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Friends of the Earth • Interfaith Power & Light • Labor Network for  
Sustainability • League of Conservation Voters • National Wildlife  
Federation • Nebraska Easement Action Team • Oil Change  
International • Rainforest Action Network**

**Comments of the Sierra Club, *et al.*, to the Department of State on the  
Final Supplemental Environmental Impact Statement and National  
Interest Determination for the TransCanada Keystone XL Pipeline**

Submitted March 7, 2014

Via regulations.gov (without exhibits) and FedEx (with exhibits) to:  
U.S. Department of State  
Bureau of Energy Resources, Room 4843  
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<b>EXHIBIT</b>	<b>DOCUMENT</b>
<b>A</b>	Natural Resources Defense Council, <i>The State Department's Final Supplemental Environmental Impact Statement and Concerns Raised by the U.S. Environmental Protection Agency from 2010-2013 Regarding the Proposed Keystone XL Tar Sands Pipeline</i> , March 7, 2014
<b>B</b>	Comments of the Sierra Club, et al., to the Department of State on the Draft Supplemental Environmental Impact Statement for the TransCanada Keystone XL Pipeline, April 22, 2013
<b>C</b>	Request for Supplemental Environmental Impact Statement for the TransCanada Keystone XL Pipeline Based on Significant New Information, June 24, 2013
<b>D</b>	Request for a Supplemental Environmental Impact Statement for the TransCanada Keystone XL Pipeline Based on the Alberta Clipper Pipeline Expansion and other New Information, January 29, 2014
<b>E</b>	Request to the Office of Inspector General to Investigate the State Department's Selection of Environmental Resources Management, Inc. as a Third-Party Contractor to Evaluate the TransCanada Keystone XL Pipeline, April 22, 2013
<b>F</b>	Submission of Documentation to the Office of Inspector General to Support the Ongoing Inquiry into the State Department's Selection of Environmental Resources Management, Inc. as a Third-Party Contractor to Evaluate the TransCanada Keystone XL Pipeline, February 6, 2014
<b>G</b>	Comments of Sierra Club, et al., to the Department of State on the National Interest Determination for the TransCanada Keystone XL Pipeline, October 9, 2011
<b>H</b>	Remarks by the President on Climate Change, Georgetown University, Washington D.C., June 25, 2013
<b>I</b>	James Leaton et al., Carbon Tracker, <i>Keystone XL Pipeline: The "Significance" Trap</i> , March 3, 2014
<b>J</b>	Pembina Institute, <i>Keystone XL Final Supplemental Environmental Impact Statement: Assessment of Market Analysis</i> , March 7, 2014
<b>K</b>	Elana Schor, <i>Greens fume at State's bet on oil sands as the new Bakken</i> , E&E, February 11, 2014
<b>L</b>	Patrick Rucker, <i>Canada oil-by-rail deliveries in 2013 lagged U.S. estimate</i> , Reuters, March 5, 2014, and accompanying report: <i>Canadian Crude Oil Exports - By Export Transportation System Summary - 5 year trend</i> , Canadian National Energy Board
<b>M</b>	Scoping Comments of Sierra Club, et al., to the Department of State on the Proposed Enbridge Energy, Limited Partnership, Line 67 Capacity Expansion Project, May 13, 2013

<b>N</b>	Oil Change International, <i>Exporting Energy Security: Keystone XL Exposed</i> , September 2011
<b>O</b>	Philip K. Verleger, <i>The Tar Sands Road to China</i> , May 2011
<b>P</b>	Oil Change International, <i>The Keystone XL pipeline will lead to a surplus of heavy crude oil on the Gulf Coast that will be exported</i> , July 2013
<b>Q</b>	Danielle Droitsch and Diane Bailey, Natural Resources Defense Council, <i>Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel</i> , February 2014
<b>R</b>	Letter from Dr. Earthea Nance to State Department, March 6, 2014
<b>S</b>	Sierra Club and Friends of the Earth letter to Inspector General Linick, February 12, 2014
<b>T</b>	Energy Resources Conservation Board, <i>Alberta's Energy Reserves 2010 and Supply/Demand Outlook 2011-2020</i> , June 2011
<b>U</b>	Kate Colarulli et al., <i>Fail: How the Keystone XL Tar Sands Pipeline Flunks the Climate Test</i> , August 2013

## I. INTRODUCTION

On behalf of the undersigned groups, please accept these comments on the State Department's "national interest determination" for the proposed Keystone XL pipeline project.

On February 5, 2014, the State Department published a "Notice of 30 Day Public Comment Period Regarding the National Interest Determination for TransCanada Keystone Pipeline, L.P.'s Presidential Permit Application."<sup>1</sup> That Notice invited the public to provide comment on any factor they deem relevant to the Department's national interest determination pursuant to Executive Order 13,337, and indicated that the public comment period would end on March 7, 2014.<sup>2</sup>

The State Department did not offer a public comment period for the Final Supplemental Environmental Impact Statement (Final SEIS) that it published on its website on January 31, 2014. As such, these comments are not intended to serve as a full critique of the Final SEIS or to evaluate its compliance with the National Environmental Policy Act (NEPA) or any other legal requirements. All of the previously-submitted comments of the undersigned groups regarding the State Department's compliance with NEPA are incorporated herein by reference.<sup>3</sup> Many of the deficiencies pointed out in those letters have not been adequately addressed and thus remain valid concerns today. Similarly, the Final SEIS fails to adequately respond to the comments from other agencies, including the Environmental Protection Agency.<sup>4</sup> However, the Final SEIS and its compliance with NEPA are discussed in these comments only to the extent that they inform the State Department's National Interest Determination.

In his historic climate speech in June 2013, President Obama said, "Allowing the Keystone pipeline to be built requires a finding that doing so would be in our nation's

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<sup>1</sup> 79 Fed. Reg. 6984.

<sup>2</sup> *Id.*

<sup>3</sup> Those include the following: Comments of the Sierra Club, *et al.*, on the Draft SEIS for the Keystone XL Pipeline, April 22, 2013, attached as Exhibit B; Request for Supplemental EIS for the Keystone XL Pipeline Based on Significant New Information, June 24, 2013, attached as Exhibit C; Request for a Supplemental EIS for the Keystone XL Pipeline Based on the Alberta Clipper Pipeline Expansion and other New Information, January 29, 2014, attached as Exhibit D; Request to the Office of Inspector General to Investigate the Department of State's Selection of Environmental Resources Management, Inc. as a Third-Party Contractor to Evaluate the TransCanada Keystone XL Pipeline, April 22, 2013, attached as Exhibit E; Submission of Evidence to the Office of Inspector General in Support of its Inquiry into the Keystone XL Review Process, February 6, 2014, attached as Exhibit F; Comments of Sierra Club, *et al.*, to the Department of State on the National Interest Determination for the TransCanada Keystone XL Pipeline, October 9, 2011, attached as Exhibit G. All exhibits to this letter have been included on a disc sent via FedEx on March 7, 2014. We request that these exhibits be included with this letter in the administrative record for this project.

<sup>4</sup> A chart outlining the EPA's concerns, and the State Department's responses, is attached as Exhibit A.

interest. And our national interest will be served only if this project does not significantly exacerbate the problem of carbon pollution.”<sup>5</sup> Keystone XL is not in the national interest. The State Department’s own analysis shows that Keystone XL would significantly exacerbate the problem of carbon pollution and take us one giant step closer to a future where catastrophic climate change is inevitable. In fact, it would cause over 8.4 billion metric tons of carbon emissions over its lifetime, a shocking amount for a single project.

But Keystone XL’s negative impacts do not stop there. The dirty tar sands crude transported by the pipeline would further increase toxic air emissions in the Gulf Coast refining communities—areas where low-income communities and communities of color already suffer the brunt of environmental injustices. Furthermore, Keystone XL would threaten endangered species along the 875-mile route and would create an unacceptable risk of dangerous tar sands spills, especially in environmentally sensitive areas such as Nebraska’s Sand Hills region and over the Ogallala Aquifer.

In return for all of this, Keystone XL would do virtually nothing for the nation’s economy or national security. It is well established—and conceded by industry executives—that Keystone XL would be an export pipeline, allowing shipments of refined and crude oil to other countries and doing nothing to reduce our dependence on Mideast and Latin American oil. Furthermore, while the Final SEIS claims that Keystone would create 35 permanent jobs, similar levels of investments in clean energy would produce many more jobs, without wreaking havoc on our environment.

In short, Keystone XL is a bad deal for this country’s citizens. Rather than trade our environment, health, and future for the benefit of a wealthy few, we urge the State Department to stand up to the fossil fuel industry and say no to Keystone XL.

## **II. KEYSTONE XL WOULD NOT SERVE THE NATIONAL INTEREST**

### **A. Keystone XL Would Significantly Exacerbate Carbon Pollution**

Climate change threatens the nation’s communities with extended periods of heat, greater numbers of heavy downpours, more regional drought, increased wildfires in parts of the American West, permafrost thawing in Alaska, ocean acidification, and sea-level rise in coastal communities. The proposed Keystone XL tar sands pipeline is a long-term commitment to infrastructure that would enable and lock in the expansion of Canadian tar sands, one of the world’s most carbon-intensive crudes. The investment community and the tar sands industry recognize that Keystone XL is critical for their plans to triple tar sands production by 2030.

Even the Final SEIS, which uses unrealistically conservative assumptions, finds that Keystone XL could increase incremental emissions by 1.45 billion metric tons CO<sub>2</sub>e

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<sup>5</sup> Remarks by the President on Climate Change, Georgetown University, Washington D.C., June 25, 2013, attached as Exhibit H, *available at* <http://www.whitehouse.gov/the-press-office/2013/06/25/remarks-president-climate-change>.

and total emissions by 8.4 billion metric tons CO<sub>2</sub>e over its lifetime.<sup>6</sup> Accordingly, the approval of Keystone XL would undermine U.S. national and international climate objectives in a number of ways:

- ***U.S. climate objectives:*** The President has been very specific in committing the United States to reduce our carbon pollution 17 percent below 2005 levels by 2020 and to keep the world temperature rise below two degrees. Increasing heavy carbon-intensive crude imports undermines these commitments and climate plans.<sup>7</sup>
- ***U.S. foreign policy leadership on climate:*** Secretary of State John Kerry in a recent climate address reaffirmed that fighting climate change is a top priority of U.S. foreign policy, ranking it along with terrorism, weapons of mass destruction, and poverty.<sup>8</sup> Approving Keystone XL would undermine U.S. climate leadership and credibility in negotiating strong international climate commitments.
- ***Canada's climate commitments to the international community:*** Canada also committed to reduce its emissions 17 percent below 2005 levels by 2020 and to keep the world temperature rise below two degrees. Emissions from Canada's expanding tar sands sector are proving its primary obstacle to honoring its climate commitments. By enabling increased tar sands production, Keystone XL will undermine Canada's ability to honor those obligations and will reduce its capacity to make future emissions reductions.

The Final SEIS released by the State Department's Bureau of Oceans and International Environmental and Scientific Affairs (OES) and its contractor ERM departs from all previous environmental reviews of the proposed Keystone XL tar sands pipeline by recognizing for the first time that there are conditions under which an approval of the Keystone XL pipeline would drive substantial tar sands expansion and associated climate emissions. OES's environmental review provides decision makers with a sufficient basis to find that Keystone XL fails the test President Obama laid out last year—that the pipeline must not significantly exacerbate carbon emissions. The key findings in the Final SEIS that compel rejection of Keystone XL include:

- Tar sands crude is significantly more carbon intensive than conventional crude.<sup>9</sup>
- Tar sands crude from Keystone XL is most likely to displace the lightest, least carbon-intensive crudes from the global market.<sup>10</sup>

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<sup>6</sup> Final SEIS at 4.14-36.

<sup>7</sup> Oil Change International, *Kerry's State Department Ignored Obama's Climate Action Plan*, February 17, 2014, <http://priceofoil.org/2014/02/17/kerrys-state-department-ignored-obamas-climate-action-plan/>.

<sup>8</sup> Secretary of State John Kerry, February 16, 2014 Remarks on Climate Change, Jakarta Indonesia, <http://www.state.gov/secretary/remarks/2014/02/221704.htm>.

<sup>9</sup> Final SEIS at 4.14.30-31.

- Certain market conditions (described below) prevent some tar sands projects from moving forward without Keystone XL. Under these conditions, Keystone XL would lead to 27.4 million metric tons of additional CO<sub>2</sub> emissions per year (the increase in emissions from using tar sands versus conventional oil), a figure greater than the tailpipe emissions generated by 5.7 million vehicles over a year. For the project’s estimated fifty-year lifespan, the additional emissions add up to 1.4 billion metric tons of carbon emissions.<sup>11</sup>
- According to the Administration’s estimates of the social cost of carbon, Keystone XL’s additional emissions would generate up to \$128 billion in climate related costs.<sup>12</sup>

While the Final SEIS presents a sufficient basis for Keystone XL’s rejection, its analysis falls short in showing the real impact of Keystone XL. Instead, it contains a series of flawed assumptions that form the basis of the Final SEIS’s preferred scenario, concluding that Keystone XL would not affect tar sands production. These assumptions led OES to ignore the broader range of scenarios in which Keystone XL would drive significant expansion of tar sands production and associated climate emissions.

In particular, the Final SEIS makes a fundamental error by relying on energy consumption scenarios that assume a global failure to address climate change. The Final SEIS uses models that are all predicated on a “business as usual” energy consumption pattern leading to a catastrophic six degree Celsius increase in global temperatures. International Energy Agency (IEA) models of energy consumption necessary to limit climate change to two degrees of warming forecast reduced oil consumption and significantly lower oil prices through 2035 than the scenarios assumed in the Final SEIS. Should international efforts to address climate change strengthen, tar sands expansion will be significantly more dependent on cheap pipeline infrastructure than in the high-carbon, high-oil-prices scenarios used in the Final SEIS.

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<sup>10</sup> The Final SEIS recognizes that in the short to medium term, light crude balance world oil supplies—meaning that whichever crude is offset from the Gulf Coast market, tar sands from Keystone XL would offset lighter, less carbon intensive crudes. Final SEIS at 4.14.25.

<sup>11</sup> Final SEIS at 4.14.41.

<sup>12</sup> In 2007 dollars, the social cost of Keystone XL’s incremental 1.4 billion metric ton carbon impact is between \$80.6 billion and \$114 billion using the administration’s SCC figures at a discount rate of 2.5% to 3%. Adjusting to 2014 dollars, that figure rises to between \$90 billion to \$128 billion. Interagency Working Group on Social Cost of Carbon, U.S. Government, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866*, May 2013, [http://www.whitehouse.gov/sites/default/files/omb/inforeg/social\\_cost\\_of\\_carbon\\_for\\_ria\\_2013\\_update.pdf](http://www.whitehouse.gov/sites/default/files/omb/inforeg/social_cost_of_carbon_for_ria_2013_update.pdf) (all dollar amounts in 2007 dollars); Bureau of Labor Statistics, Inflation Calculator, [http://www.bls.gov/data/inflation\\_calculator.htm](http://www.bls.gov/data/inflation_calculator.htm) (last visited February 28, 2014).

The Final SEIS also makes several flawed assumptions that lead it to underestimate Keystone XL's impact on tar sands expansion, as discussed below. These flawed assumptions include:

- **The Final SEIS ignores current and projected rates of tar sands development by industry and the Government of Alberta.** In its preferred reference scenario, the environmental review assumes tar sands production growth at substantially slower rates than those experienced in the last decade or forecast by the Canadian government and the tar sands industry. By assuming “slow tar sands expansion” the Final SEIS makes it more likely that alternatives could fill the gap if Keystone XL is not approved and therefore significantly underestimates Keystone XL's impact on tar sands expansion.
- **The Final SEIS eliminates from its analysis 1.6 million barrels per day (bpd) of new tar sands mines—most of which have already been approved by the Canadian government.** The assessment assumes that over 1.6 million bpd of proposed tar sands mines are economically infeasible regardless of whether Keystone XL or other tar sands pipelines are built. There is a high likelihood approved mining projects will be developed if pipelines like Keystone XL are approved. But by excluding these higher-cost projects—many of which already have government approval—the Final SEIS eliminates the projects most likely to be affected by Keystone XL's rejection.
- **The Final SEIS wrongly assumes that the current and projected costs of tar sands “in situ” drilling projects are relatively inexpensive, which then makes higher-cost rail transport a viable alternative to pipelines.** The Final SEIS assumes that “in situ” drilling would have breakeven costs at \$55-\$65 per barrel. However, recent cost estimates show new “in situ” facilities breakeven costs averaging \$80 per barrel, with some planned in situ projects having breakeven costs as high as \$90 per barrel. This would make coupling these projects with higher-cost rail transport uneconomical.
- **While the Final SEIS recognizes that Keystone XL's rejection will result in lower tar sands prices as supplies grow in Western Canada and the Midwest, it does not consider the impact of those lower prices on tar sands expansion.** The Final SEIS states that in a “pipeline constrained” scenario where Keystone XL is rejected, tar sands crude would sell at a larger discount relative to global oil prices. This discount—approximately \$15 a barrel greater—would directly affect the profitability and feasibility of new tar sands production projects. However, the Final SEIS does not consider that discount in its assessment of Keystone XL's impact on tar sands expansion. According to a recent analysis by the Pembina Institute, a Canadian-based think tank, had the Final SEIS factored its lower price estimates into its conclusion, it would have found that Keystone XL would affect

tar sands expansion at prices below \$100 per barrel.<sup>13</sup>

- **The Final SEIS wrongly assumes lower oil prices are unlikely.** The Final SEIS assumes higher oil prices, which would make tar sands projects more profitable and more likely to use more expensive transportation options like rail. Alternatively, lower oil prices would put even the cheapest tar sands expansion projects in jeopardy. The evidence suggests lower oil prices are more likely. Both the futures markets and the International Energy Agency (IEA) predict lower oil prices by 2020. Moreover, the adoption of climate policies necessary to stabilize global warming would drive crude oil prices down even further.
- **The Final SEIS overestimates the capacity of rail to serve as an alternative for Keystone XL.** The Final SEIS recognizes that transporting tar sands by rail is likely to be more expensive than transporting tar sands by pipeline. However, the Final SEIS underestimates the relative costs, logistical obstacles, and regulatory complications associated with expanded tar sands by rail that would increase the transportation costs. Moreover, recent government data show that tar sands by rail to the Gulf Coast is a small fraction of that forecast by the previous environmental reviews using similar assumptions.
- **In direct conflict with the Final SEIS conclusions, current tar sands pipeline bottlenecks are already constraining investment in tar sands expansion.** The Final SEIS suggests that rejection of Keystone XL would constrain tar sands expansion only when oil prices fall below \$85 a barrel.<sup>14</sup> However, current pipeline constraints have already affected capital spending on tar sands expansion and resulted in the suspension of new mining projects, despite current oil prices in excess of \$100 per barrel.<sup>15</sup> This illustrates the reality that tar sands expansion is already constrained by a lack of pipelines at oil prices well above the Final SEIS's \$85 a barrel low-oil-price scenario. The decision on Keystone XL will clearly affect the profitability of investments in tar sands expansion going forward.

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<sup>13</sup> See Pembina Institute, *Keystone XL Final Supplemental Environmental Impact Statement: Assessment of Market Analysis: Memorandum for Natural Resources Defense Council*, March 7, 2014, attached as Exhibit J.

<sup>14</sup> Final SEIS at 1.4-125.

<sup>15</sup> Shell's Pierre River mine (100,000 bpd) and Syncrude's Aurora Hills mines (200,000 bpd) have all recently been suspended. Moming Zhou, *WTI Crude Rises First Time in Three Days on Cushing*, Bloomberg, Feb. 24, 2014, <http://www.bloomberg.com/news/2014-02-24/wti-crude-trades-above-100-for-11th-day.html>.

**1. The Final SEIS relies on energy consumption scenarios that assume a failure to address climate change**

The Final SEIS uses U.S. Energy Information Administration (EIA) scenarios assuming that the United States and the international community will fail to adopt new policies that would reduce global carbon emissions. Specifically, the Final SEIS market analysis relies entirely on scenarios of U.S. energy consumption that assume the United States and international community will continue on a path to a catastrophic six degree Celsius increase in global temperatures.<sup>16</sup>

The Final SEIS considers three scenarios of energy consumption developed by the EIA’s 2013 Annual Energy Outlook (AEO), which assumes U.S. carbon emissions will remain at or exceed current levels through 2035.<sup>17</sup> These EIA scenarios all assume significantly greater oil consumption and higher global oil prices relative to scenarios that assume that nations adopt policies to reduce their carbon emissions.

However, models by the International Energy Agency that assume the implementation of carbon constraining policies predict significantly reduced global oil consumption and lower oil prices. Under a variety of scenarios where the United States and international community adopt policies that reduce global carbon emissions, Keystone XL will have a more dramatic effect on tar sands expansion plans, and lower oil prices further undermine the economic feasibility of tar sands expansion projects.

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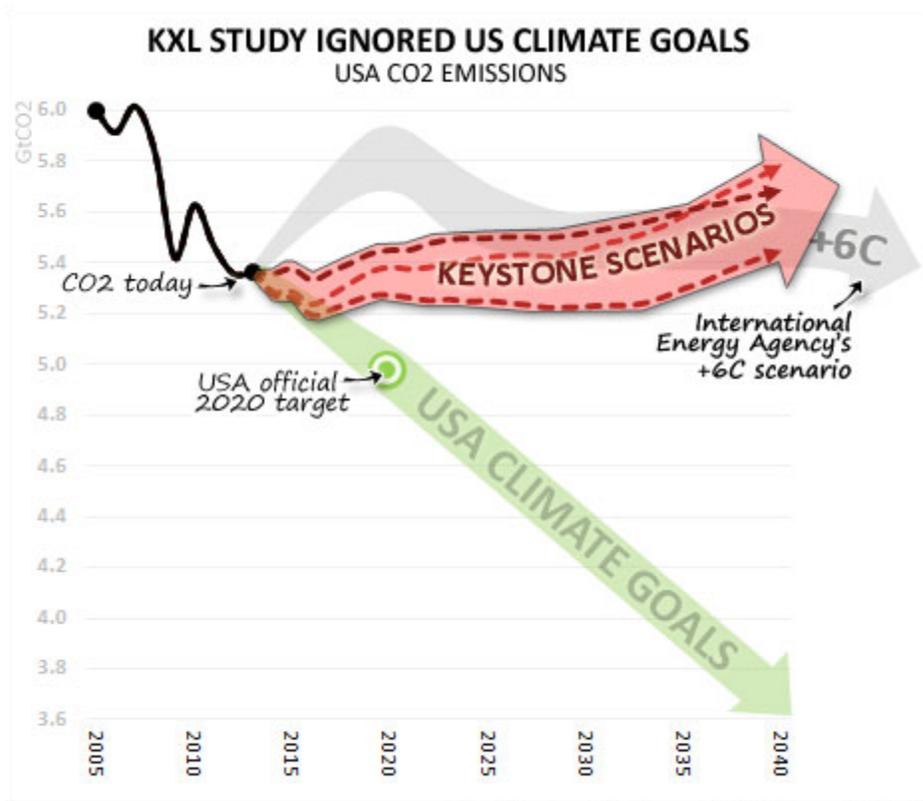
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<sup>16</sup> IEA indicates that energy consumption under the World Energy Outlooks (WEO) current policies scenario leads to six degrees of warming—and the WEO current policies scenario models energy markets that are comparable to the EIA models used in the Final SEIS (see Table 2). International Energy Agency, *Publications and Scenarios*, <http://www.iea.org/publications/scenariosandprojections/> (last visited March 1, 2014).

<sup>17</sup> The Final SEIS used three scenarios from EIA’s 2013 AEO including 1) Reference, 2) High Oil and Gas Resource, and 3) Low/No Net Imports scenarios. These scenarios anticipate U.S. carbon emissions in 2035 of 5.5 GT CO<sub>2</sub>e (Reference), 5.5 GT CO<sub>2</sub>e (High Oil and Gas Resource), and 5.2 GT CO<sub>2</sub>e (Low/No Net Import) respectively. Final SEIS at 1.4-92; U.S. Energy Information Administration (EIA), Annual Energy Outlook (AEO), Data Tables (hereinafter “AEO Data Tables”), April 15, 2013, <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2013&subject=0-AEO2013&table=2-AEO2013&region=1-0&cases=lowimport-d021113b,highresource-d021413a,ref2013-d102312a>.



**Figure 1. The Final SEIS assumed catastrophic climate change in its market analysis scenarios for Keystone XL<sup>18</sup>**

The Final SEIS uses EIA scenarios that assume U.S. carbon emissions remain at or exceed 5.2 gigatons CO<sub>2</sub>e through 2035.<sup>19</sup> Under these scenarios, U.S. crude oil consumption ranges from 16.8 million bpd to 19.5 million bpd in 2035, and U.S. carbon emissions remain at or exceed current levels.<sup>20</sup>

In contrast with EIA scenarios, the International Energy Agency’s 2013 World Energy Outlook developed scenarios assuming the adoption of carbon constraining policies world-wide. In the IEA’s 450 scenario, which forecasts an energy pathway necessary to limit warming to two degrees Celsius, oil consumption and prices will decline substantially below levels assumed by the Final SEIS. In that scenario, reduced demand for refined petroleum products drive global oil price to \$45 a barrel lower than that forecast by the Final SEIS (see Table 1).<sup>21</sup>

<sup>18</sup> Chart by Barry Saxifrage, Visual Carbon, Feb. 14, 2014, <http://www.saxifrages.org/eco/>.

<sup>19</sup> AEO Data Tables, *supra* note 17.

<sup>20</sup> *Id.*

<sup>21</sup> International Energy Agency (IEA), World Energy Outlook (WEO), June 10, 2013, at 503.

In the IEA’s “New Policy” Scenario, a more modest scenario in which IEA assumes only that nations will follow through with the climate commitments they have already made, IEA also assumes lower oil consumption and prices than those forecast by the Final SEIS. In that scenario, global oil prices are projected at \$28 a barrel lower than those forecast by the Final SEIS (*see* Table 1).

**Table 1. The Final SEIS assumes failure to address carbon emissions and increasing oil consumption**

	<b>US Oil Consumption</b>	<b>Global Oil Liquids Demand in 2035</b>	<b>Oil Prices in 2035</b>	<b>US Carbon Emissions in 2035</b>
<b>IEA 450<sup>22</sup> Scenario</b>	10.5 million bpd	78.2 million bpd	\$100 / barrel <sup>23</sup>	2.3 GT CO <sub>2</sub> e <sup>24</sup>
<b>IEA New Policies Scenario<sup>25</sup></b>	14 million bpd	101.4 million bpd	\$128 / barrel <sup>26</sup>	4.5 GT CO <sub>2</sub> e <sup>27</sup>
<b>IEA Current<sup>28</sup> Policies</b>	16.7 million bpd	111 million bpd	\$145 / barrel <sup>29</sup>	5.3 GT CO <sub>2</sub> e <sup>30</sup>
<b>Final SEIS Models</b>	16.8 million bpd – 19.5 million bpd <sup>31</sup>	NA	\$145 / barrel <sup>32</sup>	5.2 GT CO <sub>2</sub> e – 5.6 GT CO <sub>2</sub> e <sup>33</sup>

When weighing the climate benefits of rejecting Keystone XL, it is necessary to do so relative to a scenario in which other policies are adopted to address the problem of global climate change. Considering these scenarios would lead to a dramatically different energy market than one in which current policies are continued. In a scenario where climate policies reduce global oil consumption and oil prices, and increase the costs of

<sup>22</sup> IEA, WEO, at 503.

<sup>23</sup> *Id.* at 503

<sup>24</sup> *Id.* at 587.

<sup>25</sup> *Id.* at 505.

<sup>26</sup> *Id.*, at 503.

<sup>27</sup> *Id.* at 586.

<sup>28</sup> *Id.* at 585.

<sup>29</sup> *Id.* at 503.

<sup>30</sup> *Id.* at 587.

<sup>31</sup> Final SEIS at 1.4-17.

<sup>32</sup> Final SEIS, Appendix C, Adobe pg. 166.

<sup>33</sup> AEO Data Tables, *supra* note 17.

high-carbon fuels, a wider range of tar sands expansion projects will be vulnerable to cancellation. In a policy scenario sensitive to climate change concerns, Keystone XL would play a far more pivotal role in determining whether many tar sands projects move forward.

The failure by the United States to consider either the “450 Scenario” or the “New Policy Scenario” as plausible options when evaluating energy infrastructure decisions will publicly undermine the nation’s credibility as it negotiates global efforts to achieve those climate-safe scenarios.

