STATE OF SOUTH DAKOTA	**)**	**IN THE CIRCUIT COURT**
	) ss.	
COUNTY OF HUGHES	**)**	**SIXTH JUDICIAL CIRCUIT**

IN THE MATTER OF PUBLIC UTILITIES COMMISSION DOCKET HP14-001, PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUED IN DOCKET HP09-001 TO CONSTRUCT THE KEYSTONE XL PIPELINE	)	Case No. 32CIV16-33 **AFFIDAVIT OF CINDY MYERS**

STATE OF NEBRASKA	)
	) SS:
COUNTY OF HOLT	)

Cindy Myers, being duly sworn, deposes and says:

I was an intervener *pro se* in the proceeding before the South Dakota Public Utilities Commission ("PUC") on the certification of the TransCanada Keystone Pipeline, LP ("TransCanada") permit for the Keystone XL Pipeline in South Dakota (PUC Docket 14-001).

My physical address is 87925 468th Avenue, Stuart NE 68780, and my mailing address is P.O. Box 104, Stuart, NE 68780. My cell phone number is 402-709-2920. My email address is csmyers77@hotmail.com.

I am a life-long resident of Holt County, Nebraska where I have worked as a Registered Nurse for 35 years. I have been concerned about TransCanada and their oil pipelines since 2009 when I learned Keystone XL was to cross Holt County, Nebraska where the Ogallala Aquifer saturates just below the surface. I saw this as a risk to my drinking water. My fear of undetected leaks spilling large volumes over an indefinite period of time became realized with the Keystone One spill in Hutchison County, South Dakota.

My concern about water contamination prompted me to research, and in 2010 I discovered Dr. Arden Davis' expert testimony given in 2007 before the PUC. You may be aware that Dr. Davis received the 2016 J.P. Gries Geologist of the Year award this year for his contributions to the study of geology and groundwater hydrology in South Dakota. He clearly emphasized that benzene, a potent carcinogen, was the toxin of greatest concern because its maximum contamination limit in water is only a very dilute 5 parts per billion. Dr. Davis assisted me with calculations showing that it only takes 17 drops of benzene to contaminate a water tower filled with 50,000 gallons of water. Dr. Davis warned the PUC in 2007 that an oil spill in eastern

South Dakota from Keystone One could contaminate large volumes of water. The PUC did not heed his testimony then, and they again shrugged off his expert knowledge at the KXL hearing in 2015. According to the FSEIS for KXL, 3.13-10, "a notable difference between dilbit and other forms of crude is its capacity to precipitate out in water."

I first learned of the Keystone One spill in Hutchison County the morning of April 4, 2016. I keep up on the news daily, and so I was surprised to learn that the spill was actually discovered on April 2, 2016, but I had not read or heard any reports in the media until April 4, 2016. I visited the spill site that same day, arriving mid-to-late afternoon. Approaching the spill site on Highway 18, I first noticed a very large pile of dirt south of Highway 18, in the southwest corner of the intersection of Highway 18 and 437th Avenue. I estimate approximately 15-20 steps inside the fence line. *Photo 0846.

A backhoe was digging and dropping dirt on that pile, which was so high that I could only see the arm of the backhoe. *Photo 0843.

Across the road, on the east side of 437th Avenue, and a few yards further south from the intersection, I noticed another pile of dirt. This pile was not as high as the pile on the west side of the road. Yellow flags marked the base of that dirt pile. Further away from the base of the dirt pile, I noticed a white roll stretching the length of the dirt pile, on the north side. The white roll reminded me of absorbency material. *Photo 0844.

A “road closed” sign was displayed on 437th Avenue going south from the intersection with Highway 18. *Photo 0840

A semi-truck with a load of flood lights turned on to that road, and the driver visited with a man wearing a bright yellow vest before proceeding past the sign. *Photo 0837.

I informed the man in the bright yellow vest that I was interested in taking photos. He informed me I was not allowed past the sign to take photos, but gave verbal approval for me to take photos from Highway 18. He did not have any visible identification or uniform, only the yellow vest. I asked who he was working for and he replied, "TransCanada I guess." On his right hip he wore a holster with a very visible gun inside. *Photo 0845.

