

**KEYSTONE XL PIPELINE PROJECT PHASE II
PIPELINE ROUTE VARIATION FORM**

0172-SD-P2-591.0-592.9-S

KEYSTONE PHASE IV, US PIPELINE PROJECT ROUTE VARIATION FORM			
1	VARIATION TYPE: Refinement: <input type="text"/> Reroute: <input checked="" type="checkbox"/>		
	Centerline: <input checked="" type="checkbox"/>	Valve Site: <input type="text"/>	Pump Station: <input type="text"/>
2	LOCATION: Sketch: <input type="text"/> Attached <input type="text"/> Pictures: <input type="text"/> See attached.		
	State: <input type="text"/> SD	County: <input type="text"/> Tripp	Quad Map: <input type="text"/> N/A
	Township: <input type="text"/> 95N	Range: <input type="text"/> 74W	Aerial Map: <input type="text"/> See attached map sheet
	Section: <input type="text"/> 9, 10, 15	Centerline: <input type="text"/> 3/26/2010	MP: <input type="text"/> 590.99 to <input type="text"/> 592.90
3	REASON FOR ROUTE VARIATION (Please include reason for route variation):		
	<p>The centerline currently lies on two tracts that belong to Graesser Family TR (ML-SD-TR-11930, ML-SD-TR-11960). The landowner is with a landowner's opposition group. This reroute is proposed to shorten the centerline and relocate the centerline to avoid one of these tracts (ML-SD-TR-11960).</p> <p>The proposed reroute lies along a previous centerline (06/16/2008 CL) for a portion of the route, but is adjusted to avoid a terrain feature located at the southeast corner of tract number ML-SD-TR-11930 (the primary reason for the original reroute).</p>		
	DETAIL ROUTE VARIATION (Please describe route variation in detail):		
	<p>The proposed reroute starts at the PI near MP 591.0 and deviates slightly (~7") towards the east. It continues in this direction for ~3,640 ft until it crosses Viaduct Road ~2,050 ft north of its current crossing location. The proposed reroute then turns towards the south and continues for 5,740 ft to rejoin the current centerline at the PI near MP 592.9. Along its path, it makes a slight deviation to avoid a drainage feature to the northeast.</p> <p>In a future report, Colome Pump Station (PS-21) will be relocated from the current location on tract, ML-SD-TR-11960 to a different tract, ~2.8 miles downstream since the current landowner (Graesser Family TR) is with an opposition group. This report does not cover the PS-21 relocation.</p>		
	ADDITIONAL IMPACTS (Please include any additional impacts which may affect cost; crossings, induction bends, etc.):		
	<p>The proposed reroute is ~667 ft shorter than the original route. The number of horizontal fittings decreases by 4, though the savings in cost due to these fittings and the additional welds are not estimated at this stage.</p>		
	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"/>		
	COST ANALYSIS (costs incurred or saved from the route variation)		
	Additional length of route realignment:	<input type="text"/> -667 ft.	\$ (396,978.39) \$ 360/ft
	Additional length of side-hill construction:	<input type="text"/> ft.	\$ - \$ 19/ft
	Additional length of wetland construction:	<input type="text"/> ft.	\$ - \$ 195/ft
	Additional bore length (Road, RR):	<input type="text"/> 20 ft.	\$ 10,800.00 \$ 540/ft
	Additional foreign line/pipeline crossings:	<input type="text"/> EA	\$ - \$ 30,000/EA
	Additional water body crossing (streams, ponds, etc.):		
	35 - 65' +	<input type="text"/> EA	\$ - \$ 185,000/EA
	10' - 19'	<input type="text"/> EA	\$ - \$ 77,250/EA
	Less than 10'	<input type="text"/> EA	\$ - \$ 32,500/EA
	Additional survey required:		
	Civil:	<input type="text"/> 1.10 mile	\$ 5,500.00 \$ 5,000/mile
	Cultural:	<input type="text"/> 1.10 mile	\$ 2,750.00 \$ 2,500/mile
	Biological:	<input type="text"/> 1.10 mile	\$ 3,080.00 \$ 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:	\$ (374,848)	(See "Additional Impacts" above)

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4
LAND / UNIVERSAL FIELD *Doug Reichley*

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

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

c) Is realignment proposed to satisfy landowner request? Yes No

-If yes, name of landowner(s)/track number(s): _____

d) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No

If no, please explain why: _____

5
ENGINEERING/CONSTRUCTION / STATE PM *David Guien*

a) Maximum deviation perpendicular to proposed alignment: ft.

