



ENGINEERING, REIMAGINED



# PU-16-140 CONSTRUCTION INSPECTION

Plains Terminal 24-Inch Crude Oil Pipeline – McKenzie Co.  
Johnson's Corner to Dakota Access Pipeline

*October 24, 2017*

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## Executive Summary

The North Dakota Public Service Commission retained KLJ to complete a Construction Inspection report for Case Number PU-16-140, also known as the Johnsons Corner to Dakota Access Pipeline. The Plains Terminals Project consisted of a 24-Inch crude oil pipeline, of approximately 3.5 miles in length in McKenzie County, North Dakota. The purpose of the inspection was to ensure the project was constructed in compliance with the siting laws and rules and the applicable PSC Orders for the Project, and to identify aspects that required compliance.

Construction inspections were conducted on October 24<sup>th</sup>, October 25<sup>th</sup>, October 31<sup>st</sup>, and November 9<sup>th</sup>, 2017. The Certificate of Corridor Compatibility and Route Permit for the Johnsons Corner to Dakota Access Pipeline Project was used as a reference for the location, installation, and environmental concerns of the pipeline project. Throughout the inspections, depth checks were performed to verify a minimum of 48" of cover after installation.

On October 24, 2017, Paul Lee visited the worksite from 1:00 to 2:30 PM. During the time of inspection work activities were primarily focused on the utility crossing near station 60+00, where a trench box was utilized during the installation of pipe. A focus of safety was evident throughout the site, areas where workers were required to enter the trench for pipe installation were either benched or protected by trench boxes as seen in photos 6, 7, and 18. Elsewhere on the worksite, much of the site has been trenched with the pipe lowered-in, in preparation for backfill. Depth checks were periodically performed to verify 4 feet or greater of cover in the trenches.

The following day, another visit was performed in the afternoon. Work activities included excavation, welding, lowering-in pipe, and backfill. Warning tape was being placed between lifts as backfill began near the DAPL terminal.

Another inspection was performed on October 31, 2017. At this time, most of the pipeline had been trenched, spliced, and lowered in. The work activities were focused on backfill and tie-ins (approximately 50% completed). The bore at highway 73 had been completed with crew working on trench for tie-in. A second utility crossing west of station 60+00 had been completed with the pipe being installed below the existing utilities. Exposed trenches were again verified at 48", or deeper typically along utility crossings or tie-ins. Elsewhere on the worksite backfill has been completed with work beginning to restore the subgrade to match the existing contours.

The final construction inspection took place on November 9, 2017. Paul Lee visited the worksite from 4:00 to 5:00 PM. Work was focused on excavation for tie-in near station 22+00. At this time backfill was approximately 70% completed with the remaining work focused on tie-ins, or grading pipeline scar in preparation for topsoil spreading.

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## Signatures

The services performed by KLJ staff for this project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by professionals currently practicing in this area under similar time and budget constraints. Recommendations and findings contained in this report represent our professional judgement and are based upon available information and technically accepted practices at the present time and location. Other than this, no warranty is implied or expressed.