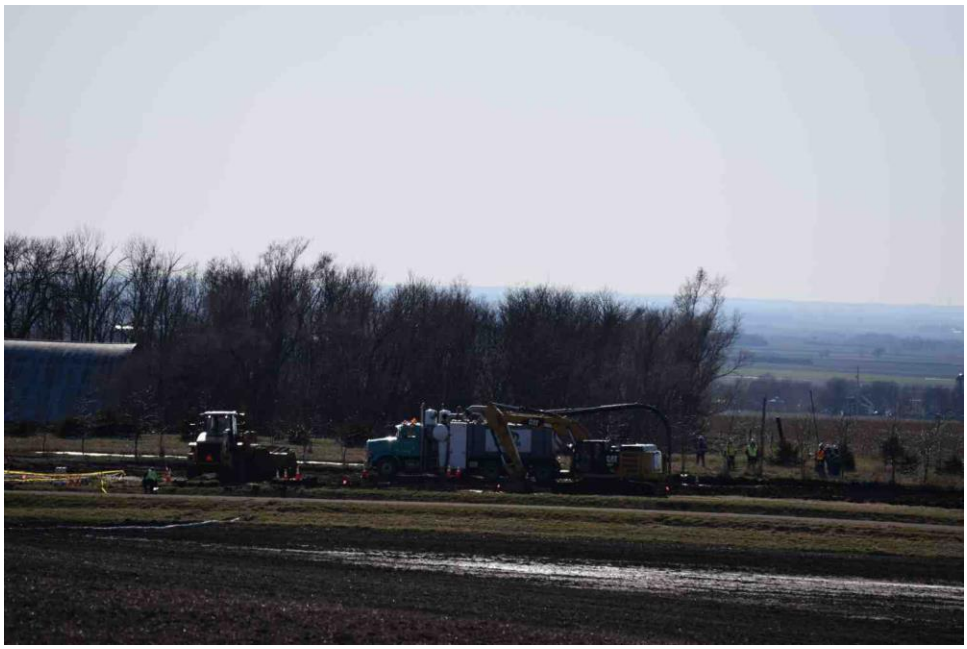
Another man with the same type of yellow vest walked up and seemed interested in our conversation. I did not see any public law enforcement the entire time I was there on April 4, 2016.

To get an overview of the spill site, I went up the hill on Highway 18, east of the site. I observed equipment parked on the south side of the spill area. A tubular structure was being hoisted. The size and diameter made me think that this was possibly a clamp or splice. *Photo 0855.

The farm house seemed quite close to the spill site activity, I would estimate less than 500 feet away. I wondered if the safety of the water source for the farmstead had been compromised from the spill. *Photo 0853.

From the hill east of the spill site, I observed the spill site looking west. I had a good view of the lay of the land, and noticed how the land slopes down from the spill site to the west. The farmhouse is located on the west side of the spill site. *Photo 0851.

While viewing the spill site from the hill to the east, I noticed a truck with “Badger” written on the side. It appeared to be pumping equipment. *Photo 0852.



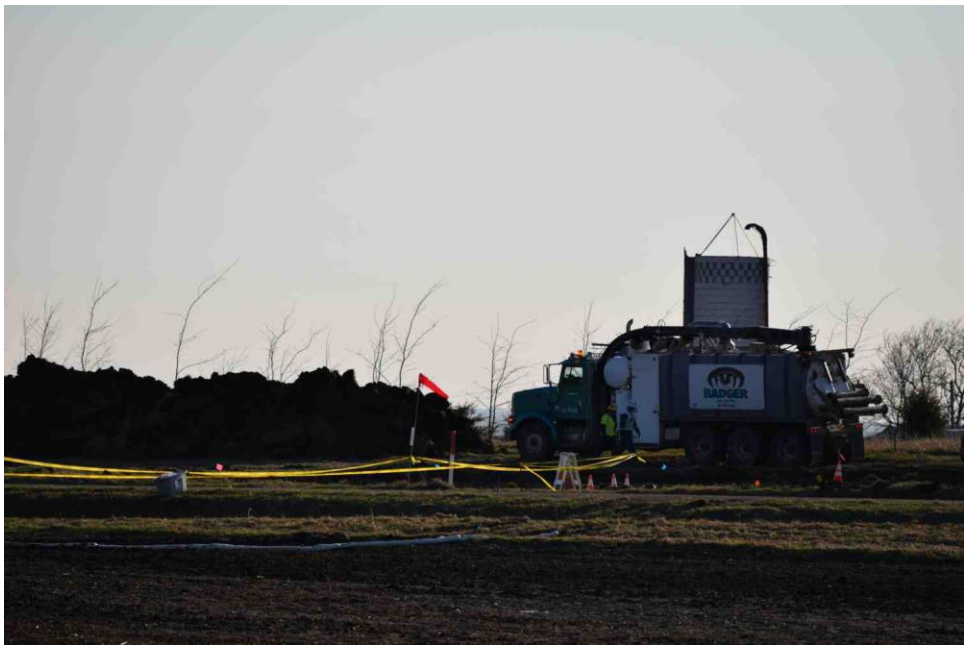
Another truck with “Clean Harbors” on the side appeared to have a hose protruding from the back of it. *Photo 0856.

