

KEYSTONE XL PIPELINE PROJECT

0372-SD-P4-434.5-436.1-1

KEYSTONE XL PIPELINE PROJECT PIPELINE ROUTE VARIATION FORM			
1	VARIATION TYPE: Refinement: <input type="text"/> Reroute: <input checked="" type="checkbox"/> Footprint: <input type="text"/> Design: <input type="text"/> Centerline: <input checked="" type="checkbox"/> Pump Station: <input type="text"/> Valve Site: <input checked="" type="checkbox"/> 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="Haakon"/> Quad Map: <input type="text" value="N/A"/> Township: <input type="text" value="06N"/> Range: <input type="text" value="18E"/> Aerial Map: <input type="text" value="See attached map sheet"/> Section: <input type="text" value="014, 015"/> Centerline: <input type="text" value="8/15/2012"/> MP: <input type="text" value="434.52"/> to <input type="text" value="436.12"/>		
3	REASON FOR ROUTE VARIATION (Please include reason for route variation): The primary reason for this route variation is to avoid valve site for CK-MLV-19 be located at a PI by extending the straight portion of the centerline and thus shifting the PI location further north. This centerline reroute allows for the accomodation of the valve and PI breakdown. This reroute is requested by Engineering based on engineering review and aerial, pictometry images.		
	DETAIL ROUTE VARIATION (Please describe route variation in detail): The proposed route variation starts near MP 434.5 and deviates ~1° northeast of current centerline. It continues in the southeast direction for ~8,428.4 ft. Then it turns south and extends straight for ~42 ft. to rejoin the current CL near MP 436.12. The location of CK-MLV-19 is not impacted by the reroute, only the fence (will be straightened out to parallel the straight line).		
	ADDITIONAL IMPACTS (Please include any additional impacts which may affect cost; crossings, induction bends, etc.): 3 Tracts are impacted by this Centerline reroute: AR-SD-HK-15040.000, ML-SD-HK-00170.000 (both Kelly Blair) ML-SD-HK-00130.000 (J. Grant Olsen) The proposed route variation avoids the need to install a fitting (~35,000). Furthermore, there are no additional cost for environmental surveys. The reroute falls within the current surveyed corridor.		
	Is there an increase/decrease in the number of crossings? Yes <input type="text"/> No <input checked="" type="checkbox"/>		
	If yes, please list: <input type="text"/> <input type="text"/>		
	COST ANALYSIS (costs incurred or saved from the route variation)		
	Additional length of route realignment:	23 ft.	\$ 8,129.91 \$ 360/ft
	Additional length of side-hill construction:	0 ft.	\$ - \$ 19/ft
	Additional length of wetland construction:	0 ft.	\$ - \$ 195/ft
	Additional bore length (Road, RR):	ft.	\$ - \$ 540/ft
	Additional foreign line/pipeline crossings:	EA	\$ - \$ 30,000/EA
	Additional water body crossing (streams, ponds, etc.):		
	35 - 65' +	0 EA	\$ - \$ 185,000/EA
	10' - 19'	0 EA	\$ - \$ 77,250/EA
	Less than 10'	0 EA	\$ - \$ 32,500/EA
	Additional survey required:		
	Civil:	1.60 mile	\$ 8,020.87 \$ 5,000/mile
	Cultural:	0.00 mile	\$ - \$ 2,500/mile
	Biological:	0.00 mile	\$ - \$ 2,800/mile
	Miscellaneous costs saved or added due to route variation from ADDITIONAL IMPACTS listed above:		\$ (35,000)
	Overall estimated costs of the route variation:	\$ (18,849.21)	(See "Additional Impacts" above)

4 **LAND / TransCanada** *Tina Hall*

a) Is a new landowner affected by the proposed variation? Yes No

b) Is the affected landowner/tract a possible condemnation? Yes No

c) Does proposed route variation impact Tribal Lands? Yes No

d) Does proposed route variation impact any Federal/State Lands? Yes No
 -If yes, name type (i.e. USFWS, BLM, etc.):

e) Is proposed realignment outside the easement/workspace? Yes No

f) Is realignment proposed to satisfy landowner request? Yes No
 -If yes, name of landowner(s)/track number(s):

g) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No
 If no, please explain why:

5 **ENGINEERING/CONSTRUCTION - TransCanada** *Meera Kothari*

a) Maximum deviation perpendicular to proposed alignment: ft.

b) Does variation (CL) (including workspaces) falls within 500 ft. MDEQ Corridor? Yes No

c) Has the centerline been staked for construction? Yes No

d) Does route variation affect HDD crossing alignment? Yes No

e) Is realignment proposed for engineering/construction reasons? Yes No

f) Will the route variation require the relocation of a pump station? Yes No

g) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No
 If no, please explain why:

6 **ENVIRONMENTAL - TransCanada** *Sandra Barnett*

a) Has the corridor been environmentally surveyed? Yes No

b) Has the proposed variation been environmentally surveyed? Yes No

c) Does proposed route variation impact Sage Grouse areas? Yes No

d) Does route variation impact ABB areas? Yes No

e) Was variation proposed to satisfy environmental issues? Yes No

f) Was realignment proposed to satisfy agency request? Yes No
 -If yes, name of agency(s):

g) Environmental features:
 Added (+): Subtracted (-):
 Wetland ID # for newly impacted wetlands:

h) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No
 If no, please explain why:

7 **ENGINEERING / FACILITIES AND HYDRAULICS (if applicable)** *Sandra Gigovic*

a) Will the route variation require the relocation of a pump station? Yes No

b) Will route variation impact hydraulics? Yes No

c) Are additional valves required at HCA's or water crossing? Yes No

d) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No
 If no, please explain why:

8 **STAKEHOLDER RELATIONS / TCPL (if applicable)** *Bud Andersen*

a) Does the variation result in any new stakeholders? Yes No

b) Does the variation require follow-up with specific stakeholder groups? Yes No

c) Was the variation proposed to satisfy stakeholder request? Yes No
 -If yes, please specify issue type (as it aligns to stakeholder database):

d) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No
 If no, please explain why:

9 Originator:
 Date:

10 Received by:
 Date:
 Fax to: ?

11 Assigned Tracking Number:

12 Filed by:
 Date:
 Fax to: ?

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KEYSTONE XL PIPELINE PROJECT ROUTE VARIATION AUTHORIZATION FORM		
Date: 10/29/2012	Tracking Number: 0372-SD-P4-434.5-436.1-1	
Description: The primary reason for this route variation is to avoid valve pits for CK-MLV-19 be located at a PI by extending the straight portion of the centerline and thus shifting the PI location further north.	MP: 434.5 to 436.1	
	Originated By: Engineering	
	Variation Form Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
<u>TransCanada - Land</u> Tina Hall	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	
Comments:	Date: 11/5/12	
	If Rejected Why?	
<u>TransCanada - Engineering</u> Meera Kothari	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	
Comments:	Date: 11/9/12	
	If Rejected Why?	
<u>Exo - Engineering</u> Kevin McGlynn	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments:	Date:	
	If Rejected Why?	
<u>TransCanada - Environmental</u> Sandra Barnett	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	
Comments:	Date: 12/3/12	
	If Rejected Why?	
<u>Stantec - Risk Assessment</u> Heidi Tillquist	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments: N/A.	Date:	
	If Rejected Why?	
<u>TransCanada - Facilities</u> Sandra Gigovic	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments: N/A. Does not affect facilities	Date:	
	If Rejected Why?	
<u>TransCanada - PM (Montana)</u> Alan Lietz	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments:	Date:	
	If Rejected Why?	
<u>TransCanada - PM (South Dakota)</u> James Odom	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	
Comments:	Date: 12/10/12	
	If Rejected Why?	
<u>TransCanada - PM (Nebraska)</u> Robert Bradley	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments:	Date:	
	If Rejected Why?	
<u>TransCanada - Area Manager</u> Steve Marr	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments:	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"/>

