

**Biodiversity Conservation Alliance • Friends of the Niobrara • Honor the Earth •
Intertribal Council on Utility Policy • Nebraska Environmental Action Coalition •
Nebraska Chapter of the Sierra Club • Nebraska Sustainable Agriculture Society •
Northern Plains Resource Council • Plains Justice • Prairie Hills Audubon Society •
Wachiska Audubon Society • Western Nebraska Resources Council • Western
Organization of Resource Councils**

July 2, 2010

BY MAIL and INTERNET UPLOAD

Elizabeth Orlando
Keystone XL Project Manager
U.S. Department of State
OES/ENV Room 2657
Washington, DC 20520
Fax: 202-647-5974 (Attn: Elizabeth Orlando)
Email: xlpipelineproject@state.gov
<http://www.keystonepipeline-xl.state.gov>

Re: Public Comments on Draft Environmental Impact Statement
for the Proposed TransCanada Keystone XL Pipeline Project

Dear Ms. Orlando:

Biodiversity Conservation Alliance, Friends of the Niobrara, Honor the Earth, Intertribal Council on Utility Policy, Nebraska Environmental Action Coalition, Nebraska Chapter of the Sierra Club, Nebraska Sustainable Agriculture Society, Northern Plains Resource Council, Plains Justice, Prairie Hills Audubon Society, Wachiska Audubon Society, Western Nebraska Resources Council, and Western Organization of Resource Councils submit the following comments regarding the Draft Environmental Impact Statement (“DEIS”) for the Keystone XL Pipeline Project (“Pipeline”). We wish to express our concerns regarding the likely and potential environmental impacts in areas where our members, families and friends live, work and play. We hope to see these concerns addressed in the final EIS, given that they raise significant impacts that are important factors before a final determination on the grant of a Presidential Permit. As residents of the states that will bear all the risk of the Pipeline, we believe that the risks associated with the current proposal are too great.

The impacts when pipelines fail are too devastating to leave any element to chance. In the last four years alone, pipeline incidents have killed 56 people, injured 209 people, and caused over \$900 million in property damage.¹ The proposed Keystone XL DEIS is

¹ Testimony of Carl Weimer, Executive Director, Pipeline Safety Trust, before the Subcommittee on Railroads, Pipelines, and Hazardous Materials Transportation and Infrastructure Committee, U.S. House of

particularly troublesome in light of the many recent oil spill disasters. On April 20, 2010, the Deepwater Horizon offshore oil rig exploded in the Gulf of Mexico, killing 11 workers and creating one of the worst environmental disasters in history.² Months later, the broken pipe continues to spew millions of gallons of crude oil into the Gulf each day, with no end to the devastation in sight.³ This disaster has exposed a shocking lack of government oversight of the oil industry and a complete lack of readiness to respond to such tragedies.

Similarly, a string of recent oil pipeline accidents have exposed a lack of government oversight of the pipeline industry and a lack of spill detection and response plans. In January of 2010, an Enbridge pipeline spilled over 3,000 barrels of crude oil in North Dakota.⁴ In late April, another Enbridge pipeline ruptured and leaked over 210 gallons of tar sands crude oil into Minnesota wetlands.⁵ The exact date of the Minnesota spill is unknown because the accident went completely undiscovered until firefighters working in the area happened to notice crude oil covering the ground while investigating a wildfire.⁶ In May of 2010, the Trans-Alaska Pipeline, owned partly by BP, had a “series of mishaps” that resulted in a power outage that opened relief valves and spilled several thousand barrels of crude oil.⁷ Luckily, this spill was mostly contained in “backup containers.”⁸ On June 12, 2010, a massive spill from a Chevron crude oil pipeline was discovered in Salt Lake City, Utah.⁹ The reason for the breach is unknown, and crews are continuing to try to stop the giant oil slick from reaching the Great Salt Lake. These risks and many others are discussed in more lengthy comments submitted by a national coalition including Sierra Club, Earthjustice, and Natural Resources Defense Council. We hereby incorporate those comments and their accompanying exhibits by reference.¹⁰

Representatives, Hearing on Implementation of the Pipeline Inspection, Protection, Enforcement and Safety Act of 2006 and Reauthorization of the Pipeline Safety Program, May 20, 2010, at 2.

² Associated Press, *Some Oil Spill Events on Thursday, June 17, 2010*, June 17, 2010, http://www.google.com/hostednews/ap/article/ALeqM5i_yfHJzPLDeBIhG5JDEF6VbaPR8QD9GD5JCG0 (last visited June 22, 2010).

³ *Id.*

⁴ Marketwire, *Enbridge Energy Partners Lakehead Pipeline System Reports Crude Oil Spill in North Dakota*, January 10, 2010,

<http://www.marketwire.com/press-release/Enbridge-Energy-Partners-Lakehead-Pipeline-System-Reports-Crude-Oil-Spill-North-Dakota-NYSE-EEP-1099523.htm> (last visited June 22, 2010).

⁵ Elizabeth Dunbar, *Pipeline Leaks Oil in Wetlands on Leech Lake Reservation*, MINNESOTA PUBLIC RADIO (April 21, 2010), available at <http://minnesota.publicradio.org/display/web/2010/04/21/oil-leak/> (last visited June 22, 2010).

⁶ Robert Pore, *Minnesota Spill Raises Questions about Nebraska's Ogallala Aquifer*, AGLINES, April 22, 2010, available at <http://www.aglines.com/2010/04/minnesota-oil-spill-raises-questions-about-nebraskas-ogallala-aquifer/> (last visited June 22, 2010).

⁷ Reuters, *BO-Owned Alaska Oil Pipeline Shut after Spill*, May 25, 2010, <http://www.reuters.com/article/idUSTRE64P04U20100526> (last visited June 22, 2010).

⁸ *Id.*

⁹ Maile Tua'one, *Cleanup Efforts Continue in Salt Lake City after Chevron Oil Spill*, June 14, 2010), <http://www.fox13now.com/news/kstu-city-working-to-contain-oil-spill-in-red-butte-canyon,0,5422602.story> (last visited June 22, 2010).

¹⁰ Documents referenced in these comments are incorporated into the formal record as exhibits to the national coalition comments, to which Plains Justice is a co-signatory.

I. INTRODUCTION : Relevant NEPA legal requirements

These comments are submitted to address the DEIS's compliance with National Environmental Policy Act (NEPA). The EIS must "provide full and fair discussion of significant environmental impacts and shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1. This discussion must include an analysis of "direct effects," which are "caused by the action and occur at the same time and place," as well as "indirect effects which . . . are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8. An EIS must also consider the cumulative impacts of the proposed federal agency action together with past, present and reasonably foreseeable future actions, including all federal and non-federal activities. 40 C.F.R. § 1508.7. Furthermore, an EIS must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed project. 40 C.F.R. § 1502.14(a).

For the reasons stated below, the DEIS for the Keystone XL project is legally and technically flawed because the U.S. Department of State ("State") failed to provide an adequate analysis all of the direct, indirect and cumulative impacts of the project, including risks of leaks and spills, emergency response planning, and abandonment standards. The DEIS also improperly defines the project's purpose and need and fails to ensure the scientific integrity of its analysis. We request that State fully and completely address the following concerns and re-issue the DEIS for further public comment. Unless these issues are adequately addressed, including remediation in the case of unpreventable environmental harm, and the project is shown to be in the national interest, the deficiencies in the DEIS are overwhelming to the point of leaving no responsible option besides the no action alternative. In the alternative, we request that State fully and completely address the following concerns and re-issue the DEIS for further public comment.

II. REQUEST FOR STAY OF DECISION AND REVISION OF EIS TO ADDRESS PENDING STATE PROCEEDINGS AND PUBLIC PARTICIPATION

A. Outstanding Montana Public Service Commission Determination of Common Carrier Status

On June 15, 2010, the Montana Public Service Commission (MPSC) rejected TransCanada's application for common carrier status on the grounds that TransCanada had not fully acquiesced to MPSC regulatory jurisdiction over the Pipeline. MPSC had previously informed TransCanada that it must apply for common-carrier status pursuant to MCA § 63-13-101(1), because it will be owning, operating, and managing the Keystone XL Pipeline in the state of Montana, engaging in the business of transporting crude petroleum by pipeline, and constructing and maintaining the Keystone XL Pipeline along and under public roads and highways in Montana. The state of Montana is considering a possible interconnection point in Montana and lateral pipeline extensions that would have significant impacts on land and water resources and pipeline safety. This additional infrastructure could significantly alter the size and character of the project, and the

potential environmental impacts that must be analyzed in the EIS. TransCanada's current status under Montana law is unclear and further proceedings could result in a finding that the Pipeline will not be a common carrier and that TransCanada therefore cannot exercise eminent domain, which would halt development of the Pipeline in Montana.

The MPSC's ultimate ruling has other relevant implications. The EIS must analyze the environmental impacts of increased capacity that will result from additional inputs of petroleum in Montana. The Pipeline is projected to have an ultimate capacity of 900,000 bpd, but the capacity may rise significantly when and if the PSC orders TransCanada to allow additional inputs, or the ultimate capacity may be reached sooner. An increase in Pipeline capacity would amplify the environmental impacts from refining and end use of the petroleum, and may heighten the risk of spills and the severity of environmental impact if a spill were to occur. It would also drastically increase the physical footprint of the project, due to increased infrastructure, access roads, pumping stations, and electric transmission lines. These impacts are reasonably foreseeable indirect, cumulative and/or connected actions that must be considered in the EIS.

The EIS must also analyze how these additional sources of conventional crude oil will interact with the tar sands crude oil being transported from Alberta and whether any operational or design changes will be necessary. For example, the EIS should examine whether the currently-planned pumping stations will be sufficient to accommodate the additional sources and additional capacity; whether the amount of diluent or heating that is required to move the crude through the pipeline will change; what additional facilities, operational plans, or emergency response plans will be necessary, and what the potential impacts to the environment and local communities will be.

If granted common carrier status, the Pipeline will likely increase the amount of oil development in Montana due to the availability of additional pipeline capacity. This increase in domestic oil development is an indirect, connected, and/or cumulative action. As such, its environmental impacts must be evaluated, including but not limited to the increased use of hydraulic fracturing, increase in greenhouse gas (GHG) emissions, and the displacement effect it will have on the renewable energy market, including biofuels.¹¹

Finally, the EIS must examine the environmental impacts of the spur lines that will transport the Montana oil to their connections with the main Pipeline. Specifically, the EIS should contain an analysis of several alternatives for the spur lines, including analyses of their respective water crossings and proximity to sensitive areas.

¹¹ The DEIS notes that the heavy crude supplied by Keystone XL pipeline will likely be used for power generation and other uses in addition to transportation fuels. DEIS, at 3.14-36. The DEIS fails to consider the displacement effect on all types of renewable and alternative power generation sources, such as wind, solar, geothermal, and nuclear; as well as transportation technologies such as biofuels and hybrid/electric automobiles; and public transportation and energy efficiency initiatives.

B. Public Participation Issues

Throughout the EIS scoping and public hearing process, there has been short notice before public meetings and remote locations that hindered meaningful public participation. Many affected entities and individuals have had no notice or very short notice of public hearing opportunities. Hard copies of the DEIS have been made available only in a very limited manner, which is not consistent with the goal of NEPA to enable public participation. The online version is inaccessible, as a practical matter, to many rural residents with slow dial-up internet connections. Accordingly, we ask State to hold open the public notice and comment period and hold public hearings and make hard copies of the DEIS more widely available, prior to any final decision on the DEIS.