Lead Project Manager, Paul Lee



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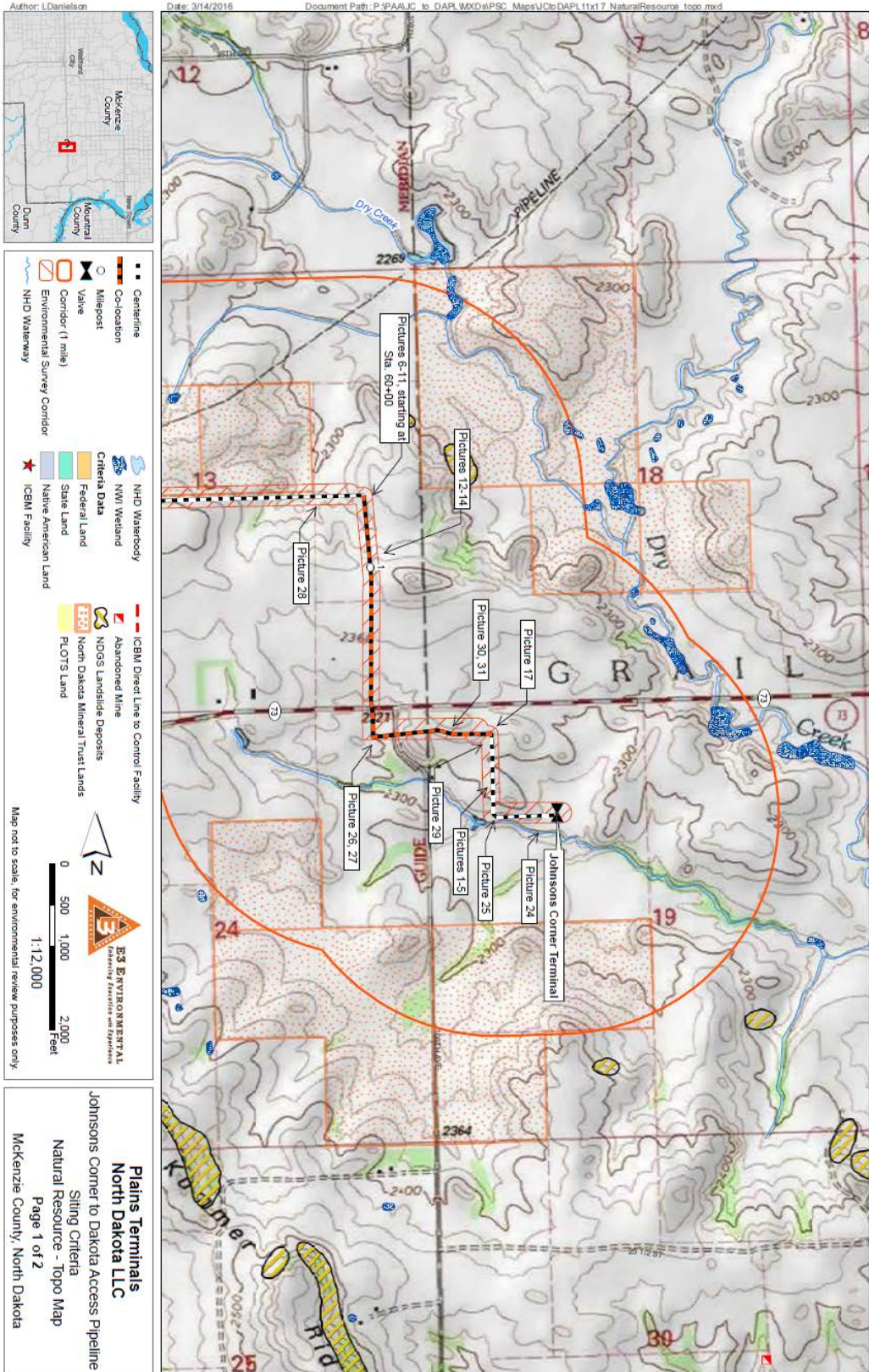
Paul Lee, PLS, Project Manager

