

KEYSTONE XL PIPELINE PROJECT

0528-SD-P4-578.6-579.4-S

KEYSTONE XL PIPELINE PROJECT PIPELINE ROUTE VARIATION FORM			
1	VARIATION TYPE:	Refinement: <input type="text"/>	Reroute: <input checked="" type="checkbox"/> X
		Centerline: <input checked="" type="checkbox"/> X	Pump Station: <input type="text"/>
		Footprint: <input type="text"/>	Design: <input type="text"/>
		Valve Site: <input type="text"/>	CAR: <input type="text"/>
2	LOCATION:	Sketch: <input type="text" value="Attached"/>	Pictures: <input type="text" value="N/A"/>
	State: <input type="text" value="SD"/>	County: <input type="text" value="Tripp"/>	Quad Map: <input type="text" value="N/A"/>
	Township: <input type="text" value="097N"/>	Range: <input type="text" value="076W"/>	Aerial Map: <input type="text" value="See attached map sheet"/>
	Section: <input type="text" value="001, 002"/>	Centerline: <input type="text" value="6/11/2013"/>	MP: <input type="text" value="578.56"/> to <input type="text" value="579.37"/>
3	REASON FOR ROUTE VARIATION (Please include reason for route variation):		
	<p>The primary reason for this proposed change is to shift the CL out of a swampy low area near a pond which also puts centerline at ~176ft from Landowner's well. There will be a 50 ft neckdown to cross the shelterbelt with 200' x 25' new workspace added to all four (4) sides of the shelterbelt without impacting any new landowners. Landowner (ML-SD-TR-11360.000 - Harter) prefers this route as there will be no tree removal due to the 74' gap in the shelterbelt where the centerline crosses. Terrain and soil conditions are improved on proposed route.</p> <p>This centerline route variation is proposed by Land following discussions with landowner and has been field reviewed by civil survey.</p>		
	DETAIL ROUTE VARIATION (Please describe route variation in detail):		
	<p>The proposed route variation starts near MP 578.56 and continues for ~1,936 feet before deviating east at an angle of 42° for ~160 feet. The proposed reroute then angles 42° southeast for 511 feet before deviating an additional 10° for ~1,842 feet to tie back in with the current CL at MP 579.37. The neckdown will be along the ~160 ft section of the proposed centerline that crosses the shelterbelt from tract ML-SD-TR-11340.000 (O'Bryan) and ML-SD-TR-11360.000 (Harter). The Pls for this reroute have been broken down.</p> <p><u>2 Tracts Impacted:</u> ML-SD-TR-11340.000 - Richard M. O'Bryan & Mavis A. O'Bryan ML-SD-TR-11360.000 - John H. & Tammy Harter</p>		
	ADDITIONAL IMPACTS (Please include any additional impacts which may affect cost; crossings, induction bends, etc.):		
	<p>The proposed route variation extends outside the current environmental surveyed corridor and will require additional survey. The proposed reroute also avoids crossing a wetland area and tree removal, both saving costs. The cost savings for the wetland crossing are estimated below, but the cost savings for eliminating tree removal is currently unknown.</p>		
	Is there an increase/decrease in the number of crossings?	Yes <input checked="" type="checkbox"/> X	No <input type="checkbox"/>
	If yes, please list:	<input type="text" value="The reroute avoids crossing a wetland area."/>	
	COST ANALYSIS (costs incurred or saved from the route variation)		
	Additional length of route realignment	<input type="text" value="37"/> ft.	\$ <input type="text" value="13,183.20"/> \$ 360/ft
	Additional length of side-hill construction:	<input type="text" value="0"/> ft.	\$ <input type="text" value="-"/> \$ 19/ft
	Additional length of wetland construction:	<input type="text" value="-400"/> ft.	\$ <input type="text" value="(78,000.00)"/> \$ 195/ft
	Additional bore length (Road, RR):	<input type="text" value="0"/> ft.	\$ <input type="text" value="-"/> \$ 540/ft
	Additional foreign line/pipeline crossings:	<input type="text" value="0"/> EA	\$ <input type="text" value="-"/> \$ 30,000/EA
	Additional water body crossing (streams, ponds, etc.):		
	35 - 65' +	<input type="text" value="0"/> EA	\$ <input type="text" value="-"/> \$ 185,000/EA
	10' - 19'	<input type="text" value="0"/> EA	\$ <input type="text" value="-"/> \$ 77,250/EA
	Less than 10'	<input type="text" value="0"/> EA	\$ <input type="text" value="-"/> \$ 32,500/EA
	Additional survey required:		
	Civil:	<input type="text" value="0.00"/> mile	\$ <input type="text" value="-"/> \$ 5,000/mile
	Cultural:	<input type="text" value="0.33"/> mile	\$ <input type="text" value="825.00"/> \$ 2,500/mile
	Biological:	<input type="text" value="0.36"/> mile	\$ <input type="text" value="1,008.00"/> \$ 2,800/mile
	Miscellaneous costs saved or added due to route variation from ADDITIONAL IMPACTS listed above: <input type="text"/>		
	Overall estimated costs of the route variation:	\$ <input type="text" value="(62,983.80)"/> (See "Additional Impacts" above)	