State also failed to identify possible alternative routes in its Notice of Intent, in violation of 40 C.F.R. § 1508.22. The result of this violation is that landowners and communities along these possible alternative routes have had no notice or opportunity to participate in the scoping process and provide input into the contents of the DEIS, which must consider these alternative routes. Due to this defect in scoping, the DEIS will not be informed by public comment on the scope of its analysis of these alternative routes, such that the DEIS itself will be defective. To remedy this violation of law, State must re-issue its scoping notice to include a description of possible alternative routes, including potential routes of spur lines transporting Montana crude to the Pipeline and potential electrical transmission routes, allow public scoping comments by potentially impacted landowners, individuals, and communities, and hold appropriately located scoping hearings.

III. CONSIDERATION OF ALTERNATIVES

A. The DEIS Improperly Rejects the No Action Alternative

The DEIS attempts to cover alternatives dealing with no action, system, and major route alternatives.¹² However, the Pipeline is being proposed in order to fill a perceived future gap in fuel and energy in the United States. The Pipeline is not the only alternative for filling this gap: other alternatives include fuel efficiency, alternative fuels, electric vehicles, other clean transport technologies, and public transportation. The draft EIS does not adequately address alternatives to expanding U.S. capacity to import tar sands oil or the opportunity costs involved in this decision.

NEPA regulations specifically require consideration of energy requirements and conservation in environmental review documents. 40 C.F.R § 1502.16(e). Yet the DEIS explicitly declines to consider alternative sources of energy, stating that “the use of alternative forms of energy in place of the proposed Project was not considered in the environmental review of the Project.”¹³ The only reason given for this failure is the conclusory assertion that “the use of alternative forms of energy would not meet the needs of refiners in PADD III or the purpose of the proposed Project.” This does not constitute

¹² Keystone Pipeline Project, Draft EIS, Chapter 4, pg. 4-1.

¹³ DEIS at 4-1.

the rigorous exploration and objective evaluation of reasonable alternatives that NEPA requires. It also ignores the ability of hundreds of miles of prime American farmland put at risk by the Pipeline to provide for our nation's energy needs.

The purpose of this EIS is to provide an assessment of the environmental impacts if a Presidential Permit for the proposed project is approved. Presidential Permits, unlike NEPA analyses, have the burden of looking at not only the narrow field of traditional NEPA factors, but whether the "issuance would serve the national interest."¹⁴ Therefore, the DEIS's determination that a "no action alternative" is not preferable cites to supply and demand components.

According to Section 4.1 of the draft, a "no action alternative" is not considered preferable because it would not meet the purpose and need of the project which involves both supply and demand components.¹⁵ Section 4.1 argues that it is because of the demand in the U.S., the supply available in WCSB, the WCSB as a "relatively stable and secure source of North American crude oil for Midwest and Gulf Coast markets" and the desire to reduce our dependence on Middle Eastern oil supplies that makes this alternative not preferable.

The analysis of national interest only looks at one aspect of how to meet our energy needs. It does not consider that unconventional oil is not the only alternative for our energy future. The DEIS does not consider the alternative of biofuels and their domestic economic advantages. It does not consider the significant risk of leaks and spills and how damage to water sources, soil and other natural resources in our nation's breadbasket would compromise the national interest. The DEIS also does not consider the security risks, acknowledged by the U.S. Department of Defense, from energy sources that increase our contributions to global warming pollution.¹⁶

B. Alternate Routes

The central problem with the DEIS analysis of alternate routes is that no U.S. agency at the state or federal level actually has the authority to change the full pipeline route in response to the DEIS. There is some jurisdiction within agencies such as the Montana Department of Environmental Quality to guide route decisions, but even that authority was abdicated during the application review process (see below) because the applicants had already chosen a route without reference to Montana standards. Other states along the route have no routing authority, except some de minimis discretion at the county level. Performing an analysis of alternative routes for the purely theoretical purpose of NEPA review, when no agency has authority to act on the conclusions, is a sham and an abuse of the NEPA process that gives participants an entirely false impression that their participation might somehow influence the outcome.

¹⁴ Executive Order (EO) 11423 (33 FR 11741), as amended by EO 12847 (58 FR 29511) and EO 13337 (69 FR 25299); *see also* US Department of State, Fact sheet: Applying for a Presidential Permit from the U.S. Department of State," http://www.state.gov/p/wha/ci/mx/rel_2001/fs/11148.htm.

¹⁵ Keystone Pipeline Project Draft EIS, Chapter 4, pgs. 4-1 and 4-2.

¹⁶ John M. Broder, "Climate Change Seen As Threat to U.S. Security," NY Times (Aug. 8, 2009) (<http://www.nytimes.com/2009/08/09/science/earth/09climate.html>).

In one instance of sham review of alternate routes, Montana DEQ collaborated with the Applicant to invent alternate routes after the proposed route had already been chosen. To comply with the requirements of the Montana Major Facilities Siting Act (MFSA) and Montana Environmental Policy Act (MEPA), at Section 4.3 the EIS considers five alternate routes in Montana. According to the EIS,

Keystone did not appear to examine the preferred Montana routine criteria and preference for the use of public land until after it had selected Alternative SCS-B as its proposed route.... Thus, MDEQ worked with Keystone and the third-party EIS contractor to develop two new alternatives (the CND and CSD alternatives) in a manner that provided clear documentation of the steps taken and factors considered, as indicated in Sections I-2.1 and I-2.3.¹⁷

Conveniently, these two after-the-fact alternate routes were rejected. Development and review of alternate routes that takes place *after* the proposed route is chosen can hardly provide the meaningful consideration of alternatives required by state and federal law. To the contrary, it is another sham with no purpose other than to paper over the NEPA, MEPA and MFSA processes.

The EIS also fails to consider existing pipeline routes, including the route of the recently completed Keystone pipeline, which begins in Alberta and would require only a relatively short additional section to reach the Gulf coast. At no point does the DEIS attempt to justify the additional disruption, destruction and risk of an entirely new pipeline route.

Finally, the DEIS gives insufficient consideration to alternate routes that would have less impact on water resources. The “Western Alternative” is one such alternative that may be both practicable and less damaging to water resources. The DEIS admits that “[p]otential positive attributes to this alternative include the avoidance of the Missouri River crossing just to the east of the Fort Peck Reservoir and the avoidance of crossings of reaches of the Niobrara River that have been included with the federal Wild and Scenic River program.”¹⁸ However, the route still crosses the Niobrara, one of Nebraska’s most treasured natural resources. Not mentioned, but also a potential reduction in impacts to water resources of this more westerly route, is the avoidance of vital and sensitive prairie potholes generally located in the more eastern portions of Montana and South Dakota.

III. INSUFFICIENT ENVIRONMENTAL ANALYSIS

As a general comment, the DEIS fails to consider environmental impacts associated with new power lines and power generation sources that will be required to provide the large amounts of electricity required by the project. In light of the probability that interconnection for domestic oil producers will be required as part of the Montana siting process, the infrastructure necessary for that interconnection must also be evaluated as part

¹⁷ DEIS at I-2.4.2.

¹⁸ DEIS at 4-17.

of the EIS process. These impacts are part of the project impacts and must be considered as part of a single EIS to avoid illegal segmentation.

A. The DEIS Does Not Adequately Address Impacts on Water and Wildlife

Under the federal Clean Water Act (CWA), discharges of pollutants, including dredged and fill material, are prohibited unless permitted pursuant to CWA.¹⁹ In order for discharges of dredged and fill to be permitted under the CWA by the U.S. Army Corps of Engineers (Corps or USACE), a “sequencing” analysis must occur.²⁰ First, impacts to wetlands must be avoided; then minimized; and finally, to the extent impacts are unavoidable, compensated.²¹ For non-water dependent projects, CWA regulations do not allow for a permit to be issued if a practicable alternative to the discharge exists that would have a lesser impact on water resources.²² Mitigation is a last resort to be used only to compensate for impacts that could not be avoided or minimized.

The DEIS relies almost solely on mitigation measures in its analysis of impacts to wetlands and streams. The DEIS fails to adequately demonstrate that efforts were properly made to avoid or minimize wetland, stream and river impacts. It also fails to quantify the extent to which CWA mitigation requirements will even apply to wetlands and streams that will be impacted, leaving a very open-ended statement that “requirements for compensatory mitigation would depend on final USACE decisions on jurisdictional determinations.”²³ As detailed below, the Pipeline will cross vital water resources the Corps has not been protecting under the CWA, meaning that no CWA permitting or mitigation requirements would apply.

As discussed in these comments above, the purpose and need of this project is unlawfully narrow and not substantiated. A proper purpose and need would reveal that this project is not necessary to meet energy needs. As such, the No-Action Alternative is the practicable alternative with the least damage to the aquatic environment. Thus, the currently proposed impacts to hundreds of rivers and streams and several hundred acres of wetlands should not be permitted under Section 404 and should not be allowed.

System alternatives would also have less impact on water resources and be practicable. As the DEIS states: “A system alternative would render construction of the pipeline unnecessary, although some modifications or additions to other existing pipeline systems would be required to increase the current capacity of those systems.”²⁴ As stated in these comments above, the DEIS projected demand well exceeds what EIA has demonstrated future demand to be. Although existing pipelines like the ExxonMobile Pegasus may not be able to accommodate the 900,000 bpd that the Keystone pipeline can carry, demand does not show such carrying capacity is needed. As such, it is possible use of existing

¹⁹ 33 U.S.C. § 1311(a).

²⁰ 33 U.S.C. § 1344; 40 C.F.R. § 230.10(a).

²¹ 33 U.S.C. § 1344(b)(1); 40 C.F.R. § 230.10(a).

²² 40 C.F.R. § 230.10(a).

²³ DEIS, Wetlands, § 3.4.4, at 3.4--12.

²⁴ DEIS, Alternatives, § 4.2, at 4-5.

pipelines could meet the need of this project, thus being practicable, and would avoid and minimize impacts to water resources as required by law. Again, this practicable alternative would almost certainly result in far less impact to aquatic resources and should demand that CWA permits not be issued for the impacts associated with the preferred alternative.

Similarly, the DEIS dismisses use of other planned pipelines (such as the Altex, Chinook-Maple Leaf, Trailbreaker, and Enbridge-BP Delivery System pipelines) as alternatives to building the Keystone XL on the basis that “[p]art of the purpose and need of the Project is to provide up to 900,000 bpd of crude oil to PADD III in as short a timeframe as possible.”²⁵ Again, the assumptions about the amount of capacity needed are baseless. A proper assessment based on an appropriate purpose and need would likely demonstrate that the project is not needed at all, and that any carrying capacity needed could be accommodated by other proposed pipelines²⁶ with overall minimization of impacts to water resources. This again leads to a conclusion that impacts for this project cannot be permitted under the CWA.

In terms of Pipeline placement, while the DEIS states that placement considered a variety of factors, including environmental concerns and avoidance of *large* wetland complexes and *large* waterbodies, it makes no mention of attempting to avoid smaller resources.²⁷ As stated in the DEIS, the vast majority of impacted streams and wetlands are smaller resources.²⁸ There is no indication that the route was chosen in a manner that would avoid or minimize impacts to these vital resources. Moreover, the DEIS explicitly states that expediency was an overriding concern in pipeline placement: “Development of alternatives also considered the desire to reduce the line miles of pipeline that would be required to reach the Project terminus.”²⁹ A look at a map of the route shows that the desire to create a direct route was an overriding concern.³⁰ There is no indication in the DEIS that appropriate consideration was given to modifying the route to avoid smaller water resources. The excuses given for not choosing routes that would have less impacts to water resources are not tenable and fails to make those alternatives not “practicable.”

The preferred Gulf Coast Section alternative (GCS-A) has considerable more impacts to wetlands than the rejected alternative (GCS-B), which is only 6 miles longer.³¹ GCS-A has 280 more acres of impacts than GCS-B (853.3 compared to 573.3). The cited reason for rejected GCS-B is its “greater length” and “associated greater area of impact and [stream/river] crossings.”³² Yet, while this alternative does have more waterway crossings,

²⁵ DEIS, Alternatives, § 4.2.2, at 4-7.