I saw two side-dumpers, one with “Knodel” and the other with “we play in the dirt” written along the side of them. *Photo 0857.

A red pickup truck was parked on 437th Avenue which seemed to divide the site. The white roll noted earlier is also seen in this photo. *Photo 0859.

On this visit, 437th Avenue seemed to be intact with piles of dirt on each side. *Photo 0864.

There was a Badger truck on the west side of 437th Avenue, facing south. I noticed something which resembled a red wind sock or flag. I again noticed the absorbent-type white roll. *Photo 0862.



Several workers gathered by a back hoe and seemed to be looking down in the hole. I did not notice any of the workers wearing masks or equipment for respiratory protection. I do know from preparing testimony, according to ATSDR, benzene can kill a person in a matter of minutes from breathing in high levels of benzene vapors. *Photo 0863.

I stayed at the site until just after it turned dark. The flood lights were turned on, and activity at the spill site continued.

On April 8, 2016, I drove up to the spill site for my second visit. While in route, I learned workers had discovered the specific location on the pipe where oil had spilled out, six days after the pipeline leak was discovered. Leak detection systems touted by TransCanada failed to detect this spill. It took a human to discover this large spill, and then it took TransCanada another six days to find the pipe defect where the oil was spilling from. This is not reassuring to me when I know that every drop of benzene is a difference maker. I am very concerned about water contamination from this spill since almost 17,000 gallons of a tar sands-type product saturated the soil. The concern with benzene is that it can become water soluble and migrate in water, not only in groundwater, but also surface water. Cleaning up the visible oil product seems to be the goal, but most worrisome are the toxins, such as benzene, that you cannot see. Benzene cannot be seen in water, and so analysis is the only means to detect benzene. Water knows no boundaries.

The James River is about 11 miles west of the spill site. *Photo 0875.

It was obvious that the dirt piles on both sides of the road were much larger than noted on my previous visit four days ago. Piping originating in the southwest corner of the intersection of Highway 18 and 437th Avenue was laid on the ground, going around the dirt pile and up the hill to the south. *Photo 0879.

Cory Heidelberg, who writes a blog called Dakota Free Press, reported the water system line had to be rerouted. A photo of the temporary line can be found in his blog. During the PUC hearing, Heidi Tilquist, an expert witness for TransCanada, admitted plastic pipe could be permeable to benzene, but it would be more likely to be permeable if the plastic pipe was "dipped" in benzene. Of concern would be whether a plastic water pipe laying in oil-saturated

soil for an unknown length of time would be considered being "dipped" in benzene. Twenty-six users of this water line had to be hooked up to temporary water lines, according to Cory Heidelberg.[1]

On April 8, 2016, there was obviously much more dirt piled up on each side of 437th Avenue, plus excavated dirt on the road, compared to what I had observed on April 4, 2016. *Photo 0880.

Two backhoes were busy working on the east side of 437th Avenue, along with a smaller piece of equipment. *Photo 0886.

[1] Heidelberg, "TransCanada Occupying Leak Site Several More Weeks, Limiting Landowner Activity", April 19, 2016 (URL last visited, July 17, 2016): http://dakotafreepress.com/?s=Freeman+oil+spill&submit=Search

I believe this to be the temporary water line in this photo, where I noted again what appeared to me to be a red windsock. *Photo 0888.

I requested a visit with TransCanada's media representative when I first arrived on April 8, 2016. The man standing guard at the intersection of Highway 18 and 437th Avenue made a phone call and then told me that their media representative would come out and visit with me. I waited about an hour before asking again. He informed me that the media representative was in a meeting and may not make it out to visit with me. I had heard reports that TransCanada was hauling soil to a site on the southern edge of Freeman, South Dakota. I drove to Freeman, and easily found a site on the southern edge of Freeman with large piles of dirt. A vehicle with "Tri-

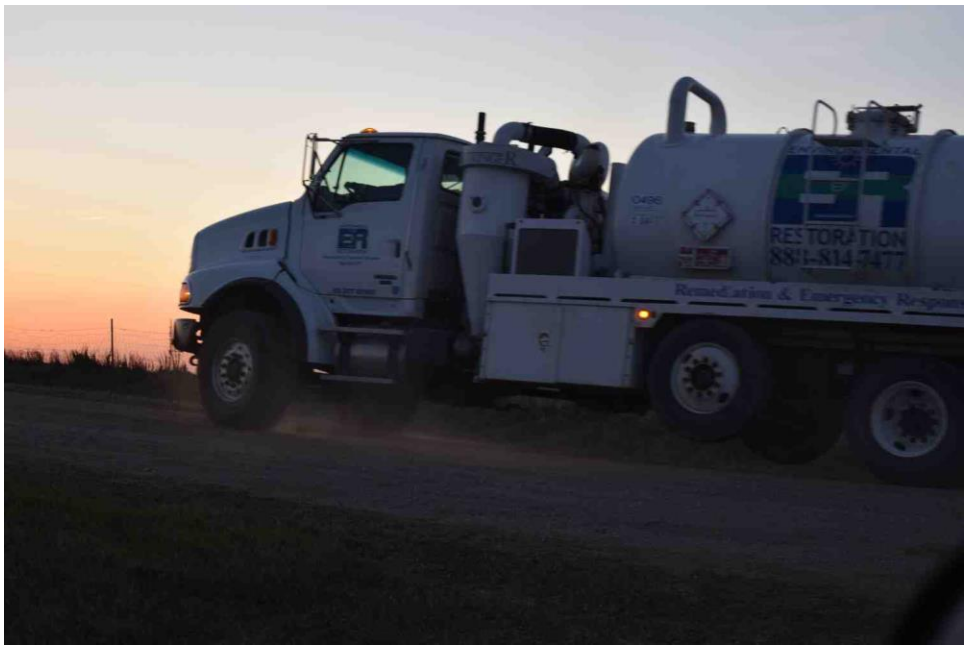
State Security" on the side was parked at the entrance to the area and a person sitting in the driver's seat stared intently at me. *Photo 0911.

A row of trucks mostly blocked the view of the dirt pile, but I noted a small skid loader on top of the pile, dropping loads of dirt. *Photo 0915.

I watched this site for about 30-60 minutes. It appeared they were trying to cover the pile of dirt with plastic. The wind billowed up the sheet of plastic. I was unable to see any ground barrier. *Photos 0922-0923.

I did see some moisture to the south of this large pile of dirt, but cannot say where it came from. *Photo 0925.

After I left Freeman, I drove to the south entrance of the spill site. There were two men standing guard at this entrance. I did note a badge that indicated the one man served in law enforcement for Springfield, SD. I asked these two if I could visit with TransCanada's media representative. They called into the site and then told me that I would be able to meet with their media representative after he was finished with a meeting. I waited there for over an hour. While I waited, several vehicles and trucks were going in and out, and the two guys who appeared to be doing security at the south gate, visited with each vehicle. One pickup had a "Clean Harbors" sign on the side. *Photos 0936, 0946.



After the sun went down, I gave up the idea of visiting with the media representative and left approximately 8:30 p.m.

I made my third visit to the spill site on April 23, 2016. I arrived about 2:00 p.m. and observed the spill site and took photos.

On this day there continued to be much activity at the spill site. A backhoe on the west side of 437th Avenue was scooping dirt off a pile which had a black plastic barrier at the base on the down slope side. I noticed a pile of small trees in a heap, which I believe were removed from the young shelterbelt on the property. *Photo 1041.

I saw equipment also working on the east side of 437th Avenue. *Photo 1043.

I took a short video of the backhoes working on the east side of 437th Avenue, but the wind was so extreme that I couldn't keep the camera steady. The wind on this day was straight from the south. I thought about the huge dirt pile on the south edge of Freeman and thought the gusty south wind could easily be blowing benzene and other toxic fumes from that dirt pile across Freeman. Paul Seamans and Sue Sibson both told me they followed trucks loaded with dirt from the oil spill site to the area south of Freeman for unloading.[2]

I witnessed a backhoe loading dirt from the dirt pile west of 437th Avenue into a truck labeled "Knodel". *Photo 1051.