## **2. The Final SEIS underestimates Keystone XL’s impact on tar sands expansion under scenarios leading to catastrophic warming**

In addition to its failure to consider the possibility of global efforts to stabilize climate change, the Final SEIS makes several flawed assumptions which leads it to underestimate Keystone XL’s role in facilitating tar sands expansion. Again, these assumptions are made considering a scenario that leads to catastrophic warming.

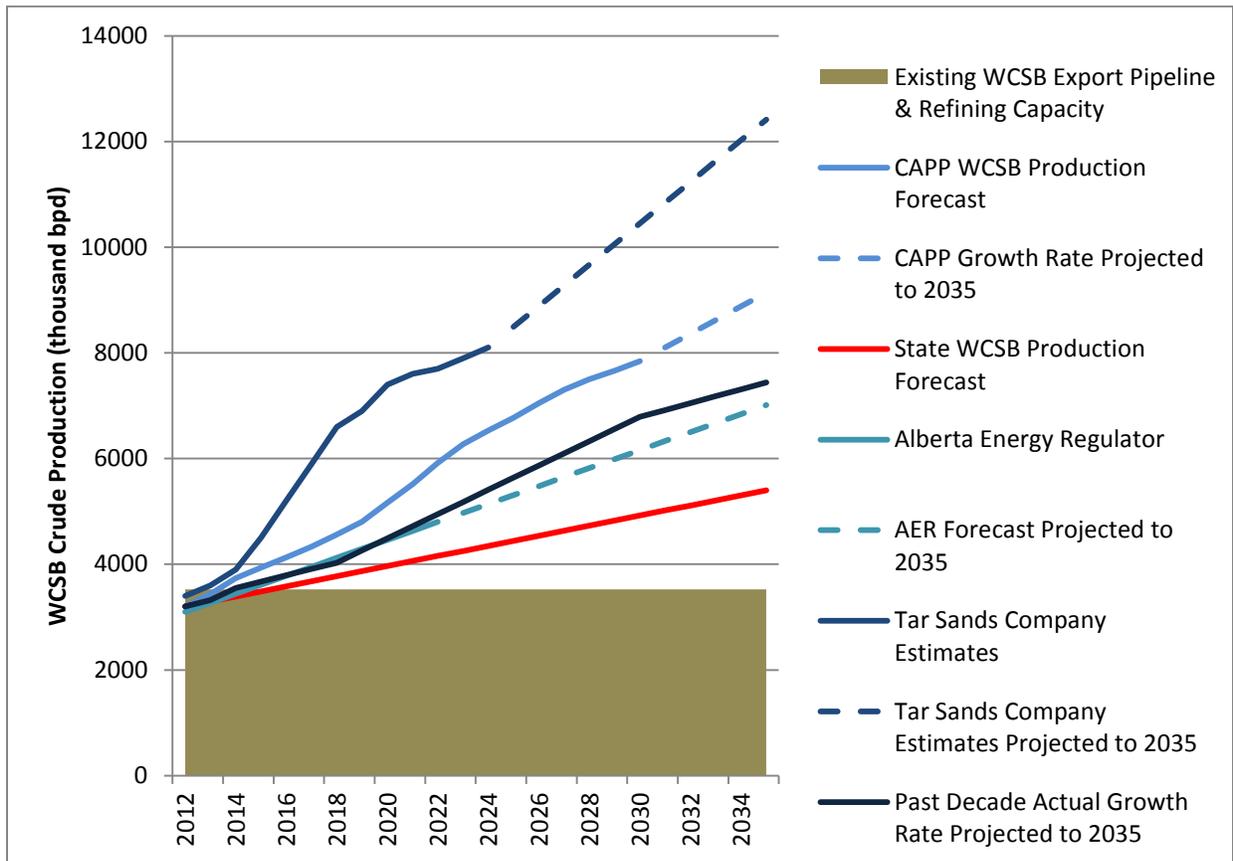
### **a) The Final SEIS ignores current and projected rates of tar sands development by industry and the Government of Alberta**

To reach its conclusion that Keystone XL would not have a significant impact on climate, the Final SEIS assumes tar sands production growth will occur at substantially slower rates than those seen in the last decade or forecast by Canada, Alberta, or the tar sands industry itself. By using only a “slow tar sands expansion” reference scenario, the Final SEIS effectively underestimates Keystone XL’s impact on tar sands expansion. The Final SEIS growth forecasts are lower than both the tar sands production growth rates over the last decade and the even more rapid growth rates forecast by industry. The Final SEIS builds its preferred reference scenario using these faulty low growth rates and then couples that with other faulty assumptions. These faulty assumptions include the Final SEIS’s elimination of new tar sands mines from its analysis, its elimination of higher-cost “in situ” facilities, its use of low breakeven price estimates for tar sands production, its assumption that oil prices would increase, and its failure to consider new rail regulations increasing costs of tar sands by rail. These other faulty assumptions are discussed below.

The rate of tar sands expansion greatly affects the extent to which Keystone XL drives tar sands expansion. While the Final SEIS could have referred to current production rates or estimates by industry trade groups, tar sands companies, or the Government of Alberta (*see* Figure 2), the Final SEIS uses *only one* tar sands expansion scenario—one which assumes the lowest growth rate of Western Canadian Sedimentary Basin (WCSB) production. This growth rate assumes both conventional and tar sands crude would increase only from 3.2 million bpd in 2012 to 5.4 million bpd in 2035.<sup>34</sup> *See* “State WCSB Production Forecast” below in red (Figure 2).

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<sup>34</sup> Final SEIS, Appendix C, Ensys Report at 4 (referenced in graph in Final SEIS at 1.4.97).



**Figure 2. Comparison of tar sands production growth estimates.** *The Final SEIS’s reference scenario for tar sands expansion underestimates Keystone XL’s impact on tar sands expansion assuming higher growth projections.*

The Final SEIS’s projected rate of 5.4 million bpd is substantially below the actual annual growth rate of tar sands production over the past decade, as well as forecasts by the Government of Alberta Energy Regulator and industry:

- Current production has increased at a rate of 120,000 bpd annually from 2003 to 2012, an expansion rate that, if continued, would reach 7.4 million bpd by 2035.<sup>35</sup>
- The Alberta Energy Regulator (AER) has projected tar sands production to reach 4.8 million bpd in 2022, an expansion rate that, if continued, would result in 7

<sup>35</sup> Tars sands production expanded from 1 million bpd in 2003 to 2.2 million bpd in 2012; if production continues to grow at 120,000 bpd per year through 2035, tar sands expansion will reach 7.4 million bpd (including 1.3 million bpd of conventional production). CAPP, 2006 to 2020 Crude Oil Supply Forecast, Table 2 (Adobe pg. 10), May 2006; CAPP, Crude Oil Supply Market Forecast, June 2013, at 37.

million bpd by 2035.<sup>36</sup>

- The Canadian Association of Petroleum Producers (CAPP) projects production reaching 7.8 million bpd by 2030, an expansion rate that, if continued, would result in 9.1 million bpd by 2035.<sup>37</sup>
- Collectively, tar sands producers have forecast start dates for new tar sands operations between now and 2024 that would increase production to 8.1 million bpd, an expansion rate that, if continued, would result in 12.4 million bpd by 2035.<sup>38</sup>

If the Final SEIS had considered these other scenarios, it would have shown that a rejection of Keystone XL would result in a substantially greater impact on tar sands expansion. To support its assertion that tar sands development will slow and remain low, the Final SEIS asserts that the rate of tar sands expansion is constrained by the lack of transportation infrastructure (resulting in higher costs, reduced investment, and cancellation of some tar sands expansion projects).<sup>39</sup> The purpose of the Final SEIS's market analysis is to evaluate and quantify the impact of the lack of pipeline infrastructure—specifically Keystone XL—on tar sands development. However, the Final SEIS defeats this purpose by 1) prematurely assuming that pipeline constraints would limit tar sands expansion, 2) using that assumption to forecast low tar sands expansion rates, and 3) evaluating Keystone XL's impact on a tar sands expansion scenario that had already assumed pipeline bottlenecks would constrain growth. By using such a low-growth scenario, the Final SEIS underestimates both the magnitude of tar sands expansion if unconstrained by transportation bottlenecks and Keystone XL's impact on that expansion.

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<sup>36</sup> The Alberta Energy Regulator (AER) projects that Alberta production will increase from 2.5 million bpd in 2012 to 4.2 million bpd in 2022. Including 600,000 bpd of production from other Western Canadian provinces, production will reach 4.8 million bpd. Projecting continuation of AER's forecasted annual tar sands growth of 170,000 bpd, WCSB crude production would reach 7.4 million bpd by 2035 (including 200,000 bpd production growth in conventional production projected by CAPP). Alberta Energy Regulator, ERCB ST98-2013: *Alberta's Energy Reserves 2012 and Supply/Demand Outlook*, May 2013, at 13, <http://www.aer.ca/data-and-publications/statistical-reports/st98>; CAPP, *Crude Oil Supply, Market, Forecast*, June 2013, at 36, <http://www.capp.ca/forecast/Pages/default.aspx>.

<sup>37</sup> CAPP projects WCSB production to grow from 3.2 million bpd in 2012 to 7.8 million in 2030; forecasting continued annual expansion at 258,000 bpd, WCSB production would reach 9.1 million bpd. CAPP, *Crude Oil Supply, Market, Forecast*, June 2013, at 37.

<sup>38</sup> Tar sands producers have proposed 8.1 million bpd of tar sands production to begin on or before 2024; projecting the continuation of a 392,000 bpd of tar sands expansion would result in 12.4 million bpd of production by 2035. Alberta Oilsands Review, *Oilsands Project List*, September 2013.

<sup>39</sup> Final SEIS at 1.4.36.

The Final SEIS relies on an analysis by CIBC that found that tar sands companies overestimated the rate of expansion, but that higher rates of growth, such as what is projected by the Canadian Association of Petroleum Producers (CAPP), would in fact be feasible if pipeline infrastructure were constructed.<sup>40</sup> While CIBC contended that production estimates by tar sands companies themselves were optimistic, CIBC concluded that the Canadian Association of Petroleum Producer's growth forecast of WCSB production increasing at a growth rate leading to 9.1 million bpd by 2035 would be possible if industry were allowed to build sufficient pipeline capacity. This growth forecast is substantially greater than the Final SEIS's forecast of 5.4 million bpd by 2035 in its reference scenario.

The Final SEIS analysis eliminates the many economically marginal tar sands expansion projects from its reference scenario because they were susceptible to being cancelled because of market factors such as transportation bottlenecks. In doing so, the State Department constructed a reference scenario that prematurely eliminated from consideration the projects most likely to be affected by Keystone XL's rejection.

This is a circular and illogical argument.

A more likely scenario is that pipeline constraints will reduce tar sands expansion as more expensive tar sands projects are cancelled. In fact, the CIBC analysis, along with other analysis by Goldman Sachs, RBC Capital, and Barclays, has recognized that pipelines will facilitate expansion.<sup>41</sup>

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<sup>40</sup> From Final SEIS Market Analysis: "CIBC (2013): "According to our detailed oil sands project database, in aggregate, oil sands producers have independent plans that would lead to oil sands production reaching 5 MMbbl/d by 2020 (vs. CAPP forecasts of 3.2 million bpd)—a completely unrealistic scenario. As no producer willingly gives up the quest for growth, some degree of project rationalization will be required and will be dictated by market forces in the form of inflation, lower pricing (due to transportation bottlenecks), inability to finance or some combination of all these factors. This continues to highlight a competitive backdrop in the oil sands." Final SEIS at 1.4.36, n.52. "The total capacity of current and announced projects exceeds forecasts of Canadian oil sands production growth because not all projects will ultimately be developed... It is expected and it would be normal for some announced projects to not proceed." Final SEIS at 1.4.36, nn.52, 53.

<sup>41</sup> Barclays, *Global 2014 E&P Spending Outlook*, Dec. 9, 2013, at 35; Goldman Sachs, *Getting oil out of Canada v1.2: heavy oil diffs widening, rail growing*, Oct. 8, 2013; RBC Capital Markets, *Energy Insights: Capitalizing on the Oil Sands*, September 25, 2013; Hussain, Yadullah, *Oil sands producers could feel squeeze in crowded market*, Financial Post, Aug. 16, 2012, <http://business.financialpost.com/2012/08/16/oil-sands-producers-could-feel-squeeze-in-crowded-market/>.

**b) The Final SEIS eliminates from its analysis 1.6 million bpd of new tar sands mines—most of which have already been approved by the Canadian government**

To reach its conclusion that Keystone XL would not have a significant impact on climate change, the Final SEIS eliminates higher-cost tar sands mining projects from its preferred reference scenario, despite the fact that many of the projects have been approved by the Canadian government. By eliminating consideration of these projects, the Final SEIS is able to conclude that a rejection of Keystone XL would not have any discernible impact on production. To be clear, the Final SEIS eliminates higher-cost tar sand mining projects in any of its scenarios. Had these projects been included, they would have been deemed economically feasible if adequate pipeline infrastructure like Keystone XL proceeded. The exclusion of these projects contributes to the Final SEIS's low tar sands expansion rates and its conclusion that Keystone XL would not drive substantial tar sands expansion.

The tar sands industry has proposed eighteen new tar sands mines with a combined production capacity of 1.6 million bpd.<sup>42</sup> Over 900,000 bpd of this capacity has already been approved by regulatory authorities.<sup>43</sup> The Final SEIS recognizes these new tar sands mines have breakeven costs of \$80 or more per barrel but excludes them from consideration in estimating the impact of Keystone XL's rejection on their viability.<sup>44</sup> But while pipeline constraints have caused some tar sands mines to be delayed and cancelled, industry has plans to move forward with many tar sands mines in coming years—plans that will likely hinge on the availability of sufficient cheap transportation infrastructure.<sup>45</sup>

The Final SEIS's failure to consider the impact of Keystone XL on higher-cost tar sands projects was recently highlighted in a report drafted by the former head of research for Deutsche Bank for the Carbon Tracker initiative (*see* Exhibit I: Carbon Tracker, *Keystone XL Pipeline: The "Significance" Trap*).<sup>46</sup> While keeping the Final SEIS's other assumptions in place, the report identified over 2 million bpd of planned tar sands

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<sup>42</sup> The Oilsands Review, Project List, Sept. 2013.

<sup>43</sup> The Oilsands Review, Project List, Sept. 2013.

<sup>44</sup> Final SEIS at 1.4.36.

<sup>45</sup> The three delayed projects include Syncrude's Aurora South projects (trains 1 and 2) and Shell's Pierre River Mine. Shell has recently decided to delay the Pierre River Mine project indefinitely. Syncrude has also put the Aurora South projects on hold for the foreseeable future. Shell's Jackpine expansion, Total's Joslyn project, and Teck's Frontier mine are all currently undergoing regulatory review and, as such, no investment decision has been made whether to proceed. All of these projects have been delayed from their originally intended start-up dates due to numerous factors, including regulatory delays and cost considerations; it is unclear as to when they might start producing, as final decisions will only be made once final regulatory approvals have been obtained.

<sup>46</sup> James Leaton et al., *Keystone XL Pipeline: The "Significance" Trap*, Carbon Tracker, March 3, 2014, at 9, attached as Exhibit I, available at <http://www.carbontracker.org/kxl>.

projects that will not be economic under the Final SEIS’s higher-cost crude by rail framework.<sup>47</sup> Approximately a third of these projects are planned over the next five years.<sup>48</sup> In addition to those projects, the Carbon Tracker report identified approximately 1 million bpd of projects that will become economic only if significant pipeline expansions are approved and global oil prices increase.<sup>49</sup> The report concluded that by enabling greater tar sands expansion, Keystone XL would enable substantial tar sands expansion.<sup>50</sup>

The Final SEIS assumes that higher-cost tar sands mines will be prevented from moving forward, relying on its arbitrarily low production forecast rather than on the mines’ economic feasibility. This is not a rational assumption, particularly in an industry in which there are numerous companies competing. Rather, it is the expected price of oil that will dictate entry. As noted by Canadian economist Andrew Leach:

*“If you want to know what the break-even price for new oil sands projects is (at least for the marginal project), look at the forecast of future oil prices. The break-even price will always be at or near this level as long as open access to the resource is allowed— it’s basic economics.”<sup>51</sup>*

The Final SEIS assumes that tar sands projects with breakeven prices above WTI prices of \$75 a barrel will not move forward—even under scenarios in which Keystone XL and oil prices makes them feasible.<sup>52</sup> The exclusion of these projects contributes to the Final SEIS’s low tar sands expansion rates and its conclusion that Keystone XL would not drive substantial tar sands expansion. By providing low cost transport that would enable these projects to move forward, Keystone XL would allow a more rapid expansion of tar sands production and its associated carbon emissions.

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<sup>47</sup> *Id.* at 9.

<sup>48</sup> *Id.* at 10.

<sup>49</sup> *Id.* at 10.

<sup>50</sup> Carbon Tracker concluded that 730,000 bpd of tar sands diluted bitumen carried on the pipeline could come entirely from Keystone XL enabled production, with total emissions ranging from 4,525 to 5,145 MMTCO<sub>2</sub>e. *Id.* at 16.

<sup>51</sup> Andrew Leach, *Cheap oil sands crude production?*, Maclean’s Magazine Econowatch, Aug. 28, 2013, <http://www2.macleans.ca/2013/08/26/cheap-oil-sands-crude-production/>.

<sup>52</sup> The Final SEIS assumes that if Keystone XL were approved, WTI prices would have to fall below \$77 a barrel before new projects move forward, meaning that WTI prices above that level will have no additional impact on tar sands expansion—despite many proposed tar sands project with breakeven prices higher than \$77 a barrel that would become economic at those higher oil prices. *See* Final SEIS at 1.4-125, Table 1.4-26.

- c) **The Final SEIS wrongly assumes that the current and projected costs of “in situ” tar sands drilling projects are relatively inexpensive, which then makes higher-cost rail transport appear to be a viable alternative to pipelines**

To reach its conclusion that Keystone XL would not have a significant impact on climate change, the Final SEIS assumes that costs for tar sands “in situ” (drilling) projects are lower than those actually achieved by industry. Already, the Final SEIS arbitrarily excludes from its consideration the highest cost tar sands projects—mining operations. By assuming lower costs for tar sands projects, the Final SEIS is able to conclude that they are sufficiently profitable to use higher-cost rail transportation as an alternative to pipelines.

The Final SEIS then assumes costs for in situ projects are much lower than those actually being achieved by industry. The Final SEIS assumes a breakeven cost for new tar sands projects of \$65-\$75 per barrel.<sup>53</sup> However, recent supply costs estimates show new in situ facilities breakeven rates average \$80 per barrel, with some planned in situ projects having breakeven costs as high as \$90 per barrel.<sup>54</sup> In fact, over 200,000 bpd of proposed in situ expansion projects planned over the next five years have breakeven prices above those estimated by the Final SEIS.<sup>55</sup> By underestimating breakeven rates of new tar sands projects, the Final SEIS underestimates the impact that higher transportation costs would have on the projects’ economic feasibility in the event of Keystone XL’s rejection.

- d) **The Final SEIS fails to show how a rejection of Keystone XL would lower Western Canadian oil prices and make new tar sands projects unprofitable**

The Final SEIS underestimates the breakeven price for new tar sands projects—a key factor in evaluating the profitability of new tar sands projects—in the scenario in which Keystone XL is rejected and other pipelines are constrained. A major factor having a significant impact on the profitability of tar sands production and the feasibility of expansion is transportation constraints leaving tar sands in oversupplied markets, driving prices down. The Final SEIS correctly finds that in a “pipeline constrained” scenario where Keystone XL is rejected, this dynamic would continue and tar sands crude prices would fall by \$15 a barrel relative to all scenarios in which the pipeline is approved. Lower prices for tar sands crude would directly affect the profitability and feasibility of new tar sands production projects.<sup>56</sup> However, the Final SEIS ignores this effect in its assessment of Keystone XL’s impact on tar sands expansion.

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<sup>53</sup> Final SEIS at 1.4-36.

<sup>54</sup> BMO Capital Markets, *Energy – Oil & Gas: U.S. Tight Oil Shale vs. the Canadian Oil Sands: Not the Gap You Think*, Feb. 3, 2014.

<sup>55</sup> *Id.*

<sup>56</sup> Final SEIS at 1-4.105.

The Final SEIS fails to consider how lower tar sands Western Canadian Select (WCS) prices will limit the feasibility of expansion projects if Keystone XL is rejected. While tar sands are marketed under the WCS crude benchmark, the Final SEIS uses a different benchmark, West Texas Intermediate (WTI), to calculate breakeven prices for new tar sands production projects. WTI represents the North American benchmark for light crude oil produced in West Texas. Because heavy WCS crudes are lower quality, they have historically sold at a discount relative to higher quality, light WTI. The discount between WCS and WTI has grown substantially in recent years due to pipeline constraints. As WCS accumulates in Western Canada and the U.S. Midwest, its price has continued to decline relative to WTI. This discount will persist with a rejection of Keystone XL, directly affecting the profitability of tar sands production and the economic feasibility of new tar sands projects. But the Final SEIS ignores the impact of these lower tar sands prices in its assessment of Keystone XL’s impact on tar sands production.

Specifically, the Final SEIS does not directly consider WCS tar sands prices in evaluating Keystone XL’s impact on the profitability of new tar sands projects. Instead, it assesses the WTI prices necessary for new tar sands projects to break even. Because tar sands producers do not produce WTI, this proves an inaccurate reference point for evaluating the breakeven prices for tar sands facilities across scenarios showing shifting relationships between WCS and WTI prices. The Final SEIS assumes the same breakeven prices across all scenarios, ignoring the fact that WCS tar sands prices would be significantly reduced if Keystone XL were rejected.

The Final SEIS’s models show that if Keystone XL is rejected, tar sands prices will be \$15 a barrel lower relative to WTI than in scenarios where Keystone XL is approved (*see* Figure 3).<sup>57</sup> Therefore, if the price for tar sands is lower, then tar sands producers will require higher WTI prices—approximately \$15 a barrel higher—to reach the same level of economic feasibility when compared to other scenarios. This dynamic means that in the event of Keystone XL’s rejection in the “pipeline constrained” scenario, WTI prices necessary for new tar sands projects to break even will be at least \$15 a barrel higher than the Final SEIS estimated.

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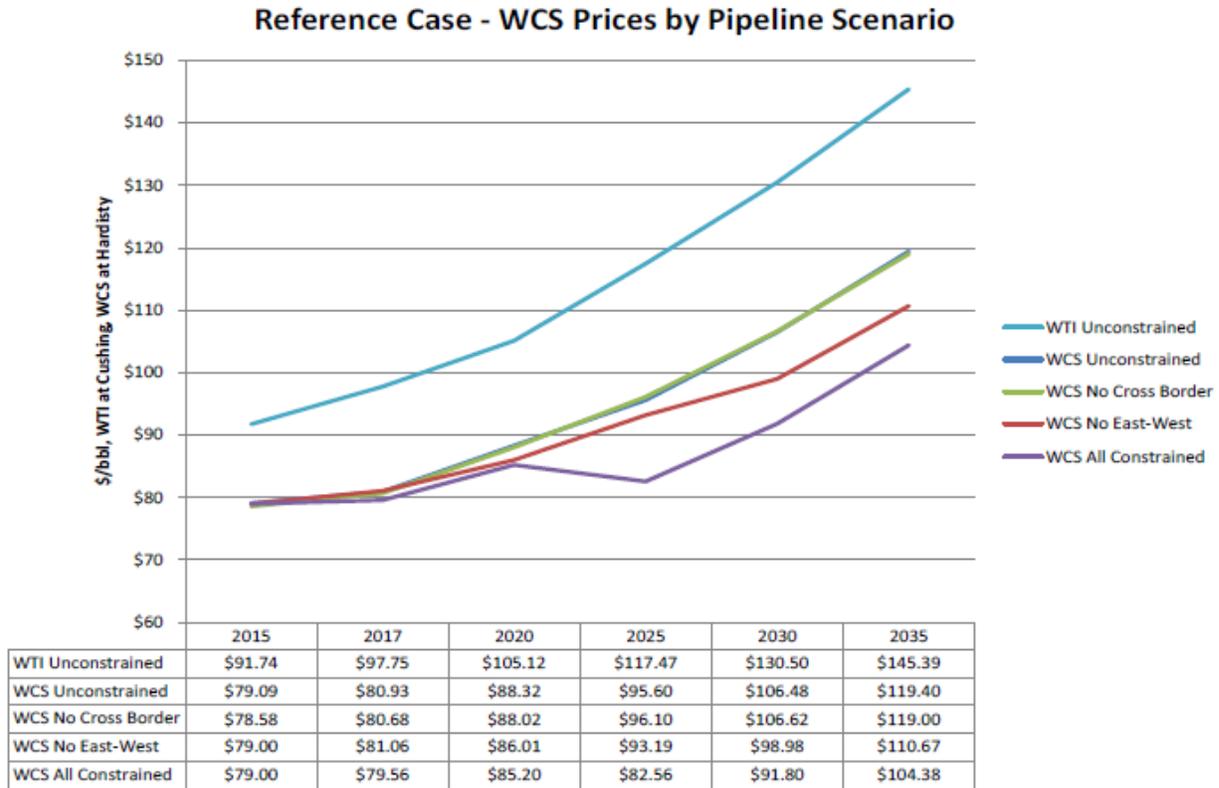
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<sup>57</sup> The discount between WTI and WCS may be much higher than the Final SEIS estimates—in 2013, the discount averaged \$24.50 a barrel, or twice that forecast by the Final SEIS in 2015. Bloomberg, USCSWCAS Index.



**Figure 3. Final SEIS crude pricing model according to pipeline scenario<sup>58</sup>**

The Final SEIS concludes that if Keystone XL is approved, new tar sands projects would require WTI prices to be between \$68 and \$77 a barrel to break even.<sup>59</sup> If Keystone XL is rejected and pipelines are constrained, new tar sands projects would actually require WTI prices to be between \$76 and \$85 a barrel to break even.<sup>60</sup> The difference between these scenarios is due entirely to the Final SEIS’s conclusion that moving tar sands by rail rather than pipeline would increase transportation costs by \$8 a barrel—an estimate that ignores the impact of lower WCS prices on breakeven prices for tar sands projects. A recent analysis by the Pembina Institution concluded that had the Final SEIS considered the lower WCS tar sands prices caused by its “pipeline constrained” scenario, Keystone XL would reduce tar sands expansion at WTI prices below \$100 per barrel (*see Exhibit J: Pembina Institute, Keystone XL Final Supplemental Environmental Impact Statement: Assessment of Market Analysis*).<sup>61</sup>

In addition, crude oil prices data over the last five years suggest that the Final SEIS model underestimates the discount between WTI light crude and WCS tar sands. In 2015, the Final SEIS assumes that the discount between WCS and WTI would not exceed

<sup>58</sup> Final SEIS, Appendix C, at 27 (Adobe pg. 166).

<sup>59</sup> Final SEIS at 1-4.125.

<sup>60</sup> Final SEIS at 1-4.125.

<sup>61</sup> *See Pembina Institute, Keystone XL Final Supplemental Environmental Impact Statement: Assessment of Market Analysis*, March 7, 2014, attached as Exhibit J.

\$13 a barrel in any of its scenarios. WCS prices have not been as robust relative to WTI prices since 2009.<sup>62</sup> In 2013, the average discount was approximately \$25 a barrel, nearly twice that assumed by the Final SEIS.<sup>63</sup> The greater discount for WCS relative to WTI suggests that new tar sands projects will be more economically marginal and vulnerable to higher transportation costs than the Final SEIS assumes.

By ignoring the impact that Keystone XL's rejection would have on tar sands WCS prices, the Final SEIS excludes a factor that will significantly increase the proposed pipeline's role in enabling tar sands expansion. Therefore, the State Department underestimated breakeven prices for new projects, which means that a rejection of Keystone XL would make many tar sands projects unprofitable and likely to be shelved. This would in turn mean that a rejection of Keystone XL would reduce tar sands expansion.

**e) The State Department wrongly assumed lower oil prices were unlikely**

To reach its conclusion that Keystone XL would not have a significant impact on climate, the Final SEIS also assumes that low oil prices were unlikely. The Final SEIS indicates that Keystone XL's rejection would limit tar sands expansion and cause greater climate impacts if oil prices (WTI) fell below \$85 a barrel.<sup>64</sup> But then the Final SEIS finds that this scenario is unlikely.<sup>65</sup> In fact, the futures markets and the International Energy Agency (IEA) have predicted oil prices will decline below this threshold before 2020.