²⁶ Our organizations are firmly of the position that no new pipeline is needed and that fuel from this project is not necessary to meet energy needs. However, to the extent any pipeline is deemed necessary, it certainly need not be of this capacity nor along the proposed route, it need not be built in the timeframe of this project, and need not be built in addition to other proposed pipelines.

²⁷ DEIS, Alternatives, § 4.3.2, at 4-9 –10.

²⁸ E.g., 350 of 389 stream crossings in MT are to intermittent/ephemeral streams; for SD the number is 331 of 354 crossing; for NE, 127 of 160 crossings; for OK, 273 of 368; for TX, 413 of 633 crossings.

²⁹ DEIS, Alternatives, § 4.3.2, at 4-10.

³⁰ E.g., DEIS, Overview Map, at Fig. 1.1-1.

³¹ DEIS, Alternatives, § 4.3.5.3-, tbl 4.3.5-1, at 4-19.

³² DEIS, Alternatives, § 4.3.5.2, at 4-19.

the difference in wetland impacts (280 less acres of impacts for the rejected alternative) dwarfs the difference in stream crossings (13.2 more acres of impacts).³³ The added six miles of length hardly makes this alternative impracticable, especially when almost 98% of this rejected alternative would parallel existing ROWs of other linear facilities.³⁴

Similarly, the preferred route for the Houston Lateral section (Houston Lateral Alternative A) has significantly more wetland impacts (236.5 acres to 165.5 acres) than the rejected alternative (Houston Lateral Alternative B).³⁵ While the rejected alternative is longer, has more stream crossings, and may have more difficulty in terms of meeting compliance with the Coastal Zone Management Act, there is still an inadequate showing that the route is not practicable and does not have less overall impact on aquatic resources than the alternative route chosen.

Likewise, crossing methods do not appropriately seek to avoid and minimize impacts to water resources. Rather than ensuring the least environmentally damaging practicable alternative is used, convenience seems to be the overriding concern in regards to which crossing methods are used. This fails to comply with the law. For instance, the DEIS states that

[a]pproximately 621 intermittent waterbodies would be crossed by the proposed Project (Appendix E). *In the event that* these intermittent waterbodies are dry or stagnant at the time of crossing, conventional upland cross-country construction techniques would be used. The pipeline would be installed with the open-cut wet crossing method if water is flowing at the time of installation. *The specific method used for each crossing would be based on site-specific analyses of conditions at the time of installation* so that the method selected would result in lower levels of environmental impact.³⁶

However, the DEIS does not indicate that efforts will be made to ensure that the *timing* of the crossing will result in the least amount of damage to water resources. Given relatively predictable changes in flow rates throughout the year, achieving the lowest level of environmental impact may depend greatly on when crossings occur, allowing crossing to happen at times of low or no flow when impacts would be reduced and less environmentally damaging methods could be used. It is practicable to time crossings in such a manner as to reduce impacts.

Similarly, crossing methods for many streams seem to improperly be allowed to occur at the whim of land owners and managers. “The actual crossing method employed at an individual perennial stream would depend on permit conditions from USACE and other relevant regulatory agencies, as well as additional conditions that may be imposed by landowners or land managers at crossing locations.”³⁷ The DEIS also does not address the

³³ DEIS, Alternatives, at tbl. 4.3.5-1.

³⁴ DEIS, Alternatives, at 4.3.5.2-19.

³⁵ DEIS, Alternatives, at tbl. 4.3.6-1.

³⁶ DEIS, Project Description, § 2.3.3.6, at 2-30.

³⁷ DEIS, Project Description, §2.3.3.5, at 2-27 – 28.

fact that the Corps may decline to find jurisdiction over certain stream crossings (see below), meaning that for some streams no CWA permit conditions may apply. In order to truly assess possible impacts from stream crossings, the DEIS must analyze the possible impacts from the Corps not asserting jurisdiction over certain water resources.

Plans for wetlands crossings also seem to be more concerned with convenience than ensuring crossings are timed to reduce impacts. The DEIS states that, “Pipeline construction across wetlands would be similar to typical conventional upland cross-country construction procedures, with modifications to reduce the potential for affects to wetland hydrology and soil structure. The wetland crossing methods used would depend largely on the stability of the soils at the location *at time of construction*.”³⁸ As with streams, there is no attempt to ensure crossings are timed during periods of lower water or other times to ensure an avoidance or minimization of impacts. In general, State should require that dry crossings should occur unless TransCanada can demonstrate that such crossings are impracticable or not possible.

Other than the 38 streams that would be crossed using the Horizontal Directional Drilling (HDD) method, the “preferred crossing method” is the open-cut crossing method, which is the method with the most environmental impacts.³⁹ An open cut allows substantial downstream sedimentation, since excavation, pipeline placement, and back fill all occur in flowing water. There are a total of 341 perennial waterbodies and 621 intermittent waterbodies. Aside from the 38 that will be crossed by the HDD method, there is no requirement that less damaging alternatives to open-cut will be used and only a statement that dam-and-pump and flume crossings will be used “where technically feasible” or “where practicable” on unspecified “environmentally sensitive waterbodies.”⁴⁰ Dam-and-pump and flume crossings are standard techniques in the pipeline industry for achieving a dry crossing. DOS should discuss a mitigation measure indicating that dry crossings of waterbodies are the preferred method unless Keystone provides information that such a crossing is infeasible or impractical.

The DEIS also does not require that stream banks be properly restored. The DEIS allows that “[a]fter pipeline installation, stream banks would be restored to preconstruction contours *or to a stable configuration*.”⁴¹ Stable configuration could mean the use of “rock riprap, gabion baskets (rock enclosed in wire bins), log walls, geogrids, willow cuttings, or alternative wood-based structured where required by regulatory authorities.”⁴² Stabilization methods like riprap, log walls and other methods, can often have severe deleterious impacts of streams. They can alter or negatively impact important functions such as stream evolution processes, riparian succession, sedimentation processes, habitat, and biological community interactions, with resulting adverse impacts to aquatic wildlife.⁴³

³⁸ DEIS, Project Description, § 2.3.3.7, at 2-31.

³⁹ DEIS, Project Description, §2.3.3.5, at 2-28 – 29.

⁴⁰ DEIS, Project Description, §2.3.3.5, at 2-28.

⁴¹ DEIS, Project Description, § 2.3.3.6, at 2-31.

⁴² DEIS, Project Description, § 2.3.3.6, at 2-31.

⁴³ See Fischenich, J. Craig, *Effects of Riprap on Riverine and Riparian Ecosystems*, U.S. Army Corps of Engineers (April 2003).

This means that once functional banks could be made stable, but have important functions permanently degraded. These impacts are not assessed by the DEIS.

The DEIS further notes several impacts to water resources that could potentially be severe, but fails to quantify or describe them in a manner that provides meaningful information regarding the severity of the impacts. For instance, the DEIS states that the project will result in “[t]emporary increase in turbidity and changes in wetland hydrology and water quality.”⁴⁴ However, how long is temporary? And when will the impacts occur? During times when, for instance, certain aquatic life may be breeding or foraging and could be dramatically impacted by turbidity? And will the turbidity and sedimentation cause long-term problems such as destruction or degradation or fish or amphibian breeding habitat? The DEIS leaves these important issues unaddressed.

1. Direct and Indirect Impacts of Pipeline Construction on Wildlife

Impacts to wildlife are not properly analyzed. The project will result in immense impacts along the project route due largely to habitat loss and fragmentation. Overall, the project will result in significant habitat modification. Construction of the proposed Project would result in loss and alteration of about 22,493 acres of wildlife habitat, including 11,533 acres of grasslands and rangelands, 2,523 acres of forested habitat, and 554 acres of wetland habitats (including 271 acres of forested wetlands).⁴⁵ This loss and fragmentation has the potential to be especially harmful in areas, such as forests and shrubland, that will recover over a longer period time.

The impacts of habitat fragmentation are documented and well-known. Studies have shown that the fragmentation of a species’ habitat can threaten that species survival for a variety of reasons. These include: reduction of total habitat area; vulnerability during dispersal to other patches (increased risk of predation to species during movement); isolation of a species population; edge effects (more “edge” habitat that changes the type and distribution of species); edge effects- changes in microclimate (e.g. forested areas tend to be shadier, more humid and less windy, but more edge can alter these micro climates).⁴⁶ The DEIS acknowledges these impacts of habitat fragmentation, stating that predator movement will be facilitated by the existence of a right of way (ROW) for the pipeline; predator opportunities will be increased by fragmentation as more “edge” habitat is created for predation and parasitism (like cowbird nesting invasions); and fragmentation will impact movement of amphibians, reptiles, small mammals and some bird species.⁴⁷

⁴⁴ DEIS, Wetlands, § 3.4.3, at 3.4-9.

⁴⁵ DEIS, Executive Summary, § ES.6.6, at ES-12.

⁴⁶ See Towson University, What is Habitat Fragmentation, *available at*, http://chesapeake.towson.edu/landscape/forestfrag/all_habitatfrag.asp (last visited June 8, 2010). Johnson, Douglas H., *Habitat Fragmentation Effects on Birds in Grasslands and Wetlands: A Critique of Our Knowledge*, USGS, Northern Plains Wildlife Research Center, (2001), *available at*, <http://www.npwrc.usgs.gov/resource/birds/habfrag/index.htm> (last visited June 8, 2010). (“Habitat fragmentation exacerbates the problem of habitat loss for grassland and wetland birds. Remaining patches of grasslands and wetlands may be too small, too isolated, and too influenced by edge effects to maintain viable populations of some breeding birds.”)

⁴⁷ E.g. DEIS, Wildlife, § 3.6.2.4, at 3.6-21 – 22.

Another major impact of the project that is inadequately analyzed is the introduction of invasive species. The pipeline ROW will cut through native grassland, shrub, and forest communities and would remove vegetation including sagebrush and native grasses, creating an unvegetated strip over the pipeline trench and adjacent construction areas. Subsequent revegetation may not provide habitat features comparable to pre-project conditions. The DEIS acknowledges that: “After removal of vegetation cover and disturbance to the soil, reestablishment of vegetation communities could be delayed or prevented by infestations of noxious weeds and invasive plants. Vegetation removal and soil disturbance during construction could create optimal conditions for the establishment of many weeds.”⁴⁸

The potential impacts of invasive species, particularly in light of climate change, are not properly analyzed. Because many invasive species are fast-growing, highly opportunistic ecological generalists, land use change and alteration generally favors biological invasion.⁴⁹ Non-native aquatic species can compete with native species and transmit diseases.⁵⁰ As protection against invasives, the DEIS provides that, “During construction, the Contractor shall clean the tracks, tires, and blades of equipment by hand (track shovel) or compressed air to remove excess soil prior to movement of equipment out of weed or soil-borne pest infested areas or utilize cleaning stations to remove vegetative materials using water under high pressure.”⁵¹ This is insufficient to protect sensitive ecosystems from the spread of invasive species. Small organisms may be hidden in crevices and other dangers, such as disease-spreading parasites, bacteria and viruses, are completely invisible to the naked eye. Additionally, the DEIS only states that such cleaning/decontamination will occur “before entering areas either identified as sensitive habitats or new ROW.”⁵² The DEIS does not explain why such measures would not be used in existing right of ways, construction areas, or other locations where invasives could easily be introduced, become established and negatively impact native species.

Plans for preventing the spread of invasive species from hydrostatic testing equipment are also inadequate. Measures apply only in areas “where zebra mussels are known to occur” and the measures only call for a “thorough cleaning” of equipment.⁵³ The project will apparently not take preventive measures to stop invasives spreading where zebra mussels are not present. This is a wholly unacceptable risk that must be examined. Also, as stated above, a “thorough cleaning” may not remove all invasives that could be contained in equipment and subsequently spread to other waterbodies. The utmost precaution should be taken in preventing the spread of invasive species, since they are a pollutant that spreads exponentially over time, and once established, are nearly impossible to eradicate and incredibly costly to manage. Climate change will make it ever easier for such invasives to

⁴⁸ DEIS, Executive Summary, § E.S.6.5, at ES-11 – 12.

⁴⁹ See Comm’n for Env’tl. Cooperation, *North American Mosaic: An Overview of Key Environmental Issues*, at 4, available at, http://www.cec.org/Storage/32/2357_SOE_InvasiveSpecies_en.pdf p 4.

⁵⁰ DEIS, Conclusions, § 5.7.1, at 5-14.

⁵¹ DEIS, Construction, Mitigation and Reclamation Plan, AppB-14; Detail Drawings 30, 31.

⁵² DEIS, Wildlife, § 3.6.3, at 3.6-24.

⁵³ DEIS Construction, Mitigation and Reclamation Plan, AppB-64 – 65.

spread, and ever harder to control such invasives. These impacts are not examined by the DEIS and must be given a hard look.

The DEIS also often uses language that leaves no guarantee that impacts to be mitigated will, in fact, be mitigated. For instance, in regards to impacts from electrical distribution or transmission lines, the DEIS states that “[p]otential impacts to wildlife from connected actions are direct mortality due to collision with or electrocution by electrical distribution and transmission lines, and reduced survival and reproduction for ground nesting birds due to the creation of perches for raptors in grassland and shrub land habitats. To reduce these impacts, power providers *may* incorporate standard, safe designs, as outlined in Suggested Practice for Avian Protection on Power Lines (issued by the Avian Power Line Interaction Committee [APLIC] in 2006) into the design of electrical distribution lines in areas of identified avian concern.”⁵⁴ The use of the permissive word “may,” as opposed to must or shall, means that these measures may not be taken in all – or any – instances.

The DEIS additionally fails to detail the full impacts to wildlife caused by the construction of the Pipeline. Many potentially harmful activities will be associated with the construction of the Pipeline. For instance, the DEIS does not address this construction in detail or provide mitigation measures for the construction of some temporary roads would be required in addition to upgrading of existing roads. Approximately 400 temporary access roads are needed to provide adequate access to the construction sites.⁵⁵ The DEIS does not properly address impacts from driving fuel trucks – such as collisions – which would be transported daily by fuel trucks from the yards to the construction area for equipment fueling or the impact of building “temporary bridges (e.g., subsoil fill over culverts, timber mats supported by flumes, railcar flatbeds, flexi-float apparatus)” which “would be installed across all perennial water bodies to allow construction equipment to cross with reduced disturbance.”⁵⁶

In addition, the methods proposed in the DEIS for water body and wetland crossings are unnecessarily destructive in many instances. Approximately 621 intermittent waterbodies would be crossed by the Pipeline.⁵⁷ In the event that these intermittent waterbodies are dry or stagnant at the time of crossing, conventional upland cross-country construction techniques would be used. However, the pipeline would be installed with the open-cut wet crossing method if water is flowing at the time of installation.⁵⁸ The open-cut wet crossing method is potentially more harmful to wildlife and wildlife habitat than other methods by causing the discharge of suspended solids and other pollutants into waters, many of which are already impaired. There is inadequate explanation as to both the number of waters that might be impacted by this method, or why efforts are not made to ensure crossings at times when a less harmful method can be used.

⁵⁴ DEIS, Executive Summary, § E.S.6.6, at ES-12.

⁵⁵ DEIS, Project Description, § 2.2.7.5 at 2-16.

⁵⁶ DEIS, Project Description, § 2.3.3.6, at 2-30.

⁵⁷ DEIS, Water Crossings Tables, App. E.

⁵⁸ DEIS, Project Description, § 2.3.3.6, at 2-30.

2. The DEIS Does Not Properly Account for the Fact that Many Impacted Wetlands and Water Bodies Are Not Being Regulated Under CWA and Therefore May Not Receive Mitigation

The DEIS relies on CWA protections to conclude that mitigation measures will protect waters from the impacts of the pipeline. However, due to two Supreme Court decisions, *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001) and *Rapanos v. United States*, 547 U.S. 715 (2006) and subsequent Corps and EPA guidance documents interpreting those decisions,⁵⁹ the status of CWA protections for many important waters that will be impacted by the project, such as intermittent streams and so-called “isolated” wetlands, is in doubt. For instance, the overwhelming majority of streams impacted are intermittent or ephemeral (350 in MT⁶⁰; 331 in SD⁶¹; 127 in NE⁶²; 273 in OK⁶³; 415 in TX⁶⁴). In terms of the wetlands, the pipeline crosses the interior of the country, where a great number of depressional, geographically isolated wetlands exist. While the DEIS never quantifies the number of “isolated” waters that will be impacted, the DEIS acknowledges that “[w]etlands throughout Montana, South Dakota, Nebraska, Kansas, Oklahoma, and Texas include isolated depressional wetlands, glaciated kettle-hole wetlands, and sinkhole wetlands, as well as isolated floodplain wetlands such as oxbows.”⁶⁵ Due to a 2003 guidance document interpreting the *SWANCC* decision,⁶⁶ the Corps is not protecting geographically isolated wetlands such as prairie potholes under the CWA meaning that developers have been free to impact and destroy these valuable resources without any federal safeguards under the CWA.⁶⁷

Yet, the DEIS never examines the extent to which jurisdictional uncertainty and Corps implementation of the *SWANCC* and *Rapanos* decisions affects its conclusions regarding impacts to water resources. While acknowledging that “[w]etland impacts that affect non-jurisdictional wetlands under Section 404 would not require mitigation,”⁶⁸ the DEIS never even roughly quantifies these impacts and does not discuss possible impacts to streams due

⁵⁹ See U. S. Environmental Protection Agency and U.S. Army Corps of Engineers, *Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in Rapanos v. United States & Carabell v. United States* (June 5, 2007) available at <http://www.epa.gov/owow/wetlands/pdf/RapanosGuidance6507.pdf>, noticed at 72 Fed. Reg. 31,824 (June 8, 2007) (revised Dec. 2, 2008); Joint Memorandum on *SWANCC* Decision, 68 Fed. Reg. 1991, 1995 (Jan. 15, 2003).

⁶⁰ DEIS, Water Resources, § 3.3, at 3.3-11.

⁶¹ DEIS, Water Resources, § 3.3, at 3.3-13.

⁶² DEIS, Water Resources, § 3.3, at 3.3-14.

⁶³ DEIS, Water Resources, § 3.3, at 3.3-16.

⁶⁴ DEIS, Water Resources, § 3.3, at 3.3-17.

⁶⁵ DEIS, Wetlands, § 3.4.1 at 3.4-1.

⁶⁶ Joint Memorandum on *SWANCC* Decision, 68 Fed. Reg. 1991, 1995 (Jan. 15, 2003).

⁶⁷ See Testimony of Benjamin H. Grumbles, EPA Assistant Administrator for Water, Hearing of House Transportation & Infrastructure Committee: “The 35th Anniversary of the Clean Water Act: Successes and Future Challenges” (Oct. 18, 2007) (“[T]here are two guidances that we are working under, the 2003 *SWANCC* guidance – and the basic point there is in the guidance we held open the possibility that there could be circumstances under . . . our regulations where there could be an assertion of jurisdiction over isolated intrastate non-navigable waters without relying on the migratory bird rule provisions. As a legal matter, that is still possible, but as a practical matter, we had not asserted jurisdiction over those types of wetlands based on that guidance, which is still in place.”).

⁶⁸ DEIS, Wetlands, § 3.4.3, at 3.4-4

to possible questions of CWA jurisdiction. Instead, the DEIS relies heavily on the existence of CWA protections to conclude impacts will be accounted for when this may not be the case. For instance, the DEIS states that

[w]here the HDD method is not used for major waterbody crossings or for waterbody crossings where important fisheries resources could be impacted, Keystone would develop a site-specific plan addressing proposed additional construction and mitigation procedures. *Prior to commencing any stream crossing construction activities, Keystone would obtain a permit under Section 404 of the Clean Water Act (CWA) through the USACE and Section 401 water quality certification as per state regulations. If required, Keystone would work with the applicable permitting agency to develop specific crossing and sediment handling procedures for contaminated or impaired waters.* Keystone would develop specific construction and crossing methods for sensitive/protected waterbodies in conjunction with USACE and U.S. Fish and Wildlife Service (USFWS) consultation. Keystone would develop a frac-out plan in consultation with the regulatory agencies for HDD crossings.⁶⁹

The DEIS fails to mention the possibility that in many instances both Section 404 and 401 safeguards would not be invoked.

The DEIS further states that

[a] total of 341 perennial waterbodies would be crossed during the construction of the proposed Project. One of four techniques would be used to cross perennial waterbodies: the open-cut wet method, the dry flume method, the dry dam-and-pump method, or, HDD, as described below. For each perennial waterbody crossing, a site specific engineering and geomorphologic analysis would determine the best method to use to avoid and reduce aquatic impacts. *The actual crossing method employed at an individual perennial stream would depend on permit conditions from USACE and other relevant regulatory agencies, as well as additional conditions that may be imposed by landowners or land managers at the crossing location.*⁷⁰

Case law has called into question jurisdiction for even perennial streams.⁷¹ This fact is not acknowledged or accounted for by the DEIS.

For the hundreds of intermittent and ephemeral streams the Corps may determine are not jurisdictional, similar protections may also not be applied. Yet, the DEIS seems oblivious to this risk, stating that, “Prior to *any* stream crossing construction activities, Keystone would obtain a permit under Section 404 [of the CWA] through the USACE and Section 401 water quality certification as per state regulations.”⁷² DOS is in no position to require

⁶⁹ DEIS, Conclusions, § 5.3.2, at 5-5.

⁷⁰ DEIS, Project Description, § 2.3.3.5, at 2-27.

⁷¹ See *United States v. Robison*, 505 F.3d 1208 (11th Cir. 2007) (finding that government needed to demonstrate “significant nexus” between perennial stream and downstream navigable waters to establish CWA jurisdiction).

⁷² DEIS, Conclusions, § 5.3.2, at 5-5.

such permits to be issued and it is ultimate the Corps and EPA, or a court, that will determine whether or not certain crossings require permits. While commenters believe such waters deem protection, DOS is in no position to assume that stream crossing will necessarily be subject to CWA protections. The DEIS must take this serious risk to waters into account, and cannot rely on assumptions about CWA protections ameliorating water impacts without assessing the extent to which those protections are assured.

3. The DEIS Fails to Assess Impacts to Water from Pump Stations, Mainline Valves, Roads and Other Associated Developments

The project will impact, in addition to the route, wetlands and water resources associated with 30 new pump stations, 74 intermediate mainline valves of which 24 are check valves located downstream of major river crossings, approximately 50 new access roads and approximately 400 temporary access roads.⁷³ However, the DEIS did not assess the associated developments: “The Project would disturb a total of 554 acres of wetlands (*not including pipe storage yards, rail sidings, contractor’s yards, access roads, or construction camps*).”⁷⁴ These impacts could potentially be enormous, as roads, storage yards and similar developments can disturb or destroy water resources by directly impacting them by crossing through them, or by causing stormwater discharges, erosion, changes in water temperature by removing shading vegetation, and other similar impacts. These impacts are not quantified or analyzed in a manner that could be characterized as a “hard look.”