4 LAND / TransCanada		<i>Tina Hall</i>
a) Is a new landowner affected by the proposed variation?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
b) Is the affected landowner/tract a possible condemnation?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
c) Does proposed route variation impact Tribal Lands?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
d) Does proposed route variation impact any Federal/State Lands?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
-If yes, name type (i.e. USFWS, BLM, etc.): <input type="text"/>		
e) Is proposed realignment outside the easement/workspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
f) Is realignment proposed to satisfy landowner request?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
-If yes, name of landowner(s)/track number(s): <input type="text" value="John and Tammy Harter (ML-SD-TR-11360.000)"/>		
g) Has all the evaluation criteria been examined/provided for this specific discipline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If no, please explain why: <input type="text"/>		
5 ENGINEERING/CONSTRUCTION - TransCanada		<i>Meera Kothari</i>
a) Maximum deviation perpendicular to proposed alignment:	<input type="text" value="479"/> ft.	
b) Does variation (CL) (including workspaces) falls within 500 ft. MDEQ Corridor?	Yes <input type="text" value="N/A"/>	No <input type="text" value="N/A"/>
c) Has the centerline been staked for construction?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
d) Does route variation affect HDD crossing alignment?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
e) Is realignment proposed for engineering/construction reasons?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
f) Will the route variation require the relocation of a pump station?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
g) Has all the evaluation criteria been examined/provided for this specific discipline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If no, please explain why: <input type="text"/>		
6 ENVIRONMENTAL / TransCanada		<i>Sandra Barnett</i>
a) Has the corridor been environmentally surveyed?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
b) Has the proposed variation been environmentally surveyed?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
c) Does proposed route variation impact Sage Grouse areas?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
d) Does route variation impact ABB areas?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
e) Was variation proposed to satisfy environmental issues?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
f) Was realignment proposed to satisfy agency request?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
-If yes, name of agency(s): <input type="text"/>		
g) Environmental features:		
Added (+): <input type="text"/>		
Subtracted (-): <input type="text" value="~400 ft of wetland crossing"/>		
Wetland ID # for newly impacted wetlands: <input type="text" value="Feature ID: W104TR001"/>		
h) Has all the evaluation criteria been examined/provided for this specific discipline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If no, please explain why: <input type="text"/>		
7 ENGINEERING / FACILITIES AND HYDRAULICS (if applicable)		<i>Sandra Gigovic</i>
a) Will the route variation require the relocation of a pump station?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
b) Will route variation impact hydraulics?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
c) Are additional valves required at HCA's or water crossing?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
d) Has all the evaluation criteria been examined/provided for this specific discipline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If no, please explain why: <input type="text"/>		
8 STAKEHOLDER RELATIONS / TCPL (if applicable)		<i>Bud Andersen</i>
a) Does the variation result in any new stakeholders?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
b) Does the variation require follow-up with specific stakeholder groups?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
c) Was the variation proposed to satisfy stakeholder request?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
-If yes, please specify issue type (as it aligns to stakeholder database): <input type="text"/>		
d) Has all the evaluation criteria been examined/provided for this specific discipline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If no, please explain why: <input type="text"/>		
9	10	
Originator: <input type="text" value="Land"/>	Received by: <input type="text"/>	
Date: <input type="text" value="10/29/2013"/>	Date: <input type="text"/>	
	Fax to: ?	
11	12	
Assigned Tracking Number: <input type="text" value="0528-SD-P4-578.6-579.4-S"/>	Filed by: <input type="text"/>	
	Date: <input type="text"/>	
	Fax to: ?	

