	KEYSTON		IE PROJECT -			NT		
1		PIPELINE	ROUTE VARIA	TION FORM				
VARIATION TYPE:	Refinement:				Reroute:	Х		
Centerlin	e:X		Valv	e Site:			Pump Stati	on:
2 LOCATION:	Sketch:	A	uttached		Pictures:	See attache	ed	
State: SD	County:	Meade			Quad Map:	N/A		
Township: 10N	Range:	14E		Д	Aerial Map:	See attache	ed map sheet	
Section: 17,20,21,27,2	8	Centerline	e: 11/18/201	10	MP:	396.58	to	399.12
REASON FOR ROUTE VARIATION	ON (Please includ	de reason for ro	oute variation):					
The current centerline crosses var Eventhough this reroute will still cr some reclamation costs by avoidir This reroute is a revised version o not agree with the magnitude of R like the idea of having a reroute in This reroute is proposed based or	oss some of thesing routing along of RV-201 propos V-201 (~2,055 ft this area so RV-	se streams it aver drainage feature ed and discuss and the ast of c 201 was modifi	voids a consider es. ed on the meeti current C/L and i ed and revised	rable amounting held on 0 in effect avoid accordingly.	t and also a 6/21/2011, ided all stre	where the nearms crosse	e difficult cons najority of the p d). Project tea	truction and saves
The proposed route variation start			, i	rom current	contorlino	It continues	in this direction	o for 770 ft then
it turns southeast for ~481 ft, wher continues in this direction for ~12, centerline near MP 399.12. ADDITIONAL IMPACTS (Please in The proposed reroute is ~-39 ft she landowner.	include any additi	ional impacts w	double crossing	g some strea	ngs, induct	ion bends, e	tc.): /L. It does not	affect new
Is there an increase/decrease in the					Yes			No
If yes, please list: Currently 10 si along drainage features.	tream crossings	are crossed by	Current C/L. T	his reroute a	avoids 3 str	eam/drainag	je features as v	well as ATWS
COST ANALYSIS (costs incurred	or saved from th	ne route variatio	on)					
Additional length of route realignm	ent:		-39	ft.		\$ (13,94	5.40)	\$ 360/ft
Additional length of side-hill constr	uction:			ft.		\$		\$ 19/ft
Additional length of wetland constr	ruction:		-700	ft.		\$ (136,50	0.00)	\$ 195/ft
Additional bore length (Road, RR)				ft.		\$	<u>-</u>	\$ 540/ft
Additional foreign line/pipeline cros Additional water body crossing (st	_	٠.١٠		EA		\$	<u>-</u>	\$ 30,000/EA
Additional water body crossing (st		35 - 65' +		EA		\$		\$ 185,000/EA
		10' - 19'	0	EA		\$	-	\$ 77,250/EA
		Less than 10'	-3	EA		\$ (97,50	0.00)	\$ 32,500/EA
Additional survey required:								
	Civil:		2.54	mile		\$ 12,69	5.07	\$ 5,000/mile
	Cultural:		2.54	mile		\$ 6,34	7.54	\$ 2,500/mile
	Biological:		2.54	mile		\$ 7,10	9.24	\$ 2,800/mile
Miscellaneous costs saved or add	ed due to route v	rariation from A	DDITIONAL IM	PACTS liste	ed above:			
Overall estimated costs of the rou			\$			(See "Add	itional Impact	s" ahove)

LAND / UNIVERSAL FIELD Doug Reichley a) Is a new landowner affected by the proposed variation? b) Is proposed realignment outside the easement/workspace? c) Is realignment proposed to satisfy landowner request? -If yes, name of landowner(s)/track number(s):	s X No
d) Has all the evaluation criteria been examined/provided for this specific discipline? Yes If no, please explain why:	s No
ENGINEERING/CONSTRUCTION / STATE PM a) Maximum deviation perpendicular to proposed alignment: b) Has the centerline been staked for construction? c) Does route variation affect HDD crossing alignment? d) Is realignment proposed for engineering/construction reasons? e) Will the route variation require the relocation of a pump station? f) Has all the evaluation criteria been examined/provided for this specific discipline? Yes If no, please explain why:	No X S X No X
ENVIRONMENTAL / exp	No X No X No X
Wetland ID # for newly impacted wetlands: f) Has all the evaluation criteria been examined/provided for this specific discipline? Yes If no, please explain why:	sNo
ENGINEERING / FACILITIES AND HYDRAULICS (if applicable) Sandra Gigovic a) Will the route variation require the relocation of a pump station? b) Will route variation impact hydraulics? c) Are additional valves required at HCA's or water crossing? d) Has all the evaluation criteria been examined/provided for this specific discipline? If no, please explain why:	No No
STAKEHOLDER RELATIONS / TCPL (if applicable) a) Does the variation result in any new stakeholders? b) Does the variation require follow-up with specific stakeholder groups? c) Was the variation proposed to satisfy stakeholder request? -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 If no, please explain why:	No No
Originator: Engineering/Environmental Date: 7/14/2011 Assigned Tracking Number: 0224-SD-P2-396.6-399.1-S	10 Received by: Date: 7/14/2011 Fax to: ? 12 Filed by: Date: Date:

0224-SD-P2-396.6-399.1-S

0224-SD-P2-396.6-399.1-S

	S. PHASE IV (STEELE CITY SEGMENT) AUTHORIZATION FORM
Date: 7/14/2011 Description: Reroute to avoid the drainage features.	Tracking Number: 0224-SD-P2-396.6-399.1-S MP: 396.6 to 399.1 Originated By: Engineering/Environmental Variation Form Attached: Yes X No
Universal Field - Land Comments: No Issues. Landownerd friendly.	Variation: Approved X Rejected Date: 8/10/2011 If Rejected Why?
TransCanada- Engineering Meera Kothari Comments:	Variation: Approved X Rejected Date: 8/10/2011 If Rejected Why?
Exp - Engineering Butch Wallace Comments:	Variation: Approved X Rejected Date: 8/10/2011 If Rejected Why?
TransCanada - Construction Bobby Curbow Comments:	Variation: Approved X Rejected Date: 8/10/2011 If Rejected Why?
Exp - Environmental Jonathan Minton Comments: Pending Environmental field survey.	Variation: Approved X Rejected Date: 8/10/2011 If Rejected Why?
AECOM - Risk Assesment Comments: N/A.	Variation: Approved Rejected Date: If Rejected
Exp - Safety Comments: N/A.	Variation: Approved Rejected Date: If Rejected Why?
Facilities: Sandra Gigovic Comments: N/A. Does not affect facilities	Variation: Approved Rejected Date: If Rejected
TransCanada - Senior PM Alan Lietz Comments:	Variation: Approved X Rejected Date: 8/10/2011 If Rejected Why?
TransCanada - Manager Steve Marr Comments:	Variation: Approved X Rejected Date: 8/10/2011 If Rejected Why?
Forward to: Doug Reichley X Jonathar Meera Kothari X Heidi Tille Butch Wallace X Jason Mi Bobby Curbow X Sandra C	quist X Steve Marr X illenbruch X

Document Control Number: KXL10-00006-01-AA-180 (Form 2)

KEYSTONE XL PIPELINE PROJECT - STEELE CITY SE PIPELINE ROUTE VARIATION FORM	GMENT
1 VARIATION TYPE: Refinement: Rero	oute: X
Centerline: X Valve Site: X	Pump Station:
2 LOCATION: Sketch: Attached Pictu	res: See attached
State: Multiple County: Multiple Quad M	Map: N/A
Township: Multiple Range: Multiple Aerial M	Map: See attached map sheet
Section: Multiple Centerline: 11/18/2010	MP: XXX.X to XXX.X
REASON FOR ROUTE VARIATION (Please include reason for route variation):	Pump Station: Pump Station: Incres: See attached Map: N/A Map: See attached map sheet MP: XXX.X to XXX.X
The Reason for each Route Variation (RV) is given with the respective RV file. These reroutes are proposed based on aerial/pictometry/Lydar/flyover analysis of current line through	
DETAIL ROUTE VARIATION (Please describe route variation in detail):	
See respective Route Variation Files. No new landowners were affected by the proposed route variat RVs included: Discussed during 8/10/2011 Meeting: HWY 73 Reroute (RV-0196) HWY 56 Reroute (RV-0219) Bad River HDD realignment reroute (RV-0220) MP 396 Reroute (RV-0224) Yellowstone River HDD Entry Pt (RV-0227) PI Breakdowns of all previous RV's for new CL (RV-0228 and RV-0229) CK-MLV-06 and CK-11 Valves relocation (RV-0230)	ions.
ADDITIONAL IMPACTS (Please include any additional impacts which may affect cost; crossings, inc	luction bends, etc.):
Is there an increase/decrease in the number of crossings?	YesNo
If yes, please list:	3
9	10
9 Originator: Multiple	Received by:
Date: 8/12/2011	10 Received by:
11	Fax to: ?
RV-0196, RV-0219-0220, RV-0224, RV-0227-0230 Assigned Tracking Number:	Filed by:
. adj du Truding Turinor.]
	Date: 6