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

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

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

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

f) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No

If no, please explain why: _____

6
ENVIRONMENTAL / TROW *Jonathan Minton*

a) Has the corridor been environmentally surveyed? Yes No

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

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

d) Was realignment proposed to satisfy agency request? Yes No

-If yes, name of agency(s): _____

e) Environmental features:

Added (+): Subtracted (-):

Wetland ID # for newly impacted wetlands: _____

f) Has all the evaluation criteria been examined/provided for this specific discipline? Yes No

If no, please explain why: _____

7
ENGINEERING / FACILITIES AND HYDRAULICS *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 *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: _____

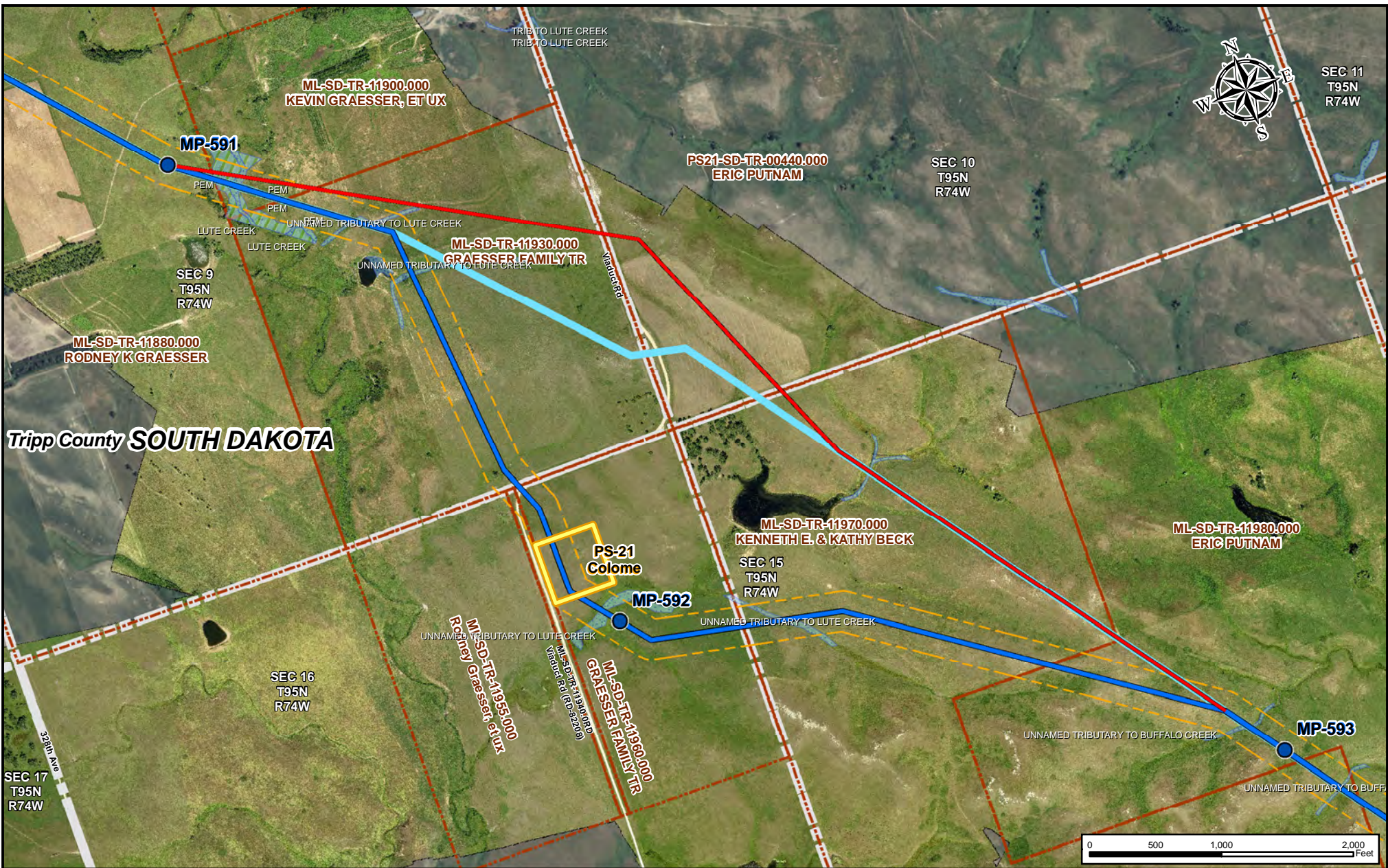
<p>9</p> <p>Originator: <input type="text" value="Doug Reichley"/></p> <p>Date: <input type="text" value="7/6/2010"/></p>	<p>10</p> <p>Received by: _____</p> <p>Date: <input type="text" value="7/6/2010"/></p> <p>Fax to: ?</p>
<p>11</p> <p>Assigned Tracking Number: <input type="text" value="0172-SD-P2-591.0-592.9-S"/></p>	<p>12</p> <p>Filed by: _____</p> <p>Date: _____</p> <p>Fax to: ?</p>