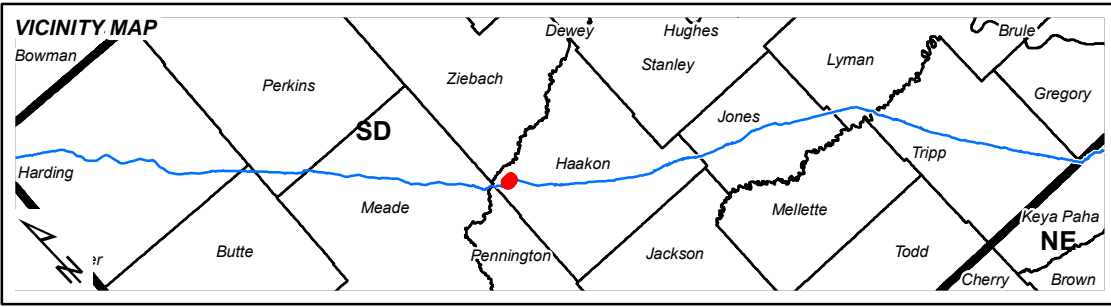
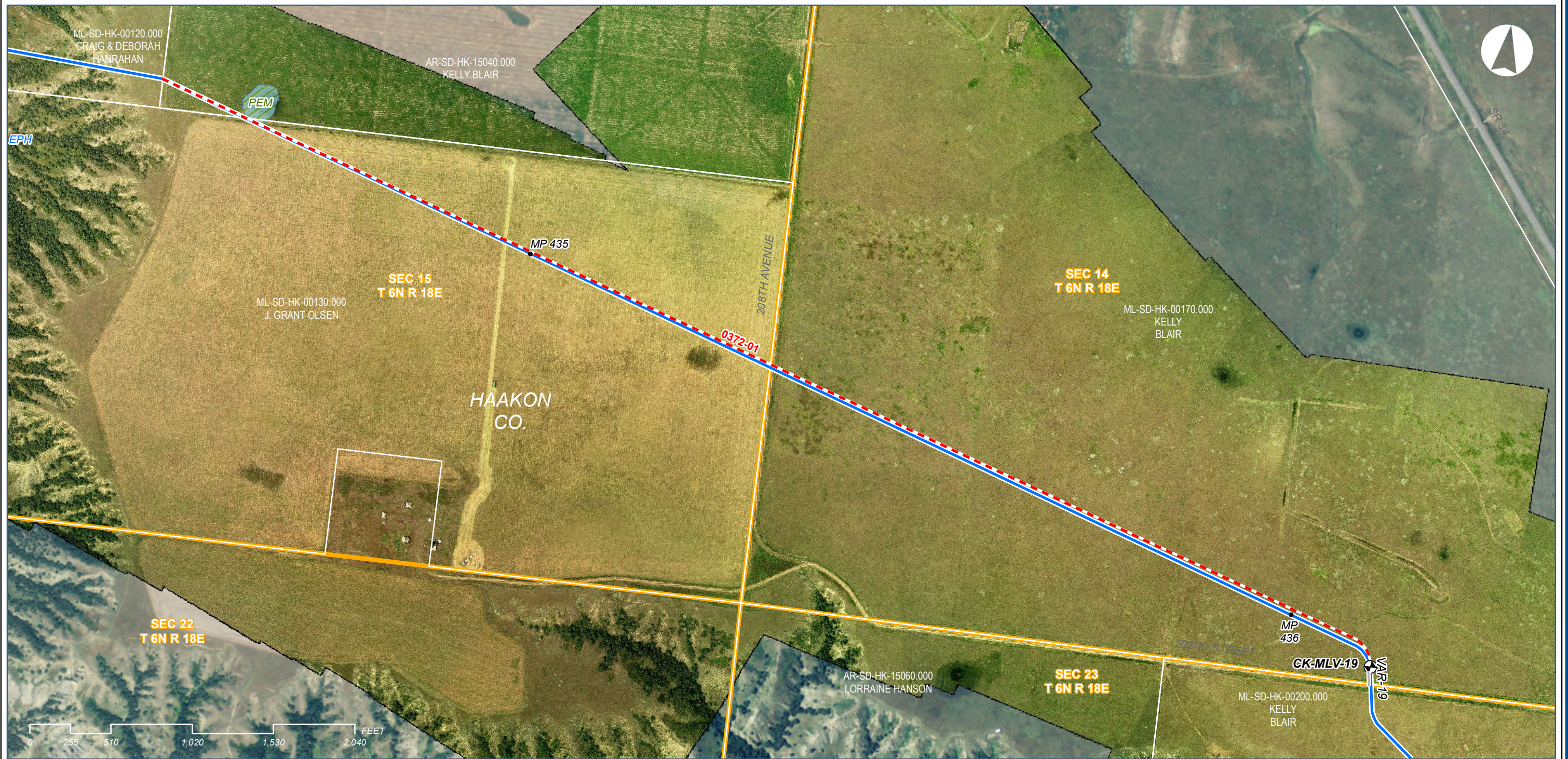
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	Originated By: Engineering
	Variation Form Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
TransCanada - Land Tina Hall	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
TransCanada - Engineering Meera Kohari	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
Exp - Engineering Kevin McOlynn	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date: 12/20/12
	If Rejected Why?
TransCanada - Environmental Sandra Barnett	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
Sluicet - Risk Assessment Heidi Falquist	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments: N/A.	Date:
	If Rejected Why?
TransCanada - Facilities Sandra Gajovic	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>
Comments: N/A. Does not affect facilities	Date: Dec 5, 2012
	If Rejected Why?
TransCanada - PM (Montana) Alan Lietz	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
TransCanada - PM (South Dakota) James Odom	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
TransCanada - PM (Nebraska) Robert Bradley	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
TransCanada - Area Manager Steve Marr	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
Forward to: Tina Hall <input type="checkbox"/> Sandra Barnett <input type="checkbox"/> James Odom <input type="checkbox"/> Meera Kohari <input type="checkbox"/> Heidi Falquist <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Kevin McOlynn <input type="checkbox"/> Alan Lietz <input type="checkbox"/> Steve Marr <input type="checkbox"/>	

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2012



LEGEND

- MILEPOST
- KEYSTONE XL CL (2012-08-15)
- - - PROPOSED ROUTE VARIATION
- ▭ SECTION LINE
- ACCESS ROAD
- ▭ PUMP STATION
- ⊗ VALVE
- ▭ PROPERTY PARCEL
- ▭ CULTURAL SITE
- ▭ WETLAND
- ▭ WATERBODY

KEYSTONE XL PROJECT

Proposed Route Variation 0372-01

COUNTY:	HAAKON	DRAWN BY:	CR
STATE:	SOUTH DAKOTA	CHECKED BY:	JP
REV. NO.:	REVISION	DATE	
0	ISSUED FOR REVIEW.	2012-10-29	
PRELIMINARY			
DATE:	2012-10-29	PROJECTION:	NAD83 UTM14 N

PREPARED BY:

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DWG: XL-00-P-9200_RVS SHEET: 1