3/20/2019

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Date

Maps





**Legend**

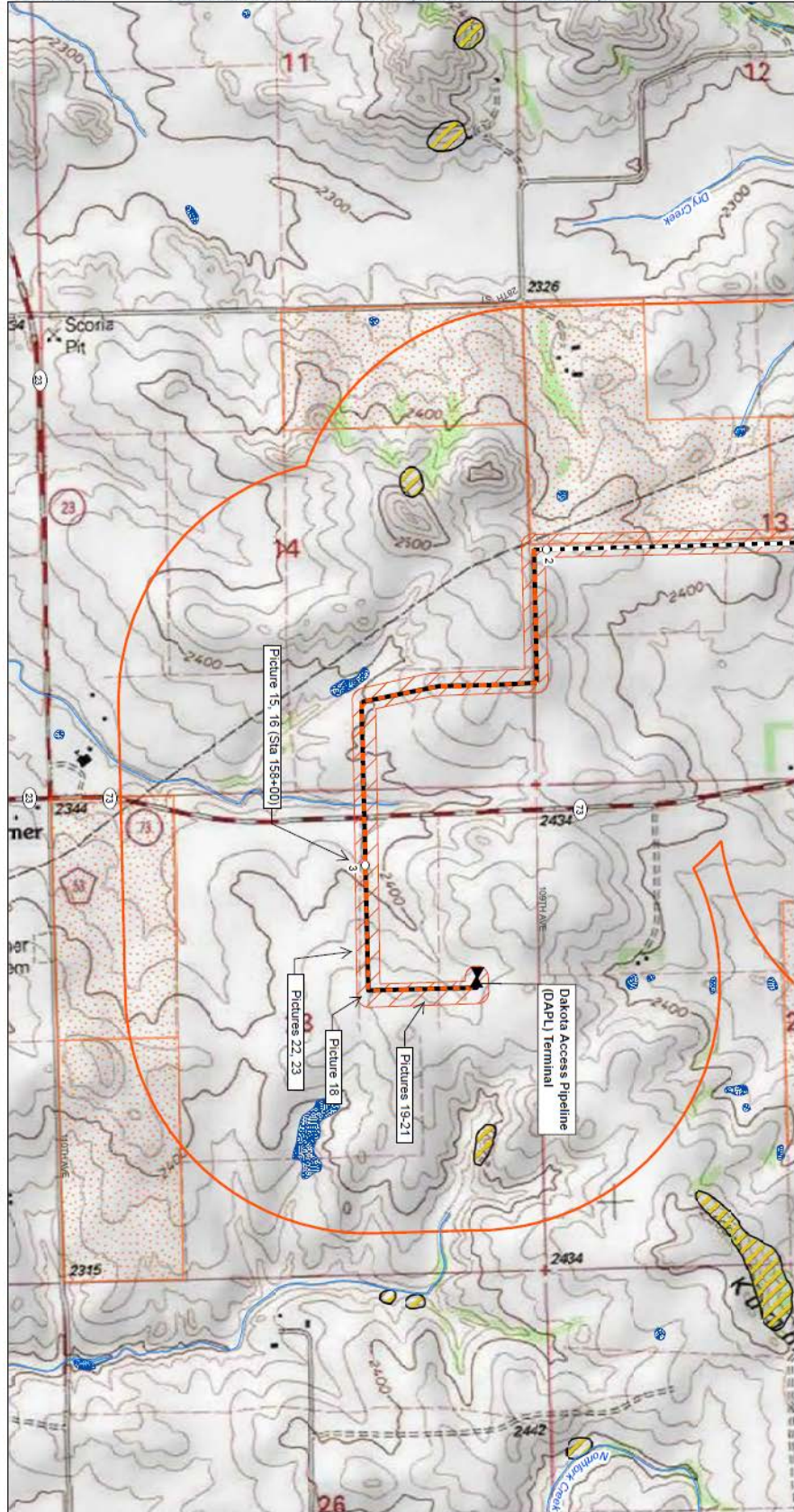
- Centerline
- Co-location
- Milepost
- Valve
- Corridor (1 mile)
- Environmental Survey Corridor
- NHD Waterway
- NHD Waterbody
- NW Wetland
- Criteria Data
- Federal Land
- State Land
- Native American Land
- ICBM Facility
- ICBM Direct Line to Control Facility
- Abandoned Mine
- NDGS Landslide Deposits
- North Dakota Mineral Trust Lands
- PLOTS Land

Map not to scale, for environmental review purposes only.

**E3 ENVIRONMENTAL**  
Engineering Services and Operations

0 500 1,000 2,000 Feet

1:12,000



**Plains Terminals**  
**North Dakota LLC**  
 Johnsons Corner to Dakota Access Pipeline  
 Siting Criteria  
 Natural Resource - Topo Map  
 Page 2 of 2  
 McKenzie County, North Dakota

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*Photographs: October 24, 2017*



Picture 1: 12+08 From entry



Picture 2: Pipe bore/trench. Depths checked at 4 feet or greater cover in trench.



Picture 3: Pipe backfill



Picture 4: Laying pipe, cover verified greater than 4 feet.