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**KEYSTONE XL PIPELINE PROJECT PHASE II
PIPELINE ROUTE VARIATION AUTHORIZATION FORM**

0172-SD-P2-591.0-592.9-S

KEYSTONE XL PIPELINE PROJECT PHASE - STEELE CITY SEGMENT ROUTE VARIATION AUTHORIZATION FORM	
Date: <input type="text" value="7/6/2010"/>	Tracking Number: <input type="text" value="0172-SD-P2-591.0-592.9-S"/> MP: <input type="text" value="591.0"/> to <input type="text" value="592.9"/> Originated By: <input type="text" value="Doug Reichley"/> Variation Form Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Universal Field - Land Doug Reichley Comments: <input type="text"/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <input type="text" value="Doug Reichley"/> Date: <input type="text" value="7/6/2010"/> If Rejected Why? <input type="text"/>
State PM - Construction / Eng. David Guen Comments: <input type="text"/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <input type="text" value="David Guen"/> Date: <input type="text" value="9/18/2010"/> If Rejected Why? <input type="text"/>
Trow - Environmental Jonathan Minton Comments: <input type="text" value="Need to complete Bio and Cultural Survey."/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <input type="text" value="Jonathan Minton"/> Date: <input type="text" value="7/8/2010"/> If Rejected Why? <input type="text"/>
Project Management Butch Wallace Comments: <input type="text"/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <input type="text" value="R. E. Wallace"/> Date: <input type="text" value="9/10/2010"/> If Rejected Why? <input type="text"/>
Stakeholder Relations Bud Andersen Comments: <input type="text"/>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> <input type="text"/> Date: <input type="text"/> If Rejected Why? <input type="text"/>
Facilities: Sandra Gigovic Comments: <input type="text"/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <input type="text" value="Sandra Gigovic"/> Date: <input type="text" value="10/5/2010"/> If Rejected Why? <input type="text"/>
TransCanada: Alan Lietz Comments: <input type="text"/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <input type="text" value="Alan D Lietz"/> Date: <input type="text" value="10/6/2010"/> If Rejected Why? <input type="text"/>
Forward to: Butch Wallace <input checked="" type="checkbox"/> Jonathan Minton <input checked="" type="checkbox"/> Alan Lietz <input checked="" type="checkbox"/> David Guen <input checked="" type="checkbox"/> Bud Andersen <input checked="" type="checkbox"/> Doug Reichley <input checked="" type="checkbox"/> Neil Lewis <input checked="" type="checkbox"/>	
Dispute Resolution, if Required: Yes <input type="checkbox"/> No <input type="checkbox"/> Comments: <input type="text"/>	Teleconference Required Yes <input type="checkbox"/> No <input type="checkbox"/> Decision: <input type="text"/>
Database - <input type="text"/> Filed By: <input type="text"/> Date: <input type="text"/> Fax to: ?	Database - <input type="text"/> Filed By: <input type="text"/> Date: <input type="text"/> Fax to: ?