[2] The video (Video 1044, in .MOV format) taken by Ms. Myers can be found at the following URL: https://www.dropbox.com/s/z03xewhjq2ss2i7/DSC_1044.MOV?dl=0

The spill site was at the top of a hill, and it seems any water-soluble contaminants, such as benzene, could have easily washed down the hillside. *Photo 1053.

Tracks, filled with water, were cut into the ground down the hill from the spill site. *Photo 1054.

A back hoe on the west side of 437th Avenue was scooping dirt from the pile and dumping it into a Knodel truck. A black plastic fence was noted at the downslope end of each of the two dirt piles. A few trees from the shelterbelt were still standing amongst all the dirt and machinery. *Photos 1058 and 1063.

The attached photograph depicts a TransCanada warning sign across the highway north of the spill site. *1066.

Recent rains caused visible washing across a barren field at the northeast corner of the intersection of Highway 18 and 437th Avenue. To the south across the Highway, at the top of a hill, was a pile of excavated dirt from the spill site. *Photo 1067.

I noted a pool of water in the ditch along 437th Avenue, about 15 feet north of the intersection of Highway 18 and 437th Avenue. This seemed to be a collection area for water run-off. *Photo 1068.

Recent rains had caused pooling of water in the area ditches, visible washing across the fields, and water to fill the sunken tire tracks at the foot of the hill, down from the spill site. The terrain generally sloped downward to the west and north from the excavated areas. Benzene becomes soluble in water, allowing it to migrate distances in moving water. You cannot see benzene in water at the maximum contamination limit, which is extremely dilute at only 5 parts per billion. I have concerns about benzene migrating from the spill site. To detect benzene in water, analysis is required. It is unknown whether the South Dakota Department of Environment and Natural Resources has been doing water samples.

In the south west corner of the intersection of Highway 18 and 437th Avenue, I saw what I believe to be the temporary water line between the highway and the dirt pile. The photo shows dust being stirred up. *Photo 1069.

I took photos from the hill east of the spill site to get a broader view. *Photos 1071 and 1073.

Our prayer group, consisting of Faith Spotted Eagle, Paula Antoine, Frank Kloucek, Paul Seamans, Tom Genung, several members of Oceti Sakowin and I, parked along 437th Avenue, north of the intersection and walked to Galen Heckenlaible's property as TransCanada continued working at the spill site. *Photo 1091.

We gathered on Galen's property for the prayer ceremony, just north of his home and down the hill from the spill site. *Photo 1114.

Galen Heckenlaible made a surprise visit to our group and walked around the prayer circle, shaking hands with everybody. He was very friendly and welcoming. I heard at this gathering, indirectly, that Galen had stated his water had been tasting unusual. I am very concerned about Galen being exposed to toxins which may have permeated a water line, but also concerned about Galen being exposed to benzene in the air, especially with the strong windy days I noticed while visiting there. *Photos 1126 and 1127.

In the group photo, the wind from the south was so extreme, that you can see ribbon and feather on the ceremonial staff blowing in a perfect horizontal direction. *Photo 1152.

I spotted what appeared to be a plastic pipe jutting up a few inches out of the ditch, surrounded mostly by water, located at the northwest corner of the intersection of Highway 18 and 437th Avenue. On the pipe's cap, was the word "water." I thought about the possibility of buried plastic water line being immersed in contaminated water and/or soil with the potential of permeation by toxic chemicals, particularly BTEX. BTEX is an acronym for benzene, toluene, ethyl benzene, and xylene. *Photo 1155.

After observing how close the spill was to the farmhouse and learning the public water line had to be rerouted from the spill area, I recalled my PUC testimony about BTEX chemicals permeating plastic water lines.

My testimony to the PUC described my concerns about KXL crossing the Mni Wiconi water line at mile marker 471. With only six feet separating the water line from the oil pipeline, oil spillage could possibly contaminate the water line via BTEX chemicals permeating the plastic water line.

Condition #40 of the 2010 permit granted by the PUC to TransCanada makes it clear that as far back as 2010, the PUC was well aware of the serious nature of BTEX chemicals and the fact plastic water lines are permeable to these very toxic chemicals. BTEX chemicals are naturally occurring components of crude oil, causing cancers and neurological disorders.