0528-SD-P4-578.6-579.4-S

KEYSTONE XL PIPELINE PROJECT

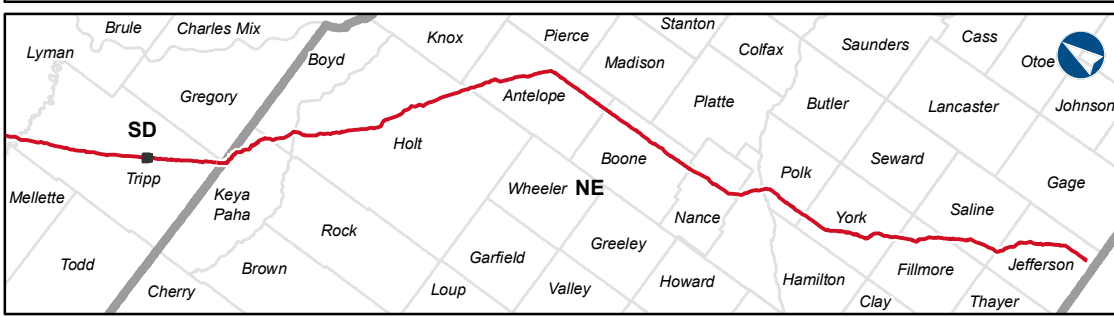
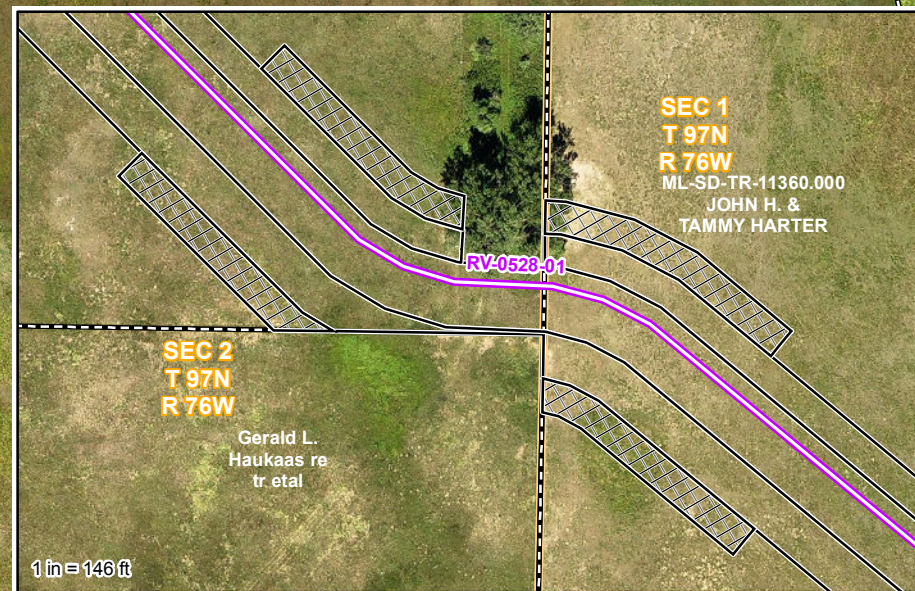
0528-SD-P4-578.6-579.4-S