Picture 5: Backfilling pipe



Picture 6: Trench box and installation of pipe at utility crossing



Picture 7: Utility crossing



Picture 8: Placing pipe near utility crossing



Picture 9: Location of bore tie-in



Picture 10: Installing pipe at utility crossing



Picture 11: Station 60+00



Picture 12: Pipe laid in trench, preparing for backfill



Picture 13: Pipe recently placed in trench



Picture 14: Station 54+00



Picture 15: Pipe placed in trench, some water collecting in low area



Picture 16: Station 158+00



Picture 17: Pipe ready for backfill, minimum depth requirements verified



Picture 18: PI



Picture 19: Backfill in progress




Picture 20: Backfill in progress



Picture 21: Pipe leveled on sandbags to make connection at PI

*Construction Progress Report October 24, 2017*

Daily Construction Progress Report				
	<b>Client:</b>	N. Dak. Public Service Commission	<b>Report Number:</b>	3
	<b>Project:</b>	PU-16-140 Plains JC-DAPL Pipeline	<b>Date:</b>	10/24/2017
	<b>KLJ Project Number:</b>	1216124	<b>Pages:</b>	1
Project Contact Information				
<b>Title</b>	<b>Name</b>	<b>Company</b>	<b>Office Phone</b>	<b>Cell Phone</b>
Client Contact	Patric Fahn	ND Public Service Commission	701-328-4077	
KLJ Project Manager	Paul Lee	KLJ	701-250-3501	701-351-5551
Field Inspector	Paul Lee	KLJ	701-250-3501	701-351-5551
Contractor Field Foreman	Joe Pease	On & Offshore		580-677-1277
Contractor Field Foreman	Ann Thessen	B.J. Kadrmias	701-225-0361	402-984-0712
Daily Construction Conditions				
<b>Weather Conditions:</b>	Partly cloudy, 7-15 mph SW			
<b>Temp (High/Low):</b>	High 62, low 28			
<b>Tailgate Meeting (Yes/No):</b>	No			
Daily Construction Activity				
<b>Construction Activity</b>	<b>Estimated % Complete</b>		<b>Comments/Description</b>	
ROW Clearing	100			
Topsoil Removal	100			
Level/Grade ROW	100			
Staking	100			
Stringing	100			
Bending	100			
Welding	100			
Coating	80			
Trench	80		In progress	
Lowering-in	80		In progress	
Backfill	55		In progress	
Tie-ins	35		In progress	
Hydro Test	0			
Restoration	0			
Photos				
Picture 1: Station 12+08				
Picture 2: Pipe bore/trench. Depths checked at 4 feet or greater cover in trench				
Picture 3: Pipe backfill				
Picture 4: Laying pipe, cover verified greater than 4 ft.				
Picture 5: Backfilling pipe				
Picture 6: Trench box and installation of pipe at utility crossing				
Picture 7: Utility crossing				
Picture 8: Placing pipe near utility crossing				
Picture 9: Location of tie-in to bore				
Picture 10: Installing pipe at utility crossing				
Picture 11: Station 60+00				
Picture 12: Pipe laid in trench, preparing for backfill				
Picture 13: Pipe recently placed in trench				
Picture 14: Reference photo, Station 54+00				
Picture 15: Pipe placed in trench, some water collecting in low area				
Picture 16: Station 158+00				
Picture 17: Pipe ready for backfill				
Picture 18: PI				
Picture 19: Backfill in progress				
Picture 20: Backfill in progress				
Picture 21: Pipe leveled on sandbags to make connection at PI				
Disposition/Comments:				
During time of inspection, majority of work is focused around utility crossing near station 60+00. Trench box is being utilized while pipe is installed and spliced.				
Adjacent to utility crossing, pipe is being lowered and installed in trench. Several locations in this area are close to being ready for backfill, or in the process of being backfilled.				
<b>Inspectors Name:</b>	Paul Lee		<b>Date:</b> 10/24/2017	
<b>Inspectors Time (hrs.):</b>	2.5			

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*Photographs October 25, 2017*