> "At the request of any landowner or public water supply system that offers to provide the necessary access to Keystone over his/her property or easement(s) to perform the necessary work, Keystone shall replace at no cost to such landowner or public water supply system, any polyethylene water piping located within 500 feet of the Project with piping that is resistant to permeation by BTEX. Keystone shall not be required to replace that portion of any piping that passes through or under a basement wall or other wall of a home or other structure. At least forty-five (45) days prior to commencing construction, Keystone shall publish a notice in each newspaper of general circulation in each county through which the Project will be constructed advising landowners and public water supply systems of this condition."[3]

[3] PUC Docket No. HP09-001; Amended Final Decision and Order; Notice of Entry.

In permit condition #40, the PUC implies polyethylene water piping is permeable to BTEX chemicals and describes replacing polyethylene water piping with piping that is resistant to permeation by BTEX.

Because the PUC knew the risks associated with permeability of water lines to BTEX chemicals, they included permit condition #40 for the KXL permit. It seems this same reasoning would have been appropriate to address with landowners and public water systems along the Keystone One route. The PUC was concerned about BTEX permeability of water lines. It seems that in the interest of public health and safety, the PUC should have made this permit condition mandatory instead of simply optional.

Landowners and public water systems have a right to be adequately informed. Only a simple notification in local newspapers does not seem appropriate to address an issue which could seriously affect the health, safety and welfare of citizens.

A "Plastic Water Line Survey" by the Iowa Department of Natural Resources indicates permeability of plastic water lines, both polyethylene and polyvinylchloride (PVC), to petroleum/BTEX chemicals.[4]

The Iowa survey asked the question "Have you had any known problems with petroleum permeation related to plastic water lines?" The summary of responses included "Thirteen states have known problems with permeation of plastic pipe. Of these thirteen states, seven states have specifically had permeation incidents involving PVC."

I believe it is important to note that one water analysis cited in this survey showed a concentration of benzene at 2,900 ppb from permeation of a plastic water line. The maximum contamination limit set by the EPA is 5 ppb.

During the KXL evidentiary hearing in 2015, I asked the PUC to admit the Iowa Department of Natural Resources Plastic Water Line Survey Results into evidence. I did the best I knew how as a lay intervener, but the PUC abruptly refused my request and did not allow the survey into evidence.

It seems an assessment of how the spill affected water lines, public and private, should be done. Photos of the affected water lines should have been taken. An assessment should also be done to learn if drinking water was contaminated from the spill, and particularly if people had been exposed to benzene and other toxins, and for how long.

Brad Vann, EPA environmental scientist, informed me that benzene at the maximum contamination limit of only 5 ppb is so dilute you can't taste, see or smell the benzene, and it is very possible to drink benzene contaminated water unknowingly. Water analysis is required to detect benzene. The idea of benzene insidiously contaminating drinking water because of an undetected oil leak is particularly disconcerting to me.

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[4] Vander Bloemen, Iowa Department of Natural Resources, "Plastic Water Line Survey Results", located at the following URL (last visited, July 17, 2016): www.iowadnr.gov/portals/idnr/uploads/ust/pwlsurveyppt07.pdf

A letter dated July 6, 2016 to PHMSA, written by Representative Brad Ashford, Nebraska, requests independent water and soil testing along the Keystone Pipeline. Rep. Ashford's concerns are related to the two corrective action orders forcing TransCanada to replace segments of the pipeline in Nebraska.[5]

All these aforementioned concerns were made clear in my PowerPoint testimony I prepared for the KXL evidentiary hearing. TransCanada actually suggested to the PUC that there was no need for me to even present my testimony at the hearing. A constant chorus of objections from TransCanada's lawyers made it extremely difficult for me to present my information completely. Two months after the hearing, TransCanada convinced the PUC to strike my PowerPoint testimony and several of my exhibits from the record, including detailed information about benzene toxicity. My fears and concerns, which were so easily discarded by the PUC, became realized when Keystone One spilled almost 17,000 gallons of BTEX laden product in Hutchison County, South Dakota, requiring a reroute of the public water line and allowing the gusty spring winds to spread benzene fumes haphazardly across the region.

[remainder of page intentionally left blank – signature page follows]

[5] *See*, July 6, 2016 letter from Rep. Brad Ashford to Christie Murray, Director of Program Development, Office of Pipeline Safety, Pipeline and Hazardous Materials Safety Administration, attached hereto.

Sworn and subscribed to this 18th day of July, 2016.

Cindy Myers
CINDY MYERS

GENERAL NOTARY - State of Nebraska
KATHLEEN A KOHLE
My Comm. Exp. January 5, 2020

Kathleen A Kohle
Notary Public

My Commission Expires: 1-5-2020

(SEAL)