The DEIS hints at the scale of the potential impacts it fails to examine, acknowledging that “[e]xtra workspace areas away from the construction ROW would be required during construction of the Project for use as pipe storage sites, railroad sidings and contractor yards. Pipe storage sites would be required at 30-mile to 80-mile intervals and contractor yards would be required at approximately 60-mile intervals. It is estimated that 40 pipe storage yards and 19 contractor yards would be required for the proposed Project.”⁷⁵ Additionally, extension road construction would large in scale as well:

Construction of some temporary roads would be required in addition to upgrading of existing roads. Approximately 400 temporary access roads are needed to provide adequate access to the construction sites. Private roads and any new temporary access roads would be used and maintained only with permission of the landowner or land management agency. Some short, permanent access roads from public roads to the proposed tank farm, pump stations, delivery facilities, and intermediate MLVs would also be necessary. Approximately 50 permanent access roads would be needed. Prior to construction, the location of new permanent access roads would be finalized. These roads must be relatively wide, as ‘access road temporary and permanent disturbance estimates are based on 30-foot roadway width required to accommodate oversized

⁷³ DEIS, Project Description, § 2.1, at 2-2.

⁷⁴ DEIS, Executive Summary, § ES 6.4, at ES-11 (emphasis added).

⁷⁵ DEIS, Project Description, § 2.2.7.2, at 2-12.

vehicles. All non-public roads are conservatively estimated to require upgrades and maintenance during construction.⁷⁶

However, the impacts of building 40 pipe storage yards, 19 contractor yards, 400 temporary access roads, and 50 permanent roads on wetlands, streams, rivers and other waters are not analyzed. This is a blatant and illegal oversight.

4. Mitigation Measures Are Inadequate

Several of the listed mitigation measures fail to explain how they will appropriately mitigate impacts, or whether practicable alternatives exist that would result in lesser impacts to aquatic resources. For example, the DEIS states that the use of herbicides or pesticides will be prohibited within 100 feet of any wetland, unless allowed by the appropriate land management or state agency.⁷⁷ This requirement is not even mitigation: it allows herbicide and pesticide use where it currently would be allowed and appears to add no additional protection. Beyond that there is no explanation as to whether 100 feet will properly reduce impacts, or how that number was chosen. It appears to be a completely arbitrary number.

A variety of other non-mandatory mitigation measures arbitrarily use 100 feet as the suggested distance for activities (e.g. “Avoid parking equipment maintenance and repairs in upland locations at least 100 feet from waterbodies and wetlands, *if possible*,” “Perform all equipment maintenance and repairs in upland locations at least 100 feet from waterbodies and wetlands, *if possible*.”)⁷⁸ Hydrostatic test manifolds would be located more than 100 feet away from wetlands and riparian areas to the maximum extent possible.⁷⁹ Similarly, there is no explanation as to why the 85 foot wide corridor construction zone mitigation measure is either protective or the least damaging width practicable.⁸⁰ Nor is there any guidance about what sort of “soil conditions” would permit TransCanada to ignore this width requirement and impact a wider corridor.

B. The DEIS does not adequately address the destruction of irreplaceable native grassland ecosystems and impacts on the Sand Hills

Although the DEIS acknowledges that “conservation of native prairie remnants is a high priority throughout the project area” and that the Sand Hills are “one of the few remaining examples of a functioning prairie ecosystem,” the Pipeline route will cross over 336 miles of native grasslands that may take a century or more to recover from the excavation. These are irreplaceable resources of national and international value that cannot simply be replanted.

⁷⁶ DEIS, Project Description, § 2.2.7.2, at 2-16.

⁷⁷ DEIS, Conclusions, § 5.4.2, at 5-9.

⁷⁸ DEIS, Conclusions, § 5.4.2, at 5-8.

⁷⁹ DEIS, Conclusions, § 5.3.2 at 5-6.

⁸⁰ DEIS, Conclusions, § 5.4.2, at 5-7.

In recent years increasing amounts of scarce remaining native grasslands have been plowed under to meet agricultural needs. The native prairie remnants on the High Plains and Great Plains are biologically unique, contain high biological diversity, and provide critical ecosystem services to the region, including carbon sequestration. Pipeline construction and operation will permanently alter this ecosystem by causing increased soil erosion, introduction and expansion of noxious weed populations, long-term damage to delicate soils, alteration of vegetation due to increased soil temperatures, and a risk of minor to catastrophic spills along the full Pipeline route.⁸¹

Proposed mitigation measures are inadequate to protect these delicate ecosystems. Stockpiling topsoil to a depth of 12 inches will not preserve native grasses whose root systems may extend many feet below the surface, nor will it preserve Sand Hill areas where there is no topsoil. In addition, many mitigation measures are proposed only for agricultural and residential areas, apparently leaving delicate grasslands exempted. At a minimum, all mitigation measures should apply to grassland and prairie ecosystems and be formalized as enforceable permit conditions.

There are certain specific errors and omissions in the DEIS discussion of native grassland ecosystems and the Sand Hills. Dr. James Stubbendieck, Director of the Center for Great Plains Studies at the University of Nebraska at Lincoln, assisted us by reviewing the DEIS sections related to these areas. His comments are incorporated into the discussion below.

1. DEIS Underestimates Significance of Native Grassland Excavation

In Section 3.5.2 (under Terrestrial Vegetation), the first sentence is inaccurate with regard to the degree of alteration “by agriculture, urban, industrial development...prairie dogs”.⁸² It is inaccurate to say that native vegetation communities “throughout” the project area have been so altered. Some of these areas have been altered very little. Their excavation would represent, in some cases, the first alteration by human hands. Section 3.5.2 includes other factual errors. For example, grasses are either bunch grasses or sodforming, not both.⁸³ The discussion of “Traditionally Used Native Plants” at Section 3.5.2.4 requires updating and/or additions to scientific names. It should also be stated regarding the Sand Hills that most of the lakes in this region represent the water table.⁸⁴ The risk of aquifer contamination is therefore exceptionally high in this area.

2. DEIS Fails to Consider Fully the Risk of Noxious Weed Introduction

Table 3.5.5-4 (Noxious Weed Sources Occurring Along the Steele City Segment of the Project) underestimates the noxious weed species active in Nebraska. The DEIS does not reflect the fact that noxious weeds ‘*Sericea* [Chinese] *lespedeza*’ and Johnsongrass grow in Nebraska. Table 3.5.4-1 (Federal, State, or Local Noxious Weeds Potentially Occurring

⁸¹ DEIS at 3.5.5.

⁸² DEIS 3.5.2.

⁸³ DEIS 3.5.2.1.

⁸⁴ DEIS 3.5.2.1.

Along the Project Route) has omissions and should be revised with the assistance of a specialist in affected prairie ecosystems.

Section 3.5.5.1 does not address the fact that increasing soil temperature might allow for southern plants to move northward. An additional concern is that the newly created microclimate may allow invasion of new noxious weeds. Research on soil temperatures increases (Appendix L) extensively cites an article, Dunn et al., that is unpublished. Since it has not gone through a scientific peer review process, the Dunn article should neither be used nor cited in the document. Other cited research is primarily related to crops, and the only article on the impact of native grass species involves a natural gas pipeline installed 17 years ago.

Further research needs to be done to determine if more relevant and newer peer-reviewed research exists that can provide a stronger basis for decision-making. The small section regarding revegetation monitoring (Appendix L, section v.) discusses a CRP field re-established after a crude oil pipeline was installed, but again the research is not in a peer-reviewed journal and was conducted by a paid environmental service firm. The 20-50% increase in temperature they quote from the Knapp article is not a correct conclusion from the article. It is an overstatement.

3. DEIS Plans Inadequately for Revegetation

At several points, the DEIS makes faulty assumptions, proposes insufficient measures, or is unclear about revegetation planning for highly sensitive areas. For example, one growing season of discouraging livestock grazing will be inadequate for establishment. Establishment will likely take five to ten years.⁸⁵ The recommendation by regulatory agencies on prohibiting burning also is not clear.⁸⁶ The DEIS is unclear on whether local ecotypes will be used for seed mixes in replanting and offers no supporting evidence for the assertion that the reseeded plan will restore the biodiversity that will be destroyed by the construction process.⁸⁷ Dr. Stubbendieck believes it will not.

Recovery time projected for “Vegetation Communities of Concern” is inadequate.⁸⁸ It is not clear if prairie dog burrows will be encouraged or even allowed on the ROW post-construction. The DEIS does not clarify whether the predicted sagebrush re-establishment time is related to re-planting or natural colonizing. Monitoring in the recovery phase must last longer than just one year, and evaluation of revegetation success by “visual survey” is inadequate.⁸⁹ A sampling technique should be developed that requires more quantitative figures versus the proposed qualitative method. For example, a system evaluating percent cover or botanical composition of each species should be employed.

⁸⁵ DEIS 3.5-34, last bullet point.

⁸⁶ DEIS 3.5-32, 4th bullet point.

⁸⁷ DEIS 3.5-33, 3rd bullet point from the bottom.

⁸⁸ DEIS 3.5.5.2.

⁸⁹ DEIS 3.5-36.

For the Sand Hills region, certain specifics are lacking or inappropriate to the unique soil conditions. There is little topsoil development in this area, so stockpiling it would be of little value on the uplands.⁹⁰ Revegetation methods specific to the Sand Hills are inadequate. Some are untested in the region (such as imprinting the soil). Wind erosion is a major concern that remains unaddressed. Fencing would also be needed to remove animal traffic in these areas.

The sixth bullet point in Section 3.5.5 fails to discuss the impact of increased soil temperatures on the soil microbial community or the impact on native vegetation. Section 3.5.5.1 (General Vegetation Resources paragraph) misrepresents the length of time it will take for vegetation to establish to preconstruction conditions. Studies have shown a much longer re-establishment period, for example, 20-40 years in the shortgrass prairie, but less time for Sand Hills or tallgrass prairies. In Section 3.5.5.1, it is unclear whether the time period for shrubland re-establishment would be if the shrubs were re-introduced or natural colonization was allowed to occur.

Finally, we note that Section 3.8 (Threatened and Endangered Species) omits consideration of the federally endangered Blowout Penstemon (*Penstemon haydenii*) population in Rock County, Nebraska.

IV. INSUFFICIENT SPILL RISK ANALYSIS AND PREPARATION

The Pipeline raises environmental and public safety issues distinct from those associated with conventional crude oil pipeline systems. The DEIS does not adequately address these unique concerns, including pipeline routing, pipe quality, construction standards, operation and maintenance, and emergency response. We request that DOS condition the grant of the Permit on a requirement that the fifty-one special permit conditions imposed on the original Keystone pipeline by PHMSA be imposed on the full length of the Keystone XL project as well. We further request that DOS condition the grant of the Permit on the use of the thicker pipe proposed only for High Consequence Areas on the full length of the Pipeline. Using a design factor and operating stress level of 72 percent of the steel pipe's specified minimum yield strength ("SMYS") in rural areas will effectively require the use of thicker pipe, and provide the maximum level of safety over the lifecycle of this pipeline. The devastating consequences of a pipeline failure to agricultural, wildlife, cultural and other resources along the route should dictate the application of the highest possible standards for the length of the Pipeline.

Lastly, as discussed in Section D, Operations and Maintenance Items, because of the higher temperature at which this pipeline will operate, internal and external corrosion will be a major risk. Given the advanced state of various corrosion mitigation technologies such as recent developments in fusion bonded epoxy ("FBE") coatings, improvements in cathodic protection design and operation, and requirements for cleaning pigs and corrosion inspection with high resolution smart pigs, we request that DOS expand its conditions for corrosion mitigation to include all of the above.

⁹⁰ DEIS 3.5-36 and 3.5-37.

The unique nature of the oil being moved plays an important role in the design, operation, and maintenance of the Keystone XL system as well as the effectiveness of oil spill response, so a brief discussion of several important tar sands oil characteristics is warranted.