Picture 22: Backfill pipe trench, warning tape placed in trench



Picture 23: Backfilling, warning tape placed in trench

*Construction Progress Report October 25, 2017*

Daily Construction Progress Report				
	<b>Client:</b>	N. Dak. Public Service Commission	<b>Report Number:</b>	4
	<b>Project:</b>	PU-16-140 Plains JC-DAPL Pipeline	<b>Date:</b>	10/25/2017
	<b>KLJ Project Number:</b>	1216124	<b>Pages:</b>	1
Project Contact Information				
<b>Title</b>	<b>Name</b>	<b>Company</b>	<b>Office Phone</b>	<b>Cell Phone</b>
Client Contact	Patric Fahn	ND Public Service Commission	701-328-4077	
KLJ Project Manager	Paul Lee	KLJ	701-250-3501	701-351-5551
Field Inspector	Paul Lee	KLJ	701-250-3501	701-351-5551
Contractor Field Foreman	Joe Pease	On & Offshore		580-677-1277
Contractor Field Foreman	Ann Thessen	B.J. Kadrmas	701-225-0361	402-984-0712
Daily Construction Conditions				
<b>Weather Conditions:</b>	Mostly clear, 5-15 mph SW			
<b>Temp (High/Low):</b>	69/35			
<b>Tailgate Meeting (Yes/No):</b>	no			
Daily Construction Activity				
Construction Activity	Estimated % Complete		Comments/Description	
ROW Clearing	100			
Topsoil Removal	100			
Level/Grade ROW	100			
Staking	100			
Stringing	100			
Bending	100			
Welding	100			
Coating	80			
Trench	80		In progress	
Lowering-in	80		In progress	
Backfill	55		In progress	
Tie-ins	35		In progress	
Hydro Test	0			
Restoration	0			
Photos				
Photo 22: Backfill and warning tape				
Photo 23: Backfill and warning tape				
Disposition/Comments:				
Paul Lee visited the worksite for one hour at approximately 3:30 PM. At the time of inspection, backfilling of pipe has began near the DAPL terminal, photos show warning tape being installed in this location. Work activities around this time in October included excavation, welding, lowering-in pipe, and backfill, and grading.				
<b>Inspectors Name:</b> Paul Lee			<b>Date:</b> 10/25/2017	
<b>Inspectors Time (hrs.):</b> 1				

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*Photographs: October 31, 2017*



Picture 24: PI near Johnsons Corner Terminal backfilled



Picture 25: Point of intersect west of Johnsons Corner Terminal



Picture 26: Excavating for trench near Highway 73 bore



Picture 27: Excavating for trench near Highway 73 bore




Picture 28: Utility crossing completed west of PI near station 60+00



Picture 29: Backfill completed, prior to topsoil placement

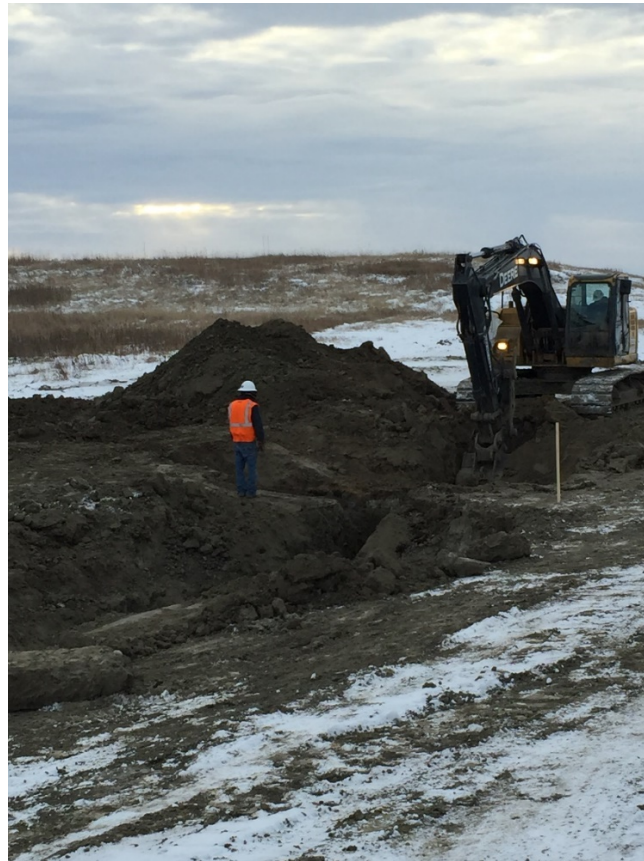
*Construction Progress Report October 31, 2017*