^{*} Evaluation Criteria is located in Route Refinement and Reroute Process, Section 3

		.S. PHASE IV (STEELE CITY SEGMENT) AUTHORIZATION FORM	T _R
Date:	8/12/2011	Tracking Number: RV-0196, RV-0219-0220, RV-0224, RV-0227-0230	RV-0196, RV-C
River HD: 0224); Ye of all prev	Reroute (RV-0196): HWY 56 Reroute (RV-0219): 8ad D resilignment reroute (RV-0220): MP 396 Reroute (RV- Blowstone River HDD Entry Pt (RV-0227): Pl Bresidowns isous RV's for new Ct. (RV-0228 and RV-0229); CK-MLV- K-11 Valves relocation (RV-0230)	MP: XXX.X to XXX.X Originated By: Multiple Variation Form Attached: Yes X No	RV-0219-0220, RV-0224, RV-0227-0230
Universal Field - La Comments:	Doug Reichley	Variation: Approved X Rejected	224, RV
7em	is Survey	If Rejected Why? Dr. F. M/5/11	0227-0230
TransCanada- Engl Comments:	Meering Meera Kothari	Variation: Approved X Rejected Date: 8/10/2011 If Rejected Why?	
Exp - Engineering Comments:	Butch Wallace	Vadatiog: Approved X Rejected K. C. M. M. M. Rejected K. C. M. M. M. Rejected Why? If Rejected Why?	
TransCanada - Con Comments:	Bobby Curbow WIND MANUTE 1.	Variation: Approved X Rejected Date: 8/10/2011 If Rejected Why?	
Exp - Environmental Comments: Pe	Jonathan Minton	Variation: Approved X Rejected Date: 8/10/2011 Ti Rejected	
ImnsCanada - Envi	ronmental Stephen Craycroft	Variation Address X Rejected Date: 8/10/2011 If Rejected ASS van. 4 br L 3 d Why AND END REAL REAL REAL REAL REAL REAL REAL REAL	W COMPLETED
Facilities: Comments: N/A. Do	Sandra Gigovic es not affect Facilities.	Variation: Approved N/A Rejected Date:	0219 Hun4 56 REROUTE
TransCenada - PM () Comments:	Robert Bradley	Variation: Approved X Rejected Date: 8/10/2011 If Rejected Why?	REROUTE
TransCanada - Senis Comments: CANO	Alan Jetz	Variation: Approved —X Rejected	
TransCanada - Mana Comments:	ger Steve Marr	Variation: Approved Rejected Date: If Rejected	
Forward to: Doug Re Meera Ke Butch We Bobby Ci	othari X Stephen C allace X Robert Bra	raycroft X Steve Marr X	

