



- GENERAL NOTES**
- 1) ALL CHAINAGES ARE IN FEET UNLESS OTHERWISE SPECIFIED.
 - 2) DATUM ELEVATION AND PROJECTION ARE BASED ON MEAN SEA LEVEL AND NAD 83.
 - 3) FIELD PIPE LOCATING REQUIRED TO DETERMINE PLACEMENT OF PIPELINE WITHIN PERMANENT EASEMENT.
 - 4) UNLESS OTHERWISE NOTED, 48 INCHES MINIMUM COVER EXCEPT 36 INCHES IN AREAS OF CONSOLIDATED ROCK.
 - 5) NO ACTUAL AS-BUILT GROUND SHOTS WERE TAKEN AT THIS LOCATION. THE PROFILE REPRESENTS A PROJECTION FROM SHOTS TAKEN AT 150' TO 250' INTERVALS.
 - 6) 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 GPC SP-2888.
 - 7) THE SUBSTANTIAL CONSTRUCTION COMPLETION DATE, BASED ON CALIPER PIG RUN, WAS AUGUST 16, 2009 FOR M.P. 66.90 TO M.P. 88.54, SEPTEMBER 16, 2009 FOR M.P. 88.54 TO M.P. 114.00 AND SEPTEMBER 23, 2009 FOR M.P. 114.00 TO M.P. 130.00.
 - 8) ORIGINAL IN-SERVICE DATE OF THE KEYSTONE PIPELINE (PHASE 1): JUNE 30, 2010.
 - 9) CPS CALCULATION DATE: MAY 2010.
 - 10) ORION STATION SERIES NUMBER: 1182700.
 - 11) TO DETERMINE THE MILE POST AT A GIVEN LOCATION, ADD THE 3D STATION NUMBER FROM THIS SEGMENT TO STATION NUMBER 4028+46 AND DIVIDE BY 5280.

OPERATING AND TEST PRESSURE

1. THE MAXIMUM OPERATING PRESSURE (MOP) IS 1440 PSIG.
2. THE MINIMUM TEST PRESSURE WAS 1600 PSIG.

BILL OF MATERIALS (3D)

ITEM NO.	DESCRIPTION	QUANTITY
1	30" O.D. X 0.438" W.T. API 5LX-70 W/FBE COATING	103'
2	30" O.D. X 0.386" W.T. API 5LX-70 W/FBE COATING	2567'
3	30" O.D. X 0.516" W.T. API 5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	84'
408	LUVERNE PUMP STATION ASSEMBLY (21')	1 EA
101E	30"-45" 3 DIA RAD WELD FITTING 0.386" W.T. Y-70	1 EA
	PIPELINE MARKERS	0 EA
	PIPELINE WARNING SIGNS	0 EA
	CATHODIC TEST STATION	0 EA
	AERIAL MARKER	0 EA

REFERENCE DRAWINGS

REF. NO.	DRAWING NO.	REV. NO.	DRAWING TITLE
408	1830-01-ML-03-108		LUVERNE PUMP STATION
	1830-01-ML-03-109		LUVERNE PUMP STATION
	1830-01-ML-03-110		LUVERNE PUMP STATION

REVISIONS

NO.	DATE	REV. BY	CHECKED BY	APPROVED BY	DESCRIPTION
1	5/17/08	UEI	RDG	LAG	ISSUED FOR CONSTRUCTION
2	10/17/09	UEI			ISSUED FOR AS-BUILT
					1829-03-ML-02-032
					REPLACES COVERAGE OF IFC DRAWINGS
					1829-03-ML-02-031
					1829-03-ML-02-032

ENGINEERING RECORDS

DRAWN BY	INITIAL	DATE	ENY APPRD.	INITIAL	DATE
UEI		10/01/11			
CHECKED BY			APPRD. BY		
			COMPANY APPROVED		

PROFESSIONAL ENGINEER

NAME	STATE	LIC#	REV#	DATE
LOYS A. GRAY, III	ND	PE5714		

SCALE: 0 125 250 500 Feet

TransCanada
In business to deliver

KEYSTONE MAINLINE (NPS 30 2008) NIAGRA SECTION

FUR 1829 SPREAD 1A DISCIPLINE 03

AS-BUILT ALIGNMENT

M.P. 123.12 TO M.P. 123.64

SHEET 20 OF 20 SHEETS

STA. 2472+05 TO STA. 2499+80 (3D)

DRAWING NO. 1829-03-ML-02-020 (3D)

REV. 2

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