



PIPELINE SCHEMATIC	HORIZONTAL STATIONS (2D)	SLOPE STATIONS (3D)
HEAVY WALL PIPE	2210+00 MATCHLINE	2211+26 MATCHLINE
WELD FITTING	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
TRANSITION PIECE	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
CASING PIPE	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
CONCRETE COATING	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
SET-ON WEIGHTS	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
PIPELINE WARNING SIGN	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
PIPELINE MARKER	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
MATERIAL ITEM	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
GROUNDING MAT	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
ZINC RIBBON	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
AERIAL MARKER	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
CATHODIC TEST STATION	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
MAINLINE VALVE	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
CHECK VALVE	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
OPEN CUT	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
SORE	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
DRINKING WATER USA	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
ECOLOGICAL USA	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
HIGHLY POPULATED AREA	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
OPERATOR (KEYSTONE) DEFINED	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
OTHER POPULATED AREA	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
SOURCE WATER PROTECTION AREA	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)
WELLHEAD PROTECTION AREA	2216+43 FENCE (BARBED WIRE)	2218+09 FENCE (BARBED WIRE)

TEST SECTIONS (3D)	ENVIRONMENTAL MITIGATION/RECLAMATION STATIONS (2D)
TEST SECTION 3B-3 ILTO-026-2010	TOPSOIL SALVAGE METHOD
	STREAMS
	WETLANDS
	TIMING CONSTRAINTS
	STATIONS
	MONITORING
	RECLAMATION
	SPECIAL CONSIDERATIONS

GENERAL NOTES

- COVER NOT IN PARENTHESIS IS TO TOP OF KEYSTONE PIPELINE. COVER IN PARENTHESIS IS TO TOP OF FOREIGN PIPELINE OR UTILITY LINE.
- DATUM ELEVATION AND PROJECTION ARE BASED ON MEAN SEA LEVEL AND NAD 83.
- FIELD PIPE LOCATING REQUIRED TO DETERMINE PLACEMENT OF PIPELINE WITHIN PERMANENT EASEMENT.
- UNLESS OTHERWISE NOTED, 48 INCHES MINIMUM COVER EXCEPT 36 INCHES IN AREAS OF CONSOLIDATED ROCK.
- NO ACTUAL AS-BUILT GROUND SHOTS WERE TAKEN AT THIS LOCATION. THE PROFILE REPRESENTS A PROJECTION FROM SHOTS TAKEN AT 150' TO 250' INTERVALS.
- THE TYPE OF COATING APPLIED TO THE FIELD WELDS DURING THE ORIGINAL CONSTRUCTION WAS TWO COMPONENT LIQUID EPOXY. THE COATING PRODUCTS USED WERE DENSO 7200 OR SPC SP-2888.
- THE SUBSTANTIAL CONSTRUCTION COMPLETION DATE, BASED ON CALIPER PIG RUN, WAS OCTOBER 10, 2009 FOR M.P. 301.75 TO M.P. 343.98 AND OCTOBER 31, 2009 FOR M.P. 343.98 TO 377.31.
- ORIGINAL IN-SERVICE DATE OF THE KEYSTONE PIPELINE (PHASE 1): JUNE 30, 2010.
- CPS CALCULATION DATE: MAY 2010.
- ORION STATION SERIES NUMBER: 1182700
- TO DETERMINE THE MILE POST AT A GIVEN LOCATION, ADD THE 3D STATION NUMBER FROM THIS SEGMENT TO STATION NUMBER 16432+39 AND DIVIDE BY 5280.

OPERATING AND TEST PRESSURE

- THE MAXIMUM OPERATING PRESSURE (MOP) IS 1440 PSIG
- THE MINIMUM TEST PRESSURE WAS 1601 PSIG

BILL OF MATERIALS (3D)

ITEM NO.	DESCRIPTION	QUANTITY
2	30" O.D. X 0.388" W.T., API-5LX-70 W/FBE COATING	12,343
3	30" O.D. X 0.516" W.T., API-5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	120
6	30" O.D. X 0.429" W.T., API-5LX-70 W/FBE COATING	77
7	30" O.D. X 0.516" W.T., API-5LX-70 W/FBE COATING	441
422	MAINLINE VALVE ASSEMBLY CRPTR+44 2-A0-MLV-001 (+26)	1 EA
	PIPELINE MARKERS	0 EA
	PIPELINE WARNING SIGNS	12 EA
	CATHODIC TEST STATION	4 EA
	AERIAL MARKER	1 EA

REFERENCE DRAWINGS

REF. NO.	DRAWING NO.	REV. NO.	DRAWING TITLE
422	1834-01-ML-03-130	3	MAINLINE VALVE
	1834-01-ML-03-131	0	MAINLINE VALVE CRPTR+44 2-A0-MLV-001

REVISIONS

NO.	DATE	REV. BY	CHK. BY	APPR. BY	DESCRIPTION
1	5/7/09	UEI	RDG	LAG	ISSUED FOR CONSTRUCTION
2	10/17/09	UEI			ISSUED FOR AS-BUILT
					REPLACES COVERAGE OF IFC DRAWINGS
					1834-03-ML-02-028
					1834-03-ML-02-029
					1834-03-ML-02-030

ENGINEERING RECORDS

DRAWN BY	INITIAL	DATE	ENY APPRD.	INITIAL	DATE
UEI		10/02/15			

PROFESSIONAL ENGINEER

NAME	STATE	LIC#	REV#	DATE
LOYS ALVIN GRAY, III	SD	CE9004		

SCALE: 0 125 250 500 Feet

TransCanada
In business to deliver

KEYSTONE MAINLINE (NPS 30 2009) CARPENTER SECTION

NAME: LOYS ALVIN GRAY, III
STATE: SD
LIC#: CE9004

AS-BUILT ALIGNMENT

M.P. 353.10 TO M.P. 355.56
SHEET 18 OF 20 SHEETS

STA. 2211+26 TO STA. 2341+33 (3D)

DRAWING NO. 1834-03-ML-02-018 REV. 2