

2014 Final Supplemental Environmental Impact Statement (“Final SEIS”), including but not limited to any and all communications between TransCanada’s or its Affiliates’ staff, consultants, advisors, or other parties, and PHMSA, DOS, or other federal agencies concerning regulatory compliance, approvals, or waivers of applicable regulations with respect to the Project.”

3. Based on my inquiries, it has been determined that approximately 55 terabytes of email data, including attachments, would have to be searched in connection with this request in order to capture the email of all company personnel who might have had communications with the relevant agencies with respect to Keystone XL over the past seven years. The e-mail data is stored on two Microsoft Exchange servers, comprising 37 databases, located in Calgary, Alberta, Canada.

4. For context, a single terabyte of data is approximately 1 trillion bytes of information and would be the equivalent of approximately 220 million (220,000,000) pages of printed text. Thus, 55 terabytes of data could comprise the equivalent of up to 12 billion (12,000,000,000) pages of printed text.

5. As a preliminary step to analyzing this data, the 55 terabytes of e-mail and associated attachments would have to be indexed. TransCanada’s internal systems are not designed for this magnitude of technical processing; therefore, one or more third-party vendors would be required to perform this indexing.

6. Next, search terms would have to be applied against that index. This would generate a subset of data that would have to be reviewed to confirm the validity of the search terms. Once confirmed, the native files would have to be retrieved from the servers, reviewed

for privilege and responsiveness, converted to an appropriate production format, and produced.

This would also require the preparation and production of a privilege log.

7. As a preliminary exercise to gauge the resources required by this process, TransCanada selected seven mailboxes for the following individuals who had the most significant, non-privileged involvement in the regulatory compliance and approvals for the Keystone XL Project: Les Cherwenuk, Stephen Marr, Meera Kothari, Michael Schmaltz, Sandra Barnett, James Odom, and Alan Lietz. Additionally, I limited the search in time to June 29, 2010 to present, which is the date of the Commission's Amended Final Decision & Order in this case.

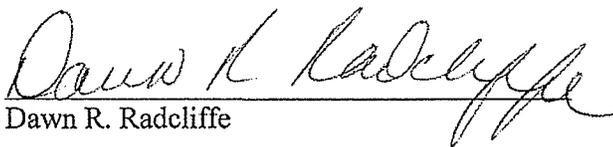
8. On May 14, 2015, TransCanada began indexing five of the mailboxes. As of this date, three mailboxes have been indexed. Two are continually indexing and it is impossible to determine when indexing will complete. In order to permit sufficient remaining resources for daily operations, the remaining two are in the queue for indexing.

9. Until the 55 terabytes of data are indexed (an endeavor that I estimate would cost between \$2,184,000 and \$3,276,000 and would take an estimated 70 days or more to complete, exclusive of review and production time and expense), it is impossible to calculate with any accuracy the time and expense associated with processing, reviewing, and producing the responsive e-mail data.

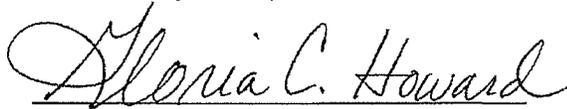
10. Based on my experience and in following generally accepted e-discovery processes, I estimate that even with the assistance of a third-party vendor, all processes, indexing through production, could take from three to six months or more at a cost of between \$8 and \$13 million dollars or more. However, as previously stated, these estimates are based on an unknown volume of data that would result from the indexing.

11. The limited search described above does not include two contractors who worked extensively on regulatory compliance and approvals for the Keystone XL Project, namely Heidi Tillquist with Stantec Consulting Services Inc. and Jon Schmidt with Exp Energy Services, Inc. Their e-mails with outside agencies are not included on TransCanada's e-mail server(s). Their e-mail servers would have to be searched separately.

Dated this 19th day of May, 2015.


Dawn R. Radcliffe

Subscribed and sworn to before me
this 19th day of May, 2015.


Notary Public – Texas
My commission expires:



CERTIFICATE OF SERVICE

I hereby certify that on the 19th day of May, 2015, I sent by United States first-class mail, postage prepaid, or e-mail transmission, a true and correct copy of Affidavit of Dawn R. Radcliffe, to the following:

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