The Final SEIS's preferred scenario forecasts WTI oil prices will exceed \$105 by 2020.<sup>66</sup> However, the commodity traders at the Chicago Mercantile Exchange (CME), where futures contracts for WTI are bought and sold, project that the State Department's "low oil price" scenario is likely. Even in the shorter term, the cost of a barrel of WTI is projected to decline from its current price of \$103 a barrel to reach \$78 by December

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<sup>62</sup> WCS has sold at a per barrel discount of \$14.93, \$16.63, \$22.34, and \$24.53 relative to WTI in 2010, 2011, 2012 and 2013, respectively. Bloomberg, USCSWCAS Index 2009-2013.

<sup>63</sup> The discount between WCS and WTI averaged \$24.53 a barrel in 2013. Bloomberg, USCSWCAS Index 2009-2013.

<sup>64</sup> While the Final SEIS notes that WTI prices below \$75 a barrel would constrain tar sands expansion if Keystone XL were rejected, Table 1.4-26 shows that tar sands projects will begin to be uneconomic in a pipeline-constrained scenario at WTI prices of \$85 a barrel or lower. Final SEIS at 1.4-125.

<sup>65</sup> Final SEIS at 1.4-125.

<sup>66</sup> The Final SEIS assumes WTI prices of \$105.12 per barrel in 2020. Final SEIS, Appendix C, World Model Overview and Results by EnSys Energy, at 27 (Adobe pg. 166).

2019.<sup>67</sup> The International Energy Agency concurs with futures traders, estimating that oil prices will decline by about \$20 a barrel over the next five years as lower-cost oil reserves come online.<sup>68</sup>

Moreover, as discussed above, in a scenario in which the United States and the international community meet or exceed current carbon reduction commitments, oil prices will be significantly lower than under the current policy scenarios the Final SEIS uses to evaluate Keystone XL.

**f) The Final SEIS overestimates the capacity of rail to serve as an alternative for Keystone XL**

The Final SEIS also underestimates the impact of Keystone XL's rejection on tar sands expansion, underestimating the costs, logistical obstacles, and regulatory complications associated with expanded tar sands by rail. On the one hand, the Final SEIS recognizes that transporting tar sands by rail is likely to be more expensive than transporting tar sands by pipeline. However, in its conclusion that tar sands by rail would increase costs by up to \$8 a barrel relative to pipelines, the Final SEIS underestimates many of the costs associated with rail that are recognized elsewhere in its analysis.<sup>69</sup>

In a detailed assessment of the impact of moving tar sands to the Gulf Coast by rail compared to pipeline, the Final SEIS shows that rail actually increases costs for tar sands producers by \$7 to \$11.40 per barrel.<sup>70</sup> However, the Final SEIS ignores this assessment when incorporating the higher costs of crude by rail in modeling Keystone XL's impact on tar sands expansion, using instead a range of \$0 to \$8 a barrel based on a simpler calculation.<sup>71</sup> By using the lower range, the Final SEIS underestimates the impact of higher transportation costs on the feasibility of economically marginal tar sands expansion projects.

In addition, the Final SEIS makes several tenuous assumptions that underestimate the logistical obstacles to a significant and sustained expansion of tar sands by rail. The Final SEIS bolsters its conclusion that a build-out of tar sands by rail to the Gulf Coast is likely by noting the existence of two large fuel storage terminals in the Gulf Coast,

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<sup>67</sup> Chicago Mercantile Exchange, West Texas Intermediate Futures, last accessed February 15, 2014, <http://www.cmegroup.com/trading/energy/crude-oil/light-sweet-crude.html>.

<sup>68</sup> International Energy Agency (IEA), Medium-Term Oil Market Report 2013, at 18.

<sup>69</sup> "Rail cost penalties are likely to fall in a range of \$0 to \$8 per barrel, according to the analysis in Sections 1.4.3, Crude Oil Transportation, and 1.4.4, Updated Modeling." Final SEIS at 1.4.136 n.167.

<sup>70</sup> The Final SEIS shows that breakeven prices for tar sands crude moving by a committed pipeline like Keystone XL was up to \$79.40 per barrel, while rail required oil prices at \$85.82 (rawbit), \$90.80 (dilbit) and \$90.98 (railbit). Final SEIS at 1.4-129, Table 1.4-27.

<sup>71</sup> Final SEIS at 1.4-86.

neither of which is suitable for handling heavy Canadian crude (*see* Exhibit K: E&E: *Greens fume at State's bet on oil sands as the new Bakken*).<sup>72</sup> The Final SEIS also uses proposed rail capacity growth in place of actual growth in tar sands by rail shipments to forecast the feasibility of crude by rail expansion.<sup>73</sup> Moreover, the Final SEIS ignores significant cost overruns and delays in the construction of crude by rail capacity in Alberta.<sup>74</sup>

In fact, the Final SEIS incorrectly, assumes that hundreds of rail projects and related infrastructure will be built.<sup>75</sup> There is already opposition to many of the crude rail and marine terminal projects discussed in the Market Analysis, including the proposed terminals at Grays Harbor, WA; Pittsburg, Benicia, Arroyo Grande, and Wilmington, CA; and Albany, NY. This opposition has delayed, and may ultimately prevent, approval of those projects. For example, the Final SEIS claims that the Pittsburg terminal will be operational this year,<sup>76</sup> but the City of Pittsburg, in the face of community opposition, has delayed its permitting and environmental review process and “does not currently have a time frame” for completing that process.<sup>77</sup> Other rail and marine crude projects around the country face similar opposition. The Final SEIS fails to properly account for this uncertainty and instead just assumes that any “proposed” rail facility will be built.

The Final SEIS fails to account for the apples to oranges nature of the comparison between moving light crude by rail from North Dakota and moving tar sand by rail from Alberta.<sup>78</sup> Crude by rail in North Dakota has proven to be a suitable, and in many cases preferable, alternative for light crude producers.<sup>79</sup> In December 2013, nearly three quarters of North Dakota crude was transported out of the state by rail.<sup>80</sup> That left the

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<sup>72</sup> Elana Schor, *Greens fume at State's bet on oil sands as the new Bakken*, E&E, Feb. 11, 2014, attached as Exhibit K,

[http://www.eenews.net/special\\_reports/pipeline\\_politics/stories/1059994362](http://www.eenews.net/special_reports/pipeline_politics/stories/1059994362).

<sup>73</sup> *Id.*

<sup>74</sup> Canexus, a company working in the crude by rail space and building one of the first major tar sands by rail expansions in Alberta, recently announced a 40% cost overrun and indicated a significant delay in commencing operations in the facility. *Cost of Canada's first unit-train crude terminal jumps 40%*, Reuters, Jan. 14, 2014,

[http://business.financialpost.com/2014/01/14/cost-of-canadas-first-unit-train-crude-terminal-jumps-40/?\\_lsa=10b8-9f4c](http://business.financialpost.com/2014/01/14/cost-of-canadas-first-unit-train-crude-terminal-jumps-40/?_lsa=10b8-9f4c)

<sup>75</sup> Final SEIS at ES-11 1.4-69, Appendix C.

<sup>76</sup> Final SEIS at Appendix C at 10.

<sup>77</sup> City of Pittsburg, WesPac Pittsburg Energy Infrastructure Project, <http://www.ci.pittsburg.ca.us/index.aspx?page=700> (last visited March 3, 2014).

<sup>78</sup> Final SEIS at 1.4-64.

<sup>79</sup> Alison Sider, *In Dakota Oil Patch, Trains Trump Pipelines Flexibility of Shifting Crude to Higher Priced Markets Strands Proposed Project*, Wall Street Journal, March 3, 2014, <http://online.wsj.com/news/articles/SB10001424052702304071004579407140444547268>

<sup>80</sup> In December 2013 rail shipments moved 73%, or nearly 800,000 bpd, of North Dakota's production to market. Dan Murtaugh, et al., *Pipelines Filled With Oil Amid Changing Economics and Rail Rules*, Bloomberg, March 4, 2014,

state's existing pipelines utilizing less than half their capacity to move Bakken crude.<sup>81</sup> In addition, local producers have turned down several major pipeline proposals in recent years, including a 200,000 bpd proposal by Oenok Partners in December 2012 and a 250,000 bpd pipeline proposal by Koch Pipeline Company in January 2013.<sup>82</sup> For Bakken producers, which have a more valuable product that does not pose logistical complications to move by rail, lower operating costs, and the capacity to access the refinery markets on the East and West Coasts predominately oriented toward light crude, rail has proven to be a feasible alternative to pipelines.<sup>83</sup>

The environmental review for Keystone XL has consistently overestimated the ability of the tar sands industry to utilize rail as a substitute for pipelines. The March 2013 Draft Supplemental Environmental Impact Statement (Draft SEIS) forecast that tar sands crude shipments to the Gulf Coast would reach 200,000 bpd by the end of the year.<sup>84</sup> However, the most recent data from the U.S. Energy Information Administration shows that Canadian crude by rail did not exceed 40,000 bpd in any month in 2013 and was often below 30,000 bpd—a fraction of the rate predicted by the environmental review (*see* Exhibit L: Reuters: *Canada oil-by-rail deliveries in 2013 lagged U.S. estimate*).<sup>85</sup> The Final SEIS makes many of the same assumptions to form a bullish perspective of the ability of rail to provide transport capacity to enable tar sands expansion in its reference scenario (though it did recognize that rail would be less likely to provide sufficient capacity to enable tar sands expansion rates proposed by industry).<sup>86</sup>

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<http://www.bloomberg.com/news/2014-03-05/pipelines-filled-with-oil-amid-changing-economics-and-rail-rules.html>.

<sup>81</sup> Of the 923,000 bpd produced in North Dakota in December 2013, 27% or about 250,000 bpd was moved by the state's existing pipeline network, which has a capacity of over 500,000 bpd. North Dakota Pipeline Authority, Oil Transportation Table, March 5, 2014, <http://northdakotapipelines.com/oil-transportation-table/>. North Dakota Pipeline Authority, US Williston Basin Oil Production, <http://northdakotapipelines.com/us-williston-basin-oil-production/> (last visited March 5, 2014).

<sup>82</sup> Alison Sider, *In Dakota Oil Patch, Trains Trump Pipelines Flexibility of Shifting Crude to Higher Priced Markets Strands Proposed Project*, Wall Street Journal, March 3, 2014, <http://online.wsj.com/news/articles/SB10001424052702304071004579407140444547268>

<sup>83</sup> *Id.*

<sup>84</sup> Draft SEIS at 2.2-4 (“Projections for WCSB crude oil transport by rail to the U.S. Gulf Coast could reach 200,000 bpd or more in 2013 (Hart 2012, Peters and Co. Ltd 2013)”).

<sup>85</sup> Patrick Rucker, *Canada oil-by-rail deliveries in 2013 lagged U.S. estimate*, Reuters, March 5, 2014, <http://www.reuters.com/article/2014/03/05/usa-keystone-rail-idUSL2N0J115H20140305>.

<sup>86</sup> Whereas the updated modeling (described below) utilized the EIA production outlook, the following assessment of logistics capabilities is based on the CAPP forecasts because it would be more challenging for crude by rail (combined with other non-pipeline transport options) to keep pace with CAPP production growth rates. Final SEIS at 1.4-73.

Import data also reveal that the tar sands industry has been unable to substantially increase its access to the Gulf Coast market without Keystone XL. In fact, EIA data show that while U.S. imports of Canadian crude have increased by 30% since 2010 to reach 2.6 million bpd in 2013, during the same time Canadian crude shipments by pipeline, rail, or barge to the Gulf Coast have declined by 18% to 120,000 bpd.<sup>87</sup> As tar sands saturated the limited heavy crude refining capacity of other refinery districts, the Gulf Coast market is becoming more critical as a means of enabling the tar sands industry's expansion plans. And Keystone XL continues to be critical as a cheap means for the tar sands industry to access that market.

Finally, the Final SEIS fails to consider how rail costs would increase with the adoption of new rail regulations advocated by the National Transportation Safety Board (NTSB), the Canadian Transportation Safety Board (TSB), and the rail industry. According to a report by Bernstein Research, a crude by rail safety initiative announced by the Department of Transportation (DOT) and the Association of American Railroads (AAR) on February 21, 2014 would slow down crude by rail trains, increase shipping costs, and lower prices for tar sands crudes.<sup>88</sup> The rail safety initiative will, among other things, require increased track inspections, more robust braking systems on crude trains, the use of lower-risk rail routes, and lower speeds in certain areas.<sup>89</sup> Higher costs associated with stronger rail regulations have already caused Bakken producers to shift over 100,000 bpd of production from rail to pipelines.<sup>90</sup> These higher costs are likely to further increase the expense of tar sands by rail as an alternative to Keystone XL, increasing the proposed pipeline's role in enabling additional tar sands expansion.

**g) Contrary to the Final SEIS's conclusions, tar sands pipeline bottlenecks are already reducing investment in tar sands expansion**

To reach its conclusion that Keystone XL would not have a significant impact on climate change, the Final SEIS suggests that Keystone XL's rejection would constrain tar sands expansion only when WTI oil prices fall below \$85 a barrel.<sup>91</sup> However, tar sands expansion is already being curtailed by pipeline constraints at current WTI oil price levels of \$103 a barrel due to a decline in capital spending for tar sands expansion and a

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<sup>87</sup> Patrick Rucker, *Canada oil-by-rail deliveries in 2013 lagged U.S. estimate*, Reuters, March 5, 2014, <http://www.reuters.com/article/2014/03/05/usa-keystone-rail-idUSL2N0J115H20140305>.

<sup>88</sup> Bernstein Research, *Crude by Rail: Slower Trains = Wider Spreads... and a Reason for BNSF to Buy Rail Cars?*, Feb. 25, 2014.

<sup>89</sup> *Id.*

<sup>90</sup> Dan Murtaugh, et al., *Pipelines Filled With Oil Amid Changing Economics and Rail Rules*, Bloomberg, March 4, 2014, <http://www.bloomberg.com/news/2014-03-05/pipelines-filled-with-oil-amid-changing-economics-and-rail-rules.html>.

<sup>91</sup> This assumes slow tar sands expansion and ignores lower WCS prices resulting from rejection of Keystone XL. Final SEIS at 1.4-125.

suspension of new mining projects.<sup>92</sup> Tar sands companies and investors will look to the decision on Keystone XL to determine the profitability of investments for tar sands expansion in 2016 and beyond.

In February 2014, the CEO of tar sands producer Cenovus told journalists that his company's plan to nearly triple its tar sands production by 2023 is contingent on new pipelines.<sup>93</sup> Challenging market conditions due to pipeline constraints and associated discounted prices have already caused companies like Suncor and Shell to pare back their expansion plans.<sup>94</sup> More recently, Shell announced that it was suspending its 100,000 bpd Pierre River mine.<sup>95</sup> Across the tar sands industry, capital spending dropped from \$28 billion in 2012 to \$17 billion in 2013 and is forecast to remain flat through 2015 as lower prices and a lack of export capacity has delayed investments in new projects (Figure 4).<sup>96</sup>

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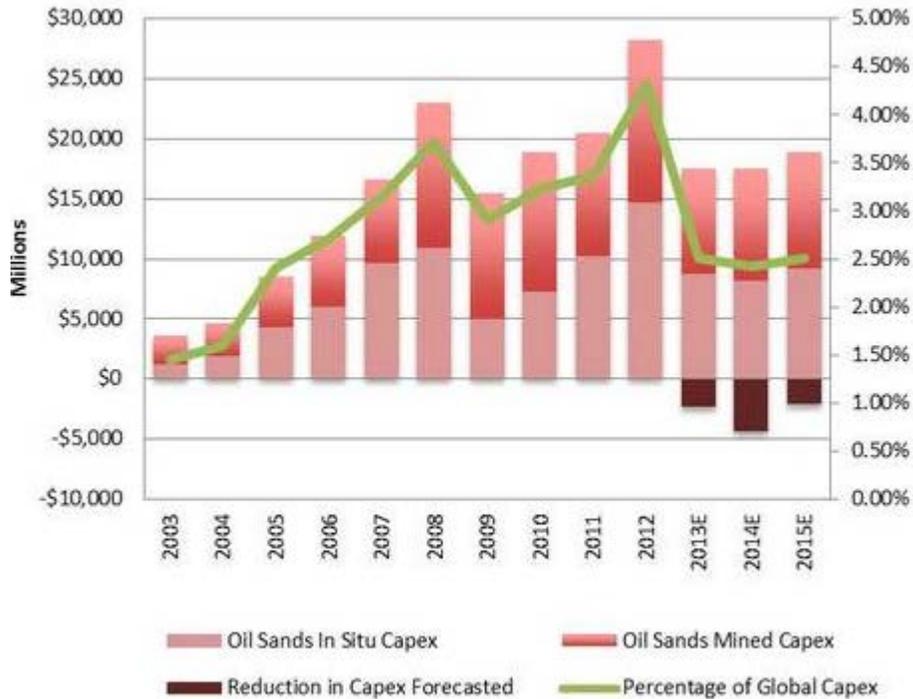
<sup>92</sup> Chicago Mercantile Exchange, *West Texas Intermediate Futures*, <http://www.cmegroup.com/trading/energy/crude-oil/light-sweet-crude.html> (last visited February 15, 2014).

<sup>93</sup> Shawn McCarthy and Richard Blackwell, *Oil Industry Rebuts Trash Talking Celebrity Critics*, *Globe and Mail*, Jan. 15, 2014, <http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/oil-industry-rebuts-trash-talking-celebrity-critics/article16357980/>.

<sup>94</sup> Nathan Vanderklippe, *A Wary Oil Patch Gears Down*, *Globe and Mail*, Aug. 10, 2012, <http://www.theglobeandmail.com/globe-investor/wary-oil-patch-gears-down/article4470876/m>.

<sup>95</sup> Pierre River Mine Project Joint Review Panel, *Letter to Shell Canada Energy re Pierre River Mine Project*, Feb. 11, 2014, <http://www.ceaa-acee.gc.ca/050/documents/p59539/98333E.pdf>.

<sup>96</sup> Susan Casey-Lefkowitz, *Keystone XL will significantly increase oil industry investment in the tar sands*, Feb. 11, 2014, [http://switchboard.nrdc.org/blogs/sclefkowitz/keystone\\_xl\\_will\\_significantly.html](http://switchboard.nrdc.org/blogs/sclefkowitz/keystone_xl_will_significantly.html).



**Figure 4. Pipeline bottlenecks are leading to declining capital investments in the tar sands<sup>97</sup>**

Industry is well aware that Keystone XL is a critical linchpin for tar sands expansion. Over two thirds of proposed tar sands expansion projects have yet to move into their construction phase and then into operation. With Keystone XL still a possibility on the horizon, industry is poised to move many of these projects off the sidelines and into production in order to realize its production goal of 7.8 million bpd by 2030 and 9.1 million bpd by 2035.<sup>98</sup> This plan comes at a tremendous cost to the climate. But to achieve this goal, the tar sands industry needs Keystone XL. Keystone XL is inextricably linked to the tar sands industry’s expansion plans and the significant carbon emissions associated with it.

<sup>97</sup> Wood Mackenzie, Pegasus Global, Company Data, Nomura estimates, Susan Casey-Lefkowitz, *Keystone XL will significantly increase oil industry investment in the tar sands*, Feb. 11, 2014,

[http://switchboard.nrdc.org/blogs/sclefkowitz/keystone\\_xl\\_will\\_significantly.html](http://switchboard.nrdc.org/blogs/sclefkowitz/keystone_xl_will_significantly.html).

<sup>98</sup> CAPP projects WCSB production to grow from 3.2 million bpd in 2012 to 7.8 million in 2030; forecasting continued annual expansion at 258,000 bpd, WCSB production would reach 9.1 million bpd. Canadian Association of Petroleum Producers, *Crude Oil Supply, Market, Forecast*, June 2013, at 37,

<http://www.capp.ca/forecast/Pages/default.aspx>.

### 3. The Final EIS fails to properly analyze and disclose the climate impacts of Keystone XL

Even putting aside all of the factual and methodological errors in the Final SEIS's Market Analysis, the State Department turns NEPA on its head by emphasizing what will happen if Keystone XL is *not* approved rather than focusing on the impacts of the project itself. At the most basic level, the Final SEIS fails to adequately analyze the impacts of Keystone XL compared to the status quo. The State Department must evaluate the "environmental impact of the proposed action," including indirect and cumulative impacts.<sup>99</sup> The Final SEIS concedes that Keystone XL's impacts include indirect climate impacts, and that the total lifecycle emissions associated with the 830,000 bpd of tar sands crude Keystone XL would transport is 147 to 168 MMTCO<sub>2</sub>e per year.<sup>100</sup> The Final SEIS—in a footnote—also refers to a study finding that if the 830,000 bpd of tar sands were additional, it could lead to an increase of 93 MMTCO<sub>2</sub>e per year based on supply and demand considerations.<sup>101</sup>

But instead of admitting that Keystone XL will cause an increase in emissions in those amounts, the Final SEIS repeatedly states, based on the Market Analysis, that "such a change is not likely to occur."<sup>102</sup> These statements are misleading because there is no doubt that Keystone XL would increase greenhouse gas emissions by bringing 830,000 bpd of crude oil to market. In fact, the conclusion—albeit faulty—of the State Department's Market Analysis is not that "such a change is not likely to occur," but rather that such a change is inevitable. The Final SEIS is fatally inconsistent on this point. Similarly, the Final SEIS repeatedly states that global forces, not individual projects, drive tar sands development.<sup>103</sup> But global forces are the drivers of many projects, especially those related to resource extraction. That does not mean the impacts of those individual projects can be ignored during the environmental review process or dismissed as inevitable.

The Final SEIS also claims that the total lifecycle emissions of Keystone XL should be discounted by the amount of carbon pollution emitted by the refining of "reference" crudes in Gulf Coast refineries.<sup>104</sup> To the contrary, the emissions from Keystone XL crudes would be additional. First, U.S. heavy crude refineries are not currently at capacity.<sup>105</sup> Second, even if some Keystone XL crudes would "displace" other heavy crudes currently refined at Gulf Coast refineries, those other crudes may ultimately be refined elsewhere.<sup>106</sup> Indeed, the Final SEIS admits that there is high

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<sup>99</sup> 42 U.S.C. § 4332; 40 C.F.R. §§ 1502.16(b), 1508.7.

<sup>100</sup> Final SEIS at 4.14-36.

<sup>101</sup> *Id.* at 4.14-36.

<sup>102</sup> *Id.* at 4.14-38, -40, -46.

<sup>103</sup> *Id.* at ES-13, 1.4-8, 1.4-131, 1.4-138, 4.14-38 -40 -46.

<sup>104</sup> *Id.* at ES-15, 4.14-5, 1.14-19.

<sup>105</sup> *Id.* at 1.4-22.

<sup>106</sup> *Id.* at 4.14-19 (improperly equating the "U.S. market" with the "world market").

demand for heavy crudes in Asia, which is increasing its refining capacity.<sup>107</sup> The Final SEIS also states that Venezuela is actively trying to market its crudes outside the U.S. and increase its own refining capacity.<sup>108</sup> There is simply no evidence supporting the Final SEIS's conclusion that the heavy crudes Keystone XL would "displace" would stay in the ground.

#### **4. The State Department's climate impacts analysis must include the cumulative impacts of the Alberta Clipper Expansion and other pipeline proposals**

On January 29, 2014, a coalition of sixteen public interest organizations submitted a letter to the State Department requesting the preparation of a supplemental environmental impact statement for Keystone XL.<sup>109</sup> The State Department thereafter released the Final SEIS without addressing these concerns. Therefore, the issues presented in the letter of January 29 remain valid, and that document is incorporated by reference herein.

The letter explained that in addition to the Keystone XL proposal, the State Department is currently evaluating the proposed expansion of the Alberta Clipper pipeline, which would constitute a capacity increase of up to 430,000 bpd of tar sands crude oil to U.S. refineries. Combined, these two proposals would add 1.3 million bpd of capacity. However, the Keystone XL Final SEIS does not consider the cumulative growth-inducing impacts that these two projects would have on Alberta's tar sands, especially their cumulative climate emissions.

NEPA requires agencies to evaluate, in a single environmental impact statement, all cumulative actions.<sup>110</sup> Cumulative actions are defined as actions "which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement."<sup>111</sup> NEPA regulations also require that an EIS consider the cumulative impacts of the proposed federal agency action, which are defined as: "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."<sup>112</sup>

In this case, the State Department failed to analyze the Alberta Clipper expansion as a cumulative project or a cumulative impact. The State Department announced that it

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<sup>107</sup> Final SEIS at 1.4-95.

<sup>108</sup> Final SEIS at 1.4-27.

<sup>109</sup> Request for a Supplemental EIS for the Keystone XL Pipeline Based on the Alberta Clipper Pipeline Expansion and other New Information, January 29, 2014, attached as Exhibit C.

<sup>110</sup> 40 C.F.R. § 1508.25.

<sup>111</sup> *Id.*

<sup>112</sup> *Id.* § 1508.7.

would prepare an EIS for the Alberta Clipper expansion on March 15, 2013, which was before both the Draft and Final versions of the SEIS for Keystone XL were released.<sup>113</sup> The undersigned groups notified the State Department of its obligation to evaluate the cumulative effects that these two projects would have on tar sands development on May 13, 2013<sup>114</sup> and January 29, 2014. Nonetheless, the cumulative impacts of the Alberta Clipper expansion have never been analyzed in the Keystone XL EIS process.<sup>115</sup>

Instead, the Keystone XL Final SEIS narrowly focuses on the Keystone XL proposal and “concludes that the *proposed Project* is unlikely to significantly affect the rate of extraction in oil sands areas.”<sup>116</sup> In other words, the Final SEIS continues to assume that if Keystone XL is not built, some other infrastructure alternative would be built (either pipeline or rail or some combination) that would also have the effect of increasing tar sands development at the same rate as Keystone XL. The State Department uses this notion of “inevitability” to downplay the climate impacts associated with Keystone XL.

President Obama has committed to basing the decision on whether Keystone XL would serve the national interest largely on whether it would significantly exacerbate the problem of climate pollution. A true accounting of Keystone XL’s climate impacts can be assessed only by analyzing the project’s direct, indirect, and cumulative impacts, which include Alberta Clipper. The State Department is now engaged in two separate NEPA processes, preparing EISs for each pipeline. The State Department cannot plausibly argue that other infrastructure projects are inevitable, and that it is powerless to affect the rate of tar sands development in Alberta, when it is simultaneously tasked with deciding whether to approve the second-largest tar sands pipeline proposal, the Alberta Clipper expansion.

An evaluation of the cumulative impacts of Keystone XL and Alberta Clipper together, including the growth-inducing effects that the combined 1.3 million bpd increase in pipeline capacity would have on tar sands development in Alberta, would unquestionably lead to the conclusion that Keystone XL would not serve the national interest.

## **B. Keystone XL Would Facilitate Oil Exports to Overseas Markets and Would Not Lead to Energy Independence**

One of the most common arguments in favor of Keystone XL is that it would enhance the energy security of the U.S. This argument fails upon even the slightest

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<sup>113</sup> See 78 Fed. Reg. 16565, 16566.

<sup>114</sup> Scoping Comments of Sierra Club, et al., to the Department of State on the Proposed Enbridge Energy, Limited Partnership, Line 67 Capacity Expansion Project, May 13, 2013, attached as Exhibit M.

<sup>115</sup> For the reasons set forth in the January 29, 2014 letter, the State Department should prepare a Supplemental EIS to address these issues.

<sup>116</sup> Final SEIS at ES-9 (emphasis added).

scrutiny. The truth is that Keystone XL is an export pipeline *through* the U.S., and is designed to sell Canadian oil products to overseas markets such as China.

Energy security and the impacts of the proposed project on meeting U.S. crude oil and energy demand are key factors that the State Department considers in making its national interest determination.<sup>117</sup> However, most of the Canadian tar sands crude transported by Keystone XL would not necessarily be used in the United States. Instead, the majority of it would be refined at Gulf Coast refineries and the finished products will be exported to foreign markets, especially China.

President Obama has repeatedly acknowledged this fact. In an interview with the New York Times on July 24, 2013, the President stated:

So what we also know is, is that that oil is going to be piped down to the Gulf to be sold on the world oil markets, so it does not bring down gas prices here in the United States. In fact, it might actually cause some gas prices in the Midwest to go up where currently they can't ship some of that oil to world markets.<sup>118</sup>

There are a few reasons why Keystone XL will largely serve as a conduit for exporting Canadian-produced oil. First, the U.S. is not in need of a long-term supply of oil derived from Canadian tar sands. Gasoline demand in the U.S. is declining largely due to increases in vehicle fuel efficiency and the imposition of more stringent fuel efficiency standards.<sup>119</sup> In addition, U.S. production of oil is on the rise for the first time since

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<sup>117</sup> Final SEIS at 1.3-2.3.