Daily Construction Progress Report				
	<b>Client:</b>	<u>N. Dak. Public Service Commission</u>	<b>Report Number:</b>	<u>5</u>
	<b>Project:</b>	<u>PU-16-140 Plains JC-DAPL Pipeline</u>	<b>Date:</b>	<u>10/31/2017</u>
	<b>KLJ Project Number:</b>	<u>1216124</u>	<b>Pages:</b>	<u>1</u>
Project Contact Information				
<b>Title</b>	<b>Name</b>	<b>Company</b>	<b>Office Phone</b>	<b>Cell Phone</b>
Client Contact	Patric Fahn	ND Public Service Commission	701-328-4077	
KLJ Project Manager	Paul Lee	KLJ	701-250-3501	701-351-5551
Field Inspector	Paul Lee	KLJ	701-250-3501	701-351-5551
Contractor Field Foreman	Joe Pease	On & Offshore		580-677-1277
Contractor Field Foreman	Ann Thessen	B.J. Kadrmass	701-225-0361	402-984-0712
Daily Construction Conditions				
<b>Weather Conditions:</b>	<u>Cloudy, 5-8 mph SE</u>			
<b>Temp (High/Low):</b>	<u>41/17</u>			
<b>Tailgate Meeting (Yes/No):</b>	<u>no</u>			
Daily Construction Activity				
Construction Activity	Estimated % Complete		Comments/Description	
ROW Clearing	100			
Topsoil Removal	100			
Level/Grade ROW	100			
Staking	100			
Stringing	100			
Bending	100			
Welding	100			
Coating	94			
Trench	90			
Lowering-in	90			
Backfill	61		In progress	
Tie-ins	45		In progress	
Hydro Test	0			
Restoration	0			
Photos				
Picture 24: PI near Johnsons corner terminal backfilled				
Picture 25: Point of intersect west of Johnsons corner terminal				
Picture 26: Excavating for trench near highway 73 bore				
Picture 27: Excavation for trench near highway 73 bore				
Picture 28: Utility crossing completed west of PI near station 60+00				
Picture 29: Backfill completed, prior to topsoil placement				
Disposition/Comments:				
Paul lee arrived on site at approximately 12:00, and was present for inspection for 1.5 hours. Work has been mostly completed at utility crossings.				
Backfill completed near Johnsons corner terminal, with excavation continuing to the west near PI. Working on Highway 73 bore connection.				
<b>Inspectors Name:</b>			<b>Date:</b>	
Paul Lee			10/31/2017	
<b>Inspectors Time (hrs.):</b>		1.5		

*Photographs November 09, 2017*




Picture 30: Station 22+00



Picture 31: Excavation

*Construction Progress Report November 09, 2017*

Daily Construction Progress Report				
	<b>Client:</b>	N. Dak. Public Service Commission	<b>Report Number:</b>	6
	<b>Project:</b>	PU-16-140 Plains JC-DAPL Pipeline	<b>Date:</b>	11/9/2018
	<b>KLJ Project Number:</b>	1216124	<b>Pages:</b>	1
Project Contact Information				
<b>Title</b>	<b>Name</b>	<b>Company</b>	<b>Office Phone</b>	<b>Cell Phone</b>
Client Contact	Patric Fahn	ND Public Service Commission	701-328-4077	
KLJ Project Manager	Paul Lee	KLJ	701-250-3501	701-351-5551
Field Inspector	Paul Lee	KLJ	701-250-3501	701-351-5551
Contractor Field Foreman	Joe Pease	On & Offshore		580-677-1277
Contractor Field Foreman	Ann Thessen	B.J. Kadrmaz	701-225-0361	402-984-0712
Daily Construction Conditions				
<b>Weather Conditions:</b>	Cloudy, light winds SE/SW			
<b>Temp (High/Low):</b>	19/-9			
<b>Tailgate Meeting (Yes/No):</b>	no			
Daily Construction Activity				
Construction Activity	Estimated % Complete		Comments/Description	
ROW Clearing	100			
Topsoil Removal	100			
Level/Grade ROW	100			
Staking	100			
Stringing	100			
Bending	100			
Welding	100			
Coating	95			
Trench	100			
Lowering-in	100			
Backfill	70		In progress	
Tie-ins	55		In progress	
Hydro Test	0			
Restoration	0			
Photos				
Photo 30: Station 22+00				
Photo 31: Excavation				
Disposition/Comments:				
Paul Lee visits worksite from 4:00 to 5:00. Main work activities include excavation near station 22+00.				
<b>Inspectors Name:</b> Paul Lee			<b>Date:</b> 11/9/2018	
<b>Inspectors Time (hrs.):</b> 1				