KEYSTONE XL PIPELINE PROJECT - STEELE CI PIPELINE ROUTE VARIATION FORM		Т		
VARIATION TYPE: Refinement:	Reroute:	X		
Centerline: X Valve Site:	X		Pump Station:	
			- unip olation	
OCATION: Sketch: Attached	Pictures: S	ee attached		
The state of the s	Quad Map: 1	THE PERSON NAMED IN COLUMN	Trans.	
	Aerial Map:	and the second		
Section: Multiple Centerline: 11/18/2010	MP:	XXX.X	to	XXX.X
REASON FOR ROUTE VARIATION (Please include reason for route variation):				
The Reason for each Route Vanation (RV) is given with the respective RV file.				
These reroutes are proposed based on aerial/pictometry/Lydar/flyover analysis of current line	through Mon	tana, South	Dakota, and Net	oraska.
DETAIL ROUTE VARIATION (Please describe route variation in detail):	San San San San	TONIO A	The state of the s	
See respective Route Variation Files. No new landowners were affected by the proposed route	e variations.			
RVs included:				
Discussed prior to 6/20/2011: Western Prairie Fringe Orchid Reroute (RV-0194)				
John Harter Reroute (RV-0195)				
Buzek Reroute (RV-0197)				
Discussed during 6/20/2011 Meeting:				
Reroute away from sidehili (SOM Land) (RV-0209)				
Discussed during 6/21/2011 Meeting:				
Reroutes to avoid creek Crossings (RV-0199)				
MP 475 Reroute (RV-0200) Reroutes to lessen/reduce Pis (RV-0213)				
Reroutes to avoid waterwell; fence (RV-0214)				9
Reroutes to avoid creeks, dropoffs, wetlands, etc. (RV-0215)				
Reroutes to avoid sideslopes/hilis (RV-0216) Reroutes to avoid pivot centers (RV-0217)				
Discussed during 8/10/2011 Meeting: HWY 73 Reroute (RV-0196)				
HWY 56 Reroute (RV-0219)				
Bad River HDD realignment reroute (RV-0220)				
MP 396 Reroute (RV-0224) Yeliowstone River HDD Entry Pt (RV-0227)				
Pi Breakdowns of all previous RV's for new CL (RV-0228 and RV-0229)				
CK-MLV-06 and CK-11 Valves relocation (RV-0230)				
ADDITIONAL IMPACTS (Please include any additional impacts which may affect cost; crossin	ngs, induction	bends, etc.):	
s there an increase/decrease in the number of crossings?	Vas			de De de de
f yes, please list:	Yes_	-	No	000 000 000 000 000 000 000 000 000 00
r yes, piease list:		- Whamin		1900
	lio			
Originator: Multiple		Received	by:	
Date: 8/12/2011		Da	ate: 8/12	2/2011
			Fax to: ?	
RV-0194-0197, RV-0199-0200, RV-0209, RV-0213-0217, RV-0219-	12			
Assigned Tracking Number: 0220, RV-0224, RV-0227-0230		Filed	by:	
		De	fax to: ?	

^{*} Evaluation Criteria is located in Route Refinement and Reroute Process Section 3

KEYSTONE PIPELINE PROJECT - U.S. PHASE IV (STEELE CITY SEGMENT)

	KEYSTONE PIPELINE PROJECT ROUTE VARIATION	- U.S. PHASE IV (STEELE C ON AUTHORIZATION FORM	ITY SEGMENT)
Date:	8/12/2011	Tracking Number:	RV-0194-0197, RV-0199-0200, RV-0209, RV-0213-0217, RV-0219-0220, RV-0224, RV-0227-0230
John Harter Buzek Rero	airie Fringe Orchid Reroute (RV-0194) r Reroute (RV-0195) rute (RV-0197) ay from sidehii (SOM Land) (RV-0209)	Originated By: Variation Form Attache	P: XXX.X to XXX.X Multiple
Universal Field - Land	Doug Reichl		X Rejected
Comments: 1ent	vil sur Jey	If Rejected Why?	P. A. 10/5) 11
TransCanada- Engine	ering Meera Koth	arl Variation Approved	X Rejected
Comments: and by Da meetings.	avid Guien on the 8/20 and 6/21	If Rejected Why?	Date: <u>6/20, 6/21, & 8/10/11</u>
Exp - Engineering	Butch Wallac	ce Variation: Approved	X Rejected
Comments:		If Rejected Why?	Date: 6/20, 6/21, & 8/10/11
TransCanada - Constr	nuction Bobby Curbo	A STATE OF THE PARTY OF THE PAR	X Rejected
Comments:		If Rejected Why?	Date: 8/20, 6/21, & 8/10/11
Exp - Environmental	Jonathan Minto	on Variation: Approved	X Rejected
Comments:		If Rejected Why?	Date: 6/20, 6/21, & 8/10/11
AECOM - Risk Assesm	nent Heidi Tiliqui	st Variation: Approved	N/A Rejected
Comments: N/A.	A MEG (TV) (CTE)	If Rejected Why?	Date:
facilities:	Sandra Gigovi	c Variation: Approved	N/A Rejected
Comments: N/A. Does	not affect Facilities.	If Rejected Why?	Date:
ranaCanada - PM (NE	1 Robert Bradle	y Variation: Approved	X Rejected
comments:		If Rejected Why?	Date: 8/10/2011
ransCanada - Senior I	PM Alan Liet	z Variation: Approved	X Rejected
comments:	ry appropriate	If Rejected Why?	Date: 6/20, 6/21, & 8/10/11
ransCanade - Manage	Steve Mar	r Variation: Approved	Rejected
omments:	A CONTRACTOR OF THE CONTRACTOR	If Rejected	Date: 2/3////
		Why?	
orward to: Doug Reich		an Minton X	Alan Lietz X
Meera Koth Butch Walls Bobby Curb	ace X Robert	iliquist X Bradley X	Steve Marr X

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