<sup>118</sup> President Obama Interview with the New York Times, July 24, 2013, *available at* <http://www.nytimes.com/2013/07/28/us/politics/interview-with-president-obama.html?pagewanted=all>; *see also* Matthew Daly, *Obama: Keystone XL Pipeline not Major jobs Creator*, The Big Story, Mar. 13, 2013, *available at* <http://bigstory.ap.org/article/obama-keystone-xl-pipeline-not-major-jobs-creator>.

<sup>119</sup> *See also* Cambridge Energy Research Associates, <http://www2cera.com/news/details/1,2318,9568,00.html>; International Energy Agency World Energy Outlook 2009 and 2010 and the Medium Term Oil and Gas Market Report 2010 and 2011; Deutsche Bank's Peak Oil Market Reports, *available at* [http://www.petrocapita.com/attachments/128\\_Deutsche%20Bank%20-%20The%20Peak%20Oil%20Market.pdf](http://www.petrocapita.com/attachments/128_Deutsche%20Bank%20-%20The%20Peak%20Oil%20Market.pdf) and <http://bioage.typepad.com/files/1223fm-05.pdf>; *see also* <http://www.whitehouse.gov/the-press-office/2011/07/29/president-obama-announces-historic-545-mpg-fuel-efficiency-standard>.

1970.<sup>120</sup> As a result of flat demand and increased domestic production, refiners have turned to export markets.<sup>121</sup>

Keystone XL would serve the largest export refineries in the U.S. Keystone XL has already committed 76 percent of its capacity to six oil shipping companies desiring access to international markets.<sup>122</sup> Three of the companies have refineries in Port Arthur, Texas (Keystone XL's southern terminus), which is within a Foreign Trade Zone where companies are exempt from customs duties on imports and exports as well as various state and local taxes. Two other shippers are tar sands producers in need of access to export markets, and one is an oil trading firm specializing in export.<sup>123</sup> Valero, Keystone XL's biggest guarantor of oil, having committed 100,000 bpd, or 20 percent of Keystone XL's capacity, until 2030, has a business strategy to refine tar sands oil into diesel and export it from its Gulf Coast refinery into the global market where demand for diesel fuel is much greater than in the U.S.<sup>124</sup>

In 2012, these Texas Gulf Coast refineries exported 60 percent of their gasoline production, some 278,000 bpd.<sup>125</sup> According to Energy Information Administration data compiled by Oil Change International, since 2008 when the application for the permit was first submitted to the State Department, exports of petroleum products from Gulf

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<sup>120</sup> See Oil Change International, *Exporting Energy Security: Keystone XL Exposed*, September 2011, at 4, attached as Exhibit N.

<sup>121</sup> *Id.* at 3 – 4; see also *Drivers Behind Growing U.S. Product Exports & Shrinking Light-Heavy Price Differentials*, available at [http://www.eia.gov/pub/oil\\_gas/petroleum/presentations/2011/aacsummit/aacsummit.pdf](http://www.eia.gov/pub/oil_gas/petroleum/presentations/2011/aacsummit/aacsummit.pdf).

<sup>122</sup> *Exporting Energy Security*, at 9, Exhibit N; see also

<http://priceofoil.org/2011/08/31/report-exporting-energy-security-keystone-xl-exposed/>

<sup>123</sup> *Id.* at 5-6; see also National Energy Board of Canada. Hearing OH-1-2009: TransCanada Keystone Pipeline GP Ltd—Keystone XL Pipeline. Sept. 15, 2009, available at <http://www.neb.gc.ca/livelink.exe?func=ii&objId=550305&objAction=browse&sort=-name&redirect=3>; see also Valero Energy Corporation, August 2011 Investor Presentation, found at: <http://www.valero.com/InvestorRelations/Pages/EventsPresentation.aspx>; Credit Suisse Group Energy Summit. Valero Energy Corporation Transcript, Feb. 10, 2011, available at [http://www.alacrastore.com/research/thomson-streetevents-Valero\\_Energy\\_Corp\\_at\\_Credit\\_Suisse\\_Group\\_Energy\\_Summit-T3707584](http://www.alacrastore.com/research/thomson-streetevents-Valero_Energy_Corp_at_Credit_Suisse_Group_Energy_Summit-T3707584).

<sup>124</sup> *Id.* at 8; see also Valero Energy Corporation. August 2011 Investor Presentation, available at <http://www.valero.com/InvestorRelations/Pages/EventsPresentations.aspx> and Valero statements in investor presentations in Appendix.

<sup>125</sup> Oil Change International, *Keystone XL refineries already exporting 60 percent of their gasoline*, March 2013, available at <http://priceofoil.org/wp-content/uploads/2013/03/OCI.Keystone-XL-refineries-export-60-percent-gasoline-March-2013-FIN3.pdf>.

Coast refineries have increased 172 percent.<sup>126</sup> Many Gulf Coast refineries have access to deep water port facilities, and the region now produces much more product than the U.S. markets can handle. Throughout the 2008-2013 period, the Gulf Coast refineries averaged 73 percent of U.S. oil exports. In 2013, that rose to 76 percent.<sup>127</sup> Thus, it is a fact that the refineries to which Keystone XL will connect are the leading export refineries in the country.

In fact, the numerous environmental impact statements prepared for Keystone XL have confirmed that this pipeline is designed to be an export pipeline. For example, the Draft SEIS discussed the booming petroleum product export trade from Gulf Coast refineries served by the project and noted that most of the products produced at Gulf Coast refineries today are exported:

Export volumes have increased to over 3 mmbpd in the first half of 2012. This increased volume of refined products is being exported by refiners as they respond to lower domestic gasoline demand and continued higher demand and prices in overseas markets (Figure 1.4.4-7). Most of these exports are from PADD 3. However, almost half of PADD 3 refined products go to the domestic market.<sup>128</sup>

In response to comments, the Final EIS discusses only whether Keystone XL would *increase* the amount of refined product exports, which is beside the point. There is little dispute that Keystone XL would supply the country's largest export refineries, and thus the majority of the crude oil transported by Keystone XL would be refined and sold to export markets. The important point is that this means Keystone XL will do little or nothing for U.S. energy security. Keystone XL is simply about increased profits for tar sands producers, shippers, and refiners.

Numerous independent analyses have also concluded that Keystone XL would serve as an export pipeline. For example, another study found that “[a]dditional pipeline infrastructure is important in order to provide an avenue for increasing Alberta heavy crude exports to new or expanding markets in the U.S. and Asia.”<sup>129</sup>

A report by Philip K. Verleger, Jr. of PKVerleger LLC on the economic impacts of the Keystone XL pipeline further establishes that this would be an export pipeline.<sup>130</sup>

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<sup>126</sup> Oil Change International, *Potential Keystone XL refineries continue to increase exports*, January 31, 2014, <http://priceofoil.org/2014/01/31/potential-keystone-xl-refineries-continue-increase-petroleum-product-exports/>.

<sup>127</sup> *Id.*

<sup>128</sup> Draft SEIS at 1.4-15. The Draft SEIS also notes: “In 2011, 1.6 mmbpd of finished petroleum products were supplied to the U.S. market out of a total of 3.5 mmbpd produced in PADD 3 (EIA 2011).” *Id.* at 1.4-15 n.13.

<sup>129</sup> ERCB ST98-2011 Alberta's Energy Reserves 2010 and Supply/Demand Outlook 2011-2020 report, Ex. F at 1-6 (pdf p.37).

<sup>130</sup> Phillip K. Verleger, *The Tar Sands Road to China*, May 2011, attached as Exhibit O.

This report was referenced in the State Department's Final SEIS. The report is based on an assessment of the economic interests of principal crude buyers on the U.S. Gulf, as well as existing relationships between Gulf Coast refiners and buyers. Among the sources relied on in the Verleger report is TransCanada's refining consultant, Purvin & Getz,<sup>131</sup> as well as TransCanada's filing with the NEB.

According to the Verleger report, the Keystone XL pipeline, if built, would facilitate Canadian crude exports to China rather than the United States.<sup>132</sup> This is because buyers for refineries on the Gulf Coast can limit their purchases of Canadian crude, forcing the Canadian producers to seek buyers in overseas markets, most likely China.<sup>133</sup> The completion of Keystone XL would also create a surplus in the U.S. and the Gulf, leading to Canadian oil being exported from the Gulf, with Asia being the clearing market.<sup>134</sup> And other oil producers already have long-term supply agreements with the refiners; hence they will be unable to buy significant quantities of the Canadian crude, and it will be in the interest of these refiners to see Canadian oil shipped to China.<sup>135</sup> Mr. Verleger explains this specifically in regards to Valero, the projected largest buyer of Canadian crude.<sup>136</sup>

In addition to resulting in most of its refined products being exported to foreign markets, Keystone XL raises the distinct possibility that some of the crude oil will be exported as well. Since Keystone XL was first proposed, the North American oil market has been radically altered by a boom in domestic production. The ban on exporting crude oil that has been in place since 1973 does not apply to tar sands crude oil originating in Canada. It does, however, prevent the domestically-produced crude oil from leaving the U.S. and therefore is set to offer U.S. refiners a unique opportunity to take advantage of cheap light oil.<sup>137</sup>

Gulf Coast refineries are recently converting refineries back to light oil processing, even though they have spent billions in the last few years increasing the capacity of those same refineries to process heavy oil. These conversions do not preclude heavy oil refining in these refineries but instead give them the flexibility to optimize which crudes to process according to their needs. This sets these refineries up to play suppliers against each other, thereby creating a buyer's market for Gulf Coast refiners.

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<sup>131</sup> *See id.* at 1.

<sup>132</sup> *Id.* at 2.

<sup>133</sup> *Id.* at 9.

<sup>134</sup> *Id.*

<sup>135</sup> *Id.* at 11.

<sup>136</sup> *Id.* at 14-15.

<sup>137</sup> Lorne Stockman, Oil Change International, *The Keystone XL pipeline will lead to a surplus of heavy crude oil on the Gulf Coast that will be exported*, July 2013, attached as Exhibit P, available at [http://priceofoil.org/content/uploads/2013/07/OCI\\_KXL-Crude-Exports\\_07-11-13.pdf](http://priceofoil.org/content/uploads/2013/07/OCI_KXL-Crude-Exports_07-11-13.pdf).

This fundamentally changes the position of U.S. refiners and enables them to increase their flexibility to refine different quality crudes. The result is a U.S. Gulf Coast market that is much more competitive and flexible than has been described by the State Department's assessment of Keystone XL. Canadian heavy crudes, which are already locked out of over 50 percent of Gulf Coast heavy oil refining capacity, will have to compete with heavy crudes from around the world in a refining market in which refiners have maximum flexibility to play off suppliers against each other.

Building Keystone XL could increase heavy crude supply by over 800,000 bpd, and this additional supply could cause a surplus of heavy oil on the Gulf Coast, requiring regular exports of Canadian heavy oil to balance the market.

The Final SEIS also fails to adequately assess the possibility of crude exports from Keystone XL by focusing solely on the possibility of bitumen blend exports. This ignores the emerging evidence that, at least while West Coast pipelines remain a distant prospect, exports of tar sands crude oil via the U.S. Gulf Coast could be profitable.<sup>138</sup>

TransCanada has repeatedly claimed that Keystone XL would serve the national interest by providing a reliable supply of oil to be used in the U.S., and would reduce our dependence on oil from the Middle East. The fallacy of that position was exposed in December 2011, when Alex Pourbaix, TransCanada's president for energy and oil pipelines, testified under oath before a congressional committee. Rep. Ed Markey (D) of Massachusetts asked Mr. Pourbaix if TransCanada would support a restriction requiring oil products from Keystone XL to be sold only in the U.S. "so that this country realizes all of the energy security benefits your company and others have promised?" Mr. Pourbaix responded simply: "No, I can't do that."<sup>139</sup>

Finally, Keystone XL will not impede U.S. dependence on Mideast oil in any significant way.<sup>140</sup> At present, the U.S. consumes approximately 19.2 million bpd, with projected increases up to 21.5 million bpd by 2030, according to the U.S. Energy Information Administration's 2010 Annual Energy Outlook.<sup>141</sup> Canadian tar sands oil currently supplies 1.73 million bpd and has been projected to increase to 4.42 million bpd by 2030—a small fraction of U.S. demand. These numbers demonstrate that Canadian tar sand supplies, even under increasing supply scenarios, will not come close to meeting U.S. demand now or in the future. In fact, even under a U.S. regime that drastically cuts U.S. oil consumption by approximately 4 million bpd, Canadian tar sands supplies cannot meet U.S. demand.<sup>142</sup> Thus, continued dependence on Mideast oil imports will persist. In

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<sup>138</sup> Citi, "Energy 2020: Independence Day - Global Ripple Effects of the North American Energy Revolution" February 2013, *available at* <https://www.citivelocity.com/citigps/ReportSeries.action>, at 38.

<sup>139</sup> [http://www.nbcnews.com/id/46689167/ns/us\\_news-christian\\_science\\_monitor/t/how-much-would-keystone-pipeline-help-us-consumers/#.UxZsQPldXQh](http://www.nbcnews.com/id/46689167/ns/us_news-christian_science_monitor/t/how-much-would-keystone-pipeline-help-us-consumers/#.UxZsQPldXQh).

<sup>140</sup> Ensys Energy, *Keystone XL Assessment – Final Report* (Dec. 2010) at 38-42.

<sup>141</sup> *Id.* at 39.

<sup>142</sup> *Id.*

fact, energy security cannot be realized even if all oil piped in from Canada's tar sands stays within the U.S. Thus, Keystone XL is not the answer to true energy independence and, as such, cannot be the basis for a State Department national interest determination.

In short, it has become abundantly clear that the purpose of Keystone XL is to serve as an export pipeline sending refined products, and very likely tar sands crude oil, to overseas markets. It would simply not lead to U.S. energy security. The pipeline would transport its toxic, dangerous crude *through* America's heartland, putting our communities and water resources at risk of oil spills, while providing financial benefits only to tar sands producers and shippers, as well as some few Gulf Coast refiners aiming to export the oil.

### **C. Keystone XL Will Generate a Small Number of Jobs and Its Approval Could Harm the Significant Job Creating Potential of the Clean Energy Sector**

Contrary to TransCanada's assertions, Keystone XL would not be a major job creator. The Final SEIS states that the project will require a total of 50 long-term employees. That figure includes only 35 permanent jobs and 15 temporary contractors. Further, during the project's estimated two-year construction timeline, it would generate only 1,950 construction jobs per year.<sup>143</sup>

The number of jobs generated by the Keystone XL is not significant, as President Obama has publicly acknowledged. In an interview with the New York Times, the President stated:

Republicans have said that this would be a big jobs generator. There is no evidence that that's true. And my hope would be that any reporter who is looking at the facts would take the time to confirm that the most realistic estimates are this might create maybe 2,000 jobs during the construction of the pipeline—which might take a year or two—and then after that we're talking about somewhere between 50 and 100 jobs in an economy of 150 million working people.<sup>144</sup>

When questioned about union support for the project, the President further clarified: "They might like to see 2,000 jobs initially. But that is a blip relative to the need."<sup>145</sup> President's Obama's response further puts into perspective how 2,000 potential temporary jobs may be offset by the fact that "oil is going to be piped down to the Gulf to be sold on the world oil markets, so it does not bring down gas prices here in the United States. In fact, it might actually cause some gas prices in the Midwest to go up where currently they can't ship some of that oil to world markets."<sup>146</sup>

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<sup>143</sup> FEIS at 4.10-5, 4.10-15.

<sup>144</sup> *Interview With President Obama*, New York Times, July 27, 2013 at p. 5, available at [http://www.nytimes.com/2013/07/28/us/politics/interview-with-president-obama.html?pagewanted=5&\\_r=0&src=recg](http://www.nytimes.com/2013/07/28/us/politics/interview-with-president-obama.html?pagewanted=5&_r=0&src=recg).

<sup>145</sup> *Id.*

<sup>146</sup> *Id.*

By contrast, there are alternatives for transport other than carbon intense fuels and for the economy as a whole that would generate significantly more new jobs than the proposed project.<sup>147</sup> A study by the Political Economy Research Institute (PERI) concluded that oil generates barely one-fourth of the number of jobs created by green investments from the same amount of investment. “Green infrastructure programs create more jobs per dollar spent because they are less capital intensive, are more labor intensive, and stimulate domestic industries and services.”<sup>148</sup> In fact, today, the clean economy employs 2.7 million American workers, which is greater than the number of people employed by the entire fossil fuel sector. Clean economy jobs also offer more opportunities and better pay for low- and middle-skilled workers than the national economy as a whole.<sup>149</sup>

Importantly, the President’s own “Blueprint for a Clean Energy Future” presents how the U.S. can reduce oil use by about 3.7 million bpd by 2025—a pathway that is consistent with the goals of both job creation and environmental protection.<sup>150</sup> Approval of Keystone XL, which would send a signal that North America intends to build its economic future on dirty fuel rather than clean energy, likely would lead to job loss in other sectors of the economy that are at the cutting edge of the green economy.<sup>151</sup> If the U.S. locked in long-term dependence on the dirtiest of fuels, then green investments will surely suffer and the potential negative impacts on jobs would be significant.<sup>152</sup>

The evidence demonstrates that Keystone XL supporters’ story that the proposed project would result in significant job creation is a myth. The job creation potential of Keystone XL is minimal, and is dwarfed by the jobs generated by a clean energy economy if Keystone XL is denied. On these facts alone, it is not in the national interest to approve it.

#### **D. The Spill Release Risks of Transporting Tar Sands Crude Through Keystone XL Are Too Extreme and Approval Is Not in the National Interest**

As has been extensively detailed in previous comments, without question one of greatest environmental concerns associated with Keystone XL is the risk that TransCanada will spill millions of gallons of heavy diluted bitumen (dilbit) and then fail to respond quickly and thoroughly. TransCanada’s own troubling history, along with an inadequate regulatory structure, the extreme risks of transporting diluted bitumen that is

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<sup>147</sup> Skinner, Lara & Sweeney, Sean, *Pipe Dreams? Jobs Gained, Jobs Lost by the Construction of the Keystone XL*, A Report by Cornell University Global Labor Institute, January 2012, at 33, available at [http://www.ilr.cornell.edu/globalaborinstitute/research/upload/GLI\\_KeystoneXL\\_012312\\_FIN.pdf](http://www.ilr.cornell.edu/globalaborinstitute/research/upload/GLI_KeystoneXL_012312_FIN.pdf).

<sup>148</sup> *Id.*

<sup>149</sup> *Id.* at 34.

<sup>150</sup> *Id.* at 33.

<sup>151</sup> *Id.*

<sup>152</sup> *Id.*

nearly impossible to clean up, and the oil industry's history of major spill disasters all point to the serious risk this project presents.

It is worth listing some of the major, very recent spills that demonstrate the alarming risks of major fossil fuel infrastructure projects:

- BP's Deepwater Horizon explosion in the Gulf of Mexico;
- Enbridge's Line 6b rupture into the Kalamazoo River;
- Exxon's Silvertip Pipeline rupture into the Yellowstone River; and
- Exxon's Pegasus Pipeline rupture into the town of Mayflower, Arkansas.

Spill prevention and response plans that largely allow the operator of Keystone XL to police itself with precious little meaningful oversight, and these tragic recent lessons, make all too clear that Keystone XL's approval would unnecessarily subject the people, communities, precious resources, and wildlife along and downstream of the pipeline route to the risks of a tar sands spill. This is not in the national interest.

### **1. The transportation of diluted bitumen presents higher risks than conventional crude**

The transportation of diluted bitumen, or dilbit, presents higher risks to communities, wildlife, and natural resources than conventional crude. These risks, particularly the risks and impacts after a release of dilbit, differ substantially from conventional crude oil. Unlike conventional crude, tar sands oil is derived from sand that is impregnated with viscous, extra-heavy oil known as bitumen.<sup>153</sup> Bitumen is the valuable component of tar sands because it can be refined into liquid fuels.<sup>154</sup> In many ways, bitumen is as akin to coal as it is oil, a solid mass that cannot be pumped out of the ground under normal conditions.<sup>155</sup> For years, it was considered a junk fuel: too expensive, too dirty, and too impractical to develop.<sup>156</sup>

Because it is so viscous and heavy, tar sands oil must be diluted with lighter hydrocarbons before it can be pumped through a pipeline (this is the derivation of term diluted bitumen).<sup>157</sup> In contrast, conventional crude is a liquid fuel source that flows

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<sup>153</sup> Alberta Energy, *What is Oil Sands?*, <http://www.energy.alberta.ca/OilSands/793.asp> (last visited Mar. 6, 2014).

<sup>154</sup> Congressional Research Service, *Oil Sands and the Keystone XL Pipeline: Background and Selected Environmental Issues*, at 2, Jul. 16, 2012, available at <http://www.fas.org/sgp/crs/misc/R42611.pdf> (last visited Mar. 6, 2014).

<sup>155</sup> The Pembina Institute, *Oilsands, Heavy Crudes, and the EU Fuel-Quality Directive*, Mar. 2012, at 2, available at <http://www.pembina.org/pub/2325>.

<sup>156</sup> Robert Kunzig, *The Canadian Oil Boom*, National Geographic Magazine, Mar. 2009, available at <http://ngm.nationalgeographic.com/2009/03/canadian-oil-sands/kunzig-text> (last visited Mar. 5, 2014).

<sup>157</sup> *About Tar Sands*, Oil Shale & Tar Sands Programmatic EIS, <http://ostseis.anl.gov/guide/tarsands/index.cfm> (last visited Mar. 5, 2014).

readily. As Nancy Kinner, a civil and environmental engineering professor at the University of New Hampshire and co-director of the Coastal Response and Research Center who researches submerged oil, has stated: “[O]ne would not consider tar sands typical crude oil.... It’s not considered crude oil by most people who deal with oil and oil spills.”<sup>158</sup>

Most troublingly, the impacts of spills can be much greater than conventional crude, and effective clean-up methods simply do not yet exist, and may never exist. The State Department’s own Final SEIS is clear about these risks and offers only general statements that lessons of dilbit clean-up are being “learned,” but no conclusions that truly effective clean-up methods have been developed or will be used for Keystone XL.

The State Department correctly outlines some of the immense challenges in attempting to clean up released dilbit. Primarily, bitumen has a propensity to sink in water, attach itself to the bottom of waterbodies, and persist in the effected environment, polluting affected areas indefinitely. For example, the State Department notes that:

A notable difference between dilbit and other forms of crude is its capacity to precipitate out in water. After a period of several days in water, the diluent in dilbit will eventually volatilize into air or dissolve into water, leaving the heavy bitumen behind to sink or become suspended. This could occur with dilbit more so than with other forms of crude due to the higher percentage of heavy compounds present (Tsaprailis 2013).<sup>159</sup>

The State Department further acknowledges that unlike conventional crude, dilbit will not readily biodegrade, concluding that:

Dilbit...is largely comprised of branched hydrocarbon chains and heavy hydrocarbons, which are less readily biodegradable [than conventional crude]. A biodegradation study conducted by the USEPA in response to the 2010 Enbridge dilbit spill in the Kalamazoo River in Michigan concluded that only 25 percent of the residual hydrocarbons impacting the river could be reasonably removed by natural attenuation (USEPA 2013).<sup>160</sup>

The Final SEIS further finds that, “Due to the capacity for dilbit to precipitate out in water and its resistance to biodegradation, in the event of a release to a waterbody, more difficult cleanup scenarios (e.g., dredging) for dilbit may be expected than with

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<sup>158</sup> Lisa Song, *A Dilbit Primer: How It's Different from Conventional Oil*, Inside Climate News, June 26, 2012 (hereinafter *A Dilbit Primer*), available at <http://insideclimatenews.org/news/20120626/dilbit-primer-diluted-bitumen-conventional-oil-tar-sands-Alberta-Kalamazoo-Keystone-XL-Enbridge>.

<sup>159</sup> Final SEIS at 3.13-10.

<sup>160</sup> *Id.*

other types of crude oil”<sup>161</sup> and that sunken bitumen could be “a continual source of oil.”<sup>162</sup>

The State Department elaborates on the clean-up concerns regarding dilbit. The Final SEIS concludes that, “The release of dilbit to a river or other aquatic environment introduces the potential for additional impacts and additional recovery challenges for responders of such an event to the environment.”<sup>163</sup> The Final SEIS then describes the challenges presented by dilbit and the fact that how to handle these challenges is not fully understood:

As with some other types of oil, dilbit would not float on water indefinitely. The dilbit-specific characteristics, water temperature, and particulate load in the water could result in oil being submerged in the water column. Submerged oil could be suspended in the water column, suspended just above the river bed, or intermixed with sediment and trapped in the river bed and shoreline. In flowing waters, the spreading of the oil in three dimensions creates many challenges for responders to minimize the impacts of the release. Consideration of submerged oil in a flowing water environment would require to a certain extent different response action planning and response equipment to contain and recover the submerged oil. *Dilbit intermixed with sediment and trapped in the river bed and shoreline results in a persistent source of oil and has the potential to present additional response and recovery challenges. The understanding and adaptation of response and recovery techniques to dilbit spills in flowing water scenarios continues along the Kalamazoo River in response to the 2010 Enbridge release near Marshall, Michigan.*<sup>164</sup>

The State Department further states that:

*Dilbit intermixed with sediment could persist for years.* A biodegradation study conducted by the USEPA in response to the 2010 Enbridge dilbit spill in the Kalamazoo River in Michigan concluded that only 25 percent of the residual hydrocarbons impacting the river could be reasonably removed by natural attenuation (USEPA 2013).<sup>165</sup>

The implications of a spill can be catastrophic. The State Department outlines the immense impacts to health from a tar sands spill and its long-term persistence in the environment. They include:

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<sup>161</sup> *Id.*

<sup>162</sup> *Id.* at 3.13-3.

<sup>163</sup> *Id.* at 4.13-84.

<sup>164</sup> *Id.* at 4.13-88 (emphasis added).

<sup>165</sup> *Id.* at 4.13.-112 (emphasis added).

- Toxic effects from benzene, which is a known carcinogen and long-term exposure to which can adversely affect bone marrow and cause anemia, leukemia, and possibly death.
- Long-term exposure to toluene, which may affect the nervous system or kidneys.
- Long-term exposure to ethylbenzene, which has been observed in animal studies to cause damage to the kidneys, inner ear, and hearing.
- Long-term exposure to xylene, which may cause impaired reaction time, impaired concentration and memory, and changes in the liver and kidneys.
- Long-term exposure to H<sub>2</sub>S, which may cause permanent or long-term effects including headaches, impaired attention span, impaired memory, or impaired motor function.
- Symptoms of long-term exposure to PAHs, which may include chronic bronchitis, chronic cough irritation, bronchogenic cancer, and dermatitis.<sup>166</sup>

Providing little comfort, the State Department adds that, “Long-term exposure effects of crude oil have not been researched . . . rigorously.”<sup>167</sup> This means that the residents of already affected areas, like Marshall, Michigan and Mayflower, Arkansas, are serving as guinea pigs for determining the long-term impact of a tar sands spill. In addition, there is evidence that the various toxic substances in tar sands oil bioaccumulate in humans and wildlife, so their harmful impacts continue with time.<sup>168</sup>

The National Academy of Sciences (NAS) released a study in 2013 considering the impacts of diluted bitumen transport on pipelines, focusing particularly on corrosion caused by diluted bitumen.<sup>169</sup> While NAS failed to find pipeline failures unique to diluted bitumen, the NAS study neglected to compare the risks of diluted bitumen to the risks associated with lighter conventional crudes, instead focusing only on the similarities between heavier crude oils and diluted bitumen.<sup>170</sup> This flawed comparison minimizes the scope of the study and leaves any conclusions regarding diluted bitumen lacking.

The U.S. Environmental Protection Agency (EPA) has also expressed serious concerns—stated early in the Keystone XL EIS process and still not adequately addressed—regarding the fact that there is insufficient information about the chemical

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<sup>166</sup> *Id.* at 3.13-30.

<sup>167</sup> *Id.* at 3.13-30.

<sup>168</sup> *Canada’s Tar Sands*, Nature Canada,

[http://www.naturecanada.ca/tarsands\\_habitat.asp](http://www.naturecanada.ca/tarsands_habitat.asp) (last visited Mar. 5, 2014).