A. Tar Sands Oil and Synthetic Crude

The bitumen oil produced from tar sands is not typical crude oil. This oil is very heavy with a gravity that can range from 7 to 13 °API, which is very close to the gravity of water of 10 °API. The bitumen is very thick or viscous at normal temperatures and either must be heated or blended with various lighter oil stocks, such as condensate or gas oil “cutter” stocks, to permit the blended mixture to flow under pipeline design conditions. While not addressed in the DEIS, the published tariffs for the Keystone project (which has the same pipeline origination point, the Hardesty Terminal in Alberta, Canada), places an upper viscosity limit (as a function of varying temperature over the year), and lower gravity quality specifications for any oil entering this pipeline system to assure that the pipeline stays within its designed operating parameters, with warmer months of the year permitting higher viscosity, thicker blends, of bitumen.⁹¹

Certain limited refinery capacity in Alberta has been designed to upgrade tar sand bitumen (7 to 13 °API) via some form of resid cracking (usually delayed coker, flexcoker, or resid hydrocracking), and major hydrocracking and hydrotreating (adds large amounts of hydrogen) to produce a much lighter (approximately 32 °API) and fuller range (depending on the amount of refinery processing) crude oil. This oil is labeled “synthetic crude oil” to distinguish it from conventional crude oil. Since the refinery capacity in Alberta is limited compared to the tar sand field production, the Keystone pipelines have been designed to move both blended bitumen (approximately 19 °API) and synthetic crude oil (approximately 32 °API) to both PADD II and PADD III refineries in batches down the pipeline, with the blended bitumen streams comprising the major share of the pipeline capacity.

B. Identifying Sensitive Areas

Federal regulations identify certain areas, such as populated areas, that can be affected by pipeline releases as HCAs.⁹² Keystone XL has asked to increase design factors to 0.8, allowing thinner pipe, in special permit rural areas that are not located in HCAs. The approximate location of HCAs and special permit areas along the pipeline should be identified in a pipeline route map that should be included in the EIS. It is very important that the public knows and understands that the HCAs and special permit areas designated are proper and this understanding can best be conveyed with a map showing the approximate locations of these areas along a pipeline.

⁹¹ Keystone Pipeline Application, Section 6: System Design, page 9, and F.E.R.C. No 1 for TransCanada Keystone Pipeline Local Pipeline Tariff, Containing Rules and Regulations Applying to the Transportation of Petroleum – From the International Boundary with

⁹² 49 CFR§195.450 Definitions, “*High consequence area* means:...”.

C. Pipeline Routing Issues

Various critical issues concerning the Keystone XL pipeline's specific route selection in the DEIS need further clarification and evaluation. Steep unstable slopes are insufficiently analyzed and avoided. Table 3.1.4-2 identifies areas of the proposed pipeline route that are "Areas with High Landslide Potential Crossed by the Project."⁹³ The impression that this table gives is that there are over 360 miles of pipeline routed in areas with high landslide potential. **No pipeline is capable of withstanding the forces of many tons associated with a massive landslide.** The DEIS states that "Keystone has considered landslide potential in its routing work and has selected crossings of these areas where the landslide potential is considered minimal."⁹⁴ Further detail is warranted to put this concern to rest given that landslide related failures usually end up as pipeline ruptures, with very large, high rate releases. Table 3.1.4-2 needs to be expanded in further detail to identify those areas of the pipeline route where steep landslide would be of the "breakaway" type rather than slight or limited earth movement or settlement. Pipelines are usually designed to handle slight earth movement or settlement. A pipeline elevation profile should quickly help in determining breakaway landslide potential in those areas identified as steep unstable slopes. Breakaway landslides place rapid and excessive abnormal loading forces on the pipeline. Pipelines placed in breakaway landslide areas need to be routed out of these landslide areas.

The analysis of seismic activity at 3.1.4.1 discounts almost entirely any risk from earthquakes along the route. These claims seem ignorant to local residents who have experienced repeated seismic activity along much of the route, including in some of the most biologically sensitive areas such as the Nebraska Sand Hills. Table 3.1.4-1 finds no "High Seismic Hazard" along the route, defined as "peak ground acceleration with 2 percent probability of exceedance in 50 years >0.5 g." The studies cited are compilations of faults, not seismological analyses or projections of seismic risk in the area. A more thorough analysis should be performed in light of the grave risk to pipeline safety posed by active geologic faults.

D. Pipe Quality and High Strength Grade X-70 and X-80 Pipe Steels

While not specifically addressed in the DEIS, further comment in this important area is warranted given that the Keystone XL pipeline will be constructed of X-70 and/or X-80 grade pipe.⁹⁵ Following several recent major pipeline construction projects, PHMSA issued an Advisory Bulletin, ADB-09-01, warning that batches of higher strength recently manufactured pipe (i.e., grade X-70, and X-80) involved on several major pipeline projects failed to make grade specifications in several areas.⁹⁶ Because of low or sub-quality manufactured pipe, pipe grades X-70 and X-80 have been experiencing either pipe failure or permanent expansion yielding during the special high stress hydrotest. This special

⁹³ DEIS, page 3.1-19.

⁹⁴ DEIS, page 3.13-38.

⁹⁵ Keystone XL DEIS, section 2.3.1 "Pipeline Design Parameters," page 2-17.

⁹⁶ PHMSA Advisory Bulletin ADB-09-01, "Pipeline Safety: Potential Low and Variable Yield and Tensile Strength and Chemical Composition Properties in High Strength Line

hydrotest sets a minimum hydrotest pressure of 100% SMYS before operating at a 0.8 design factor (80% SMYS). Following this Advisory Bulletin, Plains Justice, representing various other public parties as well, also requested under the Freedom of Information Act (“FOIA”) further information related to the hydrotest failures, and results and records related to the pipelines and pipe grades mentioned in the Advisory Bulletin.⁹⁷ Review of these FOIA-supplied files leads to several observations related to this issue.

Properly specified and manufactured pipe should **not permanently yield** during an appropriate high pressure hydrotest, even one calling for a minimum pressure test of 100% SMYS required for increasing the design factor to 0.8 (normal maximum design factor is 0.72 calling for a minimum 90% SMYS hydrotest pressure, and results in thicker pipe at the same design pressure). Steel pipe that has yielded to some **limited** upper value may not be unsafe, but such lower quality pipe segments, if left in the pipeline (obviously for pipe that has not failed during the hydrotest), must be evaluated at their actual realized lower value properties, not the properties ordered or specified for the pipe. It is critical that future anomaly evaluations for these specific lower quality pipe segments utilize the values reflective of the poorer quality of that pipe segment, or the segment should be replaced with solid quality pipe.

The fact that sections of pipe are exhibiting some permanent deformation raises serious questions about the completeness or adequacy of current federal regulations, industry quality specifications, and pipe verification sampling during the manufacture of higher stress grade steel pipe.

E. Construction Related Issues

The U.S., in recent years, has undergone an unusual expansion/construction phase in the number of miles of transmission pipeline constructed, and both the Keystone and Keystone XL projects are contributing to a serious demand on experienced pipeline construction and inspection resources. Along with the Advisory Bulletin ADB-09-01 mentioned earlier uncovering the appearance of lower yield pipe than specified, PHMSA’s investigation of thirty-five recent major pipeline construction projects has also uncovered many areas of concern related to pipeline construction activities.⁹⁸ Given the many problems encountered, PHMSA called a new pipeline construction workshop in Fort Worth, Texas on April 23, 2009 to discuss the many field observations from recent construction inspections.⁹⁹ Part of this increased construction inspection activity is related to many projects seeking to increase the design factor to 0.8 permitting thinner pipe wall, provided many additional quality improvements and quality controls are undertaken and occur. Given the decreased margin of error in such pipeline projects, the most stringent quality controls are necessary.

⁹⁷ Plains Justice letter to Marilyn Burke, US DOT PHMSA FOIA Officer, “RE Freedom of Information Act Request – Information Related to Advisory Bulletin ADB-09-01 Potential Low and Variable Yield and Tensile Strength and Chemical Composition Properties in High Strength Line Pipe,” dated September 2, 2009.

⁹⁸ See PHMSA web site <http://primis.phmsa.dot.gov/constructin/index.htm>

⁹⁹ See <http://www.regulations.gov>, search Docket ID PHMSA-2009-0060.

PHMSA, in granting the special permit for the original Keystone project, exceeded current federal pipeline safety regulations by requiring that “All girth welds must be NDE by radiography or alternative means.”¹⁰⁰ This special permit requirement for the Keystone Pipeline project exceeds that stated in the Keystone XL DEIS, “*All girth welds must be inspected, repaired, and non-destructively examined in accordance with §§195.228, 195.230 and 195.234.*”¹⁰¹ Since these DEIS referenced sections of the federal regulations do not require important quality verification via radiological (or ultrasonic) inspection of all liquid pipeline girth welds, it is critical that there be no misunderstanding that **all** girth welds in the special permit sections must be so inspected. It is also unclear if girth weld non-destructive testing means inspection by radiograph or ultrasonic testing, and if such inspection will also occur in non special permit areas (i.e., HCAs). Many companies and other countries (including Canada) now incorporate this important construction quality inspection on all their transmission pipeline girth welds and require such important records to be maintained for the life of the pipeline. It is also unclear from the DEIS if all girth weld radiological or ultrasonic inspection records are to be maintained for the life of the pipeline. This should be a simple matter to clarify.

For example, federal pipeline safety regulations do not require that **all** girth welds that join pipeline segments be radiologically or ultrasonically inspected, even segments in HCAs.¹⁰² Prudent pipeline operators constructing new pipeline exceed current federal safety minimums, and provide such high tech inspections to assure the quality of all girth welds. Smart pigging currently cannot inspect girth welds to the level of detail or quality as that of radiologically or ultrasonically inspection. Such girth weld radiologically or ultrasonically inspection records should be maintained for the life of the pipeline as is required in many other countries.

F. Operation and Maintenance Items

1. Temperature

Given the amount of energy driving the electric pumps and the viscosity of the oil, the oil temperature in the pipeline will increase and range from approximately 100°F to 140°F, depending on the pipeline’s throughput and the season of the year.¹⁰³ PHMSA has placed a 150°F maximum temperature limit on the Keystone pipeline for various technical reasons, and this restriction should also be placed on the Keystone XL pipeline.¹⁰⁴ The increase in temperature as the crude oil flows down the pipeline increases the energy efficiency of the pipeline as the oil thins with higher temperature, making it easier to flow down the pipeline. Temperature increase, however, markedly raises the risks of corrosion attack (both internal and external) to the pipeline. Corrosion will be a

¹⁰⁰ PHMSA Special Permit for Keystone Pipeline, Docket Number PHMSA-2006-26617, item 21.

¹⁰¹ DEIS, page 2-41 section 2.3.6.1, Construction Operator Qualifications.

¹⁰² 49CFR§195.234 Welds: Nondestructive testing.

¹⁰³ DEIS, Appendix L, “Pipeline Temperature Effects Study.”