Tripp County SOUTH DAKOTA

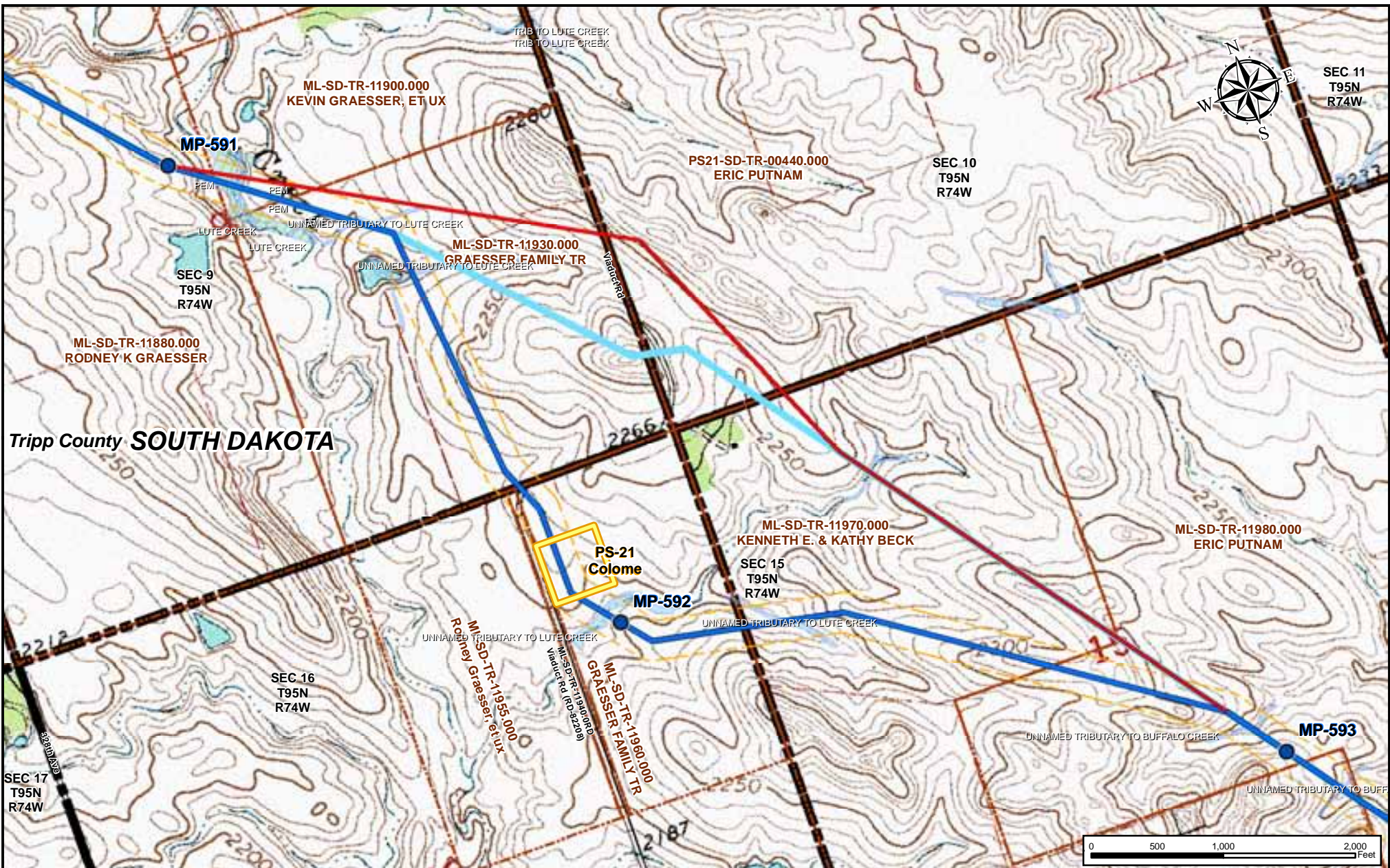
Legend

- Milepost
- Centerline (2010-03-26)
- Centerline (2008-08-16)
- Proposed Route Variation
- 300ft Corridor
- ▭ Waterbody
- ▭ Wetland
- ▭ Parcel Boundary
- ▭ Cultural Feature
- ▭ Section Line
- ▭ County Boundary
- ▭ State Boundary



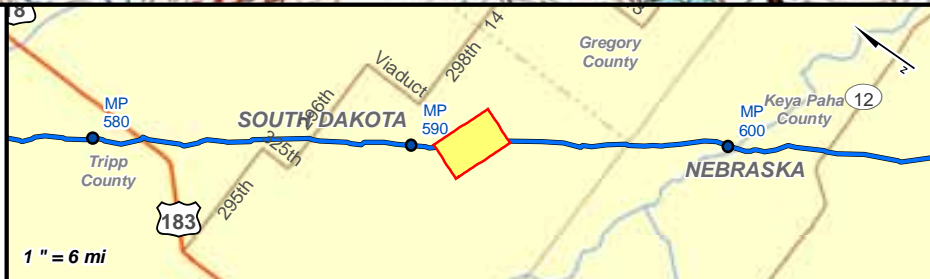
**KEYSTONE XL PROJECT - STEELE CITY SEGMENT
PROPOSED ROUTE VARIATION 0172
TRIPP COUNTY, SD**

Trow	DATE	PROJECT	MAP PARAMETERS		
	June 28, 2010	50388X	PROJECTION: UTM 14, NAD83, US FT SCALE: 1" = 1,000' 1:12,000		
DRAWN BY	CHECKED BY	APPROVED BY	ROUTE VARIATION NUMBER	SHEET	REV.
CPA	NJA	ALS	0172-SD-P2-591.0-592.9-S	001	0



Legend

- Milepost
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CPA	NJA	ALS	0172-SD-P2-591.0-592.9-S	001	0