KEYSTONE XL PIPELINE PROJECT ROUTE VARIATION AUTHORIZATION FORM		
Date: 10/29/2013		Tracking Number: 0528-SD-P4-578.6-579.4-S
Description: The primary reason for this proposed change is to shift the CL out of a swampy low area near a pond which also puts centerline at ~170ft from Landowner's well. There will be a 50 ft neckdown to cross the shellerbelt with 200' x 25' new workspace added to all four (4) sides of the shellerbelt without impacting any new landowners. Landowner (ML-)		MP: 578.6 to 579.4 Originated By: Land Variation Form Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
TransCanada - Land Tina Hall	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <i>[Signature]</i> Date: 10-30-13 If Rejected Why?	
TransCanada - Engineering Meera Kothari	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <i>[Signature]</i> Date: 10/30/13 If Rejected Why?	
Exp - Engineering Kevin McGlynn	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why?	
TransCanada - Environmental Sandra Barnett	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <i>[Signature]</i> Date: 10/30/13 If Rejected Why? Pending Survey	
Stanlec - Risk Assessment Heidi Tillquist	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> <i>[Signature]</i> Date: 11/12/13 If Rejected Why?	
TransCanada - Facilities Sandra Gigovic	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why? See pg 2	
TransCanada - PM (Montana) Alan Lietz	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why?	
TransCanada - PM (South Dakota) James Odom	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <i>[Signature]</i> Date: 6-Nov-13 If Rejected Why?	
TransCanada - PM (Nebraska) Robert Bradley	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why?	
TransCanada - Area Manager Steve Marr	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: _____ If Rejected Why?	
Forward to: Tina Hall <input type="checkbox"/> Meera Kothari <input type="checkbox"/> Kevin McGlynn <input type="checkbox"/>	Sandra Barnett <input type="checkbox"/> Heidi Tillquist <input type="checkbox"/> Sandra Gigovic <input type="checkbox"/> Alan Lietz <input type="checkbox"/>	James Odom <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Steve Marr <input type="checkbox"/>

KEYSTONE XL PIPELINE PROJECT

KEYSTONE XL PIPELINE PROJECT ROUTE VARIATION AUTHORIZATION FORM	
Date: 10/29/2013	Tracking Number: 0528-SD-P4-5788-579.4-S
Description: The primary reason for this proposed change is to shift the CL out of a swampy low area near a pond which also puts concrete at ~176ft from Landowner's wye. There will be a 50 ft roadway to cross the ditch/belt with 200' x 20' new work space added to all four (4) sides of the ditch/belt without impacting any new landowners. Landowner (M.L. ...)	Originated By: Land MP: 578.6 to 579.4 Variation Form Allowed: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
TransCanada - Land Comments:	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: <input type="text"/> If Rejected Why? <input type="text"/>
TransCanada - Engineering Comments:	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: <input type="text"/> If Rejected Why? <input type="text"/>
Env. Engineering Comments:	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: <input type="text"/> If Rejected Why? <input type="text"/>
TransCanada - Environmental Comments:	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: <input type="text"/> If Rejected Why? <input type="text"/>
State - Risk Assessment Comments:	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: <input type="text"/> If Rejected Why? <input type="text"/>
TransCanada - Facilities Comments:	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 10/29/2013 If Rejected Why? <input type="text"/>
TransCanada - PM (Montana) Comments:	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: <input type="text"/> If Rejected Why? <input type="text"/>
TransCanada - PM (South Dakota) Comments:	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: <input type="text"/> If Rejected Why? <input type="text"/>
TransCanada - PM (Nebraska) Comments:	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: <input type="text"/> If Rejected Why? <input type="text"/>
TransCanada - Area Manager Comments:	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: <input type="text"/> If Rejected Why? <input type="text"/>
Approved by: Tina Hill, Maria Kishner, Kevin McClyne	Sandra Bennett, Heidi Trujillo, Sandra Gagnon, Alan Lietz
	James Oden, Robert Bradley, Steve Mann

0528-SD-P4-5788-579.4-S



LEGEND

○ 1/10 Mile Post	OH Electric	Property Parcel
● Mile Post (2013-06-11)	Water Lines	Section Line
⊗ Valve	Workspace	County Line
— Keystone XL Centerline (2013-06-11)	ATWS	Current Waterbody
— Route Revision (Proposed)	Valve Site	Currently Wetland
— Access Road - Permanent	Pump Station	
— Access Road - Temporary		

KEYSTONE XL PROJECT
RV-0528-01 ROUTE REVISION

COUNTY:	TRIPP	DRAWN BY:	CC
STATE:	SOUTH DAKOTA	CHECKED BY:	PD
REV. NO.:	REVISION	DATE	
1	ISSUED FOR REVIEW	2013-10-29	
PRELIMINARY			

PREPARED BY:
exp Energy Services Inc.
t: +1.850.385.5441 | f: +1.850.385.5523
1300 Metropolitan Blvd.
Tallahassee, FL 32308
U.S.A.
www.exp.com

• BUILDINGS • EARTH & ENVIRONMENT • ENERGY •
• INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •