

KEYSTONE XL PIPELINE PROJECT

0442-SD-P4-514.5-514.9-1

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 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="Jones"/> Quad Map: <input type="text" value="N/A"/> Township: <input type="text" value="001S"/> Range: <input type="text" value="029E"/> Aerial Map: <input type="text" value="See attached map sheet"/> Section: <input type="text" value="36"/> Centerline: <input type="text" value="6/11/2013"/> MP: <input type="text" value="514.54"/> to <input type="text" value="514.94"/>		
3	REASON FOR ROUTE VARIATION (Please include reason for route variation): The primary reason for this CL reroute is to shift bend further away from waterline (Oglala Sioux Rural Water Supply System) located south of HWY16 crossing per 60% CPMS design review (Item #74 in action Item list) and 90% alignment sheet review. This shift will allow for a better bore at this location. This reroute is requested by Engineering and has been field verified by civil survey.		
	DETAIL ROUTE VARIATION (Please describe route variation in detail): The proposed reroute begins at ~MP 514.5 and extends for ~182 feet in the same direction/straight line as the current CL, thus shifting the CL away from U.S Hwy 16/waterline. The proposed reroute, then turns east towards the current CL. It will continue in this east-southeast direction for ~1960 ft. before it reconnects with the current CL near MP 514.9		
	ADDITIONAL IMPACTS (Please include any additional impacts which may affect cost; crossings, induction bends, etc.): The proposed route variation falls within the current environmental surveyed corridor, so no additional costs associated with surveys will be incurred.		
	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:	48	ft. \$ 17,445.60 \$ 360/ft
	Additional length of side-hill construction:		ft. \$ - \$ 19/ft
	Additional length of wetland construction:		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:	0.00	mile \$ - \$ 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:	<input type="text"/>	
	Overall estimated costs of the route variation:	\$ 17,445.60	(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:

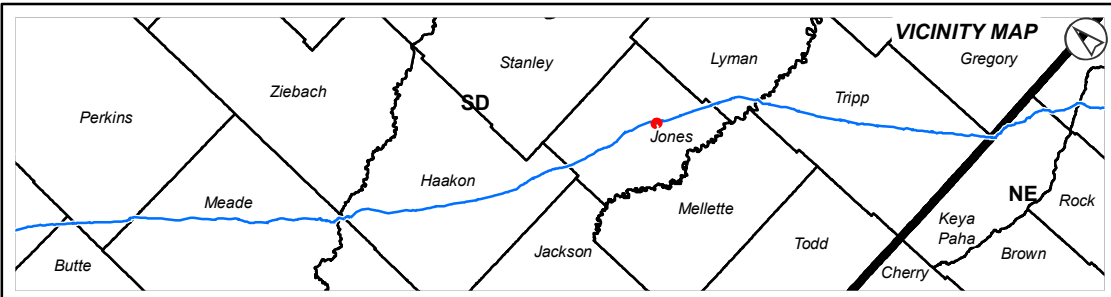
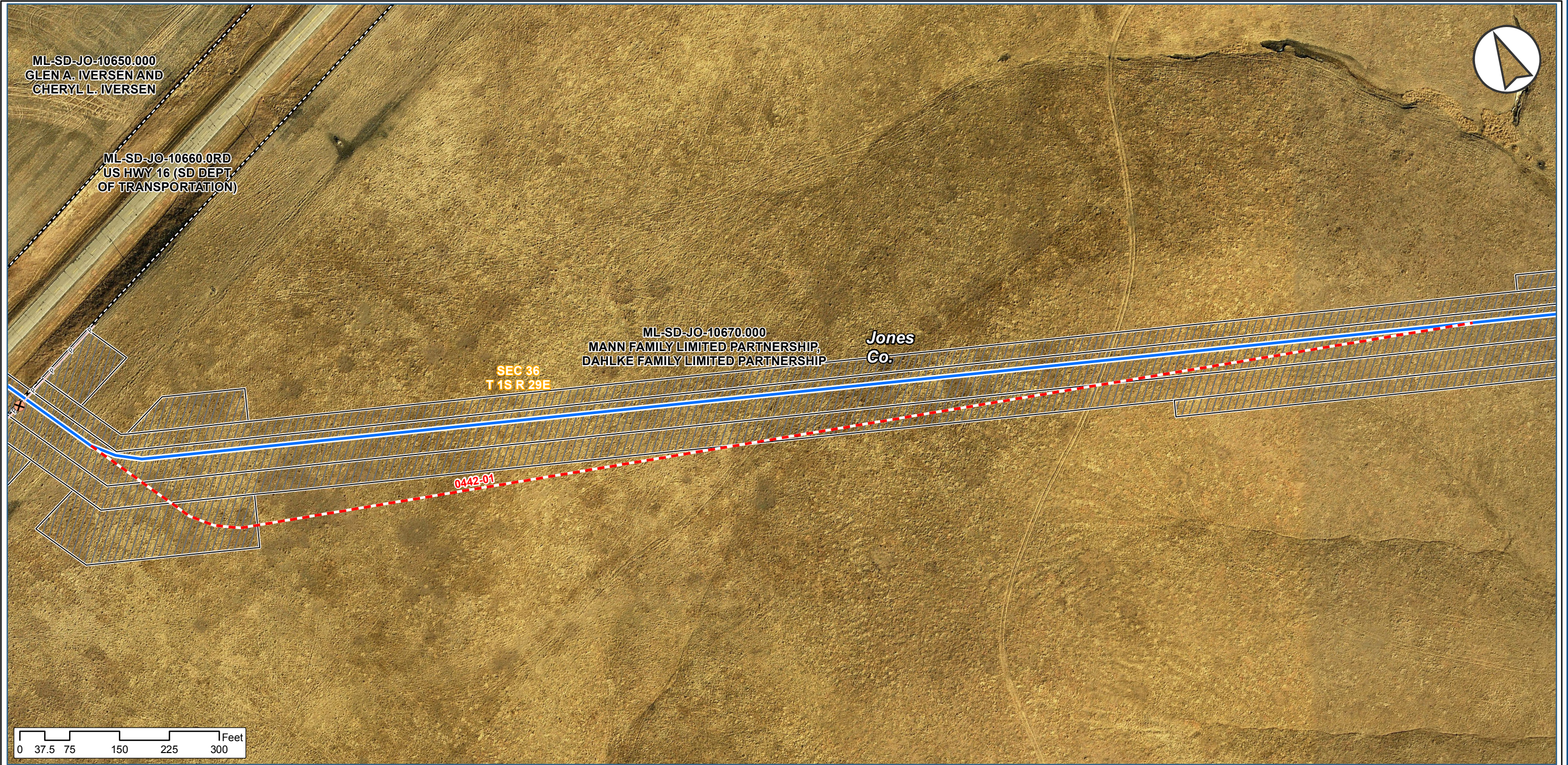
12 Filed by:
 Date:
 Fax to: ?