<sup>169</sup> See National Research Council. *TRB Special Report 311: Effects of Diluted Bitumen on Crude Oil Transmission Pipelines*. Washington, DC: The National Academies Press, 2013.

<sup>170</sup> Anthony Swift, *Diluted bitumen tar sands study answers the wrong question*, NRDC Switchboard, June 25 2013,

[http://switchboard.nrdc.org/blogs/aswift/diluted\\_bitumen\\_tar\\_sands\\_stud.html](http://switchboard.nrdc.org/blogs/aswift/diluted_bitumen_tar_sands_stud.html).

composition of the diluted bitumen, since the chemical properties of the diluents are kept secret by the industry. This is unacceptable and a problem that persists. In regard to this concern, EPA has noted that:

[I]n order for the bitumen to be transported by the pipeline, it will be either diluted with cutter stock (the specific composition of which is proprietary information to each shipper) or an upgrading technology is applied to convert the bitumen to synthetic crude oil.... Without more information on the chemical characteristics of the diluent or the synthetic crude, it is difficult to determine the fate and transport of any spilled oil in the aquatic environment. For example, the chemical nature of the diluent [sic] may have significant implications for response as it may negatively impact the efficacy of traditional floating oil spill response equipment or response strategies. In addition, the Draft EIS addresses oil in general and as explained earlier, it may not be appropriate to assume this bitumen oil/synthetic crude shares the same characteristics as other oils.... We recommend that a more complete chemical/physical profile of the oil and details describing the processing activities be provided....<sup>171</sup>

EPA echoed these comments in its 2011 letter commenting on the Draft SEIS for Keystone XL:

With regard to the chemical nature of the diluents that are added to reduce the viscosity of bitumen, the SDEIS states “the exact composition may vary between shippers and is considered proprietary information” (SDEIS, pg. 3-104). We believe an analysis of potential diluents is important to establish the potential health and environmental impacts of any spilled oil, and responder/worker safety, and to develop response strategies. In the recent Enbridge oil spill in Michigan, for example, benzene was a component of the diluent used to reduce the viscosity of the oil sands crude so that it could be transported through a pipeline. Benzene is a volatile organic compound, and following the spill in Michigan, high benzene levels in the air prompted the issuance of voluntary evacuation notices to residents in the area by the local county health department.<sup>172</sup>

The Final SEIS still fails to discuss the specific properties of the dilbit that would be transported, stating that the information is a trade secret.<sup>173</sup> The Final SEIS further acknowledges that “the chemical make-up of the diluents can vary greatly from source to

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<sup>171</sup> Comment Letter from Cynthia Giles, Assistant Administrator for Enforcement and Compliance Assurance, US EPA to Jose W. Fernandez and Kerry-Ann Jones, U.S. Department of State, at 2, July 16, 2010.

<sup>172</sup> Comment Letter from Cynthia Giles, Assistant Administrator for Enforcement and Compliance Assurance, US EPA to Jose W. Fernandez and Kerry-Ann Jones, U.S. Department of State, at 3, June 6, 2011.

<sup>173</sup> See Final SEIS at 3.13-7.

source.”<sup>174</sup> In other words, despite concerns expressed by EPA, the basic question regarding the chemical composition of what communities, people, and wildlife along the route of Keystone XL will be subjected to remains unanswered.

Given the severe impacts that are already known or suspected, it is irresponsible to subject people, wildlife, and communities to the risks of a major bitumen release where proper clean-up methods have not been, and may not ever be, developed, and where the likelihood of long-term toxic persistence is high because bitumen does not readily break down over time.

## **2. The lessons from the Kalamazoo River spill and disaster in Mayflower, Arkansas demonstrate the extreme risks of a tar sands spill**

The substantial and unacceptable risks of tar sands oil on the environment have been tragically illustrated by two recent spills: the Kalamazoo River spill and the tar sands spill in Mayflower, Arkansas.<sup>175</sup> The July 2010 Kalamazoo River spill especially illustrates the immense and long-term damage that a tar sands spill can cause. It also serves as a poster child for the complete inadequacy of current regulations and the dangers of relying on the company responsible for the disaster to prevent and respond to it.

On July 26, 2010, Enbridge reported that its 30-inch diameter 6B Pipeline had ruptured and released an estimated 840,000 gallons of crude oil (approximately 94 semi tanker trucks)<sup>176</sup> of diluted bitumen in a rural area about one mile south of Marshall, Michigan.<sup>177</sup> Investigation showed that the oil flowed into a culvert, which led to Talmadge Creek, then followed the creek to the Kalamazoo River, ultimately contaminating about 30 to 35 miles of the River before it was contained. After the spill, the River flooded and stranded oil on floodplains, wetlands, backwaters, and islands. The spill threatened to flow all the way to Lake Michigan, which would have fouled many more miles of river, as well as the lake’s shoreline.

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<sup>174</sup> *Id.* at 3.13-8.

<sup>175</sup> Environmental Protection Agency, Region V, *Pollution/Situation Report #166*, Oct. 29, 2012, *available at* [http://www.EPA.gov/enbridgespill/pdfs/sitreps/20121025\\_sitrep\\_166.pdf](http://www.EPA.gov/enbridgespill/pdfs/sitreps/20121025_sitrep_166.pdf).

<sup>176</sup> This number has varied some, with 840,000 gallons being at the low end.

<sup>177</sup> National Transportation Safety Board, NTSB/PAR-12/01, Pipeline Accident Report: Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release, Marshall, Michigan, July 25, 2010 xii (hereinafter NTSB Report), Jul. 10, 2012, *available at* <http://www.nts.gov/doclib/reports/2012/par1201.pdf>; U.S. House of Representatives, Committee on Transportation and Infrastructure, Staff Report for September 15, 2010, Hearing on Enbridge Pipeline Oil Spill in Marshall, Michigan, September 14, 2010 (House Staff Memo).

In the Kalamazoo River, the heavy bitumen sank to the river bottom, coating wildlife, rocks and sediment.<sup>178</sup> At the time of the Kalamazoo spill, transparency regarding clean-up and response was critically lacking. Enbridge's CEO denied that the pipeline was even carrying tar sands oil.<sup>179</sup> As investigations began to reveal that the substance was indeed tar sands, the CEO finally admitted that the leak was tar sands oil.<sup>180</sup>

When the spill occurred, the heavy bitumen sank to the river bottom and the lighter chemicals used to dilute the bitumen evaporated.<sup>181</sup> Resulting toxic fumes forced local residents to flee from their homes, and over 300 people suffered from immediate illness due to benzene exposure.<sup>182</sup> A report filed by the Michigan Department of Community Health found that nearly 60 percent of individuals living in the vicinity of the Kalamazoo River spill experienced respiratory, gastrointestinal, and neurological symptoms consistent with acute exposure to benzene and other petroleum-related chemicals.<sup>183</sup> The long-term consequences for these people who were exposed to benzene and other compounds contained in the diluted bitumen remain unknown—a fact acknowledged by the State Department. It took several weeks for officials to be informed that the spilled substance was diluted bitumen: up to that point they did not even know the name of the substance they were responding to because federal law does not require pipeline operators to reveal the specific contents of their pipelines, and Enbridge did not initially volunteer this information.<sup>184</sup>

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<sup>178</sup> NTSB Report; David Sassoon, *Crude, Dirty and Dangerous*, New York Times, Aug. 20 2012, available at [http://www.nytimes.com/2012/08/21/opinion/the-dangers-of-diluted-bitumen-oil.html?\\_r=0](http://www.nytimes.com/2012/08/21/opinion/the-dangers-of-diluted-bitumen-oil.html?_r=0).

<sup>179</sup> *Michigan Oil Spill Increases Concern Over Tar Sands Pipelines*, OnEarth, Aug. 6, 2010, <http://www.onearth.org/article/michigan-oil-spill-tar-sands-concerns>.

<sup>180</sup> *Michigan Oil Spill: The Tar Sands Name Game (and Why It Matters)*, OnEarth (Aug. 12, 2010), <http://www.onearth.org/node/2410>.

<sup>181</sup> David Sassoon, *Crude, Dirty and Dangerous*, New York Times, August 20, 2012, available at [http://www.nytimes.com/2012/08/21/opinion/the-dangers-of-diluted-bitumen-oil.html?\\_r=1](http://www.nytimes.com/2012/08/21/opinion/the-dangers-of-diluted-bitumen-oil.html?_r=1).

<sup>182</sup> NTSB, *Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release*, July 10, 2012, [http://www.nts.gov/news/events/2012/marshall\\_mi/index.html](http://www.nts.gov/news/events/2012/marshall_mi/index.html).

<sup>183</sup> Martha Stanbury et al., *Acute Health Effects of the Enbridge Oil Spill, Lansing, MI: Michigan Department of Community Health*, November 2010, [http://www.michigan.gov/documents/mdch/enbridge\\_oil\\_spill\\_epi\\_report\\_with\\_cover\\_1\\_22\\_10\\_339101\\_7.pdf](http://www.michigan.gov/documents/mdch/enbridge_oil_spill_epi_report_with_cover_1_22_10_339101_7.pdf).

<sup>184</sup> David Sassoon, *Crude, Dirty and Dangerous*, New York Times, August 20, 2012, available at [http://www.nytimes.com/2012/08/21/opinion/the-dangers-of-diluted-bitumen-oil.html?\\_r=1](http://www.nytimes.com/2012/08/21/opinion/the-dangers-of-diluted-bitumen-oil.html?_r=1).

The response to this diluted bitumen spill is far from complete, and may never be complete.<sup>185</sup> Cleanup costs are at almost one *billion* dollars and rising, making Kalamazoo by far the most expensive pipeline oil spill in U.S. history.<sup>186</sup> The response to the Kalamazoo River spill has required more than 2,000 personnel, over 150,000 feet of boom, 175 heavy spill response trucks, 43 boats, and 48 oil skimmers.<sup>187</sup> The river may never be restored.<sup>188</sup> Despite already spending 18 times more than would be spent on a spill of conventional oil, cleanup crews are still working to remove residual oil from the riverbed and wetlands.<sup>189</sup> On October 3, 2012, EPA issued an order to Enbridge demanding that the company undertake additional efforts to continue to “remove and mitigate the effects of oil discharged.”<sup>190</sup> On March 14, 2013, EPA ordered dredging of the river to contain further contamination from lingering oil.<sup>191</sup> The response to this spill is likely to continue for many years. As reported in a *New York Times* piece about the Kalamazoo spill, the “accident underscored not only how different dilbit is from conventional oil, but how unprepared we are for the impending flood of imports.”<sup>192</sup>

In the aftermath of the Kalamazoo Spill, statements made by EPA give context to the above conclusions that dilbit presents vastly different challenges from conventional crude. For instance, EPA’s On-Site Spill Coordinator Mark Durno stated that, “The submerged oil is a real story-it’s a real eye-opener. ... In larger spills we’ve dealt with

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<sup>185</sup> Sandy Smith, *EPA: More Work Needed to Clean up Enbridge Oil Spill in Kalamazoo River*, EHS Today, Oct. 5, 2012, available at <http://ehstoday.com/environment/epa-more-work-needed-clean-enbridge-oil-spill-kalamazoo-river>.

<sup>186</sup> See NTSB Press Release, *supra*.

<sup>187</sup> Plains Justice, *The Northern Great Plains at Risk: Oil Spill Planning Deficiencies in Keystone Pipeline System*, Nov. 23, 2010, at 9, available at [http://plainsjustice.org/files/Keystone\\_XL/Keystone%20Pipeline%20Oil%20Spill%20Response%20Planning%20Report%202010-11-23%20FINAL.pdf](http://plainsjustice.org/files/Keystone_XL/Keystone%20Pipeline%20Oil%20Spill%20Response%20Planning%20Report%202010-11-23%20FINAL.pdf).

<sup>188</sup> See U.S. Environmental Protection Agency, Press Release, *EPA Orders Enbridge to Perform Additional Dredging to Remove Oil from Kalamazoo River*, Mar. 14, 2013, <http://yosemite.epa.gov/opa/admpress.nsf/0/19CDD21822F762CD85257B2E006ECBB9>.

<sup>189</sup> National Wildlife Federation, *Importing Disaster, the Anatomy of Enbridge’s Once and Future Oil Spills*, 2012, at 3, available at [http://www.nwf.org/~media/PDFs/Global-Warming/Reports/NWF\\_EnbridgeOilSpill\\_WEB\\_Final.ashx](http://www.nwf.org/~media/PDFs/Global-Warming/Reports/NWF_EnbridgeOilSpill_WEB_Final.ashx).

<sup>190</sup> EPA Region 5, *In the Matter of Enbridge et al., Order for Removal Under Section 311(c) of the Clean Water Act, Docket No: CWA (2012)*, available at <http://xa.yimg.com/kq/groups/468332/45287179/name/20121003-proposed-order-for-removal.pdf>.

<sup>191</sup> See U.S. Environmental Protection Agency, Press Release, *EPA Orders Enbridge to Perform Additional Dredging to Remove Oil from Kalamazoo River*, Mar. 14, 2013, <http://yosemite.epa.gov/opa/admpress.nsf/0/19CDD21822F762CD85257B2E006ECBB9> (last visited Mar. 7, 2014).

<sup>192</sup> David Sasso, *Crude, Dirty and Dangerous*, *New York Times*, August 20, 2012, available at [http://www.nytimes.com/2012/08/21/opinion/the-dangers-of-diluted-bitumen-oil.html?\\_r=1](http://www.nytimes.com/2012/08/21/opinion/the-dangers-of-diluted-bitumen-oil.html?_r=1).

before, we haven't seen nearly this footprint of submerged oil, if we've seen any at all."<sup>193</sup> Similarly, Susan Hedman, EPA Region 5 Administrator, said in a press interview that, "Capturing and cleaning up this heavy oil is a unique challenge. No one at the EPA can remember dealing with this much submerged oil in a river."<sup>194</sup> Ralph Dollhopf, EPA incident commander for Kalamazoo, stated that when Enbridge's pipeline ruptured, the lighter part of the oil evaporated, "making the heavy mixture even more heavy as it moved down the creek and down the river; it had an increased tendency to sink.... It's the nature of the mixture of the oil that caused it to sink."<sup>195</sup>

The tragic consequences of the Kalamazoo spill were detailed in a July 2012 report by the National Transportation Safety Board (NTSB).<sup>196</sup> The NTSB report was highly critical of Enbridge, the pipeline operator, and the existing federal regulatory framework. The NTSB found that, "[p]ervasive organizational failures by a pipeline operator along with weak federal regulations led to a pipeline rupture and subsequent oil spill in 2010."<sup>197</sup> The NTSB report shows precisely why allowing companies to be in charge of their own clean-up is a recipe for disaster. Not only was the pipeline rupture not addressed for over 17 hours, Enbridge's operators twice pumped additional oil through the pipeline, constituting 81 percent of the total release.<sup>198</sup> In other words, the systems that were in place to prevent such a spill failed catastrophically. This NTSB report, while mentioned in the State Department's Final SEIS, was barely discussed, and the State Department did not appear to rely on it to any meaningful extent.

The fact of the matter is that while Kalamazoo has taught us some lessons, the biggest lesson is that we are unprepared for a spill like Kalamazoo. There is still no indication that dilbit, which would be traveling along the Keystone XL pipeline, can be effectively cleaned up, and that TransCanada would prove any more adept or responsive to the emergency than Enbridge. There has also been no change in the inadequate regulatory structure that in part allowed the Kalamazoo disaster to happen. Hoping next time will be different is not a proper strategy to protect resources like the Missouri River, Prairie Pothole Region, Ogallala Aquifer, and the thousand waterbodies this pipeline will transect.

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<sup>193</sup> OnEarth blog, July 25, 2011 <http://www.onearth.org/article/tar-sands-oil-plagues-a-michigan-community>.

<sup>194</sup> Elizabeth McGowan and Lisa Song, *The Dilbit Disaster: Inside The Biggest Oil Spill You've Never Heard Of, Part 3*, InsideClimate News, June 28, 2013, <http://insideclimatenews.org/news/20120628/dilbit-disaster-diluted-bitumen-oil-spill-enbridge-6b-michigan-epa-kalamazoo-river?page=show>.

<sup>195</sup> Blog on Stop Tar Sands Oil Pipelines, October 11, 2011, <http://stoptarsands.org/public-comment-submitted-u-s-national-interest-determination>; see also *The Kalamazoo Gazette*, July 24, 2011, [http://www.mlive.com/news/kalamazoo/index.ssf/2011/07/kalamazoo\\_river\\_oil\\_spill\\_res\\_p.html](http://www.mlive.com/news/kalamazoo/index.ssf/2011/07/kalamazoo_river_oil_spill_res_p.html)

<sup>196</sup> *Id.*

<sup>197</sup> NTSB Press Release, *supra*.

<sup>198</sup> NTSB Report, *supra*, at xii.

### 3. The Mayflower, Arkansas disaster

The Kalamazoo River is not the only major tar sands spill to plague an American community. On March 29, 2013, a pipe carrying dilbit ruptured in a small neighborhood in Mayflower, Arkansas, spilling approximately 210,000 gallons of dilbit through the streets into nearby wetlands and streams, and may have contaminated portions of Lake Conway,<sup>199</sup> one of the State's most prized warm water fisheries. The pipeline is the Pegasus Pipeline owned by the ExxonMobil Pipeline Company.

As with the Michigan spill, there was some question at the time of the spill about whether or not it was bitumen that was spilled. It was not until April 10, 2013 that the company admitted in a letter that the material spilled was indeed bitumen.<sup>200</sup> The incident has forced 22 families from their homes.<sup>201</sup> It has also caused numerous health problems. As detailed in a recent piece in the *New Republic*:

Ever since Exxon Mobil's Pegasus pipeline burst in March and spilled an estimated 210,000 gallons of Canadian heavy crude oil two miles from [Jason Thompson's] house, he's had headaches of preternatural intensity, so bad they wake him up in the middle of the night. He has nosebleeds, and hemorrhoids even though he's only 36; there's a rash on his neck that has only gotten worse in the eight months since the spill; and some days he feels so weak that he can hardly get out of bed. He estimates that he has lost almost 35 pounds since the rupture, falling from a fit 220 down to 185. When he went to see a doctor in April, he was told he has a mysterious spot on one lung—but he hasn't been able to afford to go back.

Hundreds of people in this working-class town of 2,200 have complained of symptoms like Thompson's. And their maladies—respiratory disorders,

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<sup>199</sup> See Jacob Kauffman, *Tar Sands in Lake Conway*, KUAR Public Radio, Apr. 23, 2013, available at <http://ualrpublicradio.org/post/tar-sands-oil-lake-conway>. There is a dispute as to whether tests in the lake were adequate, as they focused on the water itself, rather than the bottom materials. Some have reported oil contamination in the lake. Indeed, the Arkansas Attorney General stated that because a cove of Lake was deemed contaminated, the lake was contaminated because “the cove is part of Lake Conway.” <http://insideclimateneews.org/news/20130410/cove-where-exxon-oil-has-been-found-part-lake-conway>.

<sup>200</sup> Letter from Richard E. Byrne, ExxonMobil Corporation to Mr. Edwin Quinones, Esq., U.S. E.P.A. Region 6, Apr. 10, 2013, attached as Exhibit T (“ExxonMobil considers the oil released on March 29, 2013 to be conventionally produced Wabasca Heavy crude. ExxonMobil was advised today by the Government of Alberta's Energy Resources Conservation Board that Canadian producers report their production of Wabasca Heavy as bitumen.”).

<sup>201</sup> E.g., Maria Gallucci, *Dilbit or Not? Wabasca Crude Is the Question*, Inside Climate News, Apr. 18, 2013, available at <http://insideclimateneews.org/news/20130418/dilbit-or-not-wabasca-crude-question>.

nausea, fatigue, nosebleeds, bowel issues, throbbing headaches—echo the ones that appeared in Marshall, Michigan, where an Enbridge Energy pipeline burst in 2010. The two pipelines were carrying the same kind of oil: a heavy crude, or bitumen[.]<sup>202</sup>

As with the tragedy in Michigan, in Mayflower, the owner of the pipeline, Exxon, demonstrated it could not be trusted to protect the public. In a November 6, 2013 letter of probable violations sent to Exxon, the Pipeline and Hazardous Materials Safety Administration (PHMSA) found nine probable violations by Exxon.<sup>203</sup> This letter makes clear that a long-standing problem with a seam that caused the accident should have been apparent to Exxon for some time. PHMSA stated that:

The pipe manufacturing information, fracture toughness, and hydrostatic testing failure history of the Youngstown pre-1970 low frequency ERW pipe in the Patoka to Corsicana segments of the Pegasus Pipeline *provided more than adequate information for the pipe to be considered susceptible to seam failure*. Further, the operator did not present an acceptable engineering analysis to PHMSA to demonstrate that the pre-1970 ERW pipe in the Pegasus Pipeline was not susceptible to seam failure.<sup>204</sup>

The letter detailed basic safety procedures Exxon failed to follow, many of which concern oversight of the seam that failed.<sup>205</sup> These failures were long-standing. Testing from as far back as 1991 demonstrated the existence of the defect that eventually led to the spill twenty-four years later. Thus, the problem was left unaddressed by Exxon for almost a quarter century until the line burst. Additionally, there is speculation that pressure cycling, which is associated with transportation of dilbit, may have caused this long-standing defect in the pipe to finally cause a rupture.<sup>206</sup>

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<sup>202</sup> Nora Caplan-Bricker, *This Is What Happens When a Pipeline Bursts in Your Town: Conflicted about Keystone? Consider the horrific impact of an oil spill in Arkansas*, New Republic, Nov. 18, 2013, available at <http://www.newrepublic.com/article/115624/exxon-oil-spill-arkansas-2013-how-pipeline-burst-mayflower>.

<sup>203</sup> U.S. Dep't of Transportation, Pipeline and Hazardous Materials Safety Administration, Notice of Probable Violation and Proposed Compliance Order from R.M. Seely, Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration to Mr. Gary W. Pruessing, President, ExxonMobil Pipeline Company, LLC, Nov. 6, 2013, at 2, available at [http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Enforcement%20Notices/420135027\\_NOPV%20&%20PCO\\_11062013.pdf](http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Enforcement%20Notices/420135027_NOPV%20&%20PCO_11062013.pdf).

<sup>204</sup> *Id.* at 2 (emphasis added).

<sup>205</sup> *See id.*

<sup>206</sup> Elizabeth Douglas, *Experts say dilbit could have created pressure swings, hydrogen cracks in Pegasus rupture*, Arkansas Times, Sept. 12, 2013, available at <http://www.arktimes.com/arkansas/experts-say-dilbit-could-have-created-pressure-swings-hydrogen-cracks-in-pegasus-rupture/Content?oid=3037915&showFullText=true>.

Exxon may well have been betting the costs of dealing with a spill were less than the costs of taking measures to prevent one. As a result of these probable violations, Exxon incurred just a \$2.6 million fine from PHMSA for the incident, just 0.0003 percent of the company's \$7.8 billion profit in just the third quarter of 2013.<sup>207</sup> Regardless, Mayflower, Arkansas stands as yet another tragic example of what happens when pipeline companies shipping tar sands are trusted to police themselves.

#### **4. Inadequate measures are in place to protect the public from a spill of dilbit from Keystone XL**

The State Department analysis of spill prevention methods consists essentially of promises by TransCanada and an inadequate regulatory structure. These have proven tragically insufficient in the past and there is nothing in the Final SEIS to conclude this time will be different, especially in light of TransCanada's suspect safety record.

As detailed in the NTSB report, and as also detailed extensively in comments to the Draft SEIS, the current regulatory structure fails to account for the unique risks of transporting and responding to tar sands spills, and fails to protect the public and the environment from diluted bitumen spill risks. There is simply not an adequate regulatory structure to deal with the extreme risks of dilbit.

The NTSB account of the Kalamazoo spill is sobering and identifies key failures in the regulation of the diluted bitumen pipeline that spilled. The NTSB cited "[i]nsufficient public awareness and education," "weak regulation," and "ineffective oversight of pipeline integrity management programs, control center procedures, and public awareness" as factors in the Kalamazoo disaster.<sup>208</sup> The NTSB specifically found that the regulatory oversight for the pipeline was "inadequate."<sup>209</sup> It also faulted "inadequate regulatory requirements for facility response plans," the inadequacy of the "facility response plan to ensure adequate training of the first responders and sufficient emergency response resources allocated to respond," and "inadequate review and approval of Enbridge's facility response plan that failed to verify that the plan content was accurate and timely" for the spill.<sup>210</sup> The NTSB also concluded that it is "improbable that PHMSA would be able to perform an adequate review of facility response plans or enforce Federal requirements that pipeline operators identify and ensure that adequate response resources are available to respond to worst-case discharges."<sup>211</sup> Put another way, PHMSA's response resource regulations are unenforceable. The NTSB also found that, "[e]ssentially, the regulations allow the pipeline industry to dictate the requirements of an adequate spill response and to determine whether those requirements have been met."<sup>212</sup> As a consequence, communities along the pipeline route can expect no greater

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<sup>207</sup> Caplan-Bricker, *supra*.

<sup>208</sup> NTSB Report, *supra*, at xii.

<sup>209</sup> *Id.* at xiii.

<sup>210</sup> *Id.* at xiii-xiv.

<sup>211</sup> *Id.*

<sup>212</sup> *Id.* at 113.

amount of spill response resources from TransCanada than those that TransCanada believes is due them.

The NTSB additionally found that PHMSA has only 1.5 full-time employees managing about 450 response plans, far fewer than either the Coast Guard or EPA, which also have spill response responsibilities. This is true despite the fact that PHMSA receives significantly greater funding from the Oil Spill Liability Trust Fund,<sup>213</sup> which, ironically, is not funded by dilbit shippers such as TransCanada.<sup>214</sup> The NTSB also found that PHMSA had approved Enbridge's Facility Response Plan (FRP) within two weeks of its receipt without comment and that only a " cursory " review of the plan could have been conducted within this time period.<sup>215</sup>

The NTSB Line 6b Report also found that PHMSA does "not perform on-site audits to verify the content and adequacy of plans before approving them. In contrast, both the Coast Guard and EPA conduct on-site audits and plan reviews after the initial review and approval of the submitted plan."<sup>216</sup> Thus, PHMSA appears to do little more than bean count whether an FRP has all required parts, rubber stamp whatever pipeline companies submit with no meaningful review process, and then ignore FRPs until the process repeats itself.

This weak and inadequate regulatory structure—which is not currently being addressed or revised by PHMSA—is essentially all that serves to protect the people and places subject to severe risks from Keystone XL and a potentially major release of tar sands crude.

##### **5. Risks from proposed pumping of Bakken oil have not been considered in light of real concerns following a North Dakota train fire**

The Keystone XL Final SEIS casually mentions that Bakken oil may also be pumped through the pipeline. This passing reference fails to evaluate the very real concerns associated with Bakken oil. The transport of this oil is incredibly dangerous and against the national interests of the United States.

On December 30, 2013 a train transporting Bakken oil in North Dakota collided with a derailed train, erupting in flames and causing evacuations of local residents which lasted for almost a day.<sup>217</sup> One problem with Bakken oil is that emits gases that may

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<sup>213</sup> *Id.* at 113.

<sup>214</sup> I.R.S. National Office Technical Memorandum 201120019, Jan. 12, 2011, at 3 ("Accordingly, tar sands imported into the United States from Country by Company are not subject to the excise tax on petroleum imposed by § 4611.")

<sup>215</sup> NTSB Report, *supra*, at 113.

<sup>216</sup> *Id.*

<sup>217</sup> Jim Snyder, *North Dakota Train Fire Adds Fuel to Keystone XL Debate*, Bloomberg, Jan. 1 2014, <http://www.bloomberg.com/news/2013-12-31/north-dakota-train-fire-adds-fuel-to-keystone-xl-debate.html>.

cause oil-train explosions, and is more highly volatile and several times more combustible than other oils.<sup>218</sup> While Bakken crude is a lighter oil, the potential impacts of Bakken oil transport on Keystone XL are minimized in the Final SEIS. Without knowing more about why Bakken oil is combustible and how it will behave in the Keystone XL pipeline it is against the best interests of the United States to allow construction of the pipeline.

## **6. TransCanada’s safety record shows it cannot be relied on to protect people and places at risk**

With an inadequate regulatory structure that essentially relies on TransCanada to police itself, it is very relevant to consider TransCanada’s history in determining whether or not Keystone XL is in the national interest. As detailed in previous comments to the Draft SEIS and outlined in the Final SEIS, in several important areas, many of the risks associated with Keystone XL are to be mitigated by TransCanada’s construction, operation, pipeline integrity, and spill response practices. TransCanada’s operating history suggests that this is a poor bet for the American public.