¹⁰⁴ PHMSA Special Permit for Keystone Pipeline, Docket Number PHMSA-2006-26617, item 16, “Temperature Control: The pipeline operating temperature must be less than 150 degrees Fahrenheit.”

bona fide risk of concern for this system, well beyond that for a normal liquid pipeline operating at much lower temperatures. Technology has sufficiently advanced to substantially mitigate various forms of corrosion attack **if various corrosion mitigation practices are prudently applied in the operation and maintenance of the pipeline.** We highly caution **not** to overly rely on corrosion inhibitor or corrosion coupons to prevent or control the risk of internal corrosion on this system. Cleaning pigs and prudent runs of high resolution smart pigs provide an important safety net in monitoring various forms of corrosion. It is also important to note that PHMSA has required an import safety net for special permit areas in requiring that general corrosion with predicted metal loss greater than 40% wall thickness be repaired within 180 days.¹⁰⁵ Pipe in HCAs only has to be repaired within 180 days if general corrosion loss exceeds 50% of nominal wall.¹⁰⁶

2. Overpressure Protection

Federal pipeline safety regulation concerning maximum operating pressure (“MOP”) indicates that “No operator may permit the pressure in a pipeline during surges or other variations from normal operation to exceed 110 percent of the operating pressure limit established”¹⁰⁷ PHMSA has reinforced this overpressure requirement in the special permit conditions.¹⁰⁸ The regulations are moot about how to prevent such overpressure and it is not illegal to exceed 110% MOP **provided the pipeline doesn’t fail.**¹⁰⁹ Exceeding 110% MOP that results in a release from the pipeline may lead to criminal prosecution in the U.S. Overpressure protection design and effectiveness should be taken very seriously, especially for this liquid pipeline system, given several unique characteristics associated with this pipeline such as bitumen, horsepower, and batching operation. SCADA operation and design can play an important role in preventing overpressure events. SCADA operation and control room intervention, even fast scan SCADA systems, however, should never be relied on to provide failsafe overpressure protection. **Given that an overpressure event in excess of 110% MOP could indicate a serious systemic problem, we request a permit condition that all events in excess of 110% MOP be reported to PHMSA within 24 hours of the event, even if there is no release.**

The primary tool for analyzing potential overpressure in liquid pipelines is a prudent surge analysis that reflects the design and operation that actually occurs in the field. The DEIS indicates that sufficient pressure sensors should be installed “to conduct real time hydraulic modeling, and if needed to conduct surge analysis to determine pipeline

¹⁰⁵ PHMSA Special Permit for Keystone Pipeline, Docket Number PHMSA-2006-26617, item 48, Anomaly Evaluation and Repair.

¹⁰⁶ 49CFR§195.452(h)(4)(iii)(E) Pipeline integrity management in high consequence areas, *Special requirements for scheduling remediation, 180-day conditions.*

¹⁰⁷ 49CFR§195.406(b).

¹⁰⁸ PHMSA Special Permit for Keystone Pipeline, Docket Number PHMSA-2006-26617, item 17, “Overpressure Protection Control: Mainline pipeline overpressure protection must be limited to a maximum of 110 percent MOP consistent with 49 CFR§195.406(b).

¹⁰⁹ See 49CFR§191.23(4) reporting safety-related conditions and the exclusion that avoids reporting such overpressure events in excess of 110% MOP that might identify possible pipeline systemic problems to PHMSA.

segments that may have experienced an overpressure condition.”¹¹⁰ The DEIS continues, “A surge analysis showing how the pipeline special permit segment(s) would be operated to be consistent with these conditions is required prior to operating at the alternative MOP.”¹¹¹ On this pipeline system a prudent surge analysis **is very important prior to startup**, as surge overpressure can be created by more than an inadvertent mainline valve closure. The project should be able to demonstrate the method and basic engineering approach to failsafe, preventing overpressure on the mainline system.¹¹² Failsafe design should rely on field installed equipment and not rely on SCADA as the last line of defense to prevent overpressure in excess of 110% MOP. We request that State make these recommendations enforceable permit conditions.

3. Backup Power Requirement for Failsafe Equipment

From the DEIS there is no backup power to the mainline electric motors and this is not necessarily a problem. There appears to be a backup system of the SCADA operation and certain MLVs. The DEIS is not clear if other safety related equipment, such as critical core communication or tank level monitoring, has an adequate and independent electric power supply that will assure safe pipeline operation is maintained, especially during an upset associated with an electric power loss.

It is also worth noting that because of the ability for PHMSA to impose additional requirements as a result of the special permit request, PHMSA had added requirements on the Keystone pipeline system incorporating additional SCADA requirements related to National Transportation Safety Board (“NTSB”) pipeline safety investigations and recommendations that have recently been codified into federal pipeline safety regulations.¹¹³ These improvements increase the effectiveness of the SCADA, its presentation and alarm system, and incorporate control room management practices that increase the proficiency and the efficiency of the important control room operators remotely overseeing and operating the pipeline system.

4. Operation and Maintenance Manpower

The DEIS indicates that operation and maintenance of the pipeline would typically be accomplished by Keystone personnel and only about twenty U.S. employees will comprise a permanent operational workforce.¹¹⁴ Note that this number does not include Operations Control Center personnel as the control room (and SCADA) for the pipeline operation is in Calgary, Canada. While the DEIS is moot about the number of contract employees that will also assist the pipeline operator in certain operation, maintenance,

¹¹⁰ DEIS at 2.4.3.1.

¹¹¹ DEIS at 2.4.3.1(a).

¹¹² See Richard B. Kuprewicz, “Preventing Pipeline Releases,” dated July 22, 2003, prepared for the Washington City and County Pipeline Safety Consortium, for examples of why SCADA should not be counted as a failsafe device, especially as it relates to preventing overpressure.

¹¹³ DEIS, page 2-48, section 2.4.3.2 SCADA and PHMSA-2207-27954, Pipeline Safety: Control Room Management/Human Factors Final Rule, effective date April 14, 2009.

¹¹⁴ DEIS, section 2.4 Operations and Maintenance, page 2-42.

and oil spill response activities, twenty employees sounds like a very small number to cover a 24/7 pipeline operation of approximately 1,700 miles of 36-inch pipe, 32 pump stations with multiple pumps (even though electric drivers simplify the pump station complexity), 74 main line valves, a tank farm, metering equipment, cathodic protection systems, and assorted telecommunication and monitoring as well as safety equipment, that have to be periodically inspected, calibrated and tested, as well as cover round the clock 24/7 response to operating needs or demands. In fairness to the operator, this low number may reflect a reliance on contract personnel to perform many less critical operational and maintenance activities associated with maintaining the safety of the pipeline. A more detailed review of the work tasks, work load, and requirements, while under the discretion of the pipeline operator, is warranted to assure adequate coverage of maintenance and operational core activities.

5. Emergency Response Plan or Oil Spill Response

PHMSA's approval of the Keystone XL Pipeline Emergency Response Plan is a major federal action subject to NEPA.¹¹⁵ Although many of the pipeline safety standards in federal law are written as performance standards, PHMSA has discretion to determine whether the means of compliance chosen by a pipeline company satisfies federal law given the size, location, and type of the specific pipeline at issue. Further, PHMSA has authority to require changes in emergency response plans that fail to meet minimum federal standards, either with regard to the sufficiency of the planning approach or the amount and location of spill response personnel and equipment. PHMSA may and has required pipeline companies to revise plans so that they comply with broad federal performance standards. PHMSA's hands are not tied.

Since federal law requires only that emergency response plans be approved before operation, without specifying how long before operation approval is required and without prohibiting or specifying any particular review procedures, it is entirely possible for PHMSA to comply with both the requirements of federal pipeline law and NEPA. DOS's failure to include a draft Emergency Response Plan means that Draft EIS provides no opportunity to comment on this critical issue. Instead, the Draft EIS presents merely a general description of federal emergency response planning law, with no details about how the federal government will protect citizen and the environment from the Keystone XL Pipeline.

PHMSA actions under federal pipeline law are subject to NEPA in part because federal pipeline law preempts state and local pipeline safety requirements, with the result that PHMSA actions are the exclusive form of mitigation for impacts related to oil spills from this pipeline. Absent full review of Emergency Response Plan alternatives related to,

¹¹⁵ *Spiller v. Walker*, 1998 U.S. Dist. LEXIS 18341, *48 (W.D. TX). In its review of PHMSA's review of a change in product and direction of flow of an existing pipeline, the Western District of Texas stated, "The Court concludes . . . that DOT's extensive and intricate oversight and approval of the Longhorn Pipeline's safety and emergency-response plan constitutes major Federal action significantly affecting the human environment." Subsequent appellate review of this matter did not reconsider the Department of Transportation's obligation to comply with NEPA when approving emergency response plans. *Spiller v. White*, 352 F.3d 235 (5th Cir. 2003).

for example, amount of spill response equipment, number of spill response personnel, location of spill response personnel and equipment, alternative spill response strategies, time for response, worst-case spill scenarios, and mitigation options, the Draft EIS will not consider meaningful alternatives and mitigation related to the primary risk posed by the pipeline to citizens and the environment, namely oil spills.

Absent consideration of a Keystone XL Pipeline Emergency Response Plan through this NEPA review, citizens will have no opportunity to comment on the sufficiency of federal actions intended to protect them from oil spills from this pipeline.

Given several references in the DEIS, this author must caution that additional details are warranted because of the unusual properties of blended bitumen and the temperatures at which the pipeline will be operating that can make oil recovery process and equipment needs substantially different than that for more conventional lighter crude oil blends.

An oil spill plan should categorize and address releases as small rate leak releases, both those that reach the surface and those that flow underground, especially those that can threaten aquifers, and then address the oil spill recovery and mitigation plans, including mitigation/recovery techniques for such smaller releases. A separate section related to releases that can enter aquifers is a must as the response and mitigation will be entirely different than that for surface releases. Oil spill response plans must also address large rate, high mass releases, associated with pipeline ruptures, that usually reach the surface, but can also be a threat to nearby aquifers. Federal pipeline safety regulations require that an ERP be capable of dealing with a worst case release, or rupture.¹¹⁶ Certain core information related to oil spill response plans must be made public to assure that such plans **can be implemented in a timely manner and be effective for this unique material.**

One core document that is important in evaluating whether an ERP will be effective on a particular pipeline, is an elevation profile of the pipeline showing the approximate location of mainline valves including check valves. An elevation profile is especially important in judging the soundness of an ERP when it comes to a large high rate release associated with pipeline ruptures. The elevation profile is much less effective in evaluating the ERP when it comes to leaks. An elevation profile indicating the location of the mainline valves, including check valves, and their mode of operation will also help determine and confirm if the placement of such valves, especially check valves, is appropriate. Some highly sensitive areas warrant remote operated mainline valves, other than check valves, given the possible severe consequences in the event of a release.

¹¹⁶ 49 CFR§194.119 Part 194 – Response Plans for Onshore Oil Pipelines, Submission and approval procedures. 49 CFR§194.105, Worst case discharge.

G. Impacts of Oil Spills and Operational Leaks on Soils and Water Quality

According to section 3.3.1.1 of the draft EIS, the proposed route for the Keystone Pipeline Project passes directly over a number of shallow aquifers in the eastern Dakotas and Nebraska. Many of these shallow aquifers along the proposed pipeline route are close enough to the surface to be directly replenished by rainfall and hydraulically connected to surface waters. This means that any leak or spill from the pipeline has the potential to contaminate these underlying aquifers, and unlike surface waters, they cannot be directly accessed for the purpose of clean-up and mitigation measures. Many rural residents and rural communities rely on both private and public wells that draw potable water from these shallow aquifers. In addition, rural residents actively engaged in production agriculture are likely to have irrigation systems and livestock that also depend on these shallow aquifers as a primary water source. The draft EIS does not adequately address the full range of consequences that would result from a catastrophic leak or spill along the pipeline that occurs over an underlying shallow aquifer.

At section 5.3.1, the draft EIS concludes that “[m]any of the aquifers present beneath, or in the vicinity of, the proposed route are isolated by the presence of glacial till,” which would offer a measure of protection from contamination. For those near-surface aquifers that do not have this overlying layer of protection, the draft EIS notes that “measures have been proposed ... to reduce the potential impact of leaks and spills *during construction*.” (emphasis added) The draft EIS does not address what measures would be implemented to protect these aquifers during the operation lifetime of the pipeline. What, for example, would be the proposed mitigation measures if the sole available drinking water supply for several rural municipalities and surrounding farmsteads is contaminated by a spill from the pipeline? What contaminants would be released into the groundwater in the event of such a spill? What would be the likely duration of such contamination? If a spill from the pipeline could permanently contaminate a shallow aquifer that rural residents rely on for their potable water, is it appropriate to route the pipeline over such aquifers, or are there viable alternatives? The draft EIS does not address these issues, which are vital to the health and livelihood of the rural residents who depend on these aquifers as their sole source of potable water. The final EIS should more thoroughly examine the risk to shallow aquifers posed by the Keystone Pipeline Project.

