minimize potential harms to the citizens and the environment of this state by choosing the safest possible route for the proposed pipeline. While these proposed amendments at first glance are improvements to TransCanada Keystone's original application, upon closer scrutiny they only raise more questions without adequately addressing the concerns that have been raised in the record regarding the Applicant's proposed pipeline route. The Commission must not rely on these proposed design modifications as a basis to approve a route that is known not to be the safest possible route for TransCanada Keystone's pipeline.

Dated this 6<sup>th</sup> day of February, 2008.

Respectfully submitted,



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