TransCanada has built two pipelines in the United States in recent years—the Keystone I pipeline and the Bison natural gas pipeline. As is contemplated with Keystone XL, both of these pipelines operated under a series of special safety conditions and were described as state-of-the-art pipelines which would “meet or exceed world class safety and environmental standards.”<sup>219</sup>

The first Keystone pipeline (Keystone I) from Hardesty, Alberta to Wood River, Illinois and Cushing, Oklahoma was TransCanada’s first wholly owned and operated crude oil pipeline. In its environmental risk assessment for Keystone I, TransCanada forecast that Keystone I would leak no more than 1.4 times a decade.<sup>220</sup>

However, the Keystone I pipeline leaked 14 times in the United States—including one spill of as much as 21,000 gallons—and 21 times in Canada during its first year of operation.<sup>221</sup> Regulators at PHMSA had to intervene, issuing a Corrective Action

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<sup>218</sup> Russell Gold, *Bakken Shale Oil Carries High Combustion Risk*, Wall Street Journal, Feb. 23 2014, <http://online.wsj.com/news/articles/SB10001424052702304834704579401353579548592?mg=reno64wsj&url=http%3A%2F%2Fonline.wsj.com%2Farticle%2FSB10001424052702304834704579401353579548592.html>.

<sup>219</sup> TransCanada, *Keystone Pipeline Starts Deliveries to U.S. Midwest*, June 30, 2010, <http://www.transcanada.com/5407.html>.

<sup>220</sup> State Dept., *Keystone I Final EIS, Appendix L: Pipeline Risk Assessment*, June 2006, [http://www.cardnoentrix.com/keystone/project/eis/Appendix%20L\\_Pipeline%20Risk%20Assessment.pdf](http://www.cardnoentrix.com/keystone/project/eis/Appendix%20L_Pipeline%20Risk%20Assessment.pdf)

<sup>221</sup> State Department, August 2011 Keystone XL FEIS at 3.13-12-14; Mike De Souza, *Feds recorded 100 pipeline spills and accidents in the last two years*, Vancouver Sun, July 5, 2011,

Order temporarily shutting the pipeline down as an imminent threat to life, safety and the environment. This made Keystone I the newest pipeline in U.S. history to receive such an order.<sup>222</sup>

Bison natural gas pipeline is the second major pipeline constructed by TransCanada in the United States in recent years. TransCanada touted the extra safety measures it was taking for its “state-of-the-art” Bison natural gas pipeline, noting that it had agreed to special conditions, and claiming that the pipeline “will be in place for 20 or 30 years before they need any repairs.”<sup>223</sup> Two months after TransCanada avowed the safety of its Bison pipeline, a 60-foot section of the pipeline exploded.<sup>224</sup>

Additionally, the track record thus far of the Southern Segment of the Keystone XL pipeline (from Cushing, OK to its terminus in the Gulf Coast) demonstrates serious safety concerns regarding TransCanada. A November 2013 report by the group Public Citizen detailed that over one hundred anomalies, including dents, welds, field coating problems, improper backfilling, unintentional sags, insufficient pipe support, and poor soil management have been discovered on the Southern Segment.<sup>225</sup> These poor practices led PHMSA to tell TransCanada that, “TransCanada did not assure that its Keystone Pipeline was installed in the ditch in a manner that minimizes the possibility of damage to the pipe.”<sup>226</sup> PHMSA further stated that “in reviewing the submitted anomaly reports and PHMSA inspections it demonstrates that TransCanada is not following their Construction

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<http://www.canada.com/business/Feds+recorded+pipeline+spills+accidents+last+years/5053005/story.html#ixzz2R64CUaXR>. The current Final SEIS only document 12 spills during Keystone I’s first year of operation. See Final SEIS at Tbl. 4.13-12.

<sup>222</sup> Pipeline and Hazardous Safety Materials Administration, Corrective Action Order, June 3, 2011,

[http://blog.nwf.org/wildlifepromise/files/2011/06/320115006H\\_CAO\\_06032011.pdf](http://blog.nwf.org/wildlifepromise/files/2011/06/320115006H_CAO_06032011.pdf); Anthony Swift, *The Keystone tar sands pipeline becomes the newest hazardous liquid pipeline to be deemed an immediate threat to public safety by regulators*, June 6, 2011, [http://switchboard.nrdc.org/blogs/aswift/the\\_keystone\\_tar\\_sands\\_pipeline.html](http://switchboard.nrdc.org/blogs/aswift/the_keystone_tar_sands_pipeline.html).

<sup>223</sup> Richard Nemec, *TransCanada’s Newest U.S. Asset: Bison Pipeline*, *Pipeline and Gas Journal*, May 2011, <http://www.pipelineandgasjournal.com/transcanada%E2%80%99s-newest-us-asset-bison-pipeline?page=show>.

<sup>224</sup> Jeremy Fugleberg, *TransCanada’s new Bison gas pipeline blows out in Wyoming*, *Journal Star*, July 25, 2011, [http://journalstar.com/business/local/article\\_e284b5e7-8647-53dc-bcb0-53a7f035e3e4.html](http://journalstar.com/business/local/article_e284b5e7-8647-53dc-bcb0-53a7f035e3e4.html).

<sup>225</sup> Public Citizen, *TransCanada’s Keystone XL Southern Segment: Construction Problems Raise Questions About the Integrity of the Pipeline*, November 2013, at 4-5, 8, available at

<http://www.citizen.org/documents/Keystone%20report%20November%202013.pdf>.

<sup>226</sup> Letter from R. M. Seeley, Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration to Mr. Vern Meier, Vice President, Field Operations, TC Oil Pipeline Operations, Inc., Sept. 10, 2013, available at

[http://primis.phmsa.dot.gov/comm/reports/enforce/documents/420135017W/420135017W\\_Warning%20Letter\\_09102013\\_text.pdf](http://primis.phmsa.dot.gov/comm/reports/enforce/documents/420135017W/420135017W_Warning%20Letter_09102013_text.pdf).

Specifications,” and that TransCanada “did not follow its written specification, specifically, protecting existing coating from damage due to welding.”<sup>227</sup>

In short, TransCanada’s own safety record and culture demonstrate that there is no reason to believe it will be any more diligent—despite state-of-the art systems and promises—than Enbridge in policing itself to prevent, control, or respond to a release of dilbit from Keystone XL. The State Department details the vast risks of dilbit, but it provides no support for its conclusions that “combined implementation of industry standards and practices would aid in reducing the potential for spill incidents associated with the proposed project,”<sup>228</sup> or that any actual meaningful reduction of tar sands release risk exists with Keystone XL. As detailed in Section 4.13.6.2 of the Final SEIS, virtually all of the spill prevention measures TransCanada has put forth rely on the good will and proper follow-through of the very company that would be responsible for the spill. History has shown that is not enough.

Finally, with the recent decision in *Thompson v. Heineman*,<sup>229</sup> it is unclear what—if any—route will exist in Nebraska. This means that much, if not all, of the information pertaining to the route in Nebraska may no longer be relevant.

It is not in the national interest to subject numerous lives, communities, resources, and wildlife to the immense risks of another Kalamazoo spill. There is nothing in the record to indicate that approval of Keystone XL will be anything other than doing just that. Keystone XL is not in the national interest and should be denied.

#### **E. Keystone XL Would Significantly Exacerbate Air and Water Pollution from Refineries that Would Receive the Pipeline’s Crude Oil**

The Final SEIS, like the Draft SEIS before it, continues to downplay the effects of Keystone XL on refinery communities, although it is clear that the project will cause significant increases in air pollution in these communities. An increase in air pollution is not in the national interest.

The Final SEIS fails to properly analyze and disclose the impacts that Keystone XL will have on air and water quality due to the refining of Western Canadian Sedimentary Basin (WCSB) tar sands and other crudes in receiving refineries. The project will supply 600,000 to 830,000 bpd of WCSB tar sands to Petroleum Administration for Defense District (PADD) 3 refineries in the Gulf Coast region.<sup>230</sup> It will also supply up to 155,000 bpd of crude to PADD 2 refineries in the Midwest.<sup>231</sup> Yet the Final SEIS makes the perplexing claim that these supplies to refineries will not cause

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<sup>227</sup> *Id.*

<sup>228</sup> Final SEIS at 3.13-3

<sup>229</sup> *Thompson v. Heineman*, CI-12-2060 (Dist. Ct. of Lancaster County, NE) (Feb. 19, 2014).

<sup>230</sup> Final SEIS at 4.15-83.

<sup>231</sup> *Id.* at 4.15-82.

any adverse air quality impacts, and it fails to analyze water quality impacts at refineries at all.

Unlike the Draft SEIS, the Final SEIS presents some overly simplistic analysis of the effect on a few air pollutants if WCSB tar sands were replacing other crudes at Gulf refineries. But in addition to discounting this scenario, this new analysis actually makes assumptions for different pollutants that contradict each other, seemingly in an attempt to conclude that the pollution impacts will be minimal. In fact, refining tar sands crude from Keystone XL will pollute air and water, which is problematic both in and of itself and because it is a significant threat to human health—not in our national interest.

As explained in the Sierra Club et al. April 22, 2013 comments on the Keystone XL Draft SEIS, and as addressed by Phyllis Fox in Appendix II to those comments, *Air Quality Impacts of the Keystone XL Project at Refineries in PADD 3* (Fox Report), the Draft SEIS analysis of air quality impacts is inadequate. The analysis in the Final SEIS fails to address these concerns.

The Final SEIS’s analysis of air quality impacts due to the refining of Keystone XL crudes is entirely inadequate. The Final SEIS claims that there will be “little difference in emissions” from crude oil refining in PADD 3 with or without Keystone XL, because the quantity and quality of crude delivered to the refineries will not change. These assumptions were flawed when they were made in the Draft SEIS, and they are still flawed in the Final SEIS. There is nevertheless sufficient evidence to conclude that Keystone XL will have a significant impact on air and water pollution around refineries where the tar sands crude is processed, which is not in the national interest.

### **1. Keystone XL would increase air pollution from receiving refineries**

The Final SEIS fails to properly analyze whether the processing of additional crude oil at receiving refineries will impair air quality, instead relying on assumptions from a flawed market analysis that the project will not increase the quantity of crude being refined by inducing refinery expansions or the construction of new refineries.<sup>232</sup> However, as there are no conditions requiring a crude substitution at existing refineries, it is unreasonable to rule that out as a possibility. In fact, many refineries that would receive Keystone XL crude have already expanded to increase throughput,<sup>233</sup> and U.S. heavy crude refineries are not currently at capacity.<sup>234</sup>

Even assuming it is true that Keystone XL would not increase the quantity of crude being processed at U.S. refineries, the project would still have significant air quality impacts in the areas near existing refineries. The Final SEIS states that the “current supply of heavy crude oil delivered to PADD 3 from current overseas sources is

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<sup>232</sup> Final SEIS at 4.15-85.

<sup>233</sup> Final SEIS at 4.15-87

<sup>234</sup> Final SEIS at 1.4-22.

either declining or at risk for political reasons.”<sup>235</sup> In the absence of this heavy crude, and due to the influx of domestic light sweet crudes, refineries may switch to processing lighter crudes. In fact, some refineries in the Gulf Coast are already retooling to be able to process more light sweet crudes from Eagle Ford.

Furthermore, Keystone XL will have significant air quality impacts even if the project crude replaces other heavy crudes. Tar sands diluted bitumen is different from conventional crudes—and even from other heavy Venezuelan and Mexican crudes—that are currently being processed at these refineries in a number of ways.<sup>236</sup>

Unlike the Draft SEIS, the Final SEIS looks at sulfur dioxide, metals, and organics pollution that could result from change in crude oil slate that could be caused by Keystone XL.<sup>237</sup> However, it does so in an overly simplistic fashion, and makes assumptions for different pollutants that contradict each other, seemingly in an attempt to conclude that the Project will not cause air pollution impacts when, in fact, it will.

For sulfur, the Final SEIS indicates that while WCSB crudes have a higher sulfur content than is found in light to medium crude oils, WCSB crudes would “largely displace other heavy crude slates rather than light or medium crude oils,” and that WCSB heavy crude has a similar sulfur content to other heavy crude slates, such that “any displacement that would occur from the use of WCSB crude at existing refineries is not expected to result in an impact to overall refinery SO<sub>2</sub> emissions.”<sup>238</sup> Merely comparing average sulfur content is not a proper method of estimating emissions. According to Dr. Phyllis Fox, a preeminent expert on refinery emissions, “sulfur is not simply sulfur, but is made up of a complex collection of individual chemical compounds such as hydrogen sulfide, mercaptans, thiophene, benzothiophene, methyl sulfonic acid, dimethyl sulfone, thiacyclohexane, etc. Each crude has a different suite of individual sulfur chemicals. The impacts of ‘sulfur’ depend upon the specific sulfur chemicals and their relative concentrations, not on the ‘gross’ amount of total sulfur. The fact that the total sulfur content of the crude slate is the same is irrelevant.”<sup>239</sup>

For metals, the Final SEIS makes the same argument as it does for sulfur, that while WCSB crudes have a higher content of metal compounds than is found in light to medium crude oils, WCSB crudes would “largely displace other heavy crude slates rather than light or medium crude oils,” and that WCSB heavy crude has a similar metal content to other heavy crude slates, such that “any displacement that would occur from the use of

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<sup>235</sup> Final SEIS at 4.15-88.

<sup>236</sup> Phyllis Fox, *Air Quality Impacts of the Keystone XL Project at Refineries in PADD 3*, April 22, 2013, Appendix II to Comments of the Sierra Club, et al., on the Draft SEIS for the Keystone XL Pipeline, April 22, 2013 (hereinafter “Fox Report”), at 6-7, attached as Exhibit B.

<sup>237</sup> Final SEIS at 4.15-79 to 4.15-81.

<sup>238</sup> *Id.* at 4.15-80.

<sup>239</sup> Fox Report at 9.

WCSB crude at existing refineries is not expected to result in an impact to overall refinery metal emissions.”<sup>240</sup>

What is concerning about the analysis in the Final SEIS is that for the next section—organics—the assumptions change. Instead of indicating that WCSB crudes would replace other heavy crudes—which was convenient to enable a finding of no change in pollution in a flawed, rudimentary analysis of the sulfur and metal pollution—the organics section indicates that “[i]t is anticipated, however, that if a refinery processed dilbit, it would also adjust and likely decrease other lighter crude(s) in proportion to the diluent content of the dilbit in order to maintain a consistent overall crude slate through the refinery.”<sup>241</sup> Why this change? The Final SEIS indicates that “[i]f it were assumed that the dilbit would displace only heavy crude, the presence of such higher volatile materials would have the potential to lead to increases in volatile organic compound (VOC) emissions from storage tank and component leaks at refineries.”<sup>242</sup>

It is not possible to have it both ways; either the WCSB crudes will be replacing only heavy crudes, or they will be replacing a mix of heavy and lighter crudes. The analysis in the Final SEIS indicates that there is a pollution impact one way or the other, even though it fails to state that conclusion.

In addition to contradicting itself, this analysis is lacking important details about crude slate contents. Heavy tar sands crudes have different physical and chemical properties than the conventional crudes currently being refined in PADD 3.<sup>243</sup> According to Dr. Fox, tar sands bitumen “contains 102 times more copper, 21 times more vanadium, 11 times more sulfur, six times more nitrogen, 11 times more nickel, and 5 times more lead than conventional heavy crude oil.”<sup>244</sup> These pollutants can cause acid rain, bioaccumulation of toxic chemicals in the food chain, the formation of ground-level ozone and smog, visibility impairment, and odor impacts.<sup>245</sup>

Keystone XL will also cause more emissions because tar sands diluted bitumen requires more energy to refine.<sup>246</sup> Thus, to produce the same products, more fuel must be burned at fired sources at refineries and at offsite electric generating units.<sup>247</sup> For example, diluted bitumen requires more heat for distillation in the crude unit.<sup>248</sup> It also contains higher concentrations of catalyst contaminants than typical heavy crudes, which require more energy to remove.<sup>249</sup> It is hydrogen-deficient compared to conventional

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<sup>240</sup> Final SEIS at 4.15-80.

<sup>241</sup> *Id.* at 4.15-80.

<sup>242</sup> *Id.* at 4.15-80.

<sup>243</sup> Fox Report at 18-19.

<sup>244</sup> *Id.* at 19.

<sup>245</sup> *Id.* at 19.

<sup>246</sup> *Id.* at 1, 19, 21.

<sup>247</sup> *Id.* at 1, 19, 21.

<sup>248</sup> *Id.* at 21.

<sup>249</sup> *Id.* at 22-24.

crude and thus requires substantial hydrogen production and addition during refining, which again requires more energy.<sup>250</sup> Diluted bitumen will also require additional coking capacity.<sup>251</sup> All of these characteristics of diluted bitumen increase energy demand, which will in turn increase combustion emissions, including those from heaters and boilers.<sup>252</sup>

Any increase in ozone precursors is especially worrying because eight of the 15 PADD 3 refineries with direct pipeline access to Keystone XL are in ozone nonattainment areas.<sup>253</sup> Two other refineries in Louisiana with indirect access to Keystone XL crude are also in ozone nonattainment zones.<sup>254</sup> Thus, the increase in ozone precursors will contribute to existing violations of the NAAQS ozone standard in these areas.

The Final SEIS also fails to substantiate its new claim that the diluent from dilbit will cause no greater VOC emissions than the light crudes it will “replace.” Instead, it simply asserts that diluents are equivalent to light crudes in terms of emissions, and presents an unintelligible chart.<sup>255</sup> In fact, diluent is not identical to the typical light crudes currently refined at the Gulf Coast refineries. Publicly available information on diluents shows that, compared to typical light crudes, they have a higher API and higher percentages of pollutants such as benzene, toluene, and xylenes.<sup>256</sup> It is unreasonable for the Final SEIS to dismiss potential emissions increases from diluents.

Finally, the Final SEIS continues to rely inappropriately on permitting controls to argue that Keystone XL will not have significant air quality impacts.<sup>257</sup> As Dr. Fox explained, permitting has been ineffective at preventing increases in emissions in the Gulf Coast area.<sup>258</sup> More important, the question is whether Keystone XL will significantly increase air pollution in refinery communities compared to the existing baseline, regardless of whether those increases will be within existing permit thresholds. This is especially true when, as here, the increases will occur in areas that are already nonattainment zones. In sum, Keystone XL, even if it just replaces conventional heavy crudes from other sources, will impair air quality in the areas surrounding the refineries. Compared to many conventional heavy crudes, tar sands bitumen is heavier and dirtier, will require more energy to refine, and will contain more diluent if shipped via pipeline. As documented and referenced in the NRDC Issue Brief *Tar Sands Crude Oil: Health*

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<sup>250</sup> Fox Report at 24.

<sup>251</sup> *Id.* at 24-26.

<sup>252</sup> *Id.* at 26.

<sup>253</sup> *Id.* at 17, Ex. B.

<sup>254</sup> *Id.* at 17, Ex. B.

<sup>255</sup> Final SEIS at 4.15-80 to -81, Figure 4.15.3-3.

<sup>256</sup> See Crudemonitor.ca, <http://www.crudemonitor.ca/> (comparing “condensate” crudes to “light sweet” crudes).

<sup>257</sup> Final SEIS at 4.15-84.

<sup>258</sup> Fox Report at 3-4.

*Effects of a Dirty and Destructive Fuel*,<sup>259</sup> these pollutants associated with the refining of tar sands have been tied to increased cancer risks, increased respiratory issues including asthma, cardiovascular illness, developmental delays, and other negative health effects. This adverse impact on air quality and public health is not in the national interest.

**2. The project increases the likelihood of accidental releases at receiving refineries.**

Because tar sands diluted bitumen has different chemical properties than conventional heavy crude, it could create significant safety hazards at receiving refineries, which are not equipped handle the unique chemical composition of WCSB crudes without significant upgrades.<sup>260</sup> Similar changes in crude slates caused the explosion at the Chevron refinery in Richmond, California, on August 6, 2012.<sup>261</sup> That accident affected over 15,000 people from the surrounding area.<sup>262</sup> An increased risk of such an accidental release is not in the national interest.

**3. The project will increase levels of polluted wastewater produced by the refineries.**

Wastewaters generated from processing tar sands crudes in PADD 3 refineries will contain higher concentrations of many pollutants, including metals, sulfur compounds, ammonia, chemical oxygen demand (COD), oil and grease, suspended solids, salts, benzene, phenols, and sulphides.<sup>263</sup> Thus, as with air quality, a switch to refining tar sands crude will increase water pollution at refineries. The Final SEIS still fails to analyze this impact of Keystone XL at all, but certainly increasingly contaminated wastewaters are not in our national interest.

Increases in air and water pollution at refineries, and an increased likelihood of accidental releases at receiving refineries, are not in the national interest.

**F. Keystone XL Will Have Significant Environmental Justice Impacts on Low-income Communities and Communities of Color**

President William Clinton's February 11, 1994 Executive Order No. 12898, affirms and prescribes fundamental requirements for federal agencies, including the State Department, to ensure that all federal programs and federally funded agencies shall not be allowed to increase the disproportionate burdens of environmental hazards in communities of color and low-income neighborhoods. This executive order exists for good reason: because it is not in our national interest to increase the toxic burdens on these already disproportionately affected communities.

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<sup>259</sup> Danielle Droitsch and Diane Bailey, NRDC, *Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel*, February 2014, attached as Exhibit Q.

<sup>260</sup> Fox Report at 27.

<sup>261</sup> *Id.* at 27-28.

<sup>262</sup> *Id.* at 28.

<sup>263</sup> *Id.* at 26-27.

As described in the Phyllis Fox report *Air Quality Impacts of the Keystone XL Project at Refineries in PADD 3* and in the section of these comments addressing refinery pollution, Keystone XL would cause an increase in refining and processing of tar sands in Gulf Coast refineries, which would in turn cause increases in criteria and toxic air pollutants. A report prepared by NRDC scientists and policy experts, *Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel*, shows that the public health threats associated with the tar sands refining process include not just the refinery emissions and noxious odors, but also greater risks of refinery accidents, and potentially greater exposure to pollution from the by-product petroleum coke. Petroleum coke contains relatively high concentrations of mercury, lead, arsenic, chromium, selenium, vanadium, and nickel, which people are exposed to when they breathe dust blown from petroleum coke piles.<sup>264</sup> These pollutants from the refining process and the petroleum coke have been tied to increased cancer risks, increased respiratory issues such as asthma, cardiovascular illness, developmental delays, and other negative health effects.<sup>265</sup>

An approval of Keystone XL would cause an increase in pollution in low-income communities and communities of color in the Gulf Coast refinery areas. According to Dr. Earthea Nance, Associate Dean and Professor at Texas Southern University, environmental justice communities in Port Arthur and Houston, Texas are especially at risk from the effects of increased refinery pollution.<sup>266</sup> These communities already face disproportionate burdens from existing pollutant sources and are located in ozone non-attainment areas.<sup>267</sup> As Dr. Nance points out, the Final SEIS fails to “identify the project’s disproportionate impacts” on these communities and “does nothing to remedy the impacts.”<sup>268</sup> In fact, the Final SEIS does not even mention these impacts in its environmental justice analysis under EO 12898. The State Department also failed “to ensure that affected [refinery] communities have meaningful input in Keystone XL decision-making.”<sup>269</sup>

These increases in pollution in environmental justice communities are simply not in the national interest.

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<sup>264</sup> Danielle Droitsch and Diane Bailey, *Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel*, NRDC, February 2014, attached as Exhibit Q; see also Jeff Gearhart, Ecology Center, April 2, 2013, <http://docs.housedems.com/district/006/CokeAggregateCombined.pdf>.

<sup>265</sup> Diane Bailey, NRDC, *Gasping for Air: Toxic Pollutants Continue to Make Millions Sick and Shorten Lives*, Health Facts, July 2011, [www.nrdc.org/health/files/airpollutionhealthimpacts.pdf](http://www.nrdc.org/health/files/airpollutionhealthimpacts.pdf). See also USEPA, *Particulate Matter: Health* (March 18, 2013), [www.epa.gov/pm/health.html](http://www.epa.gov/pm/health.html).

<sup>266</sup> Letter from Dr. Earthea Nance to State Department, March 6, 2014, at 2-4, attached as Exhibit R.

<sup>267</sup> *Id.* at 2-4, 7-8.

<sup>268</sup> *Id.* at 11.

<sup>269</sup> *Id.* at 12.

## **G. The State Department Cannot Determine that Keystone XL Would Serve the National Interest Without an Approved Route in Nebraska**

### **1. Background of Nebraska concerns and approval process**

Keystone XL's impacts in Nebraska, including impacts to the fragile Sand Hills region and the risk of contamination of the Ogallala Aquifer, have been among the most important and controversial issues surrounding the pipeline. TransCanada's proposal to build Keystone XL created controversy in Nebraska from the beginning. United States Senator Mike Johanns opposed the proposed route through the Sand Hills and objected to TransCanada's repeated threats of eminent domain against Nebraska landowners. In the summer of the 2011, State Senator Ken Haar proposed a special session of the Legislature to deal with the issue of TransCanada's route through the Sand Hills.

On August 31, 2011, Governor Heineman sent a letter to then-Secretary of State Hillary Clinton asking that the Keystone XL permit be denied because it threatened the Ogallala Aquifer. In that letter Governor Heineman stated: "I am opposed to the proposed route of this pipeline. The Final Environmental Impact Statement compares a potential spill in the Sand Hills region to a 1979 Bemidji, Minnesota spill and concludes that the 'impacts to shallow groundwater from a spill of similar volume in the Sand Hills would affect a limited area of the aquifer around the spill site.' I disagree with this analysis and I believe that the pipeline should not cross a substantial portion of the Ogallala Aquifer."

On October 24, 2011, Governor Heineman called the Nebraska Legislature into Special Session to address the Keystone XL route beginning November 1, 2011. Legislation was introduced and hearings were held on several bills. The Legislature eventually passed LB 1 and LB 4, which were both signed into law. LB 1 established the Major Oil Pipeline Siting Act (MOPSA), which required approval of a pipeline route by the state Public Service Commission (PSC) before an oil pipeline proponent can use eminent domain or begin construction of a pipeline. MOPSA set forth a detailed process, including public participation and inter-agency cooperation, by which the PSC could approve a pipeline route if it determines that the pipeline is in the public interest. LB 4 required the State of Nebraska to participate with the U.S. State Department in the preparation of Supplemental Environmental Impact Statements for oil pipelines permitted through the state pursuant to NEPA.

Meanwhile, the State Department determined that it could not move forward with its review process until the Nebraska route was finalized. On November 10, 2011, the State Department announced that it would delay the application review because of concerns about "the proposed route through the Sand Hills area of Nebraska, which was one of the most common issues raised." In addition, the statement provided: "Taken together with the national concern about the pipeline's route, the Department has determined it is necessary to examine in-depth alternative routes that would avoid the

Sand Hills in order to move forward with a National Interest Determination for the Presidential Permit.”<sup>270</sup>

On December 23, 2011, Congress passed the Temporary Payroll Tax Cut Continuation Act of 2011, which required the State Department to approve or deny the Keystone XL application within 60 days. Subsequently, the State Department denied the application on January 18, 2012. President Obama stated that the denial was “not a judgment on the merits of the pipeline, but the arbitrary nature of a deadline that prevented the State Department from gathering the information necessary to approve the project and protect the American people.”<sup>271</sup> As the State Department’s November announcement made clear, the most significant missing information was information on the impacts in Nebraska.

## **2. Recent developments in Nebraska**

Following the State Department’s commitment to evaluating the potential impacts to the Sand Hills and Ogallala Aquifer, and its subsequent denial of the first Presidential Permit application, TransCanada succeeded in securing amendments to Nebraska’s new pipeline siting laws. On April 17, 2012, LB 1161 was passed and signed into law. The law sought to put in place a review of TransCanada’s new application by the Nebraska Department of Environmental Quality (NDEQ), similar to LB 4 from the special session. LB 1161 amended LB 1 and LB 4 in several important respects. First, it allowed pipeline applicants to seek approval of a pipeline route from directly the Nebraska governor rather than from the PSC. Second, it removed LB 4’s requirement that Nebraska collaborate with the State Department on the preparation of an SEIS. Third, it granted the Governor authority to grant eminent domain to TransCanada without providing any standards.