Water is a priceless resource in the region to be traversed by the Pipeline. The DEIS indicates in many segments of the report that the Pipeline will not cross any sole-source aquifers. We question the correctness of these statements and request further documentation of affected aquifers. There are many factors that must be considered should a pipeline release affect an aquifer. Pipeline approval must be conditioned on the exercise of all due precautions.

For example, the aquifer’s proximity and permeability near the Pipeline is very important because this can affect how quickly a pipeline release can migrate to or within an aquifer. The underground migration pattern of a Pipeline release may be slow for some leaks

(slower rate releases) as the oil quickly thickens at environmental conditions. While this thickness may be a blessing in preventing rapid underground migration and possible aquifer contamination, it may also render tremendously difficult removing such a spill within an aquifer. Oil spill response plans (or ERPs) should identify how a specific aquifer will be protected and how contamination will be addressed. This is especially important to avoid serious contamination of critical aquifers such as the Ogallala Aquifer that plays a very important water supply role along parts of the Pipeline route. Remediation could include actually digging up soil contaminated with the very thick bitumen blends in the event various other remediation approaches are ineffective.

There is a specific type of aquifer, called a karst aquifer, that usually merits special attention given its unique characteristics. Considerable discussion is presented in the DEIS related to the pipeline and the exposure to subsidence to the pipeline in karsts. While federal pipeline safety regulations require the pipeline operator to consider abnormal load threats such as that from subsidence, the more critical issue is the threat that the pipeline has to the karst aquifer as a water source. Karst aquifers consist mainly of water flow structures that can cause released oil in such an environment to more rapidly move through the aquifer. The fracture structure of a karst aquifer makes oil removal, especially the heavier oil moved by the Pipeline, extremely difficult, if not impossible, to remove. Regarding Pipeline routing, special precautions should be exercised in karst aquifers and any aquifers that may have rapid migration phenomena in the event a Pipeline oil release can reach such structures, especially if these aquifers are sole sources of water. Pipelines that can affect sole source aquifers, especially karst-like aquifers, are identified as *unusually sensitive areas* marked for special pipeline integrity management protocols in federal pipeline safety regulation covering HCAs.⁸

Table 3.1.4-3 in the DEIS lists approximately fifty miles of the pipeline that cross karst aquifers as identified by national scale karst maps. The DEIS goes on to state “Keystone would consult with the respective state geological survey departments to identify the most up-to-date sources of data on karst-related subsidence hazards along the proposed route.”⁹ We request that such karst aquifers be screened as to their potential to be impacted by an oil spill (leak or rupture) from the Pipeline. If such an analysis finds the pipeline to be a serious threat, the pipeline should be routed out of the karst risk area, or effective pipeline mitigation efforts incurred to prevent contamination from the pipeline.

These comments are equally true for impacts to soils, whose unique biological significance at many points along the route is discussed in Section IV.B above. We request a separate analysis of risks and impacts to agricultural and native soils, native biota, and productive capacity.

VI. OTHER

A. **The DEIS fails to address the environmental consequences of abandonment and mitigation thereof**

The proposal analyzed in the DEIS fails to include a comprehensive pipeline abandonment protocol, which creates unacceptable risk and liability for landowners and residents along the pipeline route. We hereby request that the permit be conditioned on national best practice requirements for abandonment and mitigation, including bonding, land restoration requirements, provision for damage claims, and reversion on nonuse. We suggest relevant portions of the Iowa pipeline abandonment law as one model (attached as an exhibit). Other relevant models include Canadian federal pipeline abandonment regulations, and those in use in Santa Barbara County, California.

Abandoned pipelines create significant risks to the human and natural environment. As abandoned pipelines corrode they may form sink holes, drain water between properties resulting in a loss of wetlands and soil productivity or loss of farm land to flooding, redirect stream flows, emerge from the surface especially in highly erodible lands, and create hazards for individuals, vehicles, and livestock, and interfere with subsequent economic use of property. Large diameter pipelines are almost certain to create adverse impacts after abandonment, particularly in areas with corrosive soils. Mitigation of these impacts includes pipe removal and land restoration, complete fill of abandoned pipe, insertion of plugs to prevent drainage, repurposing pipes for other purposes, and ongoing corrosion control and monitoring. The cost of this mitigation can be very high. Landowners should not be burdened with restoration of their land after use of the Pipeline is terminated. A failure to mitigate abandoned large diameter pipes can have substantial impacts on federal soil conservation and agricultural productivity programs and wetlands and navigable water protection.

The only discussions in the DEIS related to Abandonment are contained in a single short paragraph in Section 2.6.2, and in a two sentences in Section 3.14.1.1. This discussion does no more than state that Applicant will submit abandonment plans at the time of abandonment, and that such plans would be approved at that time by regulating entities, if any. The DEIS contains no discussion of impacts, alternatives, or mitigation. Instead, it imposes on future generations consideration of the impacts of and mitigation necessary for Pipeline abandonment. Such failure violates 42 USC §§ 4331(a), 4331(b)(1), 4332(C)(iv), and 4332(F).

Although federal agencies at present have no authority over pipeline easement termination upon abandonment, and related mitigation, participating state agencies have such authority. NEPA does not limit assessment of impacts to only those impacts that are subject to federal regulation, in part because Congress intended that NEPA review act to inform Congress and agencies of significant impacts that have not yet been addressed through federal programs. In contrast to U.S. inaction, the National Energy Board of Canada has undertaken a substantial regulatory development effort, through its Land

Matters Consultative Initiative, to ensure that landowners are not harmed by abandoned pipelines, and are not burdened with post-abandonment mitigation efforts. Full examination of the potential adverse impacts of abandonment of the Keystone XL Pipelines will improve federal decision making and help protect the environment, and as such is required under NEPA.

The DEIS's failure to contain any discussion at all on the impacts of abandonment mean that the DEIS is defective and must be revised. State must revise the DEIS to include a discussion of the impacts of abandonment and issue an amended DEIS so that citizens may have an opportunity to comment on these impacts. A failure to provide an opportunity for comment would violate NEPA and the APA.

B. The draft EIS does not adequately address the potential adverse impacts of the Pipeline on historic cultural resources of Native American nations along the route.

The draft EIS identifies at Table 3.11.4-1 a list of Native American nations who have been contacted by the Department of State regarding possible impacts of the proposed pipeline on historic cultural tribal resources, pursuant to the requirements of 36 CFR 800.2. According to the EIS, many of the traditional cultural properties studies are still “currently underway,”¹¹⁷ and some nations and tribes have not formally responded to communications from State. Although the proposed pipeline route does not currently cross any lands owned by the various Native American nations and tribes consulted with as a part of this process, federal regulations require a process of formal consultation for any properties of “historic significance” to Native American nations and tribes.¹¹⁸ These same regulations further require that the relevant federal agency “must, except where appropriate to protect confidentiality concerns of affected parties, provide the public with information about an undertaking and its effects on historic properties and seek public comment and input.”¹¹⁹

To date, the public has been provided with no information about the potential adverse impacts of the Pipeline on cultural resources of Native American nations and tribes along the proposed pipeline route. Indeed, it would be impossible for the Department of State to have done so, because formal consultations with affected Native American nations and tribes were incomplete at the time the draft EIS was published. In order for all affected parties, including members of the general public, to adequately comment in this important issue, it is vital that State complete the required process of consultation with affected Native American nations and tribes prior to publishing a final EIS. It is also vital that the results of these consultations be made available for public comment, as required by federal regulation. Without gathering this information through a rigorous process of formal consultation and subjecting the findings and conclusions to public comment, the impacts of the Pipeline on important Native American cultural resources cannot be properly predicted or adequate mitigation plans drafted in a final EIS.

¹¹⁷ DEIS at 3.11-51.

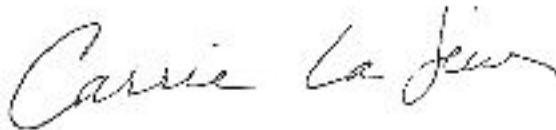
¹¹⁸ 36 CFR 800.2(c)(2)(ii).

¹¹⁹ 36 CFR 800.2(d)(2).

VI. CONCLUSION

For all the reasons outlined above, we believe that the draft EIS does not provide a full and fair discussion of significant environmental impacts of the Keystone XL project. Commenters request that State issue a subsequent DEIS that addresses these shortcomings and allows for further review and comment. Commenters have demonstrated at length that major portions of the DEIS are inadequate. In such circumstances, NEPA regulations require re-issuance of a revised draft.¹²⁰ Failing significant improvement of the DEIS, the no action alternative will be the only responsible action based on the inadequate demonstration of need for the Pipeline and the significant impacts that the project is likely to have on human health and the environment. The hundreds of Americans whose land will be condemned for a foreign corporation's private development project deserve the highest level of agency scrutiny on every detail of this misguided endeavor.

Sincerely,



Carrie La Seur, Ph.D., J.D.
President & Founder
Plains Justice
310 N. 27th St., Suite 12
Billings, MT 59101
claseur@plainsjustice.org
Cell: (406) 696-8700
Fax: 866-484-2373

Buffalo Bruce
Staff Ecologist
Western Nebraska Resources Council
P.O. Box 612
Chadron, NE 69337
Tel: (308) 432-3458
Cell: (402) 416-3239

Ted Thieman
President
Nebraska Environmental Action Coalition
405 East Leona Avenue
P.O. Box 86
Petersburg, NE 68652

Melvin Thornton
President
Friends of the Niobrara
3405 M St.
Lincoln, NE 68510
(402) 477-7597
Cell: 402-560-7597
melthorn@windstream.net

¹²⁰ 40 C.F.R. § 1502.9(a) (“If a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion.”).

William Powers
Executive Director
Nebraska Sustainable Agriculture Society
414 County Road 15
Ceresco, NE 68017
Tel: (402) 525-7794
healthyfarms@gmail.com

Julie Huddle
President
Wachiska Audubon Society
4547 Calvert St., Ste. 10
Lincoln, NE 68506
jhuddle95@yahoo.com

Ed Gulick
Chair
Northern Plains Resource Council
220 South 27th Street, Suite A
Billings, MT 59101
Tel: (406)248-1154
Fax: (406)248-2110

Duane Short
Wild Species Program Director
Biodiversity Conservation Alliance
P.O. Box 1512
Laramie, WY 82073
Tel: (307) 742-7978
duane@voiceforthewild.org

John Smillie
Campaign Director
Western Organization of Resource
Councils
220 South 27th Street, Suite A
Billings, MT 59101
Tel: (406)252-9672
Fax: (406) 252-1092

Nancy Hilding
President
Prairie Hills Audubon Society
P.O. Box 788
Black Hawk, SD 57718
nhilshat@rapidnet.com
Tel: (605) 787-6779

Winona LaDuke
Executive Director
Honor the Earth
2104 Stevens Ave. S.
Minneapolis, MN 55404
Tel: (612)879-7529
info@honorearth.org

Dick Boyd
Chapter Chair
Nebraska Chair of the Sierra Club
P. O. Box 4664
Omaha, NE 68104-0664
Tel: (402) 551-9480
Dickb8506@yahoo.com

Pat Spears
President
Intertribal Council on Utility Policy
P. O. Box 25
Rosebud, SD 57570
Tel: (605) 280-7999
Pat.spears25@gmail.com