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KEYSTONE XL PIPELINE PROJECT

KEYSTONE XL PIPELINE PROJECT ROUTE VARIATION AUTHORIZATION FORM	
Date: 8/7/2013	Tracking Number: 0442-SD-P4-514.5-514.9-1 MP: 514.5 to 514.9
Description: The primary reason for this CL reroute is to shift bends further from the water crossing downstream of HWY 16 per 60% CPMS #74 and 90% alignment sheet review.	Originated By: Engineering 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"/> Date: 8-19-13
Comments:	If Rejected Why?
TransCanada - Engineering Meera Kothari	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 8/15/13
Comments:	If Rejected Why?
Exp - Engineering Kevin McGlynn	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 8-20-13
Comments:	If Rejected Why?
TransCanada - Environmental Sandra Barnett	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 8/14/13
Comments:	If Rejected Why?
Stantec - Risk Assessment Heidi Tilquist	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date:
Comments:	If Rejected Why?
TransCanada - Facilities Sandra Gigovic	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date:
Comments:	If Rejected Why?
TransCanada - PM (Montana) Alan Lietz	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date:
Comments:	If Rejected Why?
TransCanada - PM (South Dakota) James Odom	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 20-Aug-13
Comments:	If Rejected Why?
TransCanada - PM (Nebraska) Robert Bradley	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date:
Comments:	If Rejected Why?
TransCanada - Area Manager Steve Mann	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date:
Comments:	If Rejected Why?
Forward to:	Tina Hall <input type="checkbox"/> Sandra Barnett <input type="checkbox"/> James Odom <input type="checkbox"/> Meera Kothari <input type="checkbox"/> Heidi Tilquist <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Kevin McGlynn <input type="checkbox"/> Sandra Gigovic <input type="checkbox"/> Steve Mann <input type="checkbox"/> Alan Lietz <input type="checkbox"/>

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LEGEND

• Milepost	— Access Road	▭ Section Line
⊗ Valve	P—P Overhead Power Line	▭ County Line
⊗ Power Pole	▭ Cultural Site	▭ Waterbody
— Centerline (2012-11-18)	▭ Workspace	▭ Wetland
- - - Route Variation	▭ Wash Station	▭ MDEQ Corridor
	▭ Property Parcel	

KEYSTONE XL PROJECT
PROPOSED ROUTE VARIATION

COUNTY: JONES	DRAWN BY: RJM	
STATE: SOUTH DAKOTA	CHECKED BY: JP	
REV. NO.: 0	REVISION: ISSUED FOR REVIEW.	DATE: 2013-07-09
PRELIMINARY		
DATE: 2013-07-08	PROJECTION: NAD83 UTM14 N	DWG: XL-46-P-9299-A-CLRV

PREPARED BY:
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DWG: XL-46-P-9299-A-CLRV SHEET: 1 of 1