TransCanada’s role in the passage of LB 1161 should be viewed as unwarranted foreign interference with the Nebraska democratic process. Sixteen Nebraska citizens testified in opposition to LB 1161 at its public hearing. The only supporters were TransCanada officials and the director of the Nebraska Department of Environmental Quality. The Nebraska Sierra Club and other organizations provided several warnings that the bill was unconstitutional while it was being considered by the Legislature. The fact that it was subsequently declared unconstitutional by a Nebraska court underscores this message. Such intrusions into the sovereign authority of the State of Nebraska and inducements for the state to pass legislation that violates its own constitution are clear violations of the national interest.

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<sup>270</sup> Department of State, *Keystone XL Pipeline Project Review Process: Decision to Seek Additional Information*, November 10, 2011, <http://www.state.gov/r/pa/prs/ps/2011/11/176964.htm>; see also Final EIS at 1.1-1, <http://keystonepipeline-xl.state.gov/documents/organization/191054.pdf>.

<sup>271</sup> The White House, *Statement by the President on the Keystone XL Pipeline*, January 18, 2012, <http://www.whitehouse.gov/the-press-office/2012/01/18/statement-president-keystone-xl-pipeline>.

The State Department subsequently entered into a Memorandum of Understanding (MOU) with the NDEQ on May 24, 2012. The MOU formally established the NDEQ as a collaborating agency in the NEPA process and set up a collaborative approach between the agencies to approve a route through Nebraska. The MOU recognized the “the commitment of the State Department to fully consider the views of the State of Nebraska in conducting its environmental review consistent with NEPA.”<sup>272</sup>

On January 3, 2013, the NDEQ issued its Final Evaluation Report for the 194.5-mile proposed Nebraska Reroute of the Keystone XL Pipeline. Governor Heineman approved the Keystone XL route through the State of Nebraska on January 22, 2013, and requested that the route be included in the Final SEIS.<sup>273</sup> The Governor’s letter to Secretary Clinton approving the new proposed pipeline route claimed that the new route avoids the sensitive Sand Hills, but recognized that risks to the Ogallala Aquifer remained: “The proposed route avoids the Sand Hills but would cross the High Plains Aquifer, including the Ogallala Group. Impacts on aquifers from a release would be localized and Keystone would be responsible for any cleanup.”<sup>274</sup> The Final SEIS analyzes this route as a component of TransCanada’s preferred route.<sup>275</sup>

On February 19, 2014, a Lancaster County District Court Judge held that LB 1161 unconstitutionally divested the PSC of control over oil pipelines and transferred authority to the Governor. As such, the court ruled that LB 1161 was unconstitutional and void. The court also permanently enjoined the state from enforcing the provisions of LB 1161, and from acting pursuant to the Governor’s approval of the Keystone XL route.

The recent ruling means that there is currently no approved route for Keystone XL through Nebraska. It also means that LB 1 and LB 4 are the current legal mechanisms to approve a route, which includes a PSC process that takes approximately seven months. TransCanada has not yet applied to the PSC for approval of any route through Nebraska, and there is no assurance which route, if any, the PSC will approve.

### **3. The State Department cannot determine that Keystone XL is in the national interest before a route is approved through Nebraska**

The recent developments in Nebraska, including the injunction against both LB 1161 and the Governor’s approval of the preferred route evaluated by the Keystone XL Final SEIS, constitute “substantial changes in the proposed action” and/or “significant new circumstances or information” that warrant a supplemental EIS pursuant to 40 C.F.R. section 1502.9. The State Department cannot approve Keystone XL without preparing this supplemental EIS.

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<sup>272</sup> *Memorandum of Understanding Between U.S. Department of State, and The Nebraska Department of Environmental Quality, for Conducting an Environmental Review for the Keystone XL Pipeline Project*, May 2012, at 2.

<sup>273</sup> Final SEIS, Appendix A.

<sup>274</sup> *Id.* at 2.

<sup>275</sup> Final SEIS at 2.2-66.

In addition, given the uncertainty surrounding the approval of a Nebraska route, the State Department cannot now make an affirmative determination that Keystone XL “would serve the national interest.” As set forth above, the State Department has made clear on numerous occasions that the impacts of any route through Nebraska are critical to determining the national interest. The state approval process is currently on hold, and there is no route that has been approved or even proposed to the Nebraska PSC. The federal agencies, as well as members of the public, cannot provide meaningful comments on whether Keystone XL would serve the national interest when the route through Nebraska has not yet been determined. The State Department’s November 10, 2011 decision to delay a decision until a Nebraska route had been determined, as well as President Obama’s decision to deny the permit on January 18, 2012 for the same reason should also be viewed as precedents that control the State Department’s decision-making process.

It would be entirely inappropriate for the State Department to determine that Keystone XL would serve the national interest, thus approving the project, before the Nebraska process is concluded. If the State Department made a final decision approving Keystone XL that was conditioned upon Nebraska’s eventual approval of the preferred route, it would unduly and unfairly influence the Nebraska PSC process by pre-judging the outcome. Given the national debate surrounding this process, a State Department approval would put too much pressure on the Nebraska PSC to approve the route that was analyzed as the preferred route in the NEPA process. Instead, the State Department must respect the rights of states like Nebraska to follow their own processes before any final decision is made.

As the final decision-maker on Keystone XL, the State Department simply cannot make a decision that the project would serve the national interest when a safe route through Nebraska has not yet been found. The clearest and best option for the State Department is to reject Keystone XL. There is more than enough evidence currently before the agency demonstrating, among other things, that this pipeline would cause significant climate impacts, further lock us in to a dirty energy future, and pose a serious risk of oil spills, while neither creating significant jobs nor promoting energy security.

## **H. Keystone XL Would Threaten Wetlands and Water Resources**

### **1. Impacts to Groundwater**

One of the greatest threats presented by Keystone XL, in addition to the massive climate risks, is the threat of a pipeline spill to water resources along the route. As detailed in the State Department’s Final SEIS, the current proposed route of the Keystone XL pipeline would pass within a mile of over 2,500 wells.<sup>276</sup> Currently, 39 of the wells serve as public drinking waters sources.<sup>277</sup> The examined route of the Keystone XL pipeline also crosses approximately 1,073 waterbodies and 24 miles of mapped

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<sup>276</sup> Final SEIS at ES-2.1

<sup>277</sup> *Id.*

floodplains, and would affect 383 acres of wetlands.<sup>278</sup> As detailed by the Final SEIS, aquifers affected by the proposed route include “up to 65 percent of potable water in Montana, up to 50 percent in South Dakota, and up to 83 percent in Nebraska.”<sup>279</sup>

As detailed herein, and as recognized by EPA and the State Department, diluted bitumen (or dilbit), which would be carried by this pipeline, presents a host of severe risks that differ from conventional crude. These risks are extreme and not fully understood. Primarily, as detailed herein, dilbit tends to sink in water, persists in the environment, and is nearly impossible to clean up.

We also do not know what substances exist in the diluents that will potentially threaten these water sources, but we are certain they are toxic and extremely harmful. EPA has explicitly recommended that “the permit require TransCanada to provide detailed Material Safety Data Sheets and information about the diluent and the source crude oil to support response preparations and address safety concerns in advance of any spills.”<sup>280</sup> But this information continues to remain hidden as “trade secrets.”<sup>281</sup>

Additionally, in analyzing the risks to groundwater, the State Department continues to rely heavily on a spill of conventional crude in 1979 in Bemidji, Minnesota.<sup>282</sup> Yet, as explained in previous comments, this is an apples to oranges approach comparison that provides scant assurance the Ogallala aquifer and other aquifers crossed by Keystone XL will be at all safe from the impacts of a spill, because of differences in geography and oil type. Indeed, the Final SEIS itself admits that groundwater sources along the pipeline “may occur within soil profiles somewhat *dissimilar* from the previously mentioned Bemidji site.”<sup>283</sup>

We have detailed extensively herein and in our comments to the Draft SEIS the gross inadequacy of measures to detect, prevent, and clean-up spills of diluted bitumen. Relying on the Bemidji spill for its frame of analysis means that the State Department does not consider, *inter alia*, the massive volume of the Keystone XL pipeline, the increased pressure at which it will run, and the significant differences between diluted bitumen and conventional crude in evaluating potential impacts to aquifers.

Other suggestions from EPA, such as its request for ground level inspections for leaks to quickly protect water resources, have been rejected or ignored as well.<sup>284</sup>

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<sup>278</sup> *Id.* at ES-21 – 22.

<sup>279</sup> *Id.* at 3.3-13.

<sup>280</sup> Letter from Cynthia Giles, Ass’t Administrator for Enforcement and Compliance to Mr. Jose W. Fernandez, Ass’t Sec’y, U.S. Dep’t of State and Dr. Kerri-Ann Jones, Ass’t Sec’y, U.S. Dep’t of State, Apr. 22, 2013, at 5.

<sup>281</sup> *See* Final SEIS at 3.13-7.

<sup>282</sup> *See id.* at Sec. 4.3 generally.

<sup>283</sup> *Id.* at 4.13-74.

<sup>284</sup> *Id.* at 4.3-32.

The people, farms, tribes and wildlife that rely on these groundwater resources would be put at unnecessary risk by approval of the Keystone XL pipeline.

## 2. Impacts to Surface Waters

The risk to surface waters is no less. In analyzing spill risks, the State Department uses an arbitrary cut off of ten miles downstream for measuring impacts.<sup>285</sup> However, as detailed herein, the 2010 Kalamazoo River tar sands spill stretched for over 30 miles of the river. In the 2011 Yellowstone River oil spill, oil was reported as far as 240 miles away from the spill site.<sup>286</sup> This distance of ten miles is used to support conclusions that impacts to public surface drinking water supplies and other important water resources are “exceptionally remote,”<sup>287</sup> but in fact, in recent large spills oil has traveled far in excess of ten miles downstream. Additionally, because dilbit, the substance that will be carried by the Keystone XL pipeline, has a tendency to persist in the environment, there is the possibility of further migration downstream over time as sediments are churned up and areas are disturbed by major floods and similar events.

As has been previously detailed, with respect to other impacts to surface waters from construction and operation, the State Department continues to do little more than list possible impacts and rely mostly on yet-to-be-determined processes under the Clean Water Act as mitigation for these impacts. Many of the so-called mitigation measures listed in the Final SEIS are little more than items already legally required. For instance, the Final SEIS discusses items like compliance with Construction Storm Water General Permits under the Clean Water Act,<sup>288</sup> which would have to occur anyway. Other measures are non-specific or not required. For example, “Permitting agencies *may* require access structures such as culverts and bridges necessary for the proposed Project’s long-term operation over regulated waterbodies to meet design and construction conditions that ensure unimpeded fish and aquatic organism passage during the lifetime of the structure.”<sup>289</sup>

Furthermore, the State Department continues to fail to show that it has done all it can to avoid impacts to water resources as required by the Clean Water Act, despite requests by agencies to take further measures such as requiring use of horizontal directional drilling at more water and wetland crossings.<sup>290</sup> The State Department admits that the method that may be used at some crossings has high potential for impacts: “The open-cut wet crossings pipeline installation method has a high potential to impact water

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<sup>285</sup> *Id.* at 4.3-18.

<sup>286</sup> See Laura Zuckerman, *Government asks Exxon to retool Yellowstone spill plan*, July 10, 2011, available at <http://www.reuters.com/article/2011/07/11/oil-spill-montana-idUSN1E76908O20110711>.

<sup>287</sup> *See id.* at 4.3-19.

<sup>288</sup> *Id.* at 4.3-32 – 33.

<sup>289</sup> *Id.* at 4.3-33 (emphasis added).

<sup>290</sup> See Letter from Willie R. Taylor, Director, Office of Environmental Policy and Compliance, to Ms. Genevieve Walker, NEPA Coordinator, Apr. 29, 2013, at 2-3.

resources during construction activities.”<sup>291</sup> The State Department also acknowledges that because “[t]he appropriate method of crossing [certain] waterbodies would be determined by the appropriate agency as applicable,” it cannot determine what the impacts at various crossings will be.

Under the Clean Water Act, impacts must first be avoided, and it is clear that practicable alternatives exist that would avoid impacts from construction or operation to many or all of the waterbodies that will be affected to a much greater degree than the State Department contemplates. As we previously explained, without maximizing avoidance of impacts to the extent practicable, permits should not be issued under Clean Water Act section 404.

Also, while the impacts to non-jurisdictional wetlands are catalogued, mitigation for those impacts are not properly assessed. The Final SEIS states that:

[C]ompensatory wetland mitigation (e.g., creating wetlands to offset the proposed loss of wetlands) would be provided by Keystone for permanent losses of jurisdictional wetlands and water resources. Compensatory Mitigation Plans would be developed and carried out in accordance with Title 33 of the Code of Federal Regulations Part 332 (Compensatory Mitigation for Losses of Aquatic Resources). These plans would be developed during the permitting phase when more site specific details are available and incorporated into the Section 404/Section 401 permit applications for review by coordinating agencies prior to approval. Functional assessments for all jurisdictional wetlands would likely be required by the USACE during the Section 404 permitting process.<sup>292</sup>

Further, the State Department rightly notes that jurisdiction is a determinative factor in whether any of the protective permitting programs even apply, and whether impacts to the wetlands would receive any sort of mitigation or protection. But since the State Department does not evaluate jurisdiction, the Final EIS does not accurately account for the impacts to those waters and wetlands, and how they will be mitigated.

Moreover, the Final SEIS admits that the immensely valuable Prairie Potholes—a type of wetlands particularly at risk of being non-jurisdictional because they are often geographically isolated from other waters—may be under-evaluated generally:

Certain wetland types may be under-represented in this analysis because they would require additional field-based surveys to accurately evaluate wetland characteristics and wetland boundary locations. Wetland types that may be under-represented include small depressional wetlands,

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<sup>291</sup> Final SEIS at 4.3-25.

<sup>292</sup> *Id.* at 3.4-14.

particularly in the Prairie Pothole Region...impacts presented in the Final Supplemental EIS may not be fully quantified at this time.<sup>293</sup>

This failure of accounting has occurred despite requests from EPA to ensure the impacts to potholes be well evaluated because of “their ecological importance.”<sup>294</sup>

Finally, the State Department continues to ignore EPA’s prior request to choose a protective permitting approach. EPA has previously suggested that all wetland impacts be permitted under individual permits, urging that a single individual permit be considered for the project.<sup>295</sup> There has been no commitment to this process. Indeed, no specific permitting process—which will largely govern how these impacts are dealt with—has yet been determined, making it impossible for any accurate conclusions to be drawn about the extent of the impacts to waters and subsequent mitigation.<sup>296</sup>

### **3. Impacts in Nebraska Are Still Not Properly Assessed**

A major flaw that has emerged in the State Department analysis is that the route examined in Nebraska—one that currently contains 38 of 39 groundwater public drinking supplies examined and 2,398 known and reported wells<sup>297</sup>—has been invalidated by a court.<sup>298</sup> Nebraska contains some of the most sensitive water resources and wetlands along the route, such as the Ogallala aquifer and the Sand Hills region, which is valuable habitat for wildlife including the critically endangered Whooping Crane.

It is not currently known whether the route examined by the Final SEIS is at all relevant, as the route is uncertain and could change, perhaps substantially. Any change in the route could put at risk countless other resources, the impacts to which the State Department would need to examine. It has not done so.

The impacts of any change in routing in this region would need to be examined, given the region’s reliance on the Ogallala aquifer, the sensitivity of various resources and habitat, and major Rivers like the Niobrara and Platte that are at risk. Approval of the Keystone XL pipeline simply cannot happen with so many important questions unanswered about the impacts to important water resources in Nebraska.

Indeed, it was unanswered questions about the route in Nebraska and impacts to water resources there, particularly the Ogallala aquifer, that resulted in the original denial

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<sup>293</sup> *Id.* at PC-79.

<sup>294</sup> Letter from Cynthia Giles, Ass’t Administrator for Enforcement and Compliance to Mr. Jose W. Fernandez, Ass’t Sec’y, U.S. Dep’t of State and Dr. Kerri-Ann Jones, Ass’t Sec’y, U.S. Dep’t of State, June 6, 2011, at 7.

<sup>295</sup> *Id.*

<sup>296</sup> Final SEIS at 4.4-19.

<sup>297</sup> *Id.* at 4.3-17.

<sup>298</sup> *Thompson v. Heineman*, CI-12-2060 (Dist. Ct. of Lancaster County, NE) (Feb. 19, 2014).

of Keystone XL in 2012.<sup>299</sup> A major impetus for the SEIS and many of the supposed changes from the Draft SEIS have to do with changes to the route in Nebraska. For instance, in the Final SEIS, the State Department states that, “Due to public and agency concerns about the pipeline route affecting sensitive Sand Hills wetlands, Keystone has made numerous revisions to the route alignment to reduce impacts to Sand Hills and Sand Hills-like wetlands characterized by fragile and sandy soils.”<sup>300</sup>

However, it is also clear that the proposed re-route failed to address the concerns about the Sand Hills that led to the original delay. The Final SEIS states as follows: “In northern Nebraska, the proposed Project route from approximately MP 619 to MP 707 in Boyd, Holt, and Antelope counties would enter an area where the soils tend to be highly susceptible to erosion by wind and often exhibit characteristics of the NDEQ-identified Sand Hills Region (i.e., fragile soils [see Figure 3.2.2-2]).”<sup>301</sup> In other words the proposed route still has many of the same issues as the previous route and violates the State Department’s stated intent in calling for the delay in November 2011.

With the route in Nebraska now unsettled, current analysis of the route and impacts to water resources in Nebraska cannot be relied on to determine the impacts of the pipeline. This is especially true as the State Department acknowledges that impacts of a spill on an aquifer can vary widely depending on very location specific conditions:

Potential impacts to groundwater resources associated with the proposed Project construction, operation, and connected actions *could vary significantly along the proposed route.... The impact on groundwater resources would be dependent on many factors including depth to groundwater, soil and hydrogeologic conditions, amount and type of material released, among other factors....*<sup>302</sup>

This is especially true in Nebraska, which has a lot of sandy soils and shallow aquifer areas. The State Department states that such areas are particularly vulnerable: “Any refined petroleum releases from construction or crude oil releases from operations could potentially impact groundwater where the overlying soils are permeable and the depth to groundwater is shallow.”<sup>303</sup>

Concerns such as the location of crossing the Niobrara River in Nebraska and the impact of the Wild and Scenic designated segment there are also thrown into uncertainty by the Nebraska route ruling. Other issues, such as impacts to floodplains, may turn out to be vastly different than the ones analyzed in the Final SEIS. The actual impacts of Keystone XL ultimately need to be assessed. Right now, it is not clear any relevant assessment of the impacts in Nebraska has occurred.

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<sup>299</sup> See Final SEIS at 1.1-1- 2.

<sup>300</sup> *Id.* at 3.4-11.

<sup>301</sup> *Id.* at 3.2.2.3.

<sup>302</sup> *Id.* at 4.3-2 (emphasis added).

<sup>303</sup> *Id.* at 4.3-3.

Finally, as we've previously stated, the reroute examined by the SEIS process—which has now been invalidated by a court—did not succeed in preventing the risk of impacts to the Ogallala Aquifer. According to TransCanada, “the Ogallala underlies most of the proposed re-route study area.”<sup>304</sup> Indeed, EPA has pointed out that, “The alternative route in Nebraska ... still crosses the Ogallala Aquifer.”<sup>305</sup> Approximately 35 miles of the proposed pipeline would cross over groundwater less than 20 feet below the surface.<sup>306</sup> The layers above the Ogallala Aquifer are highly permeable, and spilled tar sands oil could move quickly through these layers into the aquifer itself, contaminating a crucial water source. If the proposed pipeline were to spill in this area and contaminate the Ogallala, it would be a catastrophe for the millions of Americans who rely on it for drinking and irrigation water every day. Now that it is not certain that the State Department analysis is even relevant, the Keystone XL process is in the same place it was when it was originally rejected. There is nothing in the current record that would support a different result this time.

### **I. Keystone XL Is Against the National Interest Because It Will Result in Unacceptable Impacts to Wildlife**

Even while they fall short, the environmental reviews for Keystone XL—including the Final SEIS prepared by the State Department, the Biological Assessment prepared by a State Department contractor, and the Final Biological Opinion prepared by the U.S. Fish and Wildlife Service (FWS)—describe a litany of ways in which Keystone XL will result in vast, destructive impacts to wildlife.

These reviews show that members of 15 federally- and state-protected species and dozens of additional wildlife species will be killed by construction and operation of Keystone XL. Whooping cranes, sandhill cranes, interior least terns, piping plovers, bald eagles, many other migratory bird species, and swift foxes will be killed or injured by vehicles, power line collisions, stress, and starvation, with dens, nests, burrows, and crucial habitat irreparably destroyed. Reduced breeding success and survival rates are expected for many of these species. Steady leaks of diluted bitumen through small holes and fissures in the pipeline will create a toxic load for aquifers and ground- and surface-water, which provide important habitats for these species. Spills, which will indisputably occur over the 50-year (or more) lifespan of Keystone XL, will migrate within watersheds to fish habitat and places where migratory birds nest or stop over. Complete

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<sup>304</sup> TransCanada Keystone XL Pipeline Project: Initial Report Identifying Alternative and Preferred Corridors for Nebraska Reroute, April 2012, at 14, <https://ecmp.nebraska.gov/deq-seis/DisplayDoc.aspx?DocID=eInGtTzydRvDw10GNaJ4oA%3d%3d>.

<sup>305</sup> Letter from Cynthia Giles, Ass't Administrator for Enforcement and Compliance to Mr. Jose W. Fernandez, Ass't Sec'y, U.S. Dep't of State and Dr. Kerri-Ann Jones, Ass't Sec'y, U.S. Dep't of State, Apr. 22, 2013, at 5.

<sup>306</sup> Kim Murphy, Keystone XL pipeline: New route proposed through Nebraska, Los Angeles Time, April 29, 2012, <http://articles.latimes.com/2012/apr/19/nation/la-na-nn-keystone-nebraska-20120419>.

cleanup of any form of petroleum products is, under the best of circumstances, difficult or even impossible; diluted bitumen presents an even greater challenge in this regard.

Some of these species, such as the whooping crane, are critically endangered and are hovering on the brink of extinction. There are only about 215 whooping cranes in the central flyway, *i.e.*, the only self-sustaining wild population of this majestic species. The American people have invested substantial public resources over the course of decades to recover this iconic bird, and its migration captures the hearts and minds of many around the world. Major threats to whooping crane survival persist, however, and include habitat loss and collisions with manmade features including power lines.

Nearly the entire proposed route for Keystone XL—including the United States as well as Canada—falls directly within the crane’s migratory corridor, and the project would entail the development of several new pump station power feeder lines and associated transmission infrastructure in both countries. According to FWS, building Keystone XL would present 74 additional collision hazard locations—new hazards for an endangered population containing only 215 individuals—in the United States alone. But although collisions with power lines are a primary threat to the survival of whooping cranes, and although Keystone XL would add 378 miles of new power lines, the State Department lacks a clear assessment of the *specific* locations where Keystone XL-associated power lines would be located and affect cranes, or the cumulative impact of such power lines in combination with other power lines that are projected to be constructed over the course of the pipeline’s lifespan of 50 years or more. Indeed, like many aspects of the project, the threat to whooping cranes from new power lines needed for Keystone XL has been swept under the rug.

To the extent that they have considered these dire impacts, the agencies and TransCanada have blithely dismissed them on the basis that the use of “bird diverters” may mitigate this additional threat. Hence, the Biological Opinion for the project discusses the use of “bird diverters,” but only very generally, and glosses over the reality that these devices are only marginally effective at best. There are, moreover, no specific terms and conditions requiring their use, and no enforceable way to ensure that such bird flight diverters or other “conservation measures” would be implemented under the Endangered Species Act 20, 30, 40 years into the pipeline’s 50-year lifespan.

Furthermore, despite years of “study” of Keystone XL, FWS and the State Department have failed to assess any impacts to whooping crane habitat north of the United States-Canada border whatsoever, let alone develop any conservation measures for mitigating the impacts to whooping cranes in Canada, such as through appropriate siting or the use of bird diverters, whether enforceable or not.

The above is true for two additional endangered bird species as well, the piping plover and interior least tern, which will be harmed through loss of habitat from pipeline construction and the presence of additional power lines near sensitive habitats, where such power lines will increase threats from predators. Keystone XL will cross sensitive nesting habitat for these species at many locations—including the Platte, Loup, and

Niobrara rivers in Nebraska; the Cheyenne River in South Dakota; and the Yellowstone and Missouri Rivers in Montana—but the non-binding “conservation measures” in the Biological Opinion for the project will allow construction to occur up to a *quarter-mile* within nesting habitat for these imperiled species.

In addition, myriad additional migratory bird species would be affected by the construction of Keystone XL and the presence of additional power lines near sensitive habitats, including nesting habitat and rookeries for raptors, owls, herons, eagles, and migrant songbirds. Twenty-eight large nests were found within the project footprint in Montana and South Dakota alone. The environmental reviews for the Keystone XL acknowledge that such nests and rookeries will be destroyed, killing or irreversibly displacing migratory birds. Cleared vegetation will fragment habitat, creating more edge habitat and increase nest parasitism including by non-native predators. Noise pollution from compressor stations will compromise bird breeding success. As with whooping cranes, power lines will present an added risk for sandhill cranes and other migratory birds. Tar sands mining in Canada will destroy Alberta’s boreal forest—a huge carbon sink—and threaten hundreds of thousands of birds that depend on the wetlands in Alberta with highly-toxic wastewater pits, mining operations, and nutrient deposition. A spill in the wrong place—*e.g.*, the North Valley Grasslands and Rainwater Basin Important Bird Areas— could severely impair critical habitat for migratory birds.

TransCanada, FWS, and the State Department have offered few specific mitigation requirements to avoid or reduce these impacts, and buffer restrictions are unlikely to be followed in all circumstances. Many of the affected bird species are already in decline. And the federal government and TransCanada have yet to reveal how take of migratory birds will be permitted consistent with the Migratory Bird Treaty Act, as a FWS review of TransCanada’s proposed migratory bird conservation plan has yet to be completed, at this late date and despite years of project study. There is serious question whether FWS would have the authority to enforce any such plan, even when it is Final. Indeed, the project’s failure to adequately protect migratory birds has been criticized multiple times by the Interior Department and EPA.

Even at current levels of tar sands development in Alberta, woodland caribou herds in the tar sands region of Alberta face a high probability of extinction within four decades. Although Keystone XL is part of a plan to expand tar sands development in Alberta, the U.S. government has never considered, let alone addressed, Keystone XL’s impact on the ability of this iconic species to survive the threat of extinction.

Nor has any entity properly considered Keystone XL’s impacts to the endangered northern swift fox, a species protected under the Endangered Species Act since 1973. Keystone XL’s route crosses through important habitat for this species in both the U.S. and Canada, and the State Department has acknowledged that foxes could be crushed in their dens during Keystone XL’s construction. There is no dispute that the northern swift fox is protected in its Canadian range under the ESA, or that energy development and subsequent loss of habitat are dominant threats to the species. But although Keystone XL would cross important, occupied habitat in Canada such as the Masfield prairie, which is

also designated critical habitat for the endangered black-footed ferret, there has never been any analysis of the impacts to these species in Canada under the Endangered Species Act or the National Environmental Policy Act. The northern swift fox is also protected under the ESA throughout its range in the territorial United States, but FWS and the State Department have refused to consider Keystone XL's impacts to domestic populations of this species, despite the State Department's acknowledgement that it lives along the pipeline route in both Montana and South Dakota. As a result, the northern swift fox has received no mitigation measures at all, and despite the rhetoric of this being the most studied pipeline in history, the agencies have failed to consider its impacts to an endangered species directly in its path.

At only an estimated 418 breeding adults in the wild, the black-footed ferret remains far short of the goal of 1,500 breeding adults set forth in FWS's recovery plan, and remains vulnerable to many threats. The proposed route for the Keystone XL pipeline bisects an area in Montana where black-footed ferrets occur, and would skirt another. Black-footed ferrets depend on prairie dog towns for survival, and FWS has prioritized conservation of prairie dog habitat that can sustain ferrets in several populations that are distributed throughout their historical range, but the Keystone XL pipeline would destroy eight prairie dog towns in South Dakota and Nebraska as well. Keystone XL would be an unnecessary step backward in the road to recovery for the black-footed ferret.

The pallid sturgeon has not received rigorous analysis or binding conservation measures during project review, either. Because of heavy alteration of river systems throughout its range, the pallid sturgeon has been reduced to only a few locations, including several locations near the proposed route for Keystone XL. These include areas in the Milk and Yellowstone Rivers of Montana, as well as the Platte, Niobrara, and other rivers upstream of occupied areas in the Missouri and lower Platte Rivers. Yet, although Keystone XL will result in leaks and spills, including quite possibly in these watersheds, the devastating impacts that would result for pallid sturgeon are dismissed on the basis that spills would be cleaned up. This ignores, however, the obvious fact that oil spills are never easily "cleaned up," which is all the more true when diluted bitumen is involved, as made evident by the Kalamazoo spill, the spill near Mayflower, Arkansas, and many others. Even in the event that spills do occur and cleanup efforts are carried out, there are no specific, enforceable conservation measures to ensure that impacts to pallid sturgeon or other wildlife in particular are avoided, minimized, or mitigated. Just one or a few releases could seriously compromise the pallid sturgeon in the few remaining areas where it still occurs.

The pallid sturgeon will also be adversely affected as a result of massive water withdrawals for hydrostatic testing, but recommended conservation measures to avoid the worst impacts from such withdrawals—including the use of screens and controlled water rates—are voluntary. TransCanada, or any private actor, simply is not entitled to such a high degree of trust when it comes to endangered American wildlife.

The American burying beetle was once a ubiquitous creature of the American Midwest and East, but due to habitat loss, has been reduced to just a few areas including

in the Sand Hills of Nebraska. The pipeline would go through the heart of this remaining habitat. Although the American burying beetle is the only protected species that has received the benefit of a formal consultation under the ESA in connection with Keystone XL, the outcome of this consultation is a series of measures that presume that the pipeline's impact to the species will be negligible because individuals will be trapped and relocated to suitable habitat elsewhere. This scenario, however, ignores the fact that the carrying capacity of American burying beetle habitat has been narrowed considerably and is already full. There are no remaining unoccupied areas; where suitable habitat and prey remain, beetles have already occupied such habitat according to that habitat's ability to sustain them. When this basic ecological principle is taken into account, the notion that Keystone XL's impacts are unlikely to jeopardize this species' recovery is placed into doubt.

The greater sage grouse—which has declined as much as 27 percent in the Keystone XL areas over the past 40 years—is slated to receive a proposed listing determination (or “not warranted” finding) by FWS in Fiscal Year 2015, under the terms of a landmark settlement agreement between FWS and the Center for Biological Diversity. The Bureau of Land Management (BLM) is a cooperating agency in the Keystone XL proposal, would have to approve federal rights-of-way for the project, and has developed a conservation strategy for the sage grouse. Keystone XL would affect 86 miles of sage grouse habitat located within three miles of 29 active greater sage-grouse leks in Montana and South Dakota. As many as 35 recently occupied leks are within four miles of the proposed route. Yet, sage grouse require at least—at a bare minimum—a four-mile buffer zone around their leks to avoid harm from activities such as pipeline construction. Keystone XL would also result in increased road density, noise from pump stations, and roost sites for predators, all of which threaten the ability of this species to carry out its necessary life functions.

Indeed, the best available science and even the Final SEIS demonstrate that construction, operation, and maintenance of Keystone XL and all of its associated facilities, such as the South Dakota pipe yard within a mile of a continuously-occupied lek, would cause sage grouse declines, even as BLM policies are intended to prevent that very result. Meanwhile, the mitigation measures recommended in the Final SEIS are inadequate to protect greater sage grouse throughout all life stages.

New information continues to surface regarding the threats posed by Keystone XL to imperiled species. For example, FWS proposed listing the northern long-eared bat as endangered in the fall of 2013. This species is found in six counties crossed by Keystone XL, yet FWS and the State Department have offered no indication that they have surveyed the project area for these bats, despite the fact that they are threatened with extinction due in part to habitat loss and human disturbance. The existing analysis of this and many other imperiled species along the pipeline route is woefully inadequate.

There are myriad remaining questions about the pipeline's leaks as well, which have the potential to affect the pallid sturgeon as well as any wildlife where they would occur. As made clear from construction of the Gulf Coast Segment, the pipeline material

that would be used for Keystone XL is riddled with small holes and fissures that may not trigger the high threshold for detecting leaks—which is 1.5 to 2.0 percent. This means that we should expect a steady leak of highly-toxic petroleum products and chemicals below the “spill” threshold over the course of the project’s decades-long lifespan. Not only will these leaks cumulatively threaten the quality of the Ogallala aquifer, which supplies water for millions of people and agriculture, but they will add a deadly toxic load to water sources that are relied on by wildlife as well.

Each of the above impacts is unacceptable alone, but even more so when their cumulative impact is taken into account. For instance, as described above, the environmental reviews for Keystone XL identify a threat to endangered species from the construction of Keystone XL-related power lines, but no review has yet considered the *cumulative* impact of those power lines together with the reasonably-foreseeable proliferation of power lines throughout the project area over the next 50 or more years. The degradation of the Ogallala Aquifer and affected waterbodies from leaks and spills is not considered in combination with the other activities that will diminish and degrade water quality as well, including climate change. Other cumulative impacts, such as increased use of agricultural chemicals and urban sprawl, are wholly unaddressed as well.

Indeed, there has been much discussion of Keystone XL’s unacceptable contribution to climate change, which is rapidly becoming a crisis in the absence of action by the United States to mitigate greenhouse gas emissions. Much has been made, for example, of the fact that Keystone XL would transport tar sands, one of the most expensive and energy-intensive fossil fuels to develop. Indeed, developing tar sands will only exacerbate the climate change problem, and simply may not proceed if there is to be any hope of maintaining a level of carbon dioxide and other greenhouse gases in the atmosphere that is safe for life as we know it on Earth. Yet, a glaring omission from the environmental reviews of Keystone XL’s impacts to endangered species is any assessment of how they may be expected to survive—let alone recover—in the face of the *combined impact* of Keystone XL and the impacts of climate change in the affected area.

For instance, increasingly intense droughts are projected to occur throughout the American Midwest as a result of climate change, but left completely unaddressed in all of the Keystone XL environmental reviews is how affected wildlife are expected to survive this threat when the impacts of Keystone XL are factored in. What will be the combined impact of a proliferation of power lines and reduced water flows to whooping cranes, piping plovers, and interior least terns? What will be the combined impact of lost, fragmented habitat for American burying beetles, and the expansion of the range of fire ants, a competitor for prey, into the beetle’s remaining range? What will be the combined impact of Keystone XL’s toxic leaks and spills and reduced water flows to the pallid sturgeon? All of these and more cumulative impacts should be found in the environmental reviews for Keystone XL, but are wholly absent. Indeed, reading through the environmental review documents for this project it appears as though climate change is not a real problem, even while it is the most pressing issue of our time for both wildlife and humans.

In short, for many reasons, Keystone XL would be catastrophic for American as well as Canadian wildlife, including species that are iconic to the American people and that can barely stand additional threats as they struggle to survive. In the face of such impacts, the State Department and other agencies have not—despite years of analysis—done the difficult work to assess, disclose, and mitigate the project impacts, including with enforceable mitigation measures. For all of these reasons, Keystone XL is not in the national interest of the American people.

## **J. Keystone XL Would Adversely Affect Tribal Nations and the State Department Has Not Adequately Consulted**

The Final SEIS, once again, evidences a failure of the State Department to adhere to its duties to tribes. Specifically, it has failed to properly consult with tribes on Keystone XL, fully consider impacts to irreplaceable cultural resources, and give a hard look at the impacts of the proposed pipeline to tribal water resources. For these reasons, and many others outlined in these comments, Keystone XL is not in the national interest of the United States.

### **1. The State Department Has Failed Its Obligation to Properly Consult with Tribes**

Native American tribes occupy a unique legal status, with certain rights established in the U.S. Constitution, treaties, Executive Orders, and by the judiciary. The federal government’s trust obligation to tribes requires it to act in the best interest of Native American tribes and individuals. In addition, tribes have the right to government-to-government consultation with the federal government. This requirement is set forth in Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (EO 13175).<sup>307</sup> Section 5(a) of EO 13175 states that “[e]ach agency shall have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.”

The Final SEIS claims that the State Department has consulted and continues to consult with tribes regarding this proposed project. However, the State Department’s tribal consultation process fails to fulfill the spirit of consultation as envisioned under EO

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<sup>307</sup> Executive Order No. 13,175, 65 Fed. Reg. 67249 (November 9, 2000). EO 13175 expanded the breadth of tribal consultation to “ensure the meaningful and timely input by tribal officials in the development of regulatory policies [rules, policies, and guidance] that have tribal implications.” Tribal implications are defined as having substantial direct effects on one or more tribes, on the relationship between the federal government and tribes, or on the distribution of power and responsibilities between the federal government and tribes. Among other things, EO 13175 requires federal agencies to respect tribal self-government and sovereignty, honor tribal treaty and other rights, and strive to meet responsibilities arising from the unique relationship between the federal government and tribes.

13175. Instead of leading to meaningful government-to-government consultation with all potentially affected and interested tribes, it appears that the State Department has engaged in a rote exercise designed to check off minimum legal requirements for tribal consultation. We reiterate the comments the National Wildlife Federation provided to the State Department on July 26, 2012 and July 30, 2012, reaffirmed during conference calls with the State Department on June 21, 2012 and September 4, 2012, as well as comments submitted on April 22, 2013 regarding the Draft SEIS.

The State Department has failed to develop and implement an accountable consultation plan and failed to conduct meaningful government-to-government consultation with tribes. Despite our recommendations on the Draft SEIS<sup>308</sup> and the thorough feedback from tribes, the State Department did not take any substantial new steps to meet its consultation obligations and to improve the consultation process.

Since the comment period for the Draft SEIS, the State Department has held only two additional “consultation” meetings with tribes. The first was held in Rapid City, South Dakota on May 16, 2014, and the second was a teleconference held on July 31, 2013. Neither encompassed the true spirit of consultation as they were group meetings without the opportunity for one-on-one formal dialogue between an individual tribe and the State Department. Moreover, as the Final SEIS indicates, the Rapid City meeting “could not proceed due to a demonstration,”<sup>309</sup> so no consultation actually occurred. In addition, the Final SEIS is not clear about the tribal attendees for the Rapid City meeting, in one place stating the names of nine tribes and in another place stating the names of ten tribes as attending the meeting.<sup>310</sup> It is troubling that the State Department cannot even properly record the tribes that attended its “consultation” meeting; this speaks to the overall validity of its consultation process.

The State Department was required to develop and implement an accountable tribal consultation plan that was widely available to tribes both affected and potentially affected by Keystone XL. The State Department’s current consultation plan, “Plan to Implement Executive Order 13175: *Consultation and Coordination with Indian Tribal Governments*,” is short on specifics concerning the consultation process and its implementation.<sup>311</sup> Furthermore, the Programmatic Agreement (PA)<sup>312</sup>—which is intended to outline the NHPA Section 106 consultation process—is problematic because tribes were merely granted “concurring party” status so they do not retain the same rights as signatory parties to amend or terminate the agreement. This gives them a significantly

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<sup>308</sup> Letter from Garrit Voggesser, National Wildlife Federation, to Genevieve Walker, U.S. Department of State, Comments – Draft Supplemental Environmental Impact State for the Keystone XL Project, April 22, 2013.

<sup>309</sup> Final SEIS at 3.11-37.

<sup>310</sup> Final SEIS at 3.11-37 and Appendix E, Attachment G.

<sup>311</sup> The State Department’s consultation website is completely inadequate, is not kept up to date with announcements of consultations and other items, and does not even include a direct link to its consultation plan.

<sup>312</sup> Final SEIS, Appendix E.

lower status and disqualifies them from receiving compensation for project impacts. Tribes should have rights equal to all other parties to the Programmatic Agreement. These are significant threshold issues.

We find it equally troubling that the State Department does not divulge the tribes that are concurring parties to the PA, simply stating “[Number TBD].”<sup>313</sup> We find it curious that the State Department notes that seven tribes signed the PA in the period between 2009 and 2011 under the Final EIS<sup>314</sup>, but for the new PA under the Final SEIS there is no disclosure. Have any tribes signed on? If so, which tribes? If the State Department cannot even provide the names and number of tribes that are concurring parties to the current PA, it certainly calls into question the effectiveness of its consultation efforts, and points to an overall lack of support from tribes for Keystone XL.

In our comments on the Draft SEIS, we provided nine recommendations on how the State Department could conduct effective consultation with tribes. Rather than revisit those recommendations, all of which still apply, we wish to emphasize one major point. We argued that the State Department must stop mistaking group meetings with tribes as true government-to-government consultation as called for by EO 13175. The State Department’s group meetings with tribes were not consultation, but informal informational meetings that represented only a first step in the State Department’s engagement with tribes in government-to-government consultation. One-on-one consultation provides opportunity for candid conversations between individual tribes and the State Department that would not necessarily occur during a group meeting. Each tribe’s circumstances are unique and must be treated as such by the federal government. Because most cultural resources information is confidential and is protected from release, discussion of such information at a group meeting risks its release to the general public and potentially endangers tribal cultural sites and practices. Thus, tribes may not raise significant issues in public venues. Despite this guidance that we recommended in accordance with regulation, the State Department continued forward with public tribal meetings disguised as true consultation.

## **2. Cultural Resources**

### **a) The State Department Has an Obligation to Protect Tribal Cultural Resources**

The State Department and cooperating federal agencies are legally and ethically obligated to protect and preserve tribal historic and cultural resources.<sup>315</sup> This

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<sup>313</sup> Final SEIS, Appendix E, Attachment I.

<sup>314</sup> Final SEIS at 3.11-34.

<sup>315</sup> Executive Order No. 13007, 61 Fed. Reg. 26771 (May 29, 1996) (“In managing Federal lands, each executive branch agency ... shall, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites.”).

responsibility is established by the federal government's trust responsibility; the U.S. Constitution; treaties; and several federal statutes, executive orders, presidential memoranda, secretarial orders, memoranda of understanding, and department and agency policies. In addition, the principles of environmental justice as well as the tenets set forth in the United Nations Declaration on the Rights of Indigenous Peoples<sup>316</sup> demand that the State Department take all measures necessary to protect the traditional, cultural, religious and spiritual resources and practices of Native Americans.

#### **b) Tribal Cultural Resources Are Threatened by this Project**

The proposed Keystone XL route and area of potential effect (APE)<sup>317</sup> cross lands that have been occupied, utilized, and revered by Native Americans since time immemorial. The APE encompasses a relatively high concentration of pre-contact period cultural resources as well as objects, sites, and places that are vital to the continuing traditional, cultural, spiritual, and religious practices of Native Americans. Section 3.11.3.1 of the Final SEIS notes that “[l]ands and resources within and outside the respective Native American reservations are important to Native American peoples for subsistence gathering, collection of plants for medicines, spiritual and ceremonial purpose, and everyday life.” Given the truth of this acknowledgement, it seems unreasonable that the State Department could permit Keystone XL to harm these lands and resources.

One example of affected land is the portion of Keystone XL that crosses the area of the Great Sioux Nation that was reserved under the 1851 and 1868 Fort Laramie Treaties. The Sioux tribes that signed these treaties have aboriginal rights to cultural, historical, and burial sites that may be located in and around the Keystone XL APE<sup>318</sup> and that could be affected by the widening of roads, trenching of the site, and oil spills.<sup>319</sup>

#### **c) The State Department Has Failed to Complete an Adequate Cultural Resources Analysis**

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<sup>316</sup> The United States supports this Declaration. *See* Announcement of U.S. Support for the United Nations Declaration on the Rights of Indigenous Peoples, *available at* <http://usun.state.gov/documents/organization/153239.pdf>. The Advisory Council on Historic Properties became the first federal agency to adopt a plan to proactively support the Declaration on March 1, 2013.

<sup>317</sup> The area of potential effect is defined as the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.” Final SEIS at 3.11.3.2 (citing 36 CFR § 800.16(d)).

<sup>318</sup> *See* Rosebud Sioux Tribe, Resolution No. 2011-308 and Resolution #758-2010-05, Fort Beck Assiniboine and Sioux.

<sup>319</sup> TransCanada's earlier project, the Keystone I tar sands crude oil pipeline through the Great Plains, ruptured at least 14 times during its first year of operation (2010-2011), spewing toxic sludge.

NEPA and the National Historic Preservation Act (NHPA) require agencies to assess potential resource impacts at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays in the process, and to head off potential conflicts.<sup>320</sup> The State Department has been analyzing Keystone XL for years, yet it has failed to complete a full analysis of the potential effects to tribal and cultural resources.<sup>321</sup> It would be unlawful for Keystone XL to move forward until all impacts have been studied and subject to review and comment by tribes and the public, consistent with NEPA and NHPA regulations. The State Department argues that the PA would ensure completion of cultural resource surveys and consultation with Indian tribes to provide “adequate mitigation.”<sup>322</sup> We find this statement unjustifiable given the consistent failure to conduct true government-to-government consultation through the EIS processes and even more perplexing considering the State Department does not disclose how many, if any, tribes are concurring parties to the PA.

Cultural resources, once altered, damaged or destroyed, are irreplaceable. Moreover, it is nearly impossible to remove cultural resources from their surrounding environment without infringing on the traditional, cultural, or religious significance of such resources. Indeed, the Final SEIS states that “[a]voidance is recommended for all eligible or unevaluated sites.”<sup>323</sup> Mitigation and avoidance should not be limited to NRHP-listed or eligible resources. Furthermore, the State Department states that if “avoidance is not feasible, a mitigation plan would be prepared consistent with the stipulations of the amended PA.”<sup>324</sup> We do not find this statement plausible given, again, that there is no disclosure of what tribes are concurring parties to the PA, which brings into question who would be party to consultation.

### **3. The State Department Has Failed to Adequately Protect Tribal Water Resources**

As in previous comments, we note that the proposed pipeline would cross infrastructure of the Mni Wiconi Project, which supplies water to the Pine Ridge, Lower Brule, and Rosebud Sioux Reservations.<sup>325</sup> The Oglala Sioux and other tribes have a genuine concern about any adverse effect that Keystone XL could have on the Mni Wiconi Project, such as the contamination of water. One particularly troubling issue is that the Final SEIS does not fully account for the impacts of an oil spill to the Mni Wiconi Project, instead only providing a brief assessment of the issue, despite the State Department’s trust obligation to fully assess potential impacts to tribes. Because it has a

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<sup>320</sup> See e.g., 40 C.F.R. § 1501.2

<sup>321</sup> Final SEIS at ES-26.

<sup>322</sup> *Id.*

<sup>323</sup> Final SEIS at 3.11.3.3, 3.11-18, 3.11-23, 3.11-31).

<sup>324</sup> *Id.*

<sup>325</sup> The Mni Wiconi Project Act of 1988, Pub. L. 100-516, as amended, authorized the Mni Wiconi Project to deliver safe water to the Pine Ridge Reservation, the Rosebud Indian Reservation, Lower Brule Indian Reservation, and the area known as West River/Lyman-Jones.

trust responsibility to ensure that adequate and safe water supplies are available to meet the economic, environmental, and public health needs of tribes, the State Department must take every precaution to protect the Oglala Sioux and other tribes served by the Mni Wiconi Project. With the Final SEIS as is, the State Department has not fulfilled this responsibility.

### **K. The State Department’s “No Action” Alternatives Are Still Seriously Flawed**

The Final SEIS fails to correct the many flaws in the Draft SEIS’s “no action” alternatives. First, the “no action” alternatives continue to assume that a vast network of rail infrastructure will be built where none is currently approved—or even proposed.<sup>326</sup> For example, all of the “no action” alternatives contemplate massive expansions of rail loading capacity in Lloydminster, Saskatchewan, and Epping, North Dakota.<sup>327</sup> The “Rail/Pipeline” alternative requires over a billion dollars’ worth of new infrastructure, including 3,500 acres (roughly 5.5 square miles) of rail offloading facilities in the tiny town of Stroud, Oklahoma,<sup>328</sup> which has fewer than 3,000 people. The “Rail/Tanker” alternative includes a massive 4,200-acre rail offloading facility in Prince Rupert, British Columbia.<sup>329</sup> Furthermore, the Final SEIS fails to mention that additional track would be necessary to allow these sorts of increases in train traffic—even the small increase in crude-by-rail over the past few years has already caused disruptive congestion on existing rail lines. The Final SEIS admits it could take decades to build this type of rail infrastructure,<sup>330</sup> if it is built at all. In short, these alternatives are *action* alternatives, not “no action” alternatives.

Second, even if there were actually proposals for these so-called “no action” alternative projects, the projects would likely require discretionary approvals and permitting, and may also require environmental review. However, the Final SEIS does not even attempt to discuss the regulatory framework for this hypothetical rail infrastructure. Furthermore, these rail projects would likely face significant community opposition. As described above, there is already opposition to many of the crude rail terminal projects discussed in the Market Analysis. However, the Final SEIS fails to discuss these obstacles to rail transport in either the Market Analysis or the “no action” alternatives.

Third, the Final SEIS continues to include the impacts of Keystone XL in the “no action” alternatives, in violation of NEPA. These alternatives were explicitly based on the assumption that they would transport the exact same amount of crude as Keystone XL.<sup>331</sup> Accordingly, the “no action” alternatives effectively assume the existence of Keystone

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<sup>326</sup> See Final SEIS at ES-28, section 2.2.4.

<sup>327</sup> Final SEIS at 2.2-12 to -19.

<sup>328</sup> Final SEIS at 2.2-20 to -21.

<sup>329</sup> Final SEIS at 2.2-25 to -26.

<sup>330</sup> Final SEIS at 1.4-80.

<sup>331</sup> Final SEIS at 2.2-7.

XL and thus fail to provide a meaningful tool for evaluating its impacts on the environment.<sup>332</sup>

Fourth, the Final SEIS continues to evaluate multiple “no action” alternatives.<sup>333</sup> Logically, there can be only one no action alternative.<sup>334</sup> The fact that the State Department analyzes more than one “no action” alternative reveals the uncertainty about the new infrastructure required for these alternatives.

Fifth, in the Final SEIS, the State Department, for the first time, added a new “no action” alternative: the “Rail Direct to Gulf Coast” alternative.<sup>335</sup> This new alternative assumes, without any support, that there is already sufficient rail offloading capacity in the Gulf Coast area to accommodate an additional 830,000 bpd of crude oil. The State Department must prepare a supplemental EIS to analyze this alternative and allow the public to comment on it.

### **III. THE STATE DEPARTMENT CANNOT APPROVE KEYSTONE XL WHEN THERE REMAIN SERIOUS QUESTIONS ABOUT THE INTEGRITY OF THE KEYSTONE XL REVIEW PROCESS**

The State Department’s review of the proposed project has been all but transparent and its failure to document compliance with its own conflict of interest screening guidelines leaves unanswered many critical questions addressing the review’s objectivity. The Review and approval of this pipeline is an extremely important issue, and many believe it will largely form President’s Obama’s environmental legacy. That is because approval or denial of the Keystone XL pipeline would have a major effect on the future of our climate and fuel policies. The below facts demonstrate that a decision to approve the pipeline cannot be made based on the analysis in the EIS, which was prepared by a contractor with significant ties to the oil industry. However, a decision denying the proposed project would be entirely appropriate in light of Environmental Resources Management’s (ERM) failure to fully demonstrate its objectivity in reviewing the project.

Evidence secured by the Sierra Club through Freedom of Information Act requests demonstrates that the integrity of the State Department’s Keystone XL review and its Final Supplemental Environmental Impact Statement are severely compromised.<sup>336</sup> Specifically, the evidence establishes that:

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<sup>332</sup> See *Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1037-38 (9th Cir. 2008); *N. Carolina Wildlife Fed’n v. N. Carolina Dep’t of Transp.*, 677 F.3d 596, 603 (4th Cir. 2012).

<sup>333</sup> Final SEIS at 2.2-6.

<sup>334</sup> *Conservation Nw. v. Rey*, 674 F. Supp. 2d 1232, 1247 (W.D. Wash. 2009).

<sup>335</sup> Final SEIS at 2.2-29.

<sup>336</sup> See Sierra Club and Friends of the Earth February 12, 2014 letter to Inspector General Linick at 1, attached as Exhibit S.

- 1) The State Department improperly selected ERM without conducting any independent inquiry into potential conflicts of interest, thus ignoring previous OIG recommendations and its own Interim Guidance procedures;
- 2) ERM made false and/or misleading statements of State Department regarding potential bias and conflicts of interest;
- 3) ERM has extensive ties to the oil industry, including dues paying memberships to multiple oil and gas industry trade organizations, such as the American Petroleum Institute, which has been one of the most vocal supporters of the Keystone XL;
- 4) ERM worked on another TransCanada project during the period covered by their conflict of interest disclosure statement, and has an extensive list of additional clients that stand to benefit from approval of the proposed pipeline, but failed to disclose those relationships;
- 5) The State Department selected ERM based on TransCanada's recommendation.

These improprieties undermine the credibility of the Final SEIS, which the undersigned have noted throughout their comments, downplays the true carbon pollution from Keystone XL, the increased tar sand development that it will cause, and the project's threats to human health and safety, wetlands, wildlife habitat, drinking water supplies and air quality. Indeed, a true accounting of the carbon pollution and other environmental threats from Keystone XL would result in a determination that the project is not in the national interest. These facts and the conclusions reached by ERM and its sub-contractors place the objectivity of the project's environmental review in doubt.

The Office of Inspector General's (OIG) February 2014 report on its investigation into the State Department's conflict of interest screening was supposed to conclude this matter, but instead left more questions about the process. For example, it found that while the agency staff said that they conducted a thorough conflicts interest process, they did not actually document the process. The OIG report notes, "the Department did not document its internal substantive analyses of the specific organizational conflict of interest issues it reviewed prior to May 2013," and instead took agency staff interviews about the conflict review process at face value. In other words, the OIG is asking the American public to take the Department's word for it that it followed its conflict-screening guidelines and the requirements of 40 C.F.R. section 1506.5(c).

This undocumented process is especially egregious considering that this is not the first but the second time that the Department's hiring of a third-party contractor for this same project has been investigated. One would think that after the first Inspector General investigation into conflicts related to the State Department's selection of contractor Cardno-Entrix in 2011 and the OIG's resulting mandate that the agency improve its screening guidelines that the agency would be vigilant in its conflict screening the second time around.

Moreover, the OIG's investigation narrowly looked at whether the State department followed its own guidelines, but failed to evaluate the entire practice of allowing the industry to write its own review of the proposed project. For example, overlooked in the minutiae of the report is whether it is acceptable for ERM to write the

EIS while it is also a member of the American Petroleum Institute, which has spent \$22 million lobbying in favor of Keystone XL on behalf of its members, including ERM.

The OIG also concluded that there were no conflicts of interest in selecting ERM as the reviewing contractor, yet at the same time recommended that the agency develop a definition of “organizational conflict of interest”.<sup>337</sup> Absent a current definition or standard, it is unclear how staff can adequately and diligently determine whether or not a conflict exists.

Many of the most serious questions remain about the objectivity of the States Department review of the proposed project despite the OIG Report’s narrowly based conclusions that no conflicts of interest exist. ERM actually relied on natural resource developer and Alberta tar sands operator Jacobs Consultancy to conduct the greenhouse gas emissions analysis of the proposed project.<sup>338</sup> Not surprisingly, the analysis reached the conclusion that Keystone XL would not substantially worsen carbon pollution. The climate change impact analysis of the Keystone XL is critically important especially because President Obama has explicitly conveyed that the potential impacts of tar sands development on climate change will be a major factor in his approval decision.

The current record does not support a transparent and objective review process. This is further supported by a number of members of Congress, including Representative Grijalva who has made a formal request to the US Government Accounting Office to conduct an independent investigation of the State Department’s selection of ERM and the underlying biases of the project’s review.<sup>339</sup> Critically, there cannot be even a hint of bias in State’s review process. Yet, the record does not support that. Based on these facts, President Obama cannot make a finding that the Keystone XL tar sands pipeline is in the national interest. Instead, the President can and should reject the project.

#### **IV. CONCLUSION**

For these reasons, we urge the State Department to find that the Keystone XL pipeline would not serve the national interest. Alternatively, we ask the State Department to conduct further environmental analysis before reaching a decision on this permit.

If you have any questions about these comments, please contact me at 303-449-5595 ext. 100.

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<sup>337</sup> OIG Report at 5.

<sup>338</sup> Brad Wieners, *Did the State Department Fail Obama on Keystone XL*, Bloomberg Business Week, available at <http://www.businessweek.com/articles/2014-02-26/did-the-state-department-fail-obama-on-keystone-xl#p1>.

<sup>339</sup> Letter from Representative Grijalva to the Honorable Gene Dodaro, February 25, 2014, <http://grijalva.house.gov/uploads/Grijalva%20Letter%20to%20GAO%20Requesting%20Review%20of%20State%20Department%20EIS%20Process%20Feb%2025.pdf>.

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