K360 DEF MFL GMFL SMFL XYZ LGT

2013

Pipeline Inspection Report

T.D. Williamson
Pipeline Performance™

Company Name

Hiland Crude, LLC

Project Name

Tioga Station to Epping Injection

Pipe Size

8"

Inspection Date(s)

Oct 3, 2013

Report Date(s)

Dec 3, 2013

TDW Regional Office

TDW Services, Inc.

Executive Summary - GMFL Inspection

RUN INFORMATION

Hiland Crude, LLC
Heber Briceno

Tioga Station to Epping Injection
8" Crude

	Launcher	Receiver
Location:	Tioga Station	Epping Injection
Date/Time:	10/3/2013 1:20:18 PM	10/3/2013 8:17:31 PM
Stationing:	0+00	1079+37
GPS - LAT:	48.285068659	48.255922953
GPS - LONG:	-102.919191938	-103.274725098

Duration of run - Hours: 6.95
Pipeline Length: 109,666.00 ft
On-site Representative: Jesse Child
Contact: Heber Briceno

Average Velocity: 4.38 ft/sec
Maximum Velocity: 7.79 ft/sec
Data Analyst: Ben Stehling

Tool Tracking By: Cherokee Pipeline Services

INSPECTION FINDINGS

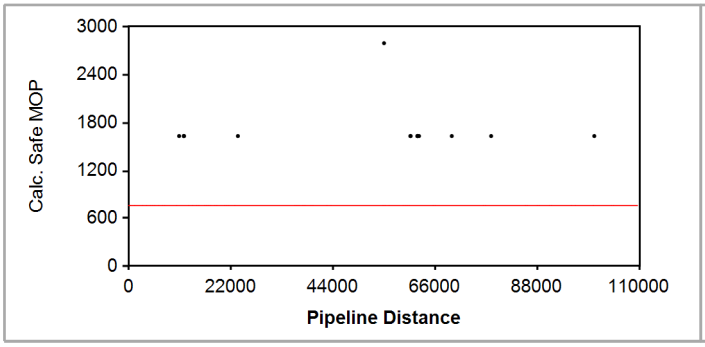
Current Established Maximum
Operating Pressure of Pipeline: 750 psi

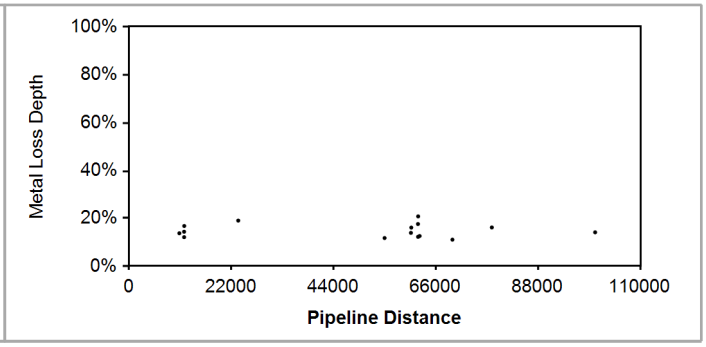
Criteria Used: ASME B31G: Modified
Defect Interaction Rule: 1 inch between pits

Welds Detected: 2,669 **Valves Detected:** 4 **Fittings Detected:** 1 **Markers Detected:** 19 **Gains Detected:** 4
Casings Detected: 0 **Tees Detected:** 7 **Flanges Detected:** 11 **Repairs Detected:** 0 **Deformations Detected:** 3

P'<P*: 0 **M/L pits:** 15 **M/L grouping:** 15

Internal groups: 2 **External groups:** 13





** The number of anomalies where P' (calculated safe max. pressure for an anomaly) is less than P (current established maximum pressure of pipeline) - see ASME B31G*

INSPECTION DETAILS

A total of 15 metal loss groups (2 Internal/13 External) were detected on the inspection survey, of which the deepest is reported at 21%. Using an established maximum operating pressure of 750 psi, 0 of the metal loss features appear to be pressure reducing.

Inspection data was obtained for the full length (109,666 feet / 20.77 miles) of the survey. The quality of the inspection data is satisfactory for a comprehensive assessment of this pipeline segment.

One GMFL and one IDOD sensor failed at 32,827 feet into the run resulting in 99% and 97% coverage respectively; however, tool rotation is good and an acceptable analysis was completed. Client was notified of the incomplete sensor coverage and accepted the run.

Executive Summary - GMFL Inspection

The inspection tool for this project included TDW XYZ Mapping module consisting of a high resolution Inertial Measurement Unit (IMU). The precision navigation data recorded by the IMU along with survey data supplied for specified control points and AGM locations provides a calculation of X, Y and Z coordinates for all objects and features listed in this report. The reported Latitude and Longitude are in WGS 84 datum format. Z coordinates are Orthometric heights reported in feet. The final accuracy of reported coordinates is dependent upon the accuracy of the survey points and distance between these points, as well as uniform tool speed; however, the Survey Data Provided for AGM/Control Points is not at the required Sub-Centimeter accuracy level as specified in the document: XYZ Survey Data Requirements (D1902 Rev D).

Executive Summary - Deformation

RUN INFORMATION

Hiland Crude, LLC
Heber Briceno

Tioga Station to Epping Injection
8" Crude

	Launcher	Receiver
Location:	Tioga Station	Epping Injection
Date/Time:	10/2/2013 3:32:26 PM	10/2/2013 11:39:08 PM
Stationing:	0+00	1079+37
GPS - LAT:	48.285068659	48.255922953
GPS - LONG:	-102.919191938	-103.274725098

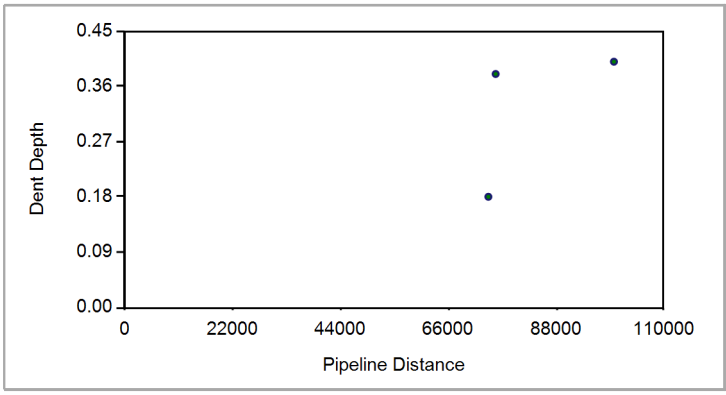
Duration of run - Hours: 8.11
Pipeline Length: 109,457.00 ft
On-site Representative: Jesse Child

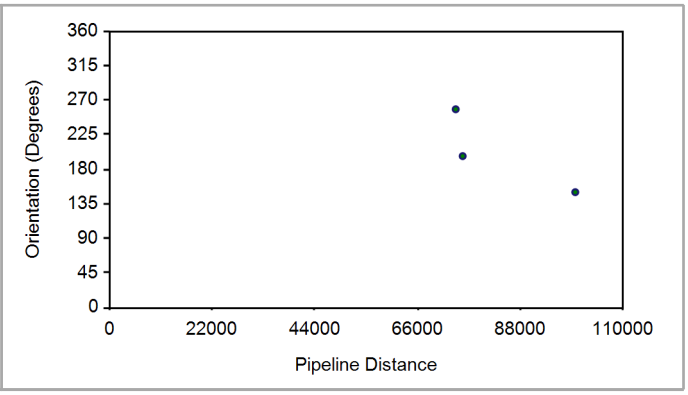
Average Velocity: 3.75 ft/sec
Maximum Velocity: 6.4 ft/sec
Data Analyst: Ben Stehling

Tool Tracking By: Cherokee Pipeline Services

INSPECTION FINDINGS

Deformations Detected: 3 **Ovalities Detected:** 0 **Expansions Detected:** 0 **Heavy Weld Detected:** 0 **Valves Detected:** 4





INSPECTION DETAILS

Inspection data was obtained for the full length (109,457 feet / 20.73 miles) of the survey. The quality of the inspection data is satisfactory for a comprehensive assessment of this pipeline segment.

A total of 3 deformations (3 dents) were detected on the inspection survey, of which the deepest is reported at 0.4 inch.

One DEF sensor was weak throughout the run resulting in 96% coverage; however, an acceptable analysis was completed. Client was notified of the incomplete sensor coverage and accepted the run for analysis.

Metal Loss - Immediate Prioritized Repairs

ID#	Distance (ft)	Depth	Length	Width	Orientation	PSI (P')	% of Est. psi (P'/P)	Latitude	Longitude	Altitude

Nothing found in this pipeline inspection meets the criteria for Immediate Repair conditions relating to METAL LOSS.

Sorted by depth then distance

Metal Loss - 180 Day Prioritized Repairs

ID#	Distance (ft)	Depth	Length	Width	Orientation	PSI (P')	% of Est. psi (P'/P)	Latitude	Longitude	Altitude

Nothing in the inspection meets the criteria for 180 Day Repair conditions relating to METAL LOSS.

Dent - Immediate Prioritized Repairs

ID#	Distance (ft)	Depth (in)	Depth (%)	Orientation	Metal Loss	On a Weld	Ovality	Description

Nothing found in the pipeline inspection meets the criteria for Immediate Repair conditions relating to DENTS.

Sorted by depth then distance

Dent - 60 Day Prioritized Repairs

ID#	Distance (ft)	Depth (in)	Depth (%)	Orientation	Metal Loss	On a Weld	Ovality	Description

Nothing in the inspection meets of the criteria for 60 Day Repair conditions relating to DENTS.

Sorted by depth then distance

Dent - 180 Day Prioritized Repairs

ID#	Distance (ft)	Depth (in)	Depth (%)	Orientation	Metal Loss	On a Weld	Ovality	Description

Nothing in the inspection meets of the criteria for 180 Day Repair conditions relating to DENTS.

Sorted by depth then distance

Metal Loss Summary

DEFINITIONS

This Metal Loss Summary Report provides information regarding indicated anomalies found in this inspection. Anomalies detected during the inspection are sized and assigned a length, width, and depth. The specified formula for determining remaining-strength of the anomaly is then applied to the predicted sizes. The predicted size accuracy is described in the contract specifications.

The Metal Loss Summary Report is a listing of metal loss indications in the pipeline, sorted first by the calculated safe maximum operating pressure (P') ascending, then by depth descending. As an aid in locating these anomalies, the upstream and downstream references are included, as well as distances from the defect to the reference.

ID#	Each location is automatically assigned a number in the software. This number is provided to assist the user of PIGTRAP software to more easily find any given defect.
Dist.	Given in either feet or meters, based on contractual agreements, this is the absolute distance from launch.
Depth	Predicted depth of the defect as a percentage of nominal wall.
Length	Predicted length of the defect, reported in either inches or millimeters.
Width	Predicted width of the defect, reported in either inches or millimeters.
ID/OD	Determination whether the defect exists on the inside (INT) or outside (EXT) surface of the pipe.
Orientation: Deg / O'Clock	Orientation is reported in degrees and o'clock (0 degrees/12:00 at top of pipe) as viewed looking downstream.
P'	Based on the specified formula for determining remaining-strength, it is the predicted safe maximum allowable pressure for the defect (P').
% Est. Press. (P'/P)	Percent of maximum established pressure, this is calculated by dividing the calculated safe pressure of the defect (P') by the current established maximum operating pressure of the pipeline (P). For TDW reporting, P is either established MOP provided by the customer or the calculated pressure rating for the pipe (P). Percentages less than 100% are considered pressure reducing.
Aboveground References	The name of the closest upstream and downstream references, usually either an AGM or a Valve.
Distance from Defect	The distance to the upstream and downstream reference listed in the previous column. Used for locating defects in the field.

See Appendix C for Dig Sheet Preparation

Metal Loss Summary

ID#	Dist (ft)	Depth	Length	Width	ID/OD	Orientation Deg	Orientation O'clock	P'	% Est. Press. (P'/P)	Above-Ground References		Distance from Defect
40000010	62,297.4	20.9%	0.81	0.61	EXT	27	12:45	1632.2	100.0	U/S:	AGM 100, Sta. 609+71, CR 117 -- Han #8611	336.22
										D/S:	AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point	3498.17
40000004	23,542.3	19.1%	0.43	0.39	EXT	95	3:00	1632.2	100.0	U/S:	AGM 030, Sta. 201+54, 106th Ave NW -- Han #8043	2831.42
										D/S:	AGM 040, Sta. 255+14, Two track -- Survey Point	2602.45
40000008	62,259.5	17.7%	0.85	0.81	EXT	90	3:00	1632.2	100.0	U/S:	AGM 100, Sta. 609+71, CR 117 -- Han #8611	298.31
										D/S:	AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point	3536.08
40000003	11,913.0	16.8%	0.84	0.58	EXT	98	3:15	1632.2	100.0	U/S:	AGM 010, Sta. 69+49, CR 8 -- Survey Point	4489.43
										D/S:	AGM 020, Sta. 146+84, CR 21 -- Survey Point	3300.97
40000013	78,168.0	16.2%	0.81	0.57	INT	128	4:15	1632.2	100.0	U/S:	AGM 130, Sta. 757+29, 116th Ave NW -- Survey Point	1314.74
										D/S:	AGM 140, Sta. 848+51, 117th Ave NW -- Han #8611	7735.60
40000007	60,815.7	16.2%	1.22	0.71	EXT	0	12:00	1632.2	100.0	U/S:	AGM 090, Sta. 540+95, 112th Ave NW -- Han #100	5781.43
										D/S:	AGM 100, Sta. 609+71, CR 117 -- Han #8611	1145.47
40000001	11,884.3	14.4%	0.73	0.74	EXT	97	3:00	1632.2	100.0	U/S:	AGM 010, Sta. 69+49, CR 8 -- Survey Point	4460.75
										D/S:	AGM 020, Sta. 146+84, CR 21 -- Survey Point	3329.66
40000014	100,421.5	14.2%	1.04	1.05	EXT	106	3:30	1632.2	100.0	U/S:	AGM 160, Sta. 952+38, 119th Ave NW -- Han #8611	4074.39
										D/S:	AGM 170, Sta. 1027+08, Two track -- Han #100	3843.92
40000006	60,740.3	14.0%	0.93	0.79	EXT	249	8:15	1632.2	100.0	U/S:	AGM 090, Sta. 540+95, 112th Ave NW -- Han #100	5706.01
										D/S:	AGM 100, Sta. 609+71, CR 117 -- Han #8611	1220.89
40000000	10,861.0	13.8%	0.76	1.12	INT	67	2:00	1632.2	100.0	U/S:	AGM 010, Sta. 69+49, CR 8 -- Survey Point	3437.38
										D/S:	AGM 020, Sta. 146+84, CR 21 -- Survey Point	4353.02

Metal Loss Summary

ID#	Dist (ft)	Depth	Length	Width	ID/OD	Orientation Deg	Orientation O'clock	P'	% Est. Press. (P'/P)	Above-Ground References		Distance from Defect
40000011	62,614.5	12.7%	0.45	0.37	EXT	305	10:00	1632.2	100.0	**U/S:**	AGM 100, Sta. 609+71, CR 117 -- Han #8611	653.37
										D/S:	AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point	3181.01
40000009	62,279.3	12.3%	0.65	0.73	EXT	29	12:45	1632.2	100.0	**U/S:**	AGM 100, Sta. 609+71, CR 117 -- Han #8611	318.10
										D/S:	AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point	3516.28
40000002	11,889.2	12.2%	0.83	0.56	EXT	42	1:15	1632.2	100.0	**U/S:**	AGM 010, Sta. 69+49, CR 8 -- Survey Point	4465.66
										D/S:	AGM 020, Sta. 146+84, CR 21 -- Survey Point	3324.74
40000012	69,683.4	11.1%	0.55	0.53	EXT	64	2:00	1632.2	100.0	**U/S:**	AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point	3887.83
										D/S:	AGM 120, Sta. 708+33, 59th St. NW -- Han #8611	2232.62
40000005	55,068.3	11.8%	0.59	0.43	EXT	327	10:45	2795.5	100.0	**U/S:**	AGM 090, Sta. 540+95, 112th Ave NW -- Han #100	34.00
										D/S:	AGM 100, Sta. 609+71, CR 117 -- Han #8611	6892.89

This report shows a maximum of 100 metal loss groups.

Type	Number
Metal Loss	15

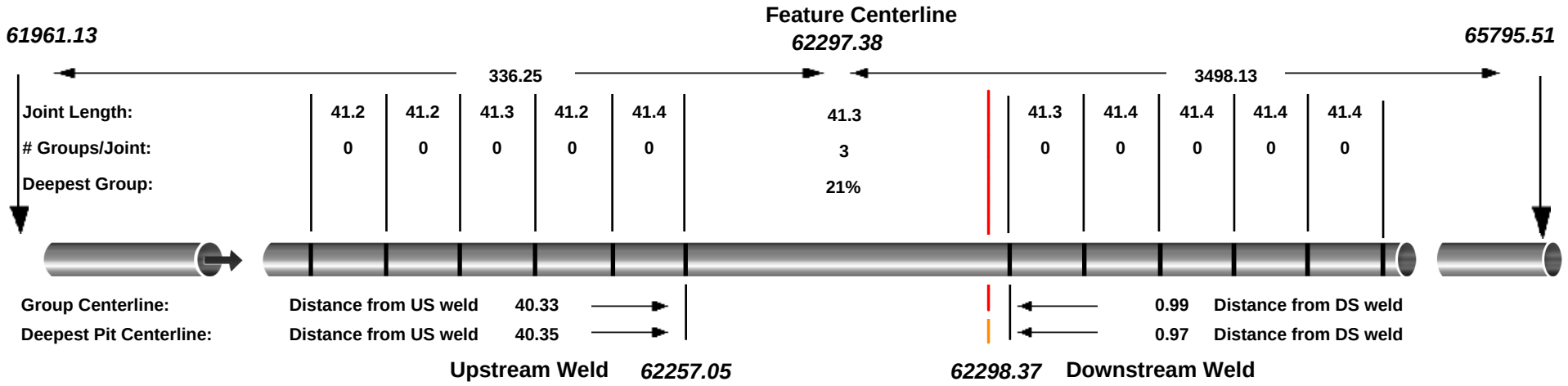
GROUP - Dig Site Information Report

UPSTREAM REFERENCE

AGM 100, Sta. 609+71, CR 117 -- Han #8611

DOWNSTREAM REFERENCE

AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point



Feature Information

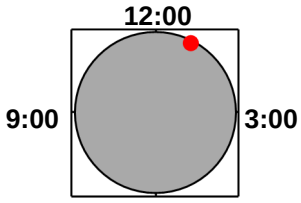
ID:	**40000010**	Distance from Launcher:	***62297.38***	***Feature Description***	
Time:	**19674.13**	Orientation on Pipe Wall:	**12:45**	**Metal Loss - EXTERNAL**	
				Wall Thickness:	**0.188**
Latitude:	**48.27011136**	Longitude:	**-103.13742844**	Altitude:	**2235.671**

Upstream Locations		Downstream Locations	
2818.04	Bend left - 45 deg., 3D	13588.67	Bend right - 45 deg., 3D
3106.73	Bend right - 45 deg., 3D	14595.29	Bend right - 40 deg., 3D
5989.72	Bend right - 45 deg., 3D	18289.39	Bend left - 25 deg., 3D
6294.32	Bend left - 45 deg., 3D	18418.08	Bend left - 32 deg., 3D
12039.64	Bend right - 45 deg., 3D	18446.12	Bend left - 32 deg., 3D

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

GROUP

Depth: **21%**
Length: **0.813**
Width: **0.614**
ERF: **0.460**
Safe Operating Pressure: **1632 psi**

1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

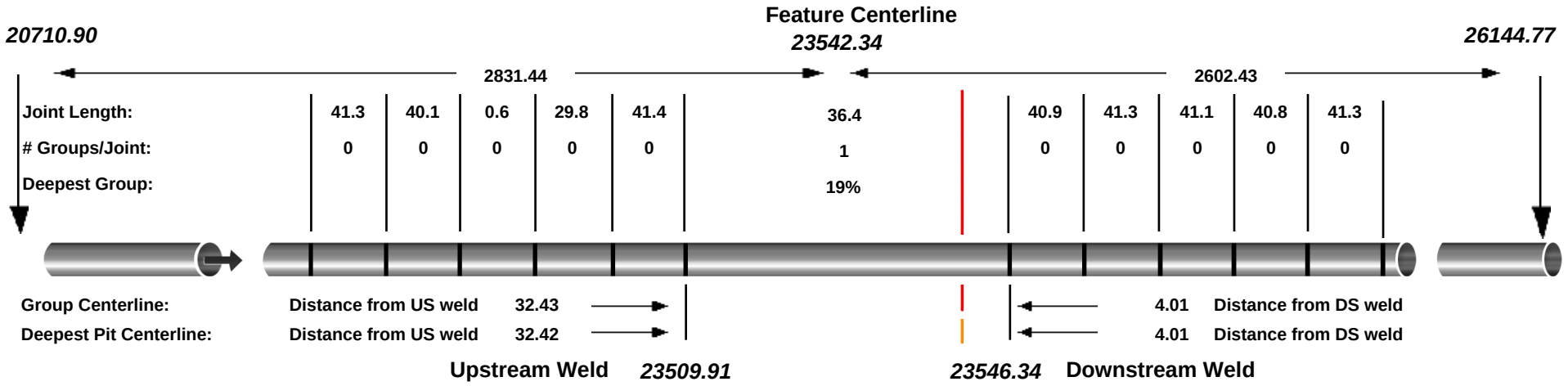
GROUP - Dig Site Information Report

UPSTREAM REFERENCE

AGM 030, Sta. 201+54, 106th Ave NW -- Han #8043

DOWNSTREAM REFERENCE

AGM 040, Sta. 255+14, Two track -- Survey Point



Feature Information

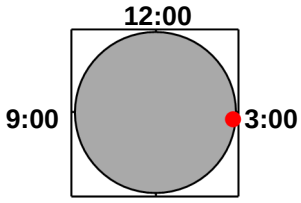
ID:	**40000004**	Distance from Launcher:	***23542.34***	***Feature Description***	
Time:	**10756.34**	Orientation on Pipe Wall:	**3:00**	**Metal Loss - EXTERNAL**	
				Wall Thickness:	**0.188**
Latitude:	**48.27891112**	Longitude:	**-102.99039207**	Altitude:	**2340.848**

Upstream Locations		Downstream Locations	
104.16	Bend left - 20 deg., 1.5D	1429.63	Bend left - 32 deg., 3D
1773.64	Bend left - 35 deg., 3D	1827.08	Bend right - 40 deg., 3D
4084.30	Bend right - 30 deg., 1.5D	2549.19	Bend right - 20 deg., 3D
12681.56	Bend right - 90 deg., 5D	2732.21	Bend left - 35 deg., 1.5D
16107.42	Bend left - 20 deg., 1.5D	13821.67	Bend right - 60 deg., 3D

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

GROUP

Depth: **19%**
Length: **0.425**
Width: **0.387**
ERF: **0.460**
Safe Operating Pressure: **1632 psi**

1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

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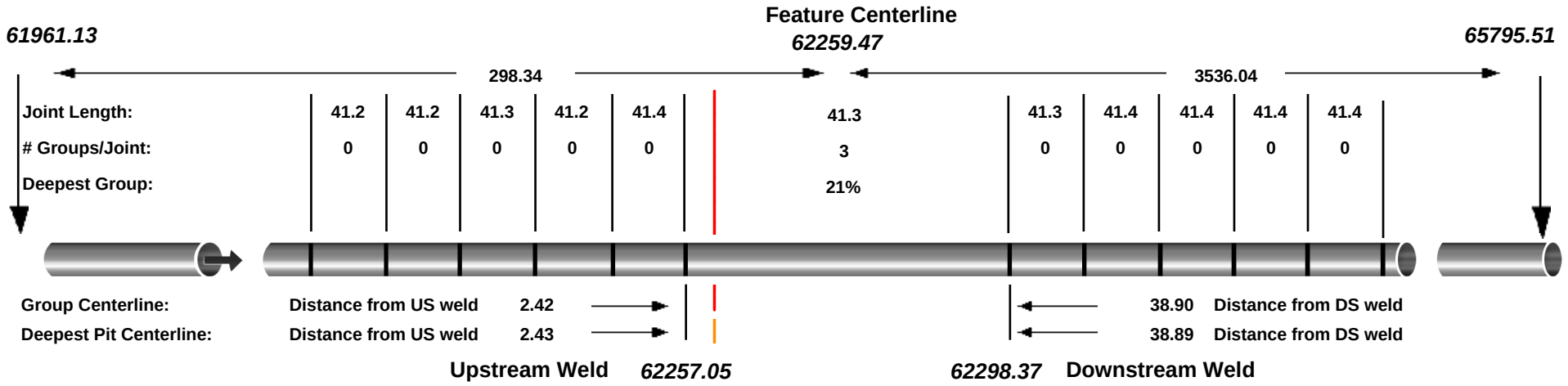
GROUP - Dig Site Information Report

UPSTREAM REFERENCE

AGM 100, Sta. 609+71, CR 117 -- Han #8611

DOWNSTREAM REFERENCE

AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point



Feature Information

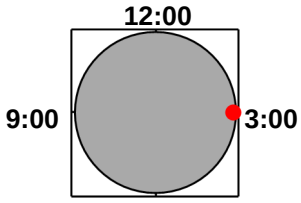
ID:	**40000008**	Distance from Launcher:	***62259.47***	***Feature Description***	
Time:	**19664.85**	Orientation on Pipe Wall:	**3:00**	**Metal Loss - EXTERNAL**	
				Wall Thickness:	**0.188**
Latitude:	**48.27011244**	Longitude:	**-103.13727343**	Altitude:	**2235.266**

Upstream Locations		Downstream Locations	
2780.13	Bend left - 45 deg., 3D	13626.58	Bend right - 45 deg., 3D
3068.82	Bend right - 45 deg., 3D	14633.20	Bend right - 40 deg., 3D
5951.81	Bend right - 45 deg., 3D	18327.30	Bend left - 25 deg., 3D
6256.41	Bend left - 45 deg., 3D	18455.99	Bend left - 32 deg., 3D
12001.73	Bend right - 45 deg., 3D	18484.03	Bend left - 32 deg., 3D

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

GROUP

Depth: **18%**
Length: **0.846**
Width: **0.806**
ERF: **0.460**
Safe Operating Pressure: **1632 psi**

1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

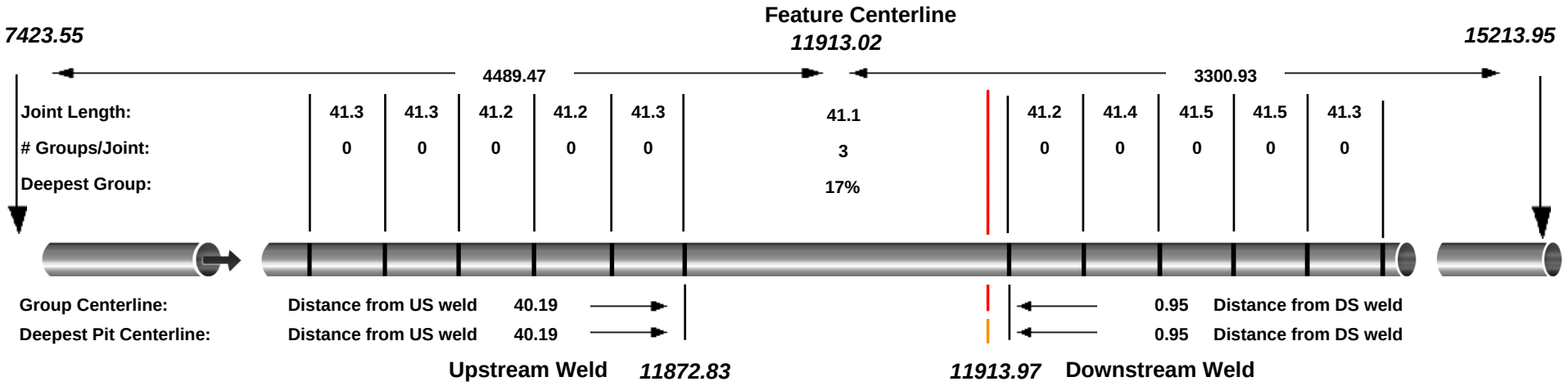
GROUP - Dig Site Information Report

UPSTREAM REFERENCE

AGM 010, Sta. 69+49, CR 8 -- Survey Point

DOWNSTREAM REFERENCE

AGM 020, Sta. 146+84, CR 21 -- Survey Point



Feature Information

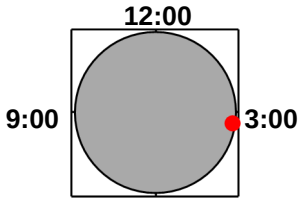
ID:	**40000003**	Distance from Launcher:	***11913.02***	***Feature Description***	
Time:	**8173.85**	Orientation on Pipe Wall:	**3:15**	**Metal Loss - EXTERNAL**	
				Wall Thickness:	**0.188**
Latitude:	**48.27533656**	Longitude:	**-102.94428131**	Altitude:	**2351.102**

Upstream Locations		Downstream Locations	
1052.24	Bend right - 90 deg., 5D	7545.02	Bend right - 30 deg., 1.5D
4478.10	Bend left - 20 deg., 1.5D	9855.68	Bend left - 35 deg., 3D
6115.76	Bend left - 75 deg., 6D	11525.16	Bend left - 20 deg., 1.5D
7674.82	Bend left - 90 deg., 6D	13058.95	Bend left - 32 deg., 3D
8077.69	Bend right - 90 deg., 7D	13456.40	Bend right - 40 deg., 3D

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

GROUP

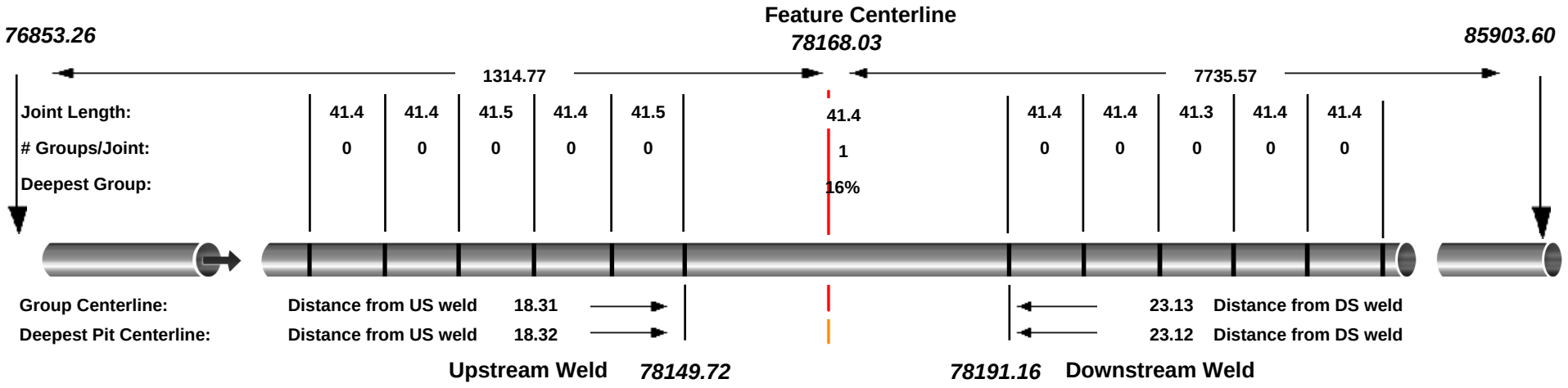
Depth: **17%**
Length: **0.845**
Width: **0.584**
ERF: **0.460**
Safe Operating Pressure: **1632 psi**

1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

GROUP - Dig Site Information Report

UPSTREAM REFERENCE
AGM 130, Sta. 757+29, 116th Ave NW -- Survey Point

DOWNSTREAM REFERENCE
AGM 140, Sta. 848+51, 117th Ave NW -- Han #8611



Feature Information

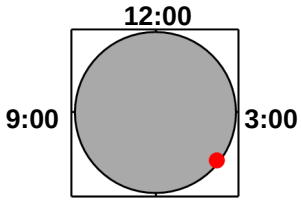
ID:	**40000013**	Distance from Launcher:	***78168.03***	***Feature Description***	
Time:	**23580.36**	Orientation on Pipe Wall:	**4:15**	**Metal Loss - INTERNAL**	
				Wall Thickness:	**0.188**
Latitude:	**48.27538104**	Longitude:	**-103.19605620**	Altitude:	**2417.672**

Upstream Locations		Downstream Locations	
1275.36	Bend right - 40 deg., 3D	2418.74	Bend left - 25 deg., 3D
2281.98	Bend right - 45 deg., 3D	2547.43	Bend left - 32 deg., 3D
18688.69	Bend left - 45 deg., 3D	2575.47	Bend left - 32 deg., 3D
18977.38	Bend right - 45 deg., 3D	7444.39	Bend left - 30 deg., 3D
21860.37	Bend right - 45 deg., 3D	9819.94	Tee at 90 deg.

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

GROUP

Depth: **16%**
Length: **0.807**
Width: **0.572**
ERF: **0.460**
Safe Operating Pressure: **1632 psi**

1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

Generated: 12/3/2013

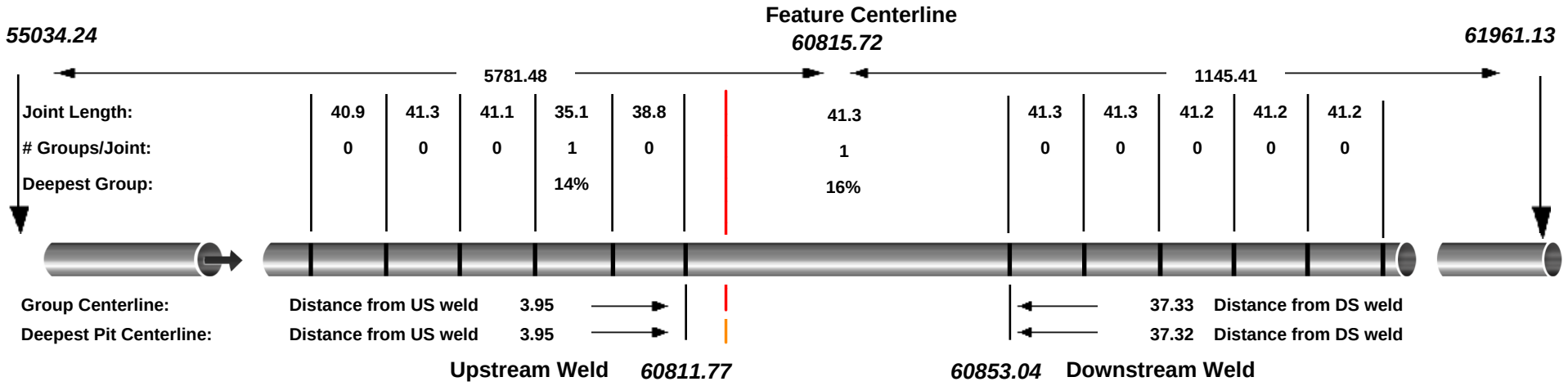
GROUP - Dig Site Information Report

UPSTREAM REFERENCE

AGM 090, Sta. 540+95, 112th Ave NW -- Han #100

DOWNSTREAM REFERENCE

AGM 100, Sta. 609+71, CR 117 -- Han #8611



Feature Information

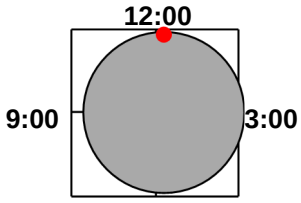
ID:	**40000007**	Distance from Launcher:	***60815.72***	***Feature Description***	
Time:	**19310.99**	Orientation on Pipe Wall:	**12:00**	**Metal Loss - EXTERNAL**	
				Wall Thickness:	**0.188**
Latitude:	**48.27012436**	Longitude:	**-103.13136829**	Altitude:	**2227.532**

Upstream Locations		Downstream Locations	
1336.38	Bend left - 45 deg., 3D	15070.33	Bend right - 45 deg., 3D
1625.07	Bend right - 45 deg., 3D	16076.95	Bend right - 40 deg., 3D
4508.06	Bend right - 45 deg., 3D	19771.05	Bend left - 25 deg., 3D
4812.66	Bend left - 45 deg., 3D	19899.74	Bend left - 32 deg., 3D
10557.98	Bend right - 45 deg., 3D	19927.78	Bend left - 32 deg., 3D

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

GROUP

Depth: **16%**
Length: **1.220**
Width: **0.713**
ERF: **0.460**
Safe Operating Pressure: **1632 psi**

1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

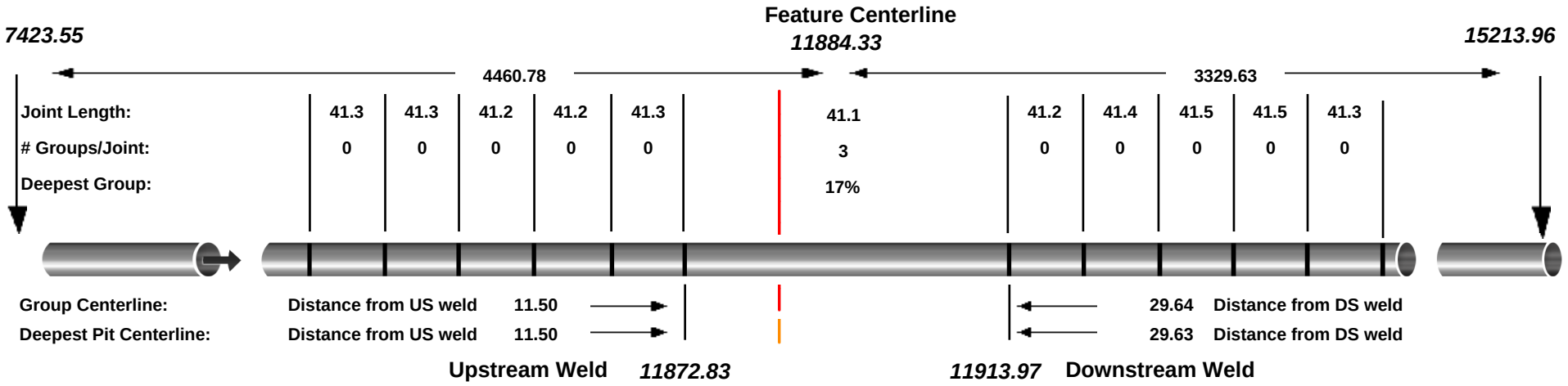
GROUP - Dig Site Information Report

UPSTREAM REFERENCE

AGM 010, Sta. 69+49, CR 8 -- Survey Point

DOWNSTREAM REFERENCE

AGM 020, Sta. 146+84, CR 21 -- Survey Point



Feature Information

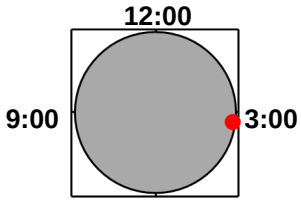
ID:	**40000001**	Distance from Launcher:	***11884.33***	***Feature Description***	
Time:	**8166.92**	Orientation on Pipe Wall:	**3:00**	**Metal Loss - EXTERNAL**	
				Wall Thickness:	**0.188**
Latitude:	**48.27533612**	Longitude:	**-102.94416371**	Altitude:	**2349.870**

Upstream Locations		Downstream Locations	
1023.55	Bend right - 90 deg., 5D	7573.71	Bend right - 30 deg., 1.5D
4449.41	Bend left - 20 deg., 1.5D	9884.37	Bend left - 35 deg., 3D
6087.07	Bend left - 75 deg., 6D	11553.85	Bend left - 20 deg., 1.5D
7646.13	Bend left - 90 deg., 6D	13087.64	Bend left - 32 deg., 3D
8049.00	Bend right - 90 deg., 7D	13485.09	Bend right - 40 deg., 3D

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

GROUP

Depth: **14%**
Length: **0.726**
Width: **0.742**
ERF: **0.460**
Safe Operating Pressure: **1632 psi**

1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

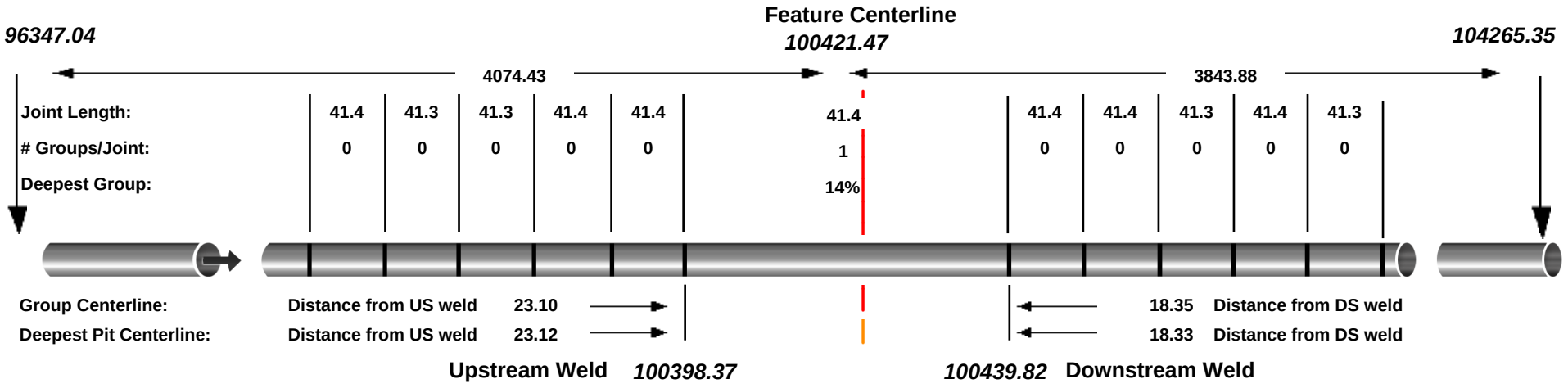
GROUP - Dig Site Information Report

UPSTREAM REFERENCE

AGM 160, Sta. 952+38, 119th Ave NW -- Han #8611

DOWNSTREAM REFERENCE

AGM 170, Sta. 1027+08, Two track -- Han #100



Feature Information

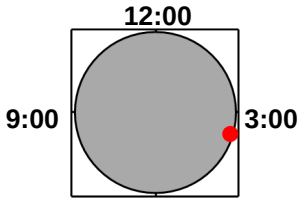
ID:	**40000014**	Distance from Launcher:	***100421.47***	***Feature Description***	
Time:	**28601.99**	Orientation on Pipe Wall:	**3:30**	**Metal Loss - EXTERNAL**	
				Wall Thickness:	**0.188**
Latitude:	**48.27930559**	Longitude:	**-103.27350314**	Altitude:	**2326.002**

Upstream Locations		Downstream Locations	
1253.90	Bend right - 45 deg., 3D	489.83	Bend left - 90 deg., 6D
1782.98	Bend left - 20 deg., 34D	8389.62	Bend left - 30 deg., 1.5D
2308.16	Bend right - 40 deg., 3D	9024.10	Bend left - 30 deg., 1.5D
2799.08	Bend left - 90 deg., 6D	9146.47	Bend right - 45 deg., 3D
5835.82	Tee at 90 deg.	9170.55	Bend right - 90 deg., 6D

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

GROUP

Depth: **14%**
Length: **1.039**
Width: **1.045**
ERF: **0.460**
Safe Operating Pressure: **1632 psi**

1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

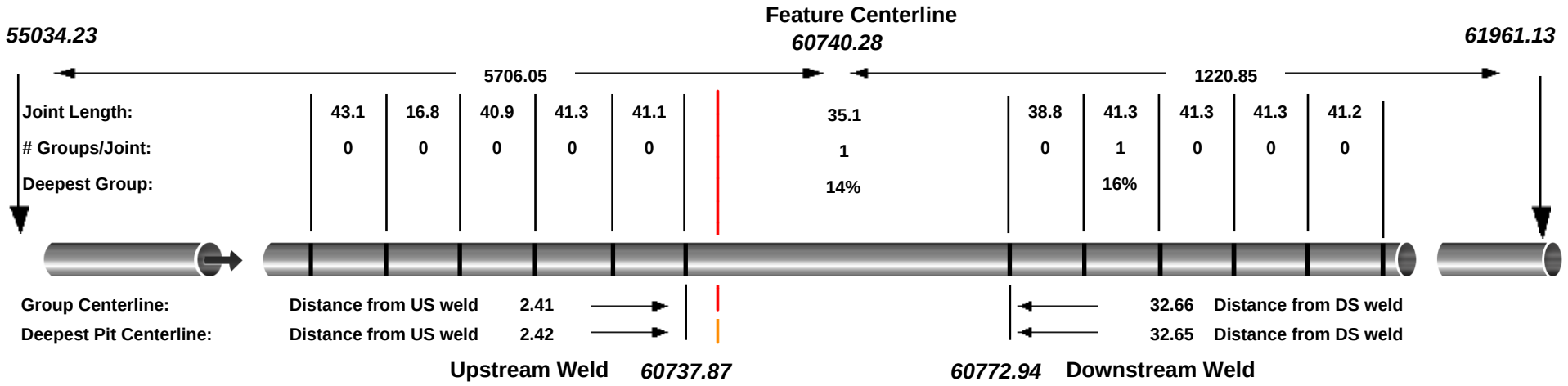
GROUP - Dig Site Information Report

UPSTREAM REFERENCE

AGM 090, Sta. 540+95, 112th Ave NW -- Han #100

DOWNSTREAM REFERENCE

AGM 100, Sta. 609+71, CR 117 -- Han #8611



Feature Information

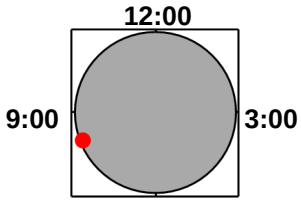
ID:	**40000006**	Distance from Launcher:	***60740.28***	***Feature Description***	
Time:	**19292.57**	Orientation on Pipe Wall:	**8:15**	**Metal Loss - EXTERNAL**	
				Wall Thickness:	**0.188**
Latitude:	**48.27012275**	Longitude:	**-103.13106047**	Altitude:	**2222.825**

Upstream Locations		Downstream Locations	
1260.94	Bend left - 45 deg., 3D	15145.77	Bend right - 45 deg., 3D
1549.63	Bend right - 45 deg., 3D	16152.39	Bend right - 40 deg., 3D
4432.62	Bend right - 45 deg., 3D	19846.49	Bend left - 25 deg., 3D
4737.22	Bend left - 45 deg., 3D	19975.18	Bend left - 32 deg., 3D
10482.54	Bend right - 45 deg., 3D	20003.22	Bend left - 32 deg., 3D

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

GROUP

Depth: **14%**
Length: **0.929**
Width: **0.791**
ERF: **0.460**
Safe Operating Pressure: **1632 psi**

1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

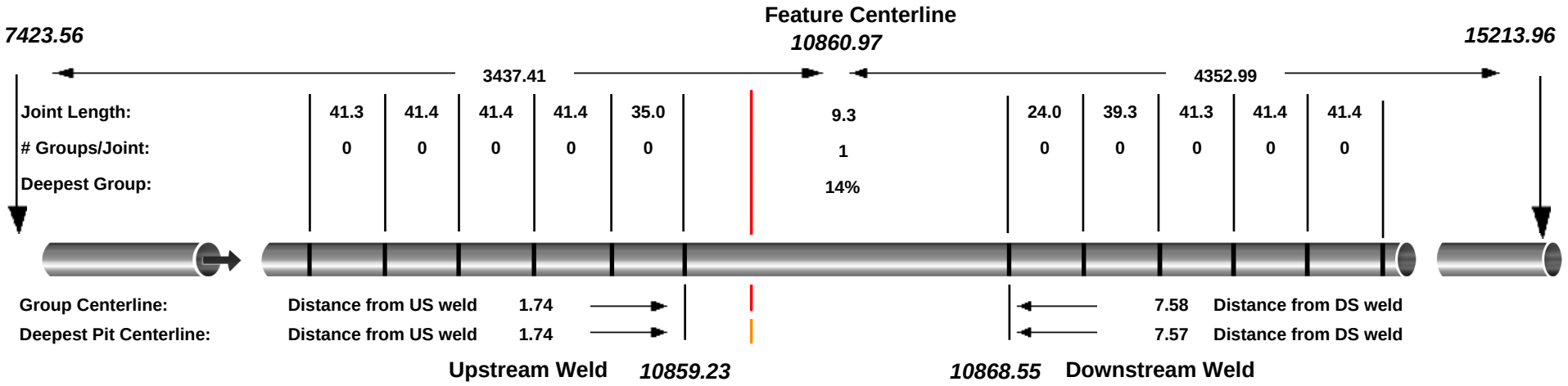
GROUP - Dig Site Information Report

UPSTREAM REFERENCE

AGM 010, Sta. 69+49, CR 8 -- Survey Point

DOWNSTREAM REFERENCE

AGM 020, Sta. 146+84, CR 21 -- Survey Point



Feature Information

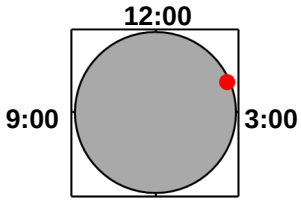
ID:	**40000000**	Distance from Launcher:	***10860.97***	***Feature Description***	
Time:	**7927.25**	Orientation on Pipe Wall:	**2:00**	**Metal Loss - INTERNAL**	
				Wall Thickness:	**0.188**
Latitude:	**48.27534435**	Longitude:	**-102.93998387**	Altitude:	**2316.285**

Upstream Locations		Downstream Locations	
0.19	Bend right - 90 deg., 5D	8597.07	Bend right - 30 deg., 1.5D
3426.05	Bend left - 20 deg., 1.5D	10907.73	Bend left - 35 deg., 3D
5063.71	Bend left - 75 deg., 6D	12577.21	Bend left - 20 deg., 1.5D
6622.77	Bend left - 90 deg., 6D	14111.00	Bend left - 32 deg., 3D
7025.64	Bend right - 90 deg., 7D	14508.45	Bend right - 40 deg., 3D

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

GROUP

Depth: **14%**
Length: **0.759**
Width: **1.124**
ERF: **0.460**
Safe Operating Pressure: **1632 psi**

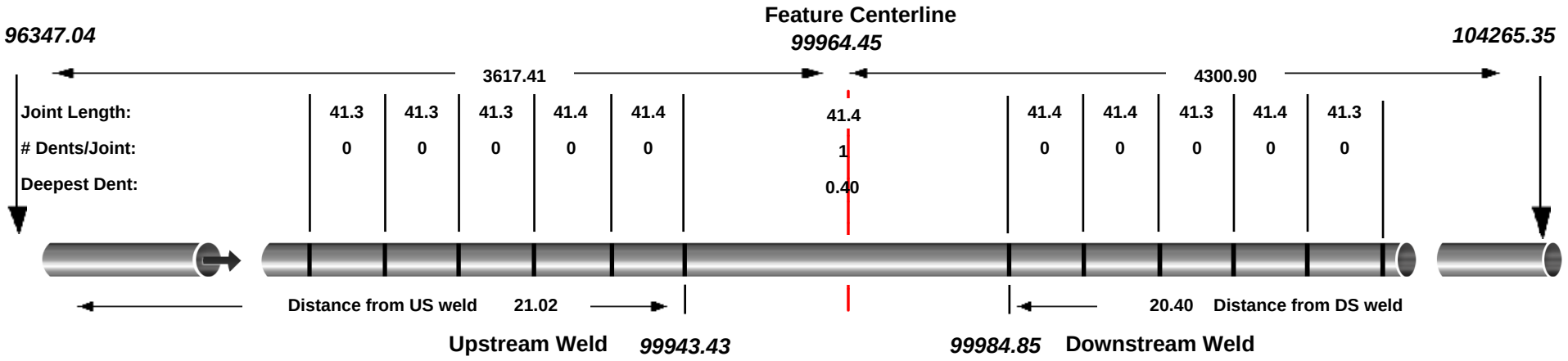
1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

TDW Services, Inc.
Hiland Crude, LLC
Tioga Station to Epping Injection

DENT - Dig Site Information Report

UPSTREAM REFERENCE
AGM 160, Sta. 952+38, 119th Ave NW -- Han #8611

DOWNSTREAM REFERENCE
AGM 170, Sta. 1027+08, Two track -- Han #100



Feature Information

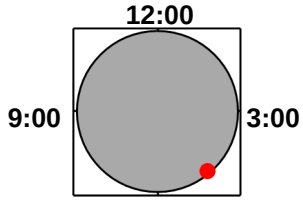
ID:	**14000002**	Distance from Launcher:	***99964.45***	***Feature Description***	
Time:	**28505.88**	Orientation on Pipe Wall:	**4:30**	**DENT**	
				Wall Thickness:	**0.188**
Latitude:	**48.27930045**	Longitude:	**-103.27163800**	Altitude:	**2329.210**
Additional Information:	**TDW Correlated Deformation**				

Upstream Locations		Downstream Locations	
796.88	Bend right - 45 deg., 3D	946.85	Bend left - 90 deg., 6D
1325.96	Bend left - 20 deg., 34D	8846.64	Bend left - 30 deg., 1.5D
1851.14	Bend right - 40 deg., 3D	9481.12	Bend left - 30 deg., 1.5D
2342.06	Bend left - 90 deg., 6D	9603.49	Bend right - 45 deg., 3D
5378.80	Tee at 90 deg.	9627.57	Bend right - 90 deg., 6D

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

DENT
Depth: **0.40**

1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

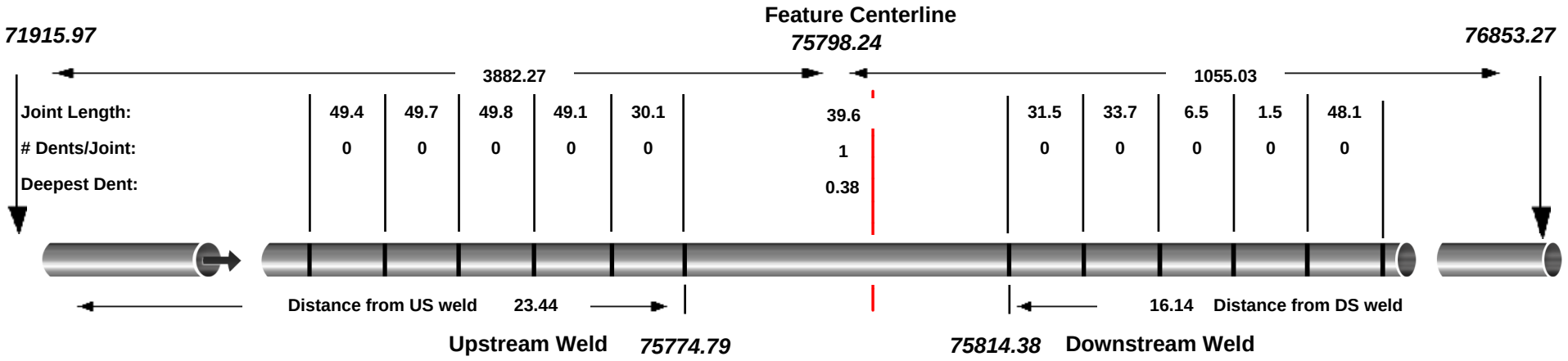
Generated: 12/3/2013

TDW Services, Inc.
Hiland Crude, LLC
Tioga Station to Epping Injection

DENT - Dig Site Information Report

UPSTREAM REFERENCE
AGM 120, Sta. 708+33, 59th St. NW -- Han #8611

DOWNSTREAM REFERENCE
AGM 130, Sta. 757+29, 116th Ave NW -- Survey Point



Feature Information

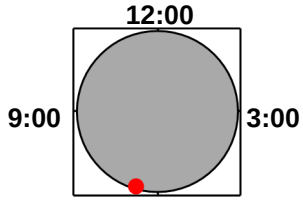
ID:	**14000001**	Distance from Launcher:	***75798.24***	***Feature Description***	
Time:	**23004.09**	Orientation on Pipe Wall:	**6:30**	**DENT**	
				Wall Thickness:	**0.188**
Latitude:	**48.27014899**	Longitude:	**-103.19255520**	Altitude:	**2401.165**
Additional Information:	**TDW Correlated Deformation**				

Upstream Locations		Downstream Locations	
16318.90	Bend left - 45 deg., 3D	87.81	Bend right - 45 deg., 3D
16607.59	Bend right - 45 deg., 3D	1094.43	Bend right - 40 deg., 3D
19490.58	Bend right - 45 deg., 3D	4788.53	Bend left - 25 deg., 3D
19795.18	Bend left - 45 deg., 3D	4917.22	Bend left - 32 deg., 3D
25540.50	Bend right - 45 deg., 3D	4945.26	Bend left - 32 deg., 3D

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

DENT
Depth: **0.38**

1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

Generated: 12/3/2013

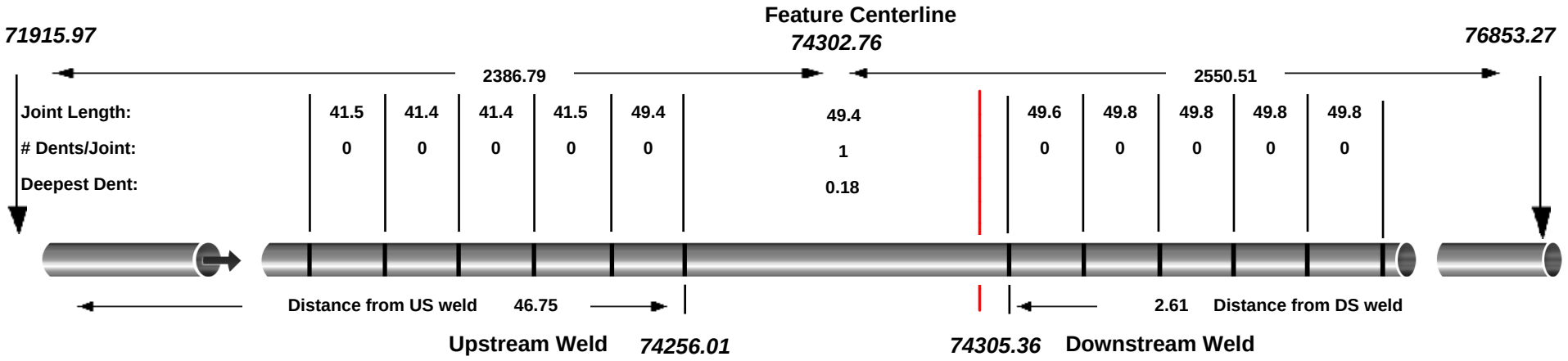
DENT - Dig Site Information Report

UPSTREAM REFERENCE

AGM 120, Sta. 708+33, 59th St. NW -- Han #8611

DOWNSTREAM REFERENCE

AGM 130, Sta. 757+29, 116th Ave NW -- Survey Point



Feature Information

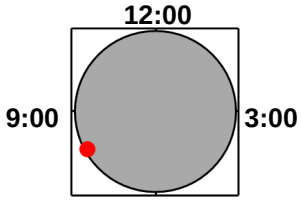
ID:	**14000000**	Distance from Launcher:	***74302.76***	***Feature Description***	
Time:	**22643.10**	Orientation on Pipe Wall:	**8:00**	**DENT**	
				Wall Thickness:	**0.188**
Latitude:	**48.27029168**	Longitude:	**-103.18645886**	Altitude:	**2391.155**
Additional Information:	**TDW Correlated Deformation**				

Upstream Locations		Downstream Locations	
14823.42	Bend left - 45 deg., 3D	1583.29	Bend right - 45 deg., 3D
15112.11	Bend right - 45 deg., 3D	2589.91	Bend right - 40 deg., 3D
17995.10	Bend right - 45 deg., 3D	6284.01	Bend left - 25 deg., 3D
18299.70	Bend left - 45 deg., 3D	6412.70	Bend left - 32 deg., 3D
24045.02	Bend right - 45 deg., 3D	6440.74	Bend left - 32 deg., 3D

(relative distance from Feature Centerline)

Feature Orientation

as looking downstream



12:00 is top of pipe

DENT

Depth: **0.18**

1. Measurements on this sheet are in ft / in
2. All numbers in italics are Distance from Launch

Generated: 12/3/2013

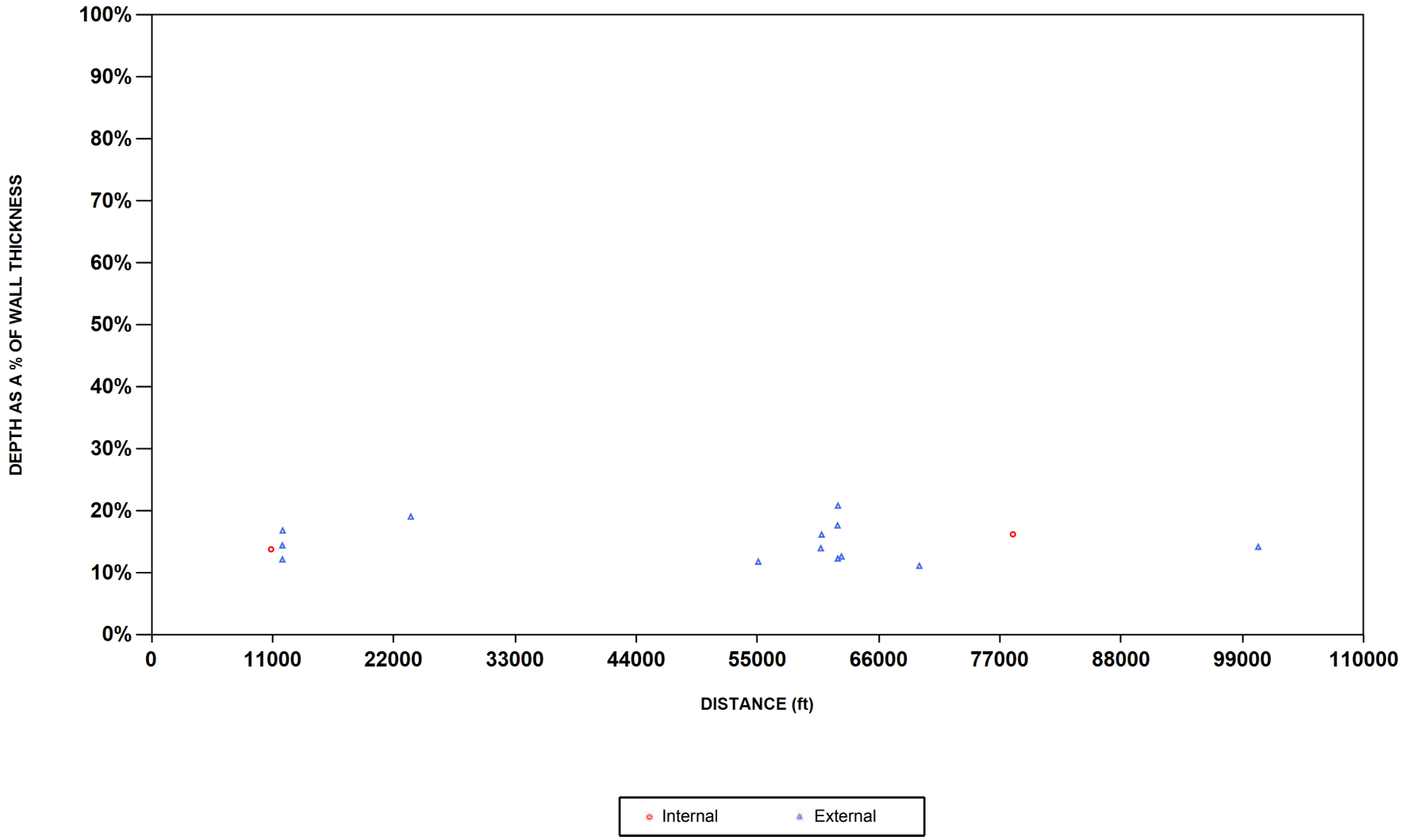
Charts

The Pipeline Summary report provides an overview of the pipeline condition.

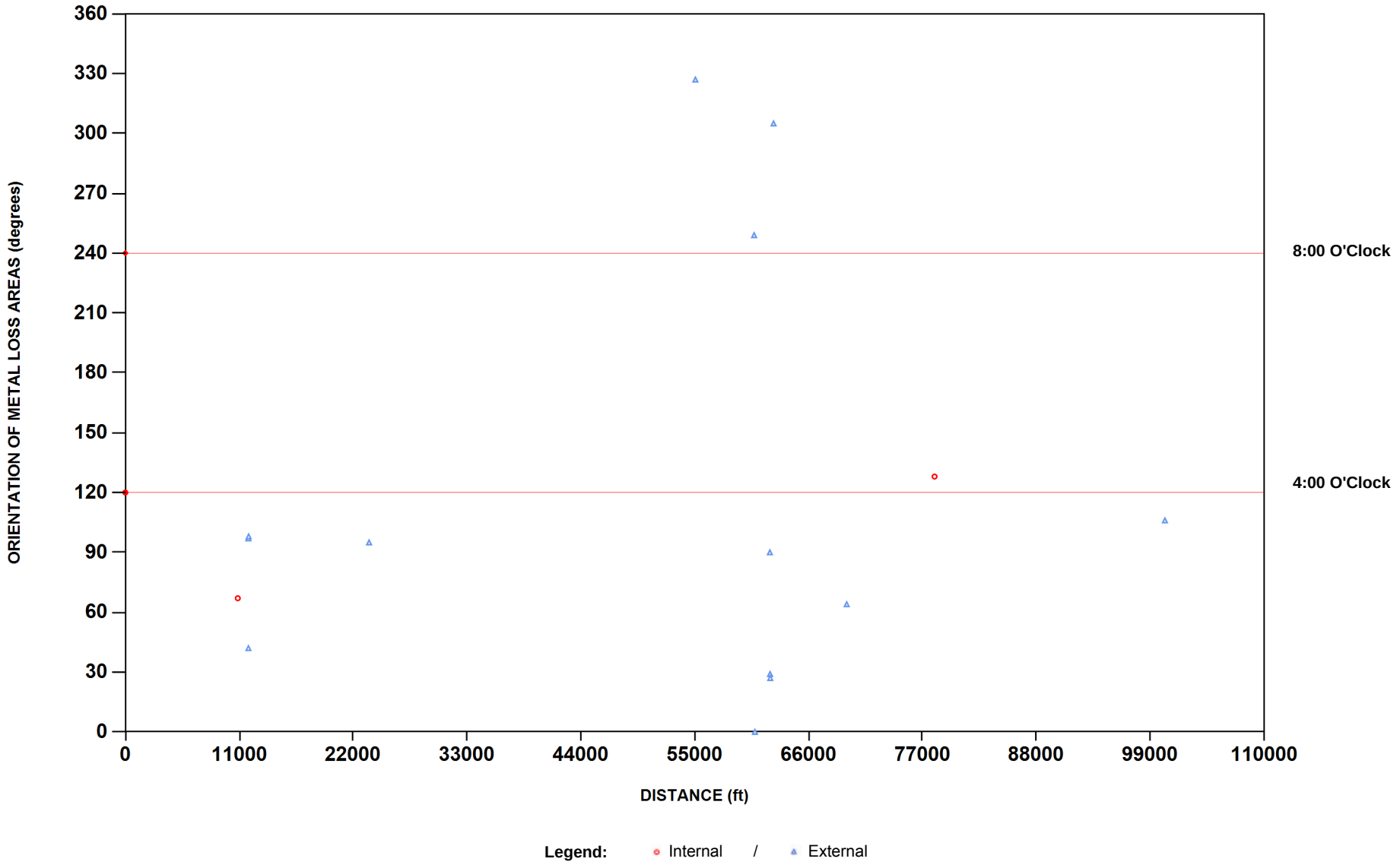
The following charts are utilized in this report:

Metal Loss Depth	This chart highlights the predicted depths of defects as a percentage of wall thickness compared to distance. Areas of concentrated metal loss are easily detected as defects group.
Metal Loss Orientation	The distance from launch is plotted against the orientation of the defect. Orientation is based on 360° in a circle, with 0°or 360° marking the top of the pipe (180° the bottom). Displaying the orientation of defects around the circumference of the pipeline may aid in determining the type of corrosion mechanism present. For example, the majority of defects along the bottom of the pipe might indicate internal channel corrosion.
Metal Loss - Calculated Safe Max. Operating Pressure	The calculated safe maximum operating pressure of each defect is plotted compared to distance.
Velocity - MFL	Displays the speed of the tool relative to distance during the inspection. The specified contractual velocity of the inspection tool is 10 feet per second. If the tool exceeds this speed, the data collected by the tool may be degraded.
Defect Depth Histogram	Displays the total number of defects (pressure reducing groups/defects and non-pressure reducing groups /defects (where P'<P)) by predicted depth of the defect as a percentage of nominal wall.
Dent Depth	This chart highlights the predicted depths of deformations in inches or mm compared to distance.
Dent Orientation	The distance from launch is plotted against the orientation of the deformation indications. Orientation is based on 360° in a circle, with 0°or 360° marking the top of the pipe (180° the bottom).
Velocity - DEF	Displays the speed of the tool relative to distance during the inspection. The specified contractual velocity of the inspection tool is 10 feet per second. If the tool exceeds this speed, the data collected by the tool may be degraded.

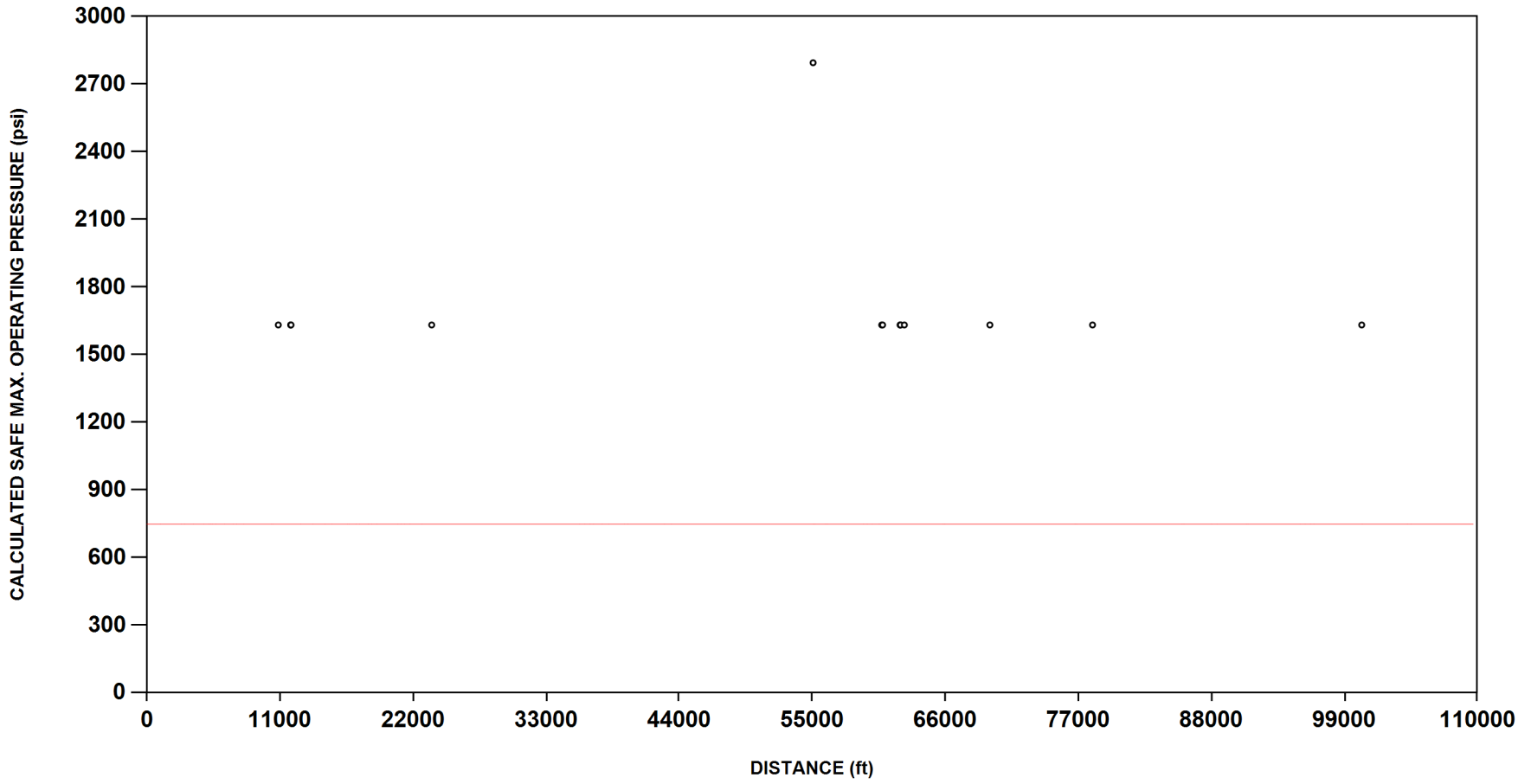
Metal Loss Depth Graph



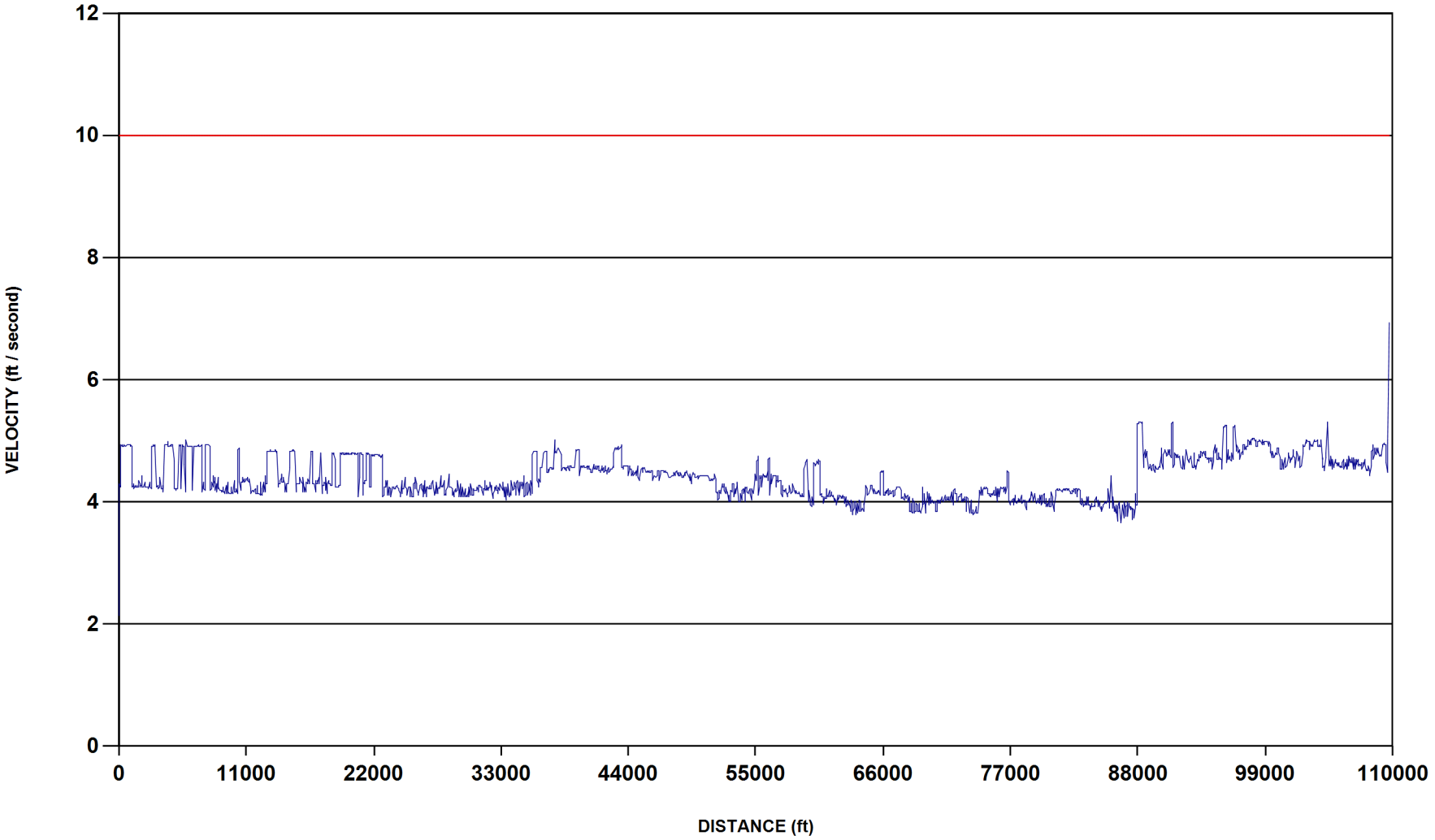
Metal Loss Orientation Graph



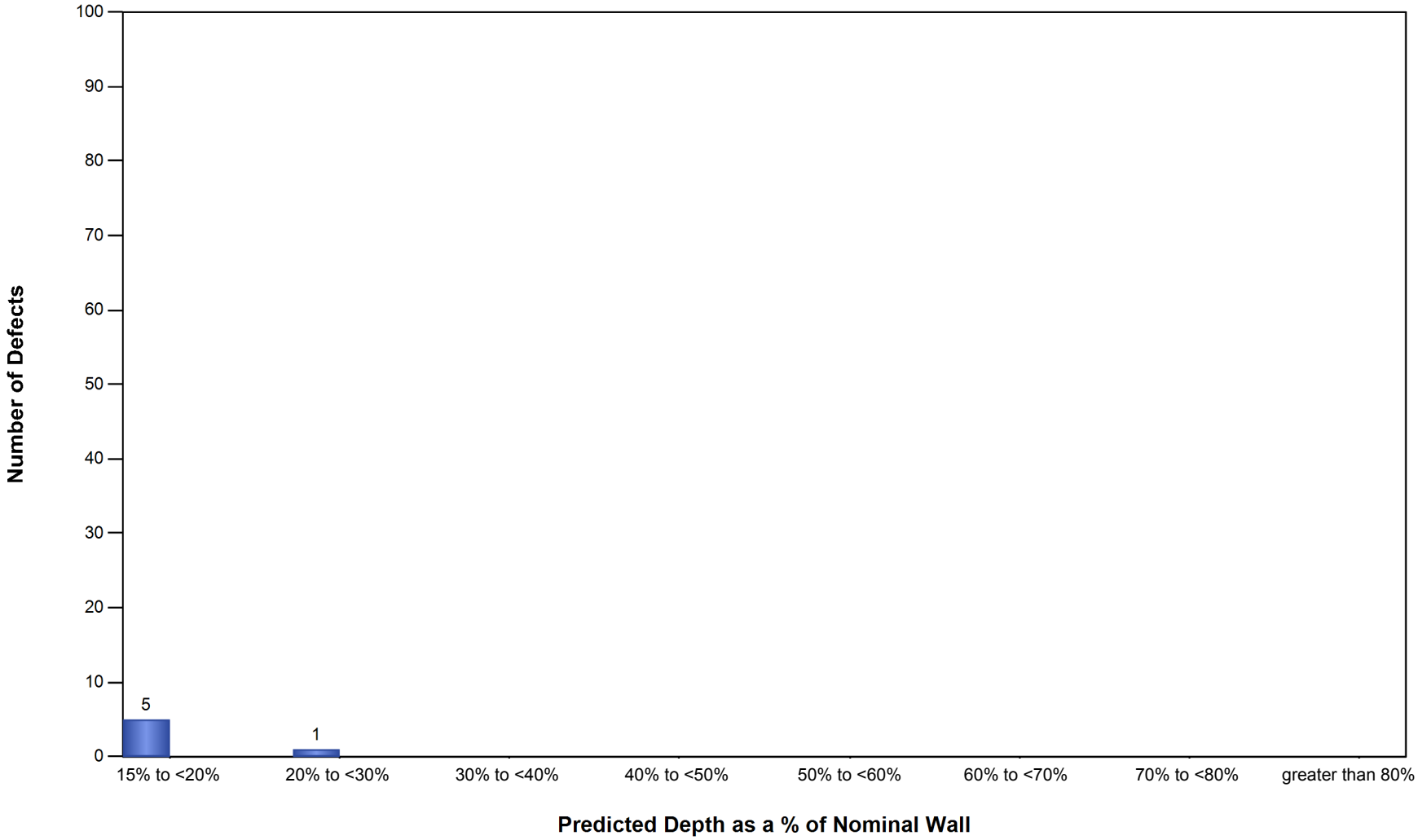
Metal Loss - Calculated Safe Max. Operating Pressure Graph



Velocity Graph - MFL



Defect Depth Histogram

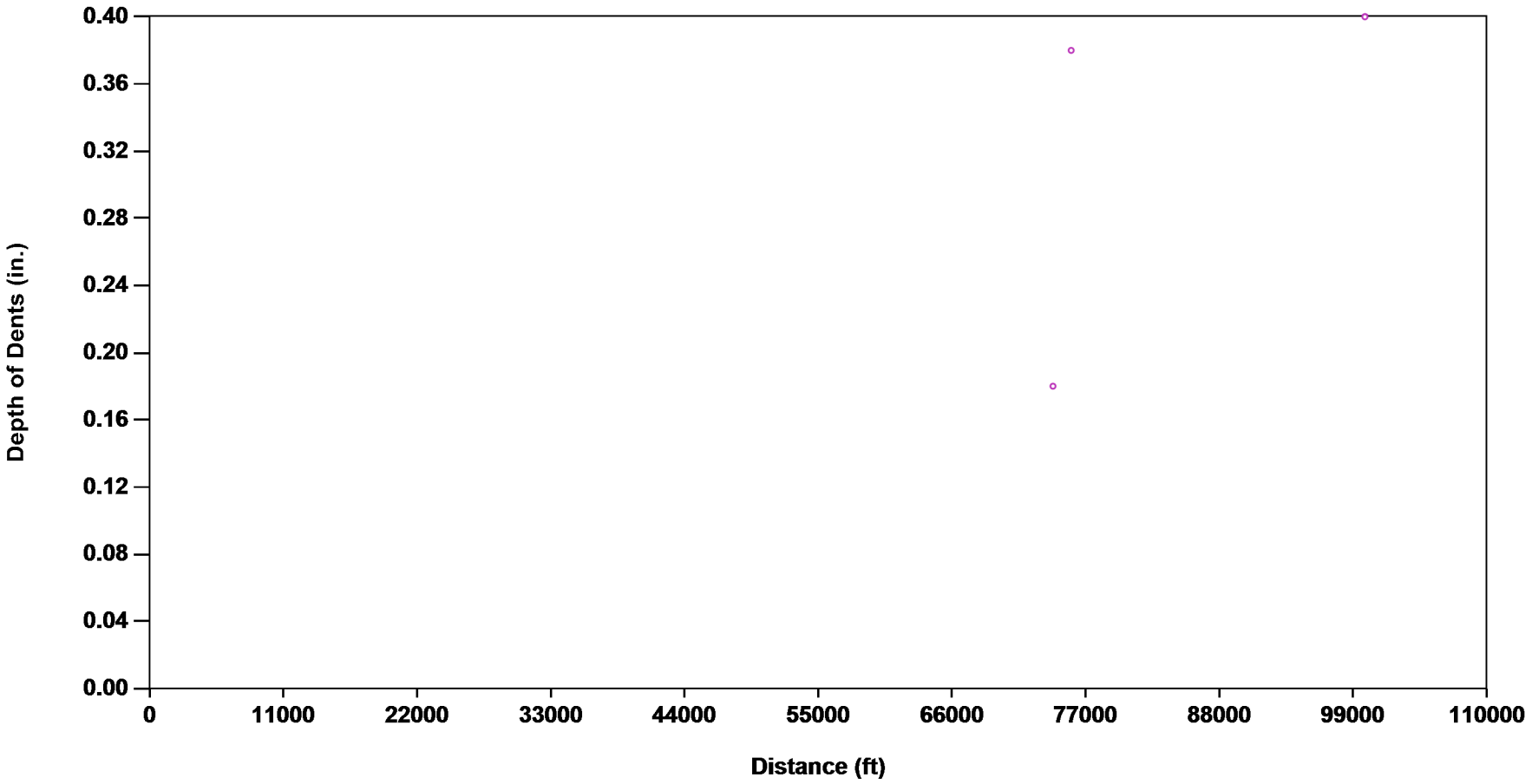


Total Defects: **15**

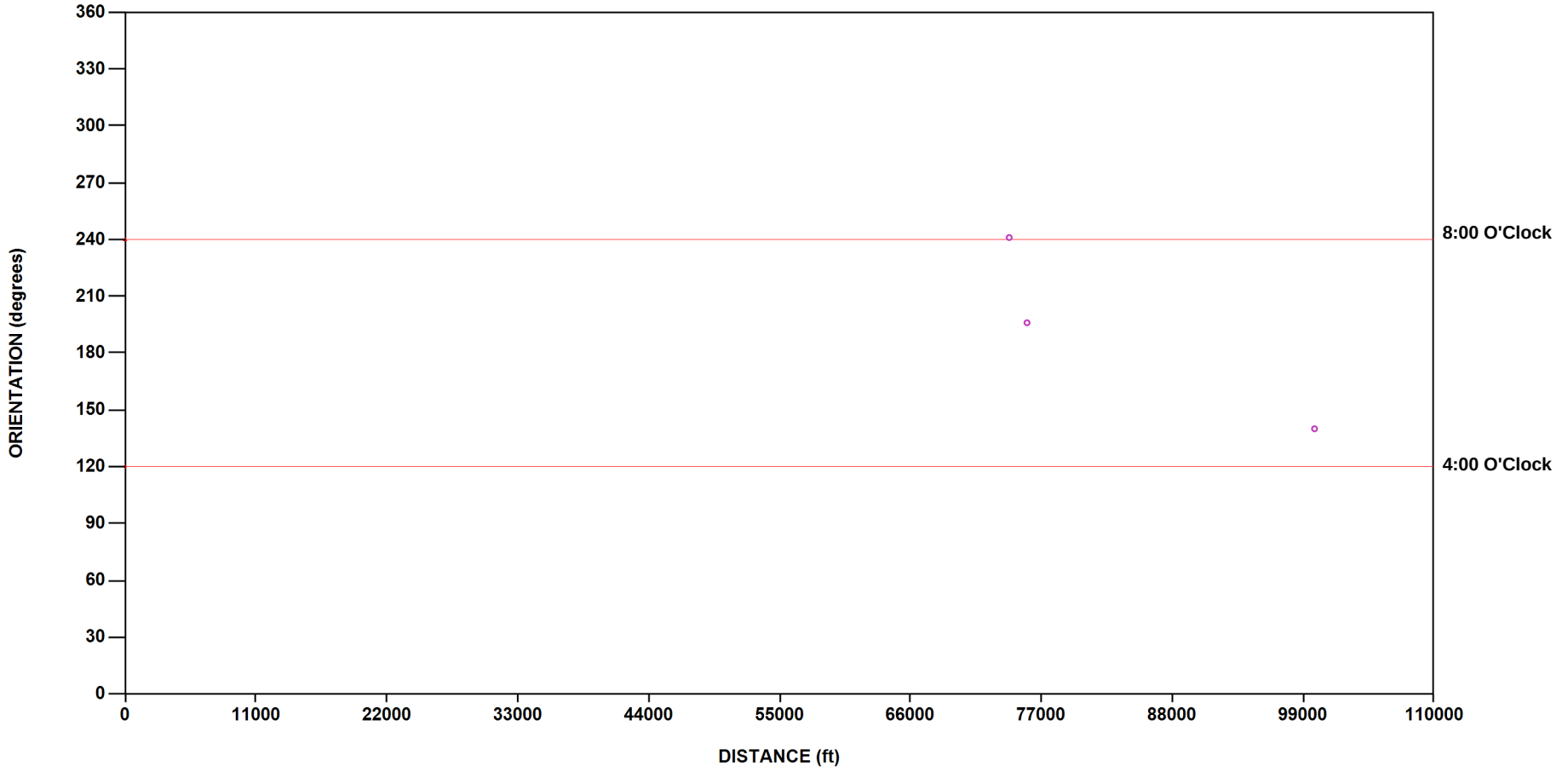
Non-Pressure-Reducing Groups

Pressure-Reducing Groups (where P' < P)

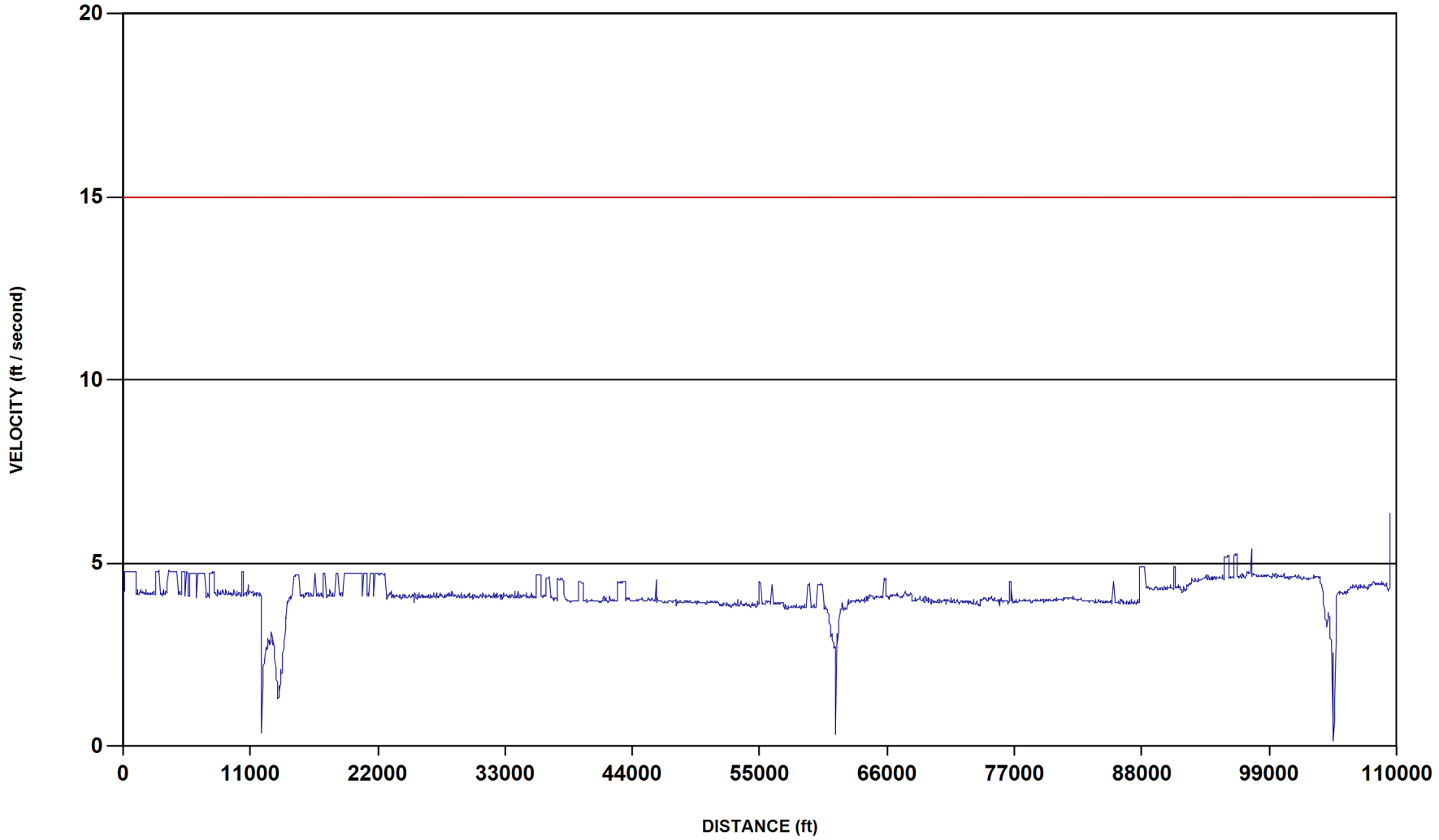
Dent Depth Graph



Dent Orientation Graph



Velocity Graph - DEF



Locations Summary

DEFINITIONS

A location is a feature in the pipeline that can be used to correlate the inspection tool data to above ground references. Common location features include valves, fittings, flanges, tees, casings, repairs and aboveground markers (AGMs).

For example, a metal loss area could be referenced as being 200 feet down stream from a valve. Not all locations can be easily found from above ground. Some locations might not be useful if they are not above ground.

ID#	Each location is automatically assigned a number in the software. This number is provided to assist the user of PIGTRAP software to more easily find any given defect.
Time	A reference time from the inspection tool. May also be used to locate features in the PIGTRAP software.
Distance	Given in either feet or meters, based on contractual agreements, this is the absolute distance measured by the tool from launch.
Joint #	This unique number identifies the girth weld number.
U/S Weld Dist.	The distance to the upstream (U/S) weld (in feet or meters).
D/S Weld Dist.	The distance to the downstream (D/S) weld (in feet or meters).
Description	Describes the location in greater detail. Possible entries include valves, flanges, fittings, tees, markers, etc.
Latitude	This shows the north/south position of the Location as supplied by the customer or recorded by an AGM box. For XYZ mapping runs, these values are the supplied survey points or were calculated by the tool.
Longitude	This shows the east/west position of the Location as supplied by the customer or recorded by an AGM box. For XYZ mapping runs, these values are the supplied survey points or were calculated by the tool.
Altitude	For XYZ mapping runs, this shows the elevation above sea level of the location as supplied by the customer or calculated by the tool.

Zeroes in Latitude and Longitude mean that no data was supplied by the customer. Calculated or estimated values can be viewed in the Pipe Listing report.

Locations Summary

ID#	Time	Dist (ft)	Joint #	U/S Weld Dist.	D/S Weld Dist.	Description	Latitude	Longitude	Altitude
10000001	5,518.12	0.0	110	1.6	1.6	Valve (Launcher), Sta. 00+00, Tioga Station	48.28506866	-102.91919194	2348.747
10000002	5,518.62	1.1	110	2.6	0.5	Flange	48.28507192	-102.91919209	2348.719
10000003	5,518.88	1.8	120	0.2	1.0	Pipe Support	48.28507422	-102.91919216	2348.697
10000004	5,519.19	3.3	130	0.1	1.0	Tee at 270 deg.	48.28507856	-102.91919229	2348.659
10000005	5,519.41	4.4	140	0.5	0.5	Flange	48.28508174	-102.91919238	2348.630
10000006	5,520.06	7.7	160	0.1	1.6	Bend down - 45 deg., 3D	48.28509100	-102.91919268	2348.326
10000091	5,520.41	9.4	170	0.9	8.4	Pipe Entering Ground -- Survey Point	48.28509493	-102.91919290	2347.265
10000007	5,522.24	18.6	180	0.1	1.5	Bend up - 45 deg., 3D	48.28511288	-102.91919438	2341.133
10000008	5,748.08	1,107.7	480	0.1	1.5	Bend left - 45 deg., 3D	48.28795722	-102.91983694	2336.023
10000009	5,749.75	1,115.8	500	0.0	0.6	Bend left - 20 deg., 1.5D	48.28796242	-102.91986919	2336.454
10000010	6,376.82	3,839.0	1,190	1.2	8.6	Bend right - 90 deg., 7D	48.28780372	-102.93099290	2302.774
10000011	6,459.03	4,241.6	1,300	1.1	8.4	Bend left - 90 deg., 6D	48.28889703	-102.93111258	2298.781
10000012	6,793.25	5,800.3	1,710	0.1	7.1	Bend left - 75 deg., 6D	48.28889273	-102.93748353	2294.407
10000013	7,134.84	7,423.6	2,120	16.9	11.3	AGM 010, Sta. 69+49, CR 8 -- Survey Point	48.28472098	-102.93970384	2303.382
10000014	7,137.52	7,435.2	2,130	0.1	0.5	Bend left - 20 deg., 1.5D	48.28469091	-102.93971975	2303.030
10000015	7,927.84	10,863.9	3,000	1.6	7.8	Bend right - 90 deg., 5D	48.27533740	-102.93998876	2316.227
10000016	8,907.83	15,214.0	4,080	5.7	36.6	AGM 020, Sta. 146+84, CR 21 -- Survey Point	48.27537709	-102.95782904	2365.052
10000017	9,870.73	19,458.4	5,140	0.1	0.9	Bend right - 30 deg., 1.5D	48.27540174	-102.97516971	2316.471
10000018	10,133.27	20,710.9	5,440	27.4	7.2	AGM 030, Sta. 201+54, 106th Ave NW -- Han #8043	48.27700995	-102.97968651	2313.707
10000019	10,364.60	21,769.2	5,710	0.1	1.1	Bend left - 35 deg., 3D	48.27868034	-102.98319000	2304.312
10000020	10,731.77	23,438.4	6,120	0.0	0.5	Bend left - 20 deg., 1.5D	48.27896264	-102.98997454	2337.465
10000021	11,095.37	24,972.5	6,520	0.1	1.0	Bend left - 32 deg., 3D	48.27870316	-102.99620515	2307.535
10000022	11,190.38	25,370.0	6,630	0.1	1.3	Bend right - 40 deg., 3D	48.27815755	-102.99760638	2288.550
10000023	11,361.85	26,091.8	6,820	0.1	0.6	Bend right - 20 deg., 3D	48.27846255	-103.00051677	2254.320
10000024	11,374.38	26,144.8	6,840	28.7	12.6	AGM 040, Sta. 255+14, Two track -- Survey Point	48.27853342	-103.00070597	2255.736
10000025	11,405.31	26,275.0	6,880	0.1	1.0	Bend left - 35 deg., 1.5D	48.27870553	-103.00117206	2259.912
10000026	12,646.89	31,489.0	8,150	9.6	31.8	AGM 050, Sta. 308+04, ROW -- Han #8043	48.27747978	-103.02234950	2187.754
10000027	13,862.17	36,708.7	9,420	1.7	40.5	AGM 060, Sta. 359+86, CR 19 -- Han #8836	48.27749126	-103.04365681	2066.700
10000028	14,004.15	37,365.0	9,580	0.1	2.1	Bend right - 60 deg., 3D	48.27751240	-103.04633625	2053.431
10000029	14,054.06	37,592.5	9,640	0.1	2.1	Bend left - 60 deg., 3D	48.27806185	-103.04676117	2050.824
10000030	14,522.91	39,787.2	10,120	0.0	0.4	Bend right - 15 deg., 1.5D	48.27808848	-103.05569524	2035.535
10000031	14,788.71	40,998.1	10,400	0.1	0.7	Bend left - 25 deg., 1.5D	48.27949948	-103.06016674	2080.817
10000032	15,069.23	42,270.9	10,660	34.3	13.8	AGM 070, Sta. 414+88, ROW -- Han #100	48.27951637	-103.06535198	2122.263

Locations Summary

ID#	Time	Dist (ft)	Joint #	U/S Weld Dist.	D/S Weld Dist.	Description	Latitude	Longitude	Altitude
10000033	15,907.68	46,114.7	11,470	0.4	7.2	Bend left - 85 deg., 7D	48.27954592	-103.08102205	2175.373
10000034	16,719.87	49,728.5	12,230	19.0	24.2	AGM 080, Sta. 488+53, Two track -- Survey Point	48.27113627	-103.08739588	2185.524
10000035	16,840.59	50,258.5	12,350	0.0	1.5	Bend right - 45 deg., 3D	48.27009809	-103.08890065	2174.800
10000036	17,969.52	55,034.2	13,470	23.3	26.1	AGM 090, Sta. 540+95, 112th Ave NW -- Han #100	48.27008774	-103.10844251	2228.074
10000037	18,188.06	56,003.7	13,690	0.1	1.4	Bend left - 45 deg., 3D	48.27009860	-103.11240320	2221.068
10000038	18,254.96	56,308.4	13,780	0.1	1.5	Bend right - 45 deg., 3D	48.26953864	-103.11332068	2235.800
10000039	18,937.63	59,191.3	14,460	0.0	1.4	Bend right - 45 deg., 3D	48.26955624	-103.12510134	2220.575
10000040	18,999.79	59,480.0	14,540	0.1	1.5	Bend left - 45 deg., 3D	48.27011378	-103.12593647	2212.461
10000041	19,591.32	61,961.1	15,150	34.2	7.1	AGM 100, Sta. 609+71, CR 117 -- Han #8611	48.27012147	-103.13605437	2226.954
10000042	20,539.25	65,795.5	16,040	10.0	32.2	AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point	48.27014177	-103.15172141	2290.235
10000043	22,046.32	71,916.0	17,430	37.6	3.7	AGM 120, Sta. 708+33, 59th St. NW -- Han #8611	48.27013628	-103.17671312	2332.827
10000044	23,025.31	75,886.7	18,360	0.1	1.4	Bend right - 45 deg., 3D	48.27014124	-103.19291434	2408.133
10000045	23,253.06	76,853.3	18,580	22.4	26.6	AGM 130, Sta. 757+29, 116th Ave NW -- Survey Point	48.27182565	-103.19594650	2438.038
10000046	23,262.81	76,893.4	18,600	0.1	1.5	Bend right - 40 deg., 3D	48.27190628	-103.19605607	2439.532
10000047	24,180.44	80,587.2	19,520	0.1	0.9	Bend left - 25 deg., 3D	48.28197415	-103.19606928	2406.822
10000048	24,212.36	80,715.9	19,560	0.1	1.0	Bend left - 32 deg., 3D	48.28228565	-103.19631320	2406.861
10000049	24,219.05	80,744.0	19,580	0.1	1.0	Bend left - 32 deg., 3D	48.28232668	-103.19640964	2407.587
10000050	25,415.65	85,612.8	20,690	0.0	0.8	Bend left - 30 deg., 3D	48.28283967	-103.21617862	2390.984
10000051	25,485.27	85,903.6	20,780	5.3	36.1	AGM 140, Sta. 848+51, 117th Ave NW -- Han #8611	48.28273591	-103.21735376	2391.593
10000052	26,019.08	87,988.2	21,300	0.2	0.9	Tee at 90 deg.	48.28260145	-103.22587975	2392.848
10000053	26,638.08	90,944.7	22,030	28.2	14.0	AGM 150, Sta. 898+81, 118th Ave NW -- Han #100	48.28239995	-103.23795394	2396.066
10000054	27,410.75	94,585.9	22,920	0.3	0.8	Tee at 90 deg.	48.28242719	-103.25282749	2372.301
10000055	27,771.12	96,347.0	23,370	14.8	27.5	AGM 160, Sta. 952+38, 119th Ave NW -- Han #8611	48.28244281	-103.26002339	2354.737
10000056	28,032.37	97,625.9	23,670	1.6	8.3	Bend left - 90 deg., 6D	48.28255572	-103.26522960	2347.827
10000057	28,129.47	98,114.0	23,790	0.1	1.4	Bend right - 40 deg., 3D	48.28122356	-103.26526457	2341.547
10000058	28,236.52	98,647.6	23,920	26.3	23.4	Bend left - 20 deg., 34D	48.28044972	-103.26710763	2350.580
10000059	28,341.06	99,168.2	24,040	0.1	1.4	Bend right - 45 deg., 3D	48.27932031	-103.26839243	2333.827
10000060	28,708.58	100,914.9	24,480	1.4	8.5	Bend left - 90 deg., 6D	48.27930812	-103.27551032	2322.271
10000061	29,402.50	104,265.3	25,240	12.3	31.0	AGM 170, Sta. 1027+08, Two track -- Han #100	48.27018086	-103.27624591	2366.437
10000062	30,375.97	108,811.5	26,350	0.0	0.8	Bend left - 30 deg., 1.5D	48.25778341	-103.27592328	2310.643
10000063	30,506.86	109,445.9	26,510	0.1	0.8	Bend left - 30 deg., 1.5D	48.25621224	-103.27483193	2296.487

Locations Summary

ID#	Time	Dist (ft)	Joint #	U/S Weld Dist.	D/S Weld Dist.	Description	Latitude	Longitude	Altitude
10000064	30,533.45	109,568.6	26,550	0.1	1.4	Bend right - 45 deg., 3D	48.25599716	-103.27444748	2296.609
10000065	30,538.88	109,595.4	26,570	2.4	9.5	Bend right - 90 deg., 6D	48.25592516	-103.27444831	2295.775
10000066	30,541.44	109,608.6	26,590	0.0	1.4	Bend up - 45 deg., 3D	48.25592207	-103.27450039	2296.227
10000092	30,543.25	109,617.9	26,610	5.5	2.0	Pipe Exiting Ground -- Survey Point	48.25592197	-103.27452782	2302.750
10000067	30,543.79	109,620.8	26,620	0.2	1.5	Bend down - 45 deg., 3D	48.25592193	-103.27453710	2304.461
10000068	30,544.03	109,622.0	26,630	0.5	0.5	Flange	48.25592192	-103.27454222	2304.627
10000069	30,544.23	109,623.1	26,640	0.1	1.1	Tee at 90 deg.	48.25592192	-103.27454659	2304.637
10000070	30,544.52	109,624.6	26,650	0.9	0.4	Pipe Support	48.25592191	-103.27455274	2304.650
10000071	30,544.67	109,625.4	26,660	0.5	2.7	Flange	48.25592191	-103.27455624	2304.658
10000072	30,544.88	109,626.4	26,660	1.5	1.6	Valve	48.25592192	-103.27456086	2304.670
10000073	30,545.09	109,627.5	26,660	2.6	0.5	Flange	48.25592192	-103.27456542	2304.681
10000074	30,545.61	109,630.2	26,670	2.0	2.3	Pipe Support	48.25592193	-103.27457676	2304.705
10000075	30,546.12	109,632.9	26,680	0.2	1.0	Tee on bottom of pipe	48.25592197	-103.27458802	2304.735
10000076	30,547.08	109,637.9	26,690	4.3	7.2	Fitting on top of pipe	48.25592205	-103.27460907	2304.795
10000077	30,548.08	109,643.2	26,690	9.6	1.9	Pipe Support	48.25592213	-103.27463125	2304.887
10000078	30,548.51	109,645.5	26,700	0.5	2.7	Flange	48.25592219	-103.27464072	2304.926
10000079	30,548.71	109,646.6	26,700	1.6	1.6	Valve	48.25592222	-103.27464529	2304.950
10000080	30,548.92	109,647.7	26,700	2.7	0.5	Flange	48.25592225	-103.27464987	2304.977
10000081	30,549.06	109,648.5	26,710	0.2	1.1	Pipe Support	48.25592226	-103.27465304	2304.997
10000082	30,549.27	109,650.0	26,720	0.2	1.0	Tee at 90 deg.	48.25592230	-103.27465968	2305.040
10000083	30,549.66	109,653.0	26,730	2.2	2.8	Pipe Support	48.25592239	-103.27467187	2305.106
10000084	30,550.07	109,656.1	26,740	0.5	0.4	Flange	48.25592252	-103.27468514	2305.193
10000085	30,550.24	109,657.4	26,750	0.7	1.8	Pipe Support	48.25592258	-103.27469072	2305.231
10000086	30,550.52	109,659.6	26,760	0.2	1.0	Tee at 90 deg.	48.25592268	-103.27469989	2305.301
10000087	30,550.85	109,662.1	26,770	1.7	2.1	Pipe Support	48.25592278	-103.27471038	2305.366
10000088	30,551.16	109,664.6	26,780	0.5	2.7	Flange	48.25592289	-103.27472062	2305.442
10000089	30,551.30	109,665.6	26,780	1.6	1.6	Valve (Receiver), Sta. 1079+37, Epping Injection	48.25592295	-103.27472510	2305.469

Locations Summary

Locations	Number
Bend	43
Casing	0
Flange	11
Fitting	1
Marker	19
Repair	0
Tee	7
Valve	4
Pipe Support	8

Casings Summary

DEFINITIONS

A casing is a section of larger diameter pipe through which the pipeline passes. Usually installed to protect a pipeline from excessive external loading, casings can also shield pipelines from protective cathodic protection currents. Therefore, the condition of a pipeline inside a casing can provide valuable information.

TDW MFL tools detect when a casing is not centered around the pipeline. These casings are referred to as being eccentric. The closer the casing is to the pipeline, the stronger the signal seen by the inspection tool. The tool will not detect if the casing is shorted to the pipe wall. The tool might see evidence of a short, such as metal loss.

This information may be useful in updating pipeline databases and alignment sheets.

Sometimes spacers are identified inside casings. These are mechanical devices used to center the pipeline inside the casing and are not considered harmful.

ID#	Each location is automatically assigned a number in the software. This number is provided to assist the user of PIGTRAP software to more easily find any given defect.
Time	A reference time from the inspection tool. May also be used to locate features in the PIGTRAP software.
Distance Start, End	Given in either feet or meters, this is the absolute distance measured by the tool from launch to the beginning and ending of the casing.
Casing Length	The total predicted casing length (in feet or meters).
Eccentric (side)	Identifies one of four conditions associated with the casing: 1- no eccentricity (blank); 2- eccentric on upstream side (upstream); 3- eccentric on downstream side (downstream); 4- eccentric on both ends (both)
# of Metal Loss in Casing	Provides the number of metal loss groups identified inside the casing.
Max. Depth of Metal Loss	If metal loss is identified inside the casing, this column provides the maximum predicted depth of all metal loss features.
Above Ground References	The name of the closest upstream and downstream references, usually an Aboveground Marker or a Valve.
Distance from Start/Upstream Side of Casing	The distance from the Aboveground Reference (AGM or Valve) to the start (upstream) side of the casing.

Casings Summary

ID#	Time	Distance (ft) Start	Distance (ft) End	Casing Length (ft)	Eccentric (side)	# of Metal Loss in Casing	Max. Depth of Metal Loss	Above Ground References	Distance from Start/Upstream Side of Casing
No Casings appear in this pipeline inspection									

Deformation Summary

DEFINITIONS

The Deformation Summary Report lists all the deformations and dents detected during the inspection, sorted by depth of deformation (descending)

Dents may affect the integrity of the pipeline and are considered harmful. A dent with associated metal loss is potentially more significant than a dent alone.

ID#	Each Deformation is automatically assigned a number in the software. This number is provided to assist the user of PIGTRAP software to more easily find any given defect.
Distance	Given in either feet or meters, based on contractual agreements, this is the absolute distance measured by the tool from launch.
Depth	Depth of the indication in inches or mm.
Orientation	The orientation of the deformation indication in degrees (top of pipe = 0) and clock position, as viewed facing downstream.
Sub Type	The sub type of deformation if other than dent (i.e. Heavy Weld, Ovality, Buckle, Expansion).
Min X Sec Dia	The minimum measured Cross-Section (ID) measured within the scope of the deformation.
Description	Text describing a deformation in greater detail. Any special conditions are noted.
On Weld	Determination whether the indication crosses a girth (or seam) weld.
Metal Loss	"Yes" is listed if there is any metal loss associated with a dent.
Above-Ground References	The name of the closest upstream and downstream references, usually either an AGM or a valve.
Distance from Defect	The distance to the upstream and downstream reference listed in the previous column. Used for locating defects in the field.

Deformation Summary

ID#	Distance (ft)	Depth (in)	Depth %	Orientation (Deg / O'Clock)		Sub Type	Min X Sec Dia	Description	On Weld	Metal Loss	Above-Ground References	Distance from Defect
14000002	99,964.4	0.40	5.0%	140	4:30		0.00	TDW Correlated Deformation			**U/S:** AGM 160, Sta. 952+38, 119th Ave NW -- Han #8611	3617.27
											D/S: AGM 170, Sta. 1027+08, Two track -- Han #100	4301.04
14000001	75,798.2	0.38	4.8%	196	6:30		0.00	TDW Correlated Deformation			**U/S:** AGM 120, Sta. 708+33, 59th St. NW -- Han #8611	3882.21
											D/S: AGM 130, Sta. 757+29, 116th Ave NW -- Survey Point	1055.08
14000000	74,302.8	0.18	2.3%	241	8:00		0.00	TDW Correlated Deformation			**U/S:** AGM 120, Sta. 708+33, 59th St. NW -- Han #8611	2386.71
											D/S: AGM 130, Sta. 757+29, 116th Ave NW -- Survey Point	2550.59

Type	Number
DENT	3

Gains (Metal in Close Proximity)

The inspection tool may detect ferrous metal objects located close to or touching the pipeline. They appear as additional metal added to the pipe, and are referred to as gains. This table identifies gains detected during the inspection.

Clamps or anchors around the pipeline are considered gains. Some metal objects can be potentially harmful to the pipeline. They can damage the pipeline's protective coating, or over time may dent or cause damage to the pipeline.

ID#	Each location is automatically assigned a number in the software. This number is provided to assist the user of PIGTRAP software to more easily find any given defect.
Distance	Given in either feet or meters, based on contractual agreements, this is the absolute distance measured by the tool from launch.
Length	The measured length of the gain measured in feet or meters.
Width	The measured width of the gain measured in inches or millimeters. When full circumference , this is usually typical of a clamp or banding around the circumference of the pipeline.
Depth in Gauss	The difference in gauss reading (magnetic strength) at the gain. The greater the number, the greater the mass of the object, or the closer the proximity to the pipeline, or both. This table is sorted with highest depth in gauss listed in a descending order.
Orientation: Degrees / O'Clock	The distance from launch is plotted against the orientation of the defect. Orientation is based on 360 degrees in a circle, with 0 / 360 degrees marking the top of the pipe (180 degrees the bottom).
Joint #	This unique number identifies the girth weld number.
U/S Weld Dist.	The distance to the upstream (U/S) weld (in feet or meters).
D/S Weld Dist.	The distance to the downstream (D/S) weld (in feet or meters).

Gains (Metal in Close Proximity)

ID#	Distance (ft)	Length (in)	Width (in)	Depth in Gauss	Orientation Degrees	/ O'Clock	Joint #	U/S Weld Dist.	D/S Weld Dist.
13000006	74115.86	1.70	4.54	113	105 to 170	3:15 to 5:30	17970	33.5	7.9
13000001	8289.12	1.79	3.14	90	280 to 325	9:15 to 10:45	2340	29.3	11.8
13000007	773.37	1.25	2.79	54	110 to 150	3:30 to 5:00	390	10.4	31.9
13000003	74002.43	1.53	2.09	52	245 to 275	8:00 to 9:00	17950	3.0	38.4

Total Number of Gains

4

Nominal Wall Thickness

The following list provides locations along the pipeline where changes in wall thickness or pipe type occur. While the TDW inspection tool can easily detect changes in wall thickness, it cannot take direct thickness measurements. Therefore, where wall thicknesses are known, the tool can identify the locations where the thickness changes. Where wall thicknesses are not known, best efforts will be made to estimate thicknesses based on best available data.

ID#	Each wall thickness change ID is automatically assigned a number in the software. This number is provided to assist the user of PIGTRAP software to more easily find any given defect.
Distance	Given in either feet or meters, based on contractual agreements, this is the absolute distance measured by the tool from launch.
Wall Thickness	The predicted wall thickness in inches or millimeters.
Pipetype	Type of pipe construction. Electric Resistance Weld (ERW), Seamless (SMLS), Lap Weld (LW), etc.
Yield Strength (SMYS)	Specified Minimum Yield Strength – A required strength level that measured yield stress of a pipe material must exceed, which is a function of pipe grade. The measured yield stress is the tensile stress required to produce a total elongation of 0.5 percent of a gage length as determined by an extensometer during a tensile test.
Safety Factor	(or design factor) Typically 0.72 per ASME B31.4 In setting the safety factor, due consideration has been given to and allowances made for the manufacturing tolerance and maximum allowable depth of imperfections provided for in the specifications.
Length of Segment	The length of the pipe for the specified wall thickness, measured in feet or meters.

Nominal Wall Thickness

ID#	Distance (ft)	Wall Thickness (in)	Pipetype	Yield Strength (SMYS)	Safety Factor	Length of Segment (ft)
11000000	-1.62	0.322	ERW	52000	0.72	29.27
11000001	27.65	0.188	ERW	52000	0.72	161.8
11000002	189.45	0.322	ERW	52000	0.72	926.66
11000003	1116.11	0.188	ERW	52000	0.72	1725.98
11000004	2842.09	0.322	ERW	52000	0.72	349.07
11000005	3191.16	0.188	ERW	52000	0.72	671.04
11000006	3862.21	0.322	ERW	52000	0.72	891.12
11000007	4753.33	0.188	ERW	52000	0.72	350.93
11000008	5104.25	0.322	ERW	52000	0.72	211.4
11000009	5315.65	0.188	ERW	52000	0.72	130.76
11000010	5446.41	0.322	ERW	52000	0.72	253.61
11000011	5700.03	0.188	ERW	52000	0.72	78.23
11000012	5778.25	0.322	ERW	52000	0.72	576.34
11000013	6354.60	0.188	ERW	52000	0.72	86.86
11000014	6441.45	0.322	ERW	52000	0.72	718.06
11000015	7159.51	0.188	ERW	52000	0.72	275.28
11000016	7434.79	0.322	ERW	52000	0.72	496.32
11000017	7931.12	0.188	ERW	52000	0.72	2343.8
11000018	10274.92	0.322	ERW	52000	0.72	126.62
11000019	10401.54	0.188	ERW	52000	0.72	2370.6
11000020	12772.14	0.322	ERW	52000	0.72	945.18
11000021	13717.31	0.188	ERW	52000	0.72	983.94
11000022	14701.25	0.322	ERW	52000	0.72	590.98
11000023	15292.23	0.188	ERW	52000	0.72	1252.58
11000024	16544.81	0.322	ERW	52000	0.72	167.99
11000025	16712.80	0.188	ERW	52000	0.72	661.08
11000026	17373.88	0.322	ERW	52000	0.72	166.77
11000027	17540.65	0.188	ERW	52000	0.72	820.34
11000028	18360.99	0.322	ERW	52000	0.72	290.3
11000029	18651.29	0.188	ERW	52000	0.72	427.93
11000030	19079.23	0.322	ERW	52000	0.72	1604.2
11000031	20683.42	0.188	ERW	52000	0.72	70.32
11000032	20753.74	0.322	ERW	52000	0.72	338.35
11000033	21092.09	0.188	ERW	52000	0.72	242.52
11000034	21334.61	0.322	ERW	52000	0.72	337.89
11000035	21672.50	0.188	ERW	52000	0.72	96.05
11000036	21768.56	0.322	ERW	52000	0.72	1011.43
11000037	22779.98	0.188	ERW	52000	0.72	12949.72
11000038	35729.71	0.322	ERW	52000	0.72	420.89
11000039	36150.59	0.188	ERW	52000	0.72	472.02

Nominal Wall Thickness

ID#	Distance (ft)	Wall Thickness (in)	Pipetype	Yield Strength (SMYS)	Safety Factor	Length of Segment (ft)
11000040	36622.62	0.322	ERW	52000	0.72	294.31
11000041	36916.92	0.188	ERW	52000	0.72	674.37
11000042	37591.30	0.322	ERW	52000	0.72	560.21
11000043	38151.51	0.188	ERW	52000	0.72	1278.85
11000044	39430.37	0.322	ERW	52000	0.72	367.31
11000045	39797.68	0.188	ERW	52000	0.72	2931.13
11000046	42728.80	0.322	ERW	52000	0.72	701.52
11000047	43430.32	0.188	ERW	52000	0.72	11629.98
11000048	55060.30	0.322	ERW	52000	0.72	178.18
11000049	55238.48	0.188	ERW	52000	0.72	824.48
11000050	56062.96	0.322	ERW	52000	0.72	180.24
11000051	56243.20	0.188	ERW	52000	0.72	2947.32
11000052	59190.52	0.322	ERW	52000	0.72	290.26
11000053	59480.78	0.188	ERW	52000	0.72	548.49
11000054	60029.28	0.322	ERW	52000	0.72	568.4
11000055	60597.68	0.188	ERW	52000	0.72	5187.78
11000056	65785.46	0.322	ERW	52000	0.72	253.75
11000057	66039.21	0.188	ERW	52000	0.72	10622.7
11000058	76661.91	0.322	ERW	52000	0.72	168.84
11000059	76830.75	0.188	ERW	52000	0.72	8781.54
11000060	85612.29	0.322	ERW	52000	0.72	169.85
11000061	85782.14	0.188	ERW	52000	0.72	2205.52
11000062	87987.66	0.322	ERW	52000	0.72	457.54
11000063	88445.20	0.188	ERW	52000	0.72	2428.98
11000064	90874.18	0.322	ERW	52000	0.72	168.88
11000065	91043.06	0.188	ERW	52000	0.72	4276.98
11000066	95320.04	0.322	ERW	52000	0.72	380.15
11000067	95700.20	0.188	ERW	52000	0.72	463.12
11000068	96163.32	0.322	ERW	52000	0.72	253.25
11000069	96416.57	0.188	ERW	52000	0.72	7836.37
11000070	104252.94	0.322	ERW	52000	0.72	170.02
11000071	104422.96	0.188	ERW	52000	0.72	5184.86
11000072	109607.81	0.322	ERW	52000	0.72	20.14
11000073	109627.95	0.365	SEAMLESS	52000	0.72	37.69

Wall Thickness	Pipetype	Total Length (ft)	Total Length (miles)	Percent of Total Distance
0.188	ERW	93,994	17.802	85.7%
0.322	ERW	15,635	2.961	14.3%
0.365	SEAMLESS	38	0.007	0.0%

Repair Report

DEFINITIONS

This table lists all the repairs to the pipeline detected during the inspection.

Pipeline repairs that are typically detected include:

- Sleeves
- Half sole
- Patches
- Stopples
- Clamps
- Weld + End
- Clock Spring

ID#	Each repair is automatically assigned a number in the software. This number is provided to assist the user of PIGTRAP software to more easily find any given defect.
Distance	Given in either feet or meters, based on contractual agreements, this is the absolute distance measured by the tool from launch.
Length	Gives the linear length of the repair.
Type of Repair	Describes the type of repair detected during the inspection.

Repair Report

ID#	Distance (ft)	Length (ft)	Type of Repair

No Repairs have been detected on this pipeline inspection

AGM Information Summary

DEFINITIONS

This table includes all values and above ground marker sites in the inspection run.

ID#	Each location is automatically assigned a number in the software. This number is provided to assist the user of PIGTRAP software to more easily find any given defect.
Time	A reference time from the inspection tool. May also be used to locate features in the PIGTRAP software.
Distance	Given in either feet or meters, based on contractual agreements, this is the absolute distance measured by the tool from launch.
Description	Describes the AGM in greater detail. Generally includes only valves and markers.
Latitude	This shows the north/south position of the Location as supplied by the customer or recorded by an AGM box. For XYZ mapping runs, these values are the supplied survey points or were calculated by the tool.
Longitude	This shows the east/west position of the Location as supplied by the customer or recorded by an AGM box. For XYZ mapping runs, these values are the supplied survey points or were calculated by the tool.
Altitude	For XYZ mapping runs, this shows the elevation above sea level of the location as supplied by the customer or calculated by the tool.

Zeroes in Latitude and Longitude mean that no data was supplied by the customer. Calculated or estimated values can be viewed in the Pipe Listing report.

AGM Information Summary

ID#	Time	Distance(ft)	Description	Latitude	Longitude	Altitude
10000001	5518.12	0.00	Valve (Launcher), Sta. 00+00, Tioga Station	48.28506866	-102.91919194	2348.747
10000091	5520.41	9.39	Pipe Entering Ground -- Survey Point	48.28509493	-102.91919290	2347.265
10000013	7134.84	7423.55	AGM 010, Sta. 69+49, CR 8 -- Survey Point	48.28472098	-102.93970384	2303.382
10000016	8907.83	15213.96	AGM 020, Sta. 146+84, CR 21 -- Survey Point	48.27537709	-102.95782904	2365.052
10000018	10133.27	20710.90	AGM 030, Sta. 201+54, 106th Ave NW -- Han #8043	48.27700995	-102.97968651	2313.707
10000024	11374.38	26144.77	AGM 040, Sta. 255+14, Two track -- Survey Point	48.27853342	-103.00070597	2255.736
10000026	12646.89	31488.96	AGM 050, Sta. 308+04, ROW -- Han #8043	48.27747978	-103.02234950	2187.754
10000027	13862.17	36708.73	AGM 060, Sta. 359+86, CR 19 -- Han #8836	48.27749126	-103.04365681	2066.700
10000032	15069.23	42270.93	AGM 070, Sta. 414+88, ROW -- Han #100	48.27951637	-103.06535198	2122.263
10000034	16719.87	49728.46	AGM 080, Sta. 488+53, Two track -- Survey Point	48.27113627	-103.08739588	2185.524
10000036	17969.52	55034.23	AGM 090, Sta. 540+95, 112th Ave NW -- Han #100	48.27008774	-103.10844251	2228.074
10000041	19591.32	61961.13	AGM 100, Sta. 609+71, CR 117 -- Han #8611	48.27012147	-103.13605437	2226.954
10000042	20539.25	65795.51	AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point	48.27014177	-103.15172141	2290.235
10000043	22046.32	71915.96	AGM 120, Sta. 708+33, 59th St. NW -- Han #8611	48.27013628	-103.17671312	2332.827
10000045	23253.06	76853.26	AGM 130, Sta. 757+29, 116th Ave NW -- Survey Point	48.27182565	-103.19594650	2438.038
10000051	25485.27	85903.60	AGM 140, Sta. 848+51, 117th Ave NW -- Han #8611	48.28273591	-103.21735376	2391.593
10000053	26638.08	90944.70	AGM 150, Sta. 898+81, 118th Ave NW -- Han #100	48.28239995	-103.23795394	2396.066
10000055	27771.12	96347.04	AGM 160, Sta. 952+38, 119th Ave NW -- Han #8611	48.28244281	-103.26002339	2354.737
10000061	29402.50	104265.35	AGM 170, Sta. 1027+08, Two track -- Han #100	48.27018086	-103.27624591	2366.437
10000092	30543.25	109617.93	Pipe Exiting Ground -- Survey Point	48.25592197	-103.27452782	2302.750
10000072	30544.88	109626.45	Valve	48.25592192	-103.27456086	2304.670
10000079	30548.71	109646.59	Valve	48.25592222	-103.27464529	2304.950
10000089	30551.30	109665.64	Valve (Receiver), Sta. 1079+37, Epping Injection	48.25592295	-103.27472510	2305.469

TYPE	NUMBER
Valves	4
Markers	19

Miscellaneous

DEFINITIONS

There are occasions when special notations or circumstances require the addition of a note. These notes are included in this table for your reference.

ID#	Each miscellaneous note is automatically assigned a number in the software. This number is provided to assist the user of PIGTRAP software to more easily find any given defect.
Time	A reference time from the inspection tool. May also be used to locate features in the PIGTRAP software.
Distance	Given in either feet or meters, based on contractual agreements, this is the absolute distance measured by the tool from launch.
Memo	A description of the entry.

MEMO EXAMPLES

Gap or dent in casing	When the casing is not welded, or when a gap occurs in the weld, this signature is detected by the tool, and identified with a Misc. remark.
Inclusion	An anomaly in the cross section of the pipeline. Inclusions may be detrimental if they protrude through the pipe wall.
Mill anomaly	The process of manufacturing pipe can often leave indications in the pipe wall. Typically these anomalies are not detrimental, and are identified for the benefit of the client.
Sensor problems	Noting locations where anomalous sensor readings occurred.
Tool stops/starts	All tools are setup on a time-based system. When the tool stops, it continues to record, although not moving. When the tool moves very slowly, it is possible that its movement is not detected, and therefore, reported distances may appear shorter than actual. Many stops and starts may affect the overall distance accuracy of the tool.

Miscellaneous

ID#	Time	Distance (ft)	Memo
12000000	159.64	-17.48	Begin Run Tickle
12000001	9,492.66	17,769.72	Debris @ 4:00
12000002	31,629.59	109,712.60	End Run Tickle

Total	Number
Misc listings	3

Other Anomalies

DEFINITIONS

This Report lists anomalies that appear in the data which do not fall into typical metal loss categories. Examples range from manufacturing/mill anomalies in the pipe body and seam weld to construction-related and girth weld anomalies. Predicted wall loss depth estimations as well as pressure calculations are not generally applicable to these features and therefore these values do not appear in this table.

ID#	Each item is automatically assigned a number in the software. This number is provided to assist the user of PIGTRAP software to more easily find any given defect.
Feature Description / Comments	Classification of the feature along with any additional comments if applicable.
Dist (ft)	Given in either feet or meters, based on contractual agreements, this is the absolute distance from launch.
Length (in)	Predicted length of the defect, reported in either inches or millimeters.
Width (in)	Predicted width of the defect, reported in either inches or millimeters.
Gauss Delta	The difference between high and low gauss readings (magnetic strength) at the feature. This table is sorted with the highest gauss listed in a descending order. Gauss delta indicates relative disturbance of the magnetic field at that location and does not necessarily represent relative severety when comparing one feature to another.
ID/OD	Determination whether the defect exists on the inside (INT) or outside (EXT) surface of the pipe.
Anomaly / Seam Orientation	Orientation of both the feature and the seam weld in the joint of pipe is reported in o'clock (12:00 at top of pipe) as viewed looking downstream. If the pipe is determined to be seamless construction and therefore has no seam, "SMLS" will appear. "N/D" will be populated for joints where the seam is not detected.
Aboveground References	The name of the closest upstream and downstream references, usually either an AGM or a Valve.
Distance from Defect	The distance to the upstream and downstream reference listed in the previous column. Used for locating defects in the field.

Other Anomalies

ID#	Feature Description/Comments	Dist (ft)	Length	Width	Gauss Delta	ID/OD	Anomaly/Seam Orientation O'clock		Above-Ground References	Distance from Defect
20000023	Mill Anomaly	83,710.5	2.30	0.33	90	INT	4:30 / N/D	U/S:	AGM 130, Sta. 757+29, 116th Ave NW -- Survey Point	6857.11
								D/S:	AGM 140, Sta. 848+51, 117th Ave NW -- Han #8611	2193.23
20000018	Seam Variation	66,611.0	0.84	0.54	38	INT	12:30 / N/D	U/S:	AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point	815.39
								D/S:	AGM 120, Sta. 708+33, 59th St. NW -- Han #8611	5305.06
20000021	Seam Variation	74,300.3	0.94	0.52	35	INT	6:00 / N/D	U/S:	AGM 120, Sta. 708+33, 59th St. NW -- Han #8611	2384.26
								D/S:	AGM 130, Sta. 757+29, 116th Ave NW -- Survey Point	2553.03
20000024	Seam Variation	98,974.2	1.13	0.58	29	EXT	1:15 / N/D	U/S:	AGM 160, Sta. 952+38, 119th Ave NW -- Han #8611	2627.12
								D/S:	AGM 170, Sta. 1027+08, Two track -- Han #100	5291.19
20000019	Seam Variation	66,612.3	0.90	0.39	29	INT	12:30 / N/D	U/S:	AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point	816.75
								D/S:	AGM 120, Sta. 708+33, 59th St. NW -- Han #8611	5303.71
20000025	Seam Variation	98,974.9	1.09	0.67	27	EXT	1:15 / N/D	U/S:	AGM 160, Sta. 952+38, 119th Ave NW -- Han #8611	2627.78
								D/S:	AGM 170, Sta. 1027+08, Two track -- Han #100	5290.53
20000009	Seam Variation	56,696.9	0.80	0.49	34	INT	3:30 / N/D	U/S:	AGM 090, Sta. 540+95, 112th Ave NW -- Han #100	1662.62
								D/S:	AGM 100, Sta. 609+71, CR 117 -- Han #8611	5264.28
20000017	Seam Variation	66,154.7	0.64	0.48	35	INT	10:00 / N/D	U/S:	AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point	359.12
								D/S:	AGM 120, Sta. 708+33, 59th St. NW -- Han #8611	5761.33
20000006	Seam Variation	42,481.2	0.56	0.41	30	INT	12:00 / N/D	U/S:	AGM 070, Sta. 414+88, ROW -- Han #100	210.24
								D/S:	AGM 080, Sta. 488+53, Two track -- Survey Point	7247.28
20000008	Seam Variation	55,487.9	0.88	0.68	30	INT	6:45 / N/D	U/S:	AGM 090, Sta. 540+95, 112th Ave NW -- Han #100	453.65
								D/S:	AGM 100, Sta. 609+71, CR 117 -- Han #8611	6473.25

Other Anomalies

ID#	Feature Description/Comments	Dist (ft)	Length	Width	Gauss Delta	ID/OD	Anomaly/Seam Orientation O'clock		Above-Ground References	Distance from Defect
20000005	Mill Anomaly	36,554.6	0.42	0.33	31	INT	2:00 / N/D	U/S:	AGM 050, Sta. 308+04, ROW -- Han #8043	5065.65
								D/S:	AGM 060, Sta. 359+86, CR 19 -- Han #8836	154.12
20000010	Seam Variation	56,902.0	1.08	0.41	17	INT	6:30 / N/D	U/S:	AGM 090, Sta. 540+95, 112th Ave NW -- Han #100	1867.78
								D/S:	AGM 100, Sta. 609+71, CR 117 -- Han #8611	5059.11

Other Anomalies Type	Number
Girth Weld Anomaly	0
Mill Anomaly	2
Seam Variation	10

The Pipeline Listing Report presents all detected pipeline data in sequential order, beginning at launcher and ending at the receiver. The table includes welds, locations, metal loss defects, AGMs, wall thickness changes, etc.

ID#	Each item is automatically assigned a number in the software. This number is provided to assist the user of PIGTRAP software to more easily find any given defect.
Description	Describes the event at the particular location. Identifies the type of the descriptive, being a weld, location, pipe thickness change, etc.
Distance	Given in either feet or meters, based on contractual agreements, this is the absolute distance from launch.
Joint #	This unique number identifies the girth weld number.
U/S Weld	The distance to the upstream (U/S) weld (in feet or meters).
D/S Weld	The distance to the downstream (D/S) weld (in feet or meters).
Latitude	If GPS coordinates were provided for launch, receive and AGMs, this provides the predicted Latitude reading of the location from the first GPS reading based on INS readings obtained by the tool during the inspection.
Longitude	If GPS coordinates were provided for launch, receive and AGMs, this provides the predicted Longitude reading of the location from the first GPS reading based on INS readings obtained by the tool during the inspection.
Altitude	If GPS coordinates were provided for launch, receive and AGMs, this provides the predicted Altitude reading of the location from the first GPS reading based on INS readings obtained by the tool during the inspection.
Orientation: Deg. / O'Clock	Orientation is reported in degrees or o'clock (0 degrees/12:00 at top of pipe) as viewed looking downstream.
% Depth	Predicted depth of the defect as a percentage of nominal wall.
Length or WT (Pipe Thickness)	Predicted length of the defect, reported in either inches or millimeters – or if a wall thickness change, the new wall thickness begins at this point.
Width or YS (Yield Strength)	Predicted width of the defect, reported in either inches or millimeters – or if a wall thickness change, the new SMYS begins at this point.
P' (Calc. Safe Max. Operating Pressure) or SF (Safety Factor)	Calculated safe maximum operating pressure for the pipeline segment as calculated based on information provided by the Customer. TDW software uses either ASME B31G, MODIFIED ASME B31G or Z662-99 to calculate the calculated safe maximum allowable operating pressure (P') of the pipeline at a metal loss area.
(P'/P)	Percent of maximum established pressure, this is calculated by dividing the calculated safe pressure of the defect (P') by the current established maximum operating pressure of the pipeline (P). For TDW reporting, P is either established MOP provided by the customer or the calculated pressure rating for the pipe (P). Percentages less than 100% are considered pressure reducing.

Pipeline Listing

TDW Services, Inc.

Hiland Crude, LLC

Tioga Station to Epping Injection

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
12000000	Begin Run Tickle	-17.5	0	-	15.9	48.28506863	-102.91919190	2348.753							
11000000	WT CHANGE	-1.6	0	0.0	0.1	48.28506863	-102.91919190	2348.753				0.322	52000	0.72	
110	WELD	-1.6	110	0.0	3.1	48.28506863	-102.91919190	2348.753							
10000000	Flange	-1.1	110	0.5	2.6	48.28506863	-102.91919190	2348.753	0	12:00					
10000001	Valve (Launcher), Sta. 00+00, Tioga Station	0.0	110	1.6	1.6	48.28506866	-102.91919194	2348.747							
10000002	Flange	1.1	110	2.6	0.5	48.28507192	-102.91919209	2348.719	0	12:00					
120	WELD	1.6	120	0.0	1.2	48.28507339	-102.91919214	2348.705							
10000003	Pipe Support	1.8	120	0.2	1.0	48.28507422	-102.91919216	2348.697							
130	WELD	2.8	130	0.0	1.2	48.28507698	-102.91919224	2348.673							
10000004	Tee at 270 deg.	3.3	130	0.1	1.0	48.28507856	-102.91919229	2348.659	267	8:45					
140	WELD	3.9	140	0.0	0.9	48.28508037	-102.91919234	2348.643							
10000005	Flange	4.4	140	0.5	0.5	48.28508174	-102.91919238	2348.630	0	12:00					
150	WELD	4.9	150	0.0	2.0	48.28508306	-102.91919241	2348.622							
160	WELD	6.8	160	0.0	1.7	48.28508882	-102.91919257	2348.566							
10000006	Bend down - 45 deg., 3D	7.7	160	0.1	1.6	48.28509100	-102.91919268	2348.326	0	12:00					
170	WELD	8.5	170	0.0	9.3	48.28509305	-102.91919281	2347.928							
10000091	Pipe Entering Ground -- Survey Point	9.4	170	0.9	8.4	48.28509493	-102.91919290	2347.265							
180	WELD	17.8	180	0.0	1.6	48.28511110	-102.91919425	2341.475							
10000007	Bend up - 45 deg., 3D	18.6	180	0.1	1.5	48.28511288	-102.91919438	2341.133	0	12:00					
190	WELD	19.4	190	0.0	8.3	48.28511481	-102.91919451	2340.915							
11000001	WT CHANGE	27.6	190	0.0	0.1	48.28513704	-102.91919608	2340.912				0.188	52000	0.72	
200	WELD	27.7	200	0.0	41.0	48.28513719	-102.91919609	2340.912							
210	WELD	68.7	210	0.0	40.8	48.28524896	-102.91920550	2340.680							
220	WELD	109.5	220	0.0	40.9	48.28536035	-102.91921616	2339.601							
230	WELD	150.4	230	0.0	39.1	48.28547201	-102.91922817	2337.996							
11000002	WT CHANGE	189.4	230	0.0	0.1	48.28557791	-102.91923978	2336.704				0.322	52000	0.72	
240	WELD	189.5	240	0.0	42.1	48.28557813	-102.91923980	2336.704							
250	WELD	231.7	250	0.0	42.2	48.28569277	-102.91925207	2334.680							
260	WELD	273.9	260	0.0	42.2	48.28580724	-102.91926227	2330.972							
270	WELD	316.1	270	0.0	42.2	48.28592193	-102.91926236	2327.190							
280	WELD	358.3	280	0.0	42.2	48.28603599	-102.91924022	2325.699							
290	WELD	400.5	290	0.0	42.2	48.28614972	-102.91921332	2325.721							
300	WELD	442.7	300	0.0	42.2	48.28626409	-102.91919462	2326.449							
310	WELD	484.8	310	0.0	42.2	48.28637869	-102.91917893	2327.455							
320	WELD	527.0	320	0.0	42.2	48.28649340	-102.91916512	2328.414							
330	WELD	569.1	330	0.0	42.2	48.28660840	-102.91916330	2330.027							

Criteria: ASME B31G: Modified

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
340	WELD	611.3	340	0.0	42.2	48.28672345	-102.91916530	2331.759							
350	WELD	653.5	350	0.0	17.8	48.28683825	-102.91916922	2328.771							
360	WELD	671.3	360	0.0	7.0	48.28688639	-102.91917081	2326.674							
370	WELD	678.3	370	0.0	42.3	48.28690536	-102.91917217	2325.794							
380	WELD	720.6	380	0.0	42.3	48.28701861	-102.91918960	2319.354							
390	WELD	762.9	390	0.0	42.3	48.28713160	-102.91921469	2313.559							
13000007	GAIN	773.4	390	10.4	31.9	48.28715948	-102.91922135	2312.411	130	4:15					
400	WELD	805.2	400	0.0	42.3	48.28724442	-102.91924614	2309.755							
410	WELD	847.6	410	0.0	42.3	48.28735550	-102.91929163	2310.265							
420	WELD	889.9	420	0.0	41.7	48.28746072	-102.91935908	2314.570							
430	WELD	931.6	430	0.0	42.3	48.28755747	-102.91944799	2316.603							
440	WELD	973.9	440	0.0	42.3	48.28765376	-102.91954260	2318.435							
450	WELD	1,016.1	450	0.0	42.3	48.28774916	-102.91963794	2322.477							
460	WELD	1,058.4	460	0.0	42.2	48.28784505	-102.91973121	2327.906							
470	WELD	1,100.6	470	0.0	6.3	48.28794130	-102.91982149	2335.210							
480	WELD	1,106.9	480	0.0	1.6	48.28795569	-102.91983479	2335.950							
10000008	Bend left - 45 deg., 3D	1,107.7	480	0.1	1.5	48.28795722	-102.91983694	2336.023	0	12:00					
490	WELD	1,108.4	490	0.0	7.1	48.28795798	-102.91983993	2336.072							
500	WELD	1,115.5	500	0.0	0.6	48.28796236	-102.91986809	2336.444							
10000009	Bend left - 20 deg., 1.5D	1,115.8	500	0.0	0.6	48.28796242	-102.91986919	2336.454	0	12:00					
11000003	WT CHANGE	1,116.1	500	0.0	0.1	48.28796241	-102.91987037	2336.461				0.188	52000	0.72	
510	WELD	1,116.2	510	0.0	37.9	48.28796241	-102.91987060	2336.462							
520	WELD	1,154.1	520	0.0	41.3	48.28795302	-102.92002489	2337.229							
530	WELD	1,195.4	530	0.0	38.3	48.28794385	-102.92019368	2337.842							
540	WELD	1,233.8	540	0.0	28.5	48.28793825	-102.92035075	2338.809							
550	WELD	1,262.3	550	0.0	38.2	48.28793598	-102.92046749	2338.850							
560	WELD	1,300.4	560	0.0	41.4	48.28793445	-102.92062383	2337.397							
570	WELD	1,341.8	570	0.0	41.3	48.28793250	-102.92079351	2336.070							
580	WELD	1,383.1	580	0.0	41.2	48.28792901	-102.92096269	2336.061							
590	WELD	1,424.3	590	0.0	41.2	48.28792541	-102.92113157	2336.624							
600	WELD	1,465.5	600	0.0	41.1	48.28792338	-102.92130043	2336.776							
610	WELD	1,506.7	610	0.0	41.2	48.28792201	-102.92146892	2335.531							
620	WELD	1,547.8	620	0.0	41.2	48.28792034	-102.92163756	2333.757							
630	WELD	1,589.1	630	0.0	41.2	48.28791859	-102.92180636	2331.834							
640	WELD	1,630.3	640	0.0	41.2	48.28791694	-102.92197470	2328.711							
650	WELD	1,671.5	650	0.0	41.1	48.28791596	-102.92214284	2324.804							
660	WELD	1,712.6	660	0.0	41.2	48.28791487	-102.92231077	2320.513							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
670	WELD	1,753.9	670	0.0	41.2	48.28791300	-102.92247891	2317.767						
680	WELD	1,795.1	680	0.0	41.3	48.28791063	-102.92264723	2320.539						
690	WELD	1,836.4	690	0.0	41.3	48.28790847	-102.92281589	2323.128						
700	WELD	1,877.7	700	0.0	41.3	48.28790696	-102.92298481	2324.609						
710	WELD	1,919.0	710	0.0	41.4	48.28790570	-102.92315355	2325.481						
720	WELD	1,960.4	720	0.0	41.2	48.28790407	-102.92332272	2325.072						
730	WELD	2,001.6	730	0.0	40.4	48.28790229	-102.92349112	2324.625						
740	WELD	2,042.1	740	0.0	41.0	48.28789925	-102.92365637	2324.104						
750	WELD	2,083.1	750	0.0	37.6	48.28789719	-102.92382411	2323.444						
760	WELD	2,120.7	760	0.0	41.4	48.28789798	-102.92397796	2321.533						
770	WELD	2,162.1	770	0.0	41.3	48.28789564	-102.92414720	2319.656						
780	WELD	2,203.4	780	0.0	37.5	48.28789154	-102.92431610	2318.458						
790	WELD	2,240.9	790	0.0	40.6	48.28788856	-102.92446995	2318.551						
800	WELD	2,281.5	800	0.0	41.2	48.28788507	-102.92463600	2320.558						
810	WELD	2,322.7	810	0.0	41.2	48.28788182	-102.92480444	2322.043						
820	WELD	2,363.9	820	0.0	41.4	48.28787937	-102.92497309	2322.294						
830	WELD	2,405.2	830	0.0	41.2	48.28787788	-102.92514243	2322.225						
840	WELD	2,446.5	840	0.0	41.2	48.28787650	-102.92531124	2321.423						
850	WELD	2,487.7	850	0.0	41.1	48.28787407	-102.92547956	2318.798						
860	WELD	2,528.8	860	0.0	41.2	48.28787163	-102.92564707	2313.956						
870	WELD	2,570.0	870	0.0	41.1	48.28786957	-102.92581457	2309.220						
880	WELD	2,611.1	880	0.0	41.6	48.28786743	-102.92598220	2305.021						
890	WELD	2,652.7	890	0.0	41.1	48.28786512	-102.92615176	2300.935						
900	WELD	2,693.8	900	0.0	41.3	48.28786332	-102.92631978	2297.277						
910	WELD	2,735.0	910	0.0	41.2	48.28786184	-102.92648841	2294.135						
920	WELD	2,776.2	920	0.0	38.4	48.28785942	-102.92665645	2290.685						
930	WELD	2,814.6	930	0.0	27.6	48.28785582	-102.92681384	2289.096						
11000004	WT CHANGE	2,842.1	930	0.0	0.1	48.28785415	-102.92692633	2288.328			0.322	52000	0.72	
940	WELD	2,842.2	940	0.0	42.2	48.28785414	-102.92692661	2288.326						
950	WELD	2,884.4	950	0.0	42.3	48.28785390	-102.92709909	2285.577						
960	WELD	2,926.6	960	0.0	42.3	48.28785452	-102.92727024	2279.821						
970	WELD	2,968.9	970	0.0	42.3	48.28785150	-102.92744199	2275.736						
980	WELD	3,011.3	980	0.0	42.3	48.28784714	-102.92761463	2275.741						
990	WELD	3,053.6	990	0.0	42.4	48.28784619	-102.92778691	2278.612						
1000	WELD	3,095.9	1000	0.0	42.3	48.28784312	-102.92795818	2284.264						
1010	WELD	3,138.2	1010	0.0	42.3	48.28783934	-102.92812919	2290.048						
1020	WELD	3,180.5	1020	0.0	10.8	48.28783664	-102.92830087	2293.915						

Pipeline Listing

TDW Services, Inc.

Hiland Crude, LLC

Tioga Station to Epping Injection

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
11000005	WT CHANGE	3,191.2	1020	0.0	0.1	48.28783581	-102.92834417	2294.687				0.188	52000	0.72	
1030	WELD	3,191.2	1030	0.0	32.0	48.28783580	-102.92834449	2294.693							
1040	WELD	3,223.2	1040	0.0	41.3	48.28783387	-102.92847455	2298.010							
1050	WELD	3,264.5	1050	0.0	41.3	48.28783267	-102.92864188	2303.093							
1060	WELD	3,305.8	1060	0.0	37.7	48.28783066	-102.92881008	2306.828							
1070	WELD	3,343.6	1070	0.0	41.2	48.28782913	-102.92896405	2309.005							
1080	WELD	3,384.8	1080	0.0	41.2	48.28782782	-102.92913286	2310.289							
1090	WELD	3,426.0	1090	0.0	40.6	48.28782595	-102.92930170	2309.725							
1100	WELD	3,466.6	1100	0.0	41.1	48.28782258	-102.92946799	2308.713							
1110	WELD	3,507.7	1110	0.0	41.3	48.28782038	-102.92963650	2307.952							
1120	WELD	3,549.0	1120	0.0	41.2	48.28781876	-102.92980549	2307.908							
1130	WELD	3,590.2	1130	0.0	41.4	48.28781656	-102.92997440	2307.423							
1140	WELD	3,631.6	1140	0.0	40.8	48.28781393	-102.93014362	2305.843							
1150	WELD	3,672.4	1150	0.0	41.4	48.28781135	-102.93031089	2304.296							
1160	WELD	3,713.8	1160	0.0	41.3	48.28780912	-102.93048029	2302.333							
1170	WELD	3,755.1	1170	0.0	41.1	48.28780604	-102.93064964	2301.290							
1180	WELD	3,796.2	1180	0.0	37.9	48.28780322	-102.93081846	2301.342							
1190	WELD	3,834.1	1190	0.0	9.7	48.28780057	-102.93097421	2302.456							
10000010	Bend right - 90 deg., 7D	3,839.0	1190	1.2	8.6	48.28780372	-102.93099290	2302.774	0	12:00					
1200	WELD	3,843.9	1200	0.0	18.4	48.28781605	-102.93099875	2303.131							
11000006	WT CHANGE	3,862.2	1200	0.0	0.1	48.28786590	-102.93100243	2304.279				0.322	52000	0.72	
1210	WELD	3,862.3	1210	0.0	42.0	48.28786611	-102.93100244	2304.283							
1220	WELD	3,904.3	1220	0.0	42.2	48.28798094	-102.93101128	2305.368							
1230	WELD	3,946.5	1230	0.0	42.2	48.28809610	-102.93101994	2303.534							
1240	WELD	3,988.7	1240	0.0	42.2	48.28821118	-102.93102890	2300.581							
1250	WELD	4,030.9	1250	0.0	42.2	48.28832595	-102.93103738	2297.304							
1260	WELD	4,073.1	1260	0.0	42.3	48.28844073	-102.93104967	2294.503							
1270	WELD	4,115.4	1270	0.0	42.3	48.28855540	-102.93106798	2293.647							
1280	WELD	4,157.7	1280	0.0	42.3	48.28867003	-102.93108745	2294.831							
1290	WELD	4,200.1	1290	0.0	37.0	48.28878501	-102.93110057	2296.879							
1300	WELD	4,237.1	1300	0.0	9.5	48.28888575	-102.93110743	2298.706							
10000011	Bend left - 90 deg., 6D	4,241.6	1300	1.1	8.4	48.28889703	-102.93111258	2298.781	0	12:00					
1310	WELD	4,246.6	1310	0.0	29.9	48.28890031	-102.93113125	2298.799							
1320	WELD	4,276.6	1320	0.0	42.2	48.28889812	-102.93125320	2298.452							
1330	WELD	4,318.8	1330	0.0	42.2	48.28889693	-102.93142607	2297.773							
1340	WELD	4,361.0	1340	0.0	42.2	48.28889585	-102.93159884	2296.117							
1350	WELD	4,403.2	1350	0.0	42.2	48.28889689	-102.93177173	2294.703							

Criteria: ASME B31G: Modified

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
1360	WELD	4,445.4	1360	0.0	42.2	48.28889691	-102.93194454	2294.700						
1370	WELD	4,487.6	1370	0.0	42.2	48.28889605	-102.93211738	2295.202						
1380	WELD	4,529.9	1380	0.0	42.2	48.28889627	-102.93229020	2295.486						
1390	WELD	4,572.1	1390	0.0	42.2	48.28889641	-102.93246315	2294.978						
1400	WELD	4,614.3	1400	0.0	42.2	48.28889515	-102.93263585	2294.641						
1410	WELD	4,656.6	1410	0.0	42.2	48.28889335	-102.93280846	2296.510						
1420	WELD	4,698.8	1420	0.0	42.2	48.28889197	-102.93298087	2299.978						
1430	WELD	4,741.0	1430	0.0	12.4	48.28889016	-102.93315283	2304.098						
11000007	WT CHANGE	4,753.3	1430	0.0	0.1	48.28888960	-102.93320308	2304.943			0.188	52000	0.72	
1440	WELD	4,753.4	1440	0.0	35.6	48.28888959	-102.93320340	2304.948						
1450	WELD	4,789.0	1450	0.0	41.1	48.28888907	-102.93334938	2306.441						
1460	WELD	4,830.1	1460	0.0	41.3	48.28888857	-102.93351776	2308.586						
1470	WELD	4,871.4	1470	0.0	41.1	48.28888835	-102.93368709	2310.430						
1480	WELD	4,912.5	1480	0.0	41.2	48.28888953	-102.93385583	2311.549						
1490	WELD	4,953.7	1490	0.0	41.3	48.28889052	-102.93402471	2311.289						
1500	WELD	4,995.0	1500	0.0	41.1	48.28889083	-102.93419415	2311.004						
1510	WELD	5,036.2	1510	0.0	41.2	48.28889010	-102.93436271	2310.607						
1520	WELD	5,077.4	1520	0.0	26.9	48.28888905	-102.93453165	2309.503						
11000008	WT CHANGE	5,104.3	1520	0.0	0.1	48.28888870	-102.93464146	2308.532			0.322	52000	0.72	
1530	WELD	5,104.3	1530	0.0	42.2	48.28888870	-102.93464178	2308.529						
1540	WELD	5,146.5	1540	0.0	42.3	48.28888969	-102.93481468	2306.872						
1550	WELD	5,188.8	1550	0.0	42.3	48.28889093	-102.93498678	2302.664						
1560	WELD	5,231.1	1560	0.0	42.3	48.28889412	-102.93515938	2301.036						
1570	WELD	5,273.4	1570	0.0	42.3	48.28889218	-102.93533225	2301.396						
11000009	WT CHANGE	5,315.7	1570	0.0	0.1	48.28888833	-102.93550447	2302.571			0.188	52000	0.72	
1580	WELD	5,315.7	1580	0.0	37.4	48.28888832	-102.93550479	2302.575						
1590	WELD	5,353.1	1590	0.0	41.1	48.28888395	-102.93565727	2304.611						
1600	WELD	5,394.3	1600	0.0	38.7	48.28888137	-102.93582524	2305.218						
1610	WELD	5,433.0	1610	0.0	13.5	48.28888117	-102.93598357	2303.814						
11000010	WT CHANGE	5,446.4	1610	0.0	0.1	48.28888182	-102.93603821	2302.788			0.322	52000	0.72	
1620	WELD	5,446.5	1620	0.0	42.3	48.28888183	-102.93603845	2302.784						
1630	WELD	5,488.7	1630	0.0	42.4	48.28888303	-102.93621076	2299.216						
1640	WELD	5,531.1	1640	0.0	42.3	48.28888387	-102.93638324	2297.137						
1650	WELD	5,573.4	1650	0.0	42.3	48.28888548	-102.93655612	2297.646						
1660	WELD	5,615.6	1660	0.0	42.3	48.28888521	-102.93672904	2297.552						
1670	WELD	5,657.9	1670	0.0	42.2	48.28888348	-102.93690216	2297.784						
11000011	WT CHANGE	5,700.0	1670	0.0	0.1	48.28888391	-102.93707444	2298.288			0.188	52000	0.72	

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
1680	WELD	5,700.1	1680	0.0	41.2	48.28888391	-102.93707473	2298.286							
1690	WELD	5,741.3	1690	0.0	37.0	48.28888714	-102.93724344	2296.914							
11000012	WT CHANGE	5,778.3	1690	0.0	0.1	48.28889265	-102.93739455	2295.236				0.322	52000	0.72	
1700	WELD	5,778.3	1700	0.0	18.8	48.28889266	-102.93739483	2295.234							
1710	WELD	5,797.1	1710	0.0	7.3	48.28889561	-102.93747190	2294.597							
10000012	Bend left - 75 deg., 6D	5,800.3	1710	0.1	7.1	48.28889273	-102.93748353	2294.407	0	12:00					
1720	WELD	5,804.4	1720	0.0	31.9	48.28888310	-102.93749084	2294.130							
1730	WELD	5,836.3	1730	0.0	42.2	48.28880049	-102.93753222	2292.086							
1740	WELD	5,878.5	1740	0.0	42.2	48.28869266	-102.93759305	2291.810							
1750	WELD	5,920.7	1750	0.0	12.2	48.28858411	-102.93765135	2291.645							
1760	WELD	5,932.9	1760	0.0	42.2	48.28855276	-102.93766832	2291.140							
1770	WELD	5,975.1	1770	0.0	42.2	48.28844420	-102.93772638	2289.419							
1780	WELD	6,017.3	1780	0.0	42.2	48.28833467	-102.93777884	2286.731							
1790	WELD	6,059.5	1790	0.0	42.2	48.28822573	-102.93783586	2285.551							
1800	WELD	6,101.7	1800	0.0	42.1	48.28811930	-102.93790087	2282.040							
1810	WELD	6,143.8	1810	0.0	42.2	48.28801024	-102.93795604	2279.968							
1820	WELD	6,186.0	1820	0.0	42.2	48.28790109	-102.93801169	2278.777							
1830	WELD	6,228.2	1830	0.0	42.2	48.28779283	-102.93807135	2276.805							
1840	WELD	6,270.3	1840	0.0	42.2	48.28768445	-102.93813037	2275.522							
1850	WELD	6,312.5	1850	0.0	42.2	48.28757523	-102.93818607	2276.048							
11000013	WT CHANGE	6,354.6	1850	0.0	0.1	48.28746742	-102.93824451	2279.170				0.188	52000	0.72	
1860	WELD	6,354.7	1860	0.0	41.0	48.28746719	-102.93824463	2279.173							
1870	WELD	6,395.7	1870	0.0	36.1	48.28736074	-102.93829791	2279.488							
1880	WELD	6,431.8	1880	0.0	9.7	48.28726784	-102.93834890	2278.853							
11000014	WT CHANGE	6,441.5	1880	0.0	0.1	48.28724357	-102.93836322	2278.490				0.322	52000	0.72	
1890	WELD	6,441.6	1890	0.0	42.2	48.28724332	-102.93836336	2278.488							
1900	WELD	6,483.7	1900	0.0	42.3	48.28713524	-102.93842409	2276.903							
1910	WELD	6,526.0	1910	0.0	42.3	48.28702742	-102.93848472	2274.236							
1920	WELD	6,568.3	1920	0.0	42.3	48.28691903	-102.93854277	2271.233							
1930	WELD	6,610.6	1930	0.0	42.3	48.28680949	-102.93859592	2268.278							
1940	WELD	6,652.9	1940	0.0	42.2	48.28670014	-102.93865113	2266.429							
1950	WELD	6,695.1	1950	0.0	42.2	48.28659136	-102.93870882	2265.215							
1960	WELD	6,737.3	1960	0.0	42.3	48.28648270	-102.93876611	2264.221							
1970	WELD	6,779.6	1970	0.0	42.3	48.28637394	-102.93882343	2263.103							
1980	WELD	6,821.9	1980	0.0	42.2	48.28626478	-102.93887979	2263.376							
1990	WELD	6,864.1	1990	0.0	42.3	48.28615607	-102.93893566	2266.966							
2000	WELD	6,906.3	2000	0.0	42.2	48.28604823	-102.93899258	2272.040							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
2010	WELD	6,948.6	2010	0.0	42.3	48.28594021	-102.93905083	2276.412							
2020	WELD	6,990.8	2020	0.0	42.2	48.28583188	-102.93910958	2279.275							
2030	WELD	7,033.1	2030	0.0	42.2	48.28572403	-102.93916922	2283.183							
2040	WELD	7,075.3	2040	0.0	42.2	48.28561607	-102.93922748	2287.784							
2050	WELD	7,117.5	2050	0.0	42.1	48.28550818	-102.93928501	2292.587							
11000015	WT CHANGE	7,159.5	2050	0.0	0.1	48.28540039	-102.93934224	2296.302				0.188	52000	0.72	
2060	WELD	7,159.6	2060	0.0	41.0	48.28540019	-102.93934234	2296.304							
2070	WELD	7,200.6	2070	0.0	41.2	48.28529471	-102.93939983	2297.567							
2080	WELD	7,241.8	2080	0.0	41.4	48.28518906	-102.93945828	2298.100							
2090	WELD	7,283.2	2090	0.0	41.1	48.28508283	-102.93951595	2299.443							
2100	WELD	7,324.3	2100	0.0	41.1	48.28497677	-102.93957079	2301.827							
2110	WELD	7,365.4	2110	0.0	41.3	48.28487078	-102.93962478	2304.220							
2120	WELD	7,406.6	2120	0.0	28.2	48.28476454	-102.93968084	2303.883							
10000013	AGM 010, Sta. 69+49, CR 8 -- Survey Point	7,423.6	2120	16.9	11.3	48.28472098	-102.93970384	2303.382							
11000016	WT CHANGE	7,434.8	2120	0.0	0.1	48.28469193	-102.93971936	2303.045				0.322	52000	0.72	
2130	WELD	7,434.9	2130	0.0	0.6	48.28469175	-102.93971943	2303.042							
10000014	Bend left - 20 deg., 1.5D	7,435.2	2130	0.1	0.5	48.28469091	-102.93971975	2303.030	0	12:00					
2140	WELD	7,435.5	2140	0.0	39.1	48.28469006	-102.93971987	2303.006							
2150	WELD	7,474.6	2150	0.0	42.3	48.28458379	-102.93972531	2299.314							
2160	WELD	7,516.9	2160	0.0	42.3	48.28446907	-102.93973339	2294.893							
2170	WELD	7,559.2	2170	0.0	41.6	48.28435398	-102.93973911	2293.524							
2180	WELD	7,600.8	2180	0.0	42.4	48.28424059	-102.93974706	2294.919							
2190	WELD	7,643.2	2190	0.0	42.4	48.28412537	-102.93975663	2296.978							
2200	WELD	7,685.5	2200	0.0	42.3	48.28401006	-102.93976712	2298.750							
2210	WELD	7,727.9	2210	0.0	42.3	48.28389479	-102.93977798	2299.719							
2220	WELD	7,770.2	2220	0.0	42.4	48.28377940	-102.93978518	2300.182							
2230	WELD	7,812.6	2230	0.0	42.3	48.28366387	-102.93979055	2300.989							
2240	WELD	7,854.8	2240	0.0	42.3	48.28354864	-102.93979651	2302.144							
2250	WELD	7,897.1	2250	0.0	34.1	48.28343350	-102.93980451	2305.234							
11000017	WT CHANGE	7,931.1	2250	0.0	0.1	48.28334100	-102.93980377	2307.443				0.188	52000	0.72	
2260	WELD	7,931.2	2260	0.0	41.2	48.28334079	-102.93980377	2307.447							
2270	WELD	7,972.4	2270	0.0	40.4	48.28322846	-102.93979296	2308.440							
2280	WELD	8,012.8	2280	0.0	41.3	48.28311848	-102.93977921	2306.556							
2290	WELD	8,054.1	2290	0.0	41.2	48.28300588	-102.93976348	2306.747							
2300	WELD	8,095.3	2300	0.0	41.4	48.28289372	-102.93974780	2308.580							
2310	WELD	8,136.7	2310	0.0	40.8	48.28278117	-102.93973248	2312.184							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
2320	WELD	8,177.4	2320	0.0	41.1	48.28267002	-102.93971586	2313.669							
2330	WELD	8,218.6	2330	0.0	41.1	48.28255812	-102.93969705	2312.491							
2340	WELD	8,259.7	2340	0.0	41.2	48.28244607	-102.93967922	2313.088							
13000001	GAIN	8,289.1	2340	29.3	11.8	48.28236603	-102.93966728	2314.264	303	10:00					
2350	WELD	8,300.9	2350	0.0	41.4	48.28233394	-102.93966302	2314.831							
2360	WELD	8,342.3	2360	0.0	41.4	48.28222104	-102.93965225	2315.626							
2370	WELD	8,383.7	2370	0.0	41.2	48.28210790	-102.93964820	2316.977							
2380	WELD	8,424.9	2380	0.0	41.2	48.28199544	-102.93965149	2318.818							
2390	WELD	8,466.0	2390	0.0	41.1	48.28188351	-102.93965740	2322.324							
2400	WELD	8,507.1	2400	0.0	41.1	48.28177145	-102.93966376	2324.178							
2410	WELD	8,548.3	2410	0.0	41.3	48.28165939	-102.93967100	2325.178							
2420	WELD	8,589.6	2420	0.0	41.4	48.28154645	-102.93967756	2326.020							
2430	WELD	8,631.0	2430	0.0	41.3	48.28143393	-102.93968266	2324.572							
2440	WELD	8,672.3	2440	0.0	41.2	48.28132124	-102.93968814	2322.771							
2450	WELD	8,713.5	2450	0.0	41.3	48.28120884	-102.93969398	2322.487							
2460	WELD	8,754.8	2460	0.0	41.4	48.28109632	-102.93969891	2322.072							
2470	WELD	8,796.2	2470	0.0	41.6	48.28098327	-102.93970287	2322.303							
2480	WELD	8,837.8	2480	0.0	41.4	48.28086965	-102.93970750	2322.484							
2490	WELD	8,879.2	2490	0.0	41.3	48.28075687	-102.93971210	2321.997							
2500	WELD	8,920.5	2500	0.0	41.6	48.28064403	-102.93971615	2321.109							
2510	WELD	8,962.1	2510	0.0	41.3	48.28053062	-102.93972030	2319.837							
2520	WELD	9,003.5	2520	0.0	40.5	48.28041801	-102.93972505	2318.803							
2530	WELD	9,043.9	2530	0.0	41.5	48.28030779	-102.93973031	2318.395							
2540	WELD	9,085.4	2540	0.0	41.3	48.28019476	-102.93973567	2317.783							
2550	WELD	9,126.8	2550	0.0	41.4	48.28008208	-102.93974126	2316.721							
2560	WELD	9,168.2	2560	0.0	41.5	48.27996923	-102.93974689	2316.186							
2570	WELD	9,209.7	2570	0.0	41.6	48.27985614	-102.93975314	2315.088							
2580	WELD	9,251.3	2580	0.0	41.1	48.27974248	-102.93975830	2313.413							
2590	WELD	9,292.4	2590	0.0	41.3	48.27963019	-102.93976383	2311.523							
2600	WELD	9,333.7	2600	0.0	41.4	48.27951730	-102.93977002	2310.347							
2610	WELD	9,375.1	2610	0.0	34.9	48.27940435	-102.93977562	2309.944							
2620	WELD	9,410.0	2620	0.0	5.2	48.27930891	-102.93977994	2308.758							
2630	WELD	9,415.3	2630	0.0	41.4	48.27929465	-102.93978063	2308.507							
2640	WELD	9,456.7	2640	0.0	41.3	48.27918156	-102.93978639	2306.179							
2650	WELD	9,498.0	2650	0.0	34.4	48.27906851	-102.93979237	2305.250							
2660	WELD	9,532.4	2660	0.0	6.7	48.27897435	-102.93979699	2304.270							
2670	WELD	9,539.1	2670	0.0	40.4	48.27895613	-102.93979793	2303.940							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
2680	WELD	9,579.5	2680	0.0	41.2	48.27884558	-102.93980408	2303.120							
2690	WELD	9,620.7	2690	0.0	41.3	48.27873292	-102.93980962	2302.630							
2700	WELD	9,662.0	2700	0.0	41.8	48.27862000	-102.93981576	2301.492							
2710	WELD	9,703.8	2710	0.0	41.2	48.27850562	-102.93982206	2300.272							
2720	WELD	9,745.0	2720	0.0	41.1	48.27839287	-102.93982886	2299.522							
2730	WELD	9,786.0	2730	0.0	41.2	48.27828030	-102.93983545	2298.454							
2740	WELD	9,827.2	2740	0.0	41.1	48.27816774	-102.93984126	2297.034							
2750	WELD	9,868.3	2750	0.0	41.6	48.27805553	-102.93984765	2296.721							
2760	WELD	9,909.9	2760	0.0	41.5	48.27794204	-102.93985457	2296.239							
2770	WELD	9,951.5	2770	0.0	41.4	48.27782883	-102.93986121	2297.911							
2780	WELD	9,992.9	2780	0.0	41.3	48.27771594	-102.93986876	2299.965							
2790	WELD	10,034.2	2790	0.0	41.3	48.27760321	-102.93987554	2301.202							
2800	WELD	10,075.5	2800	0.0	41.4	48.27749039	-102.93988020	2300.887							
2810	WELD	10,116.9	2810	0.0	41.2	48.27737730	-102.93988367	2299.503							
2820	WELD	10,158.1	2820	0.0	41.2	48.27726460	-102.93988716	2299.366							
2830	WELD	10,199.3	2830	0.0	41.2	48.27715218	-102.93989212	2301.500							
2840	WELD	10,240.5	2840	0.0	34.5	48.27703953	-102.93989792	2302.477							
11000018	WT CHANGE	10,274.9	2840	0.0	0.1	48.27694550	-102.93990362	2303.805				0.322	52000	0.72	
2850	WELD	10,275.0	2850	0.0	42.1	48.27694525	-102.93990363	2303.811							
2860	WELD	10,317.1	2860	0.0	42.2	48.27683023	-102.93991091	2306.022							
2870	WELD	10,359.3	2870	0.0	42.3	48.27671499	-102.93992020	2308.107							
11000019	WT CHANGE	10,401.5	2870	0.0	0.1	48.27660000	-102.93992710	2310.149				0.188	52000	0.72	
2880	WELD	10,401.6	2880	0.0	9.1	48.27659982	-102.93992711	2310.151							
2890	WELD	10,410.7	2890	0.0	41.2	48.27657481	-102.93992839	2310.506							
2900	WELD	10,452.0	2900	0.0	41.3	48.27646226	-102.93993270	2311.329							
2910	WELD	10,493.2	2910	0.0	41.4	48.27634953	-102.93993652	2312.338							
2920	WELD	10,534.6	2920	0.0	41.4	48.27623654	-102.93994187	2313.396							
2930	WELD	10,576.0	2930	0.0	41.4	48.27612352	-102.93994837	2314.443							
2940	WELD	10,617.4	2940	0.0	41.3	48.27601051	-102.93995539	2316.120							
2950	WELD	10,658.8	2950	0.0	41.3	48.27589752	-102.93996245	2317.709							
2960	WELD	10,700.0	2960	0.0	41.4	48.27578452	-102.93996798	2318.587							
2970	WELD	10,741.4	2970	0.0	41.4	48.27567135	-102.93997288	2319.208							
2980	WELD	10,782.8	2980	0.0	41.4	48.27555815	-102.93997758	2319.366							
2990	WELD	10,824.2	2990	0.0	35.0	48.27544498	-102.93998170	2317.729							
3000	WELD	10,859.2	3000	0.0	9.3	48.27534900	-102.93998350	2316.333							
10000015	Bend right - 90 deg., 5D	10,863.9	3000	1.6	7.8	48.27533740	-102.93998876	2316.227	0	12:00					
40000000	Metal Loss - INTERNAL	10,861.0	3000	1.7	7.6	48.27534435	-102.93998387	2316.285	67	2:00	14%	0.76	1.12	1760	100%

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
3010	WELD	10,868.5	3010	0.0	24.0	48.27533404	-102.94000596	2316.325							
3020	WELD	10,892.5	3020	0.0	39.3	48.27533401	-102.94010272	2317.084							
3030	WELD	10,931.8	3030	0.0	41.3	48.27533387	-102.94026330	2317.925							
3040	WELD	10,973.1	3040	0.0	41.4	48.27533377	-102.94043271	2318.517							
3050	WELD	11,014.5	3050	0.0	41.4	48.27533408	-102.94060226	2318.591							
3060	WELD	11,055.9	3060	0.0	41.4	48.27533513	-102.94077176	2319.311							
3070	WELD	11,097.3	3070	0.0	41.3	48.27533587	-102.94094130	2320.587							
3080	WELD	11,138.6	3080	0.0	41.4	48.27533619	-102.94111068	2322.002							
3090	WELD	11,179.9	3090	0.0	41.4	48.27533569	-102.94128005	2323.660							
3100	WELD	11,221.4	3100	0.0	41.4	48.27533508	-102.94144959	2324.890							
3110	WELD	11,262.8	3110	0.0	41.4	48.27533445	-102.94161920	2326.038							
3120	WELD	11,304.2	3120	0.0	38.3	48.27533343	-102.94178830	2328.128							
3130	WELD	11,342.5	3130	0.0	35.9	48.27533185	-102.94194505	2329.779							
3140	WELD	11,378.4	3140	0.0	41.3	48.27533253	-102.94209172	2331.473							
3150	WELD	11,419.7	3150	0.0	41.6	48.27533480	-102.94226030	2334.027							
3160	WELD	11,461.4	3160	0.0	40.9	48.27533555	-102.94243033	2336.350							
3170	WELD	11,502.3	3170	0.0	41.2	48.27533505	-102.94259840	2338.623							
3180	WELD	11,543.5	3180	0.0	41.4	48.27533406	-102.94276721	2340.072							
3190	WELD	11,584.8	3190	0.0	40.4	48.27533322	-102.94293668	2341.243							
3200	WELD	11,625.2	3200	0.0	41.4	48.27533315	-102.94310188	2343.511							
3210	WELD	11,666.6	3210	0.0	41.3	48.27533384	-102.94327152	2344.240							
3220	WELD	11,707.9	3220	0.0	41.3	48.27533454	-102.94344066	2344.487							
3230	WELD	11,749.1	3230	0.0	41.2	48.27533497	-102.94360982	2344.488							
3240	WELD	11,790.3	3240	0.0	41.2	48.27533522	-102.94377850	2345.671							
3250	WELD	11,831.5	3250	0.0	41.3	48.27533527	-102.94394751	2347.589							
3260	WELD	11,872.8	3260	0.0	41.1	48.27533586	-102.94411665	2349.401							
40000001	Metal Loss - EXTERNAL	11,884.3	3260	11.5	29.7	48.27533612	-102.94416371	2349.870	97	3:00	14%	0.73	0.74	1760	100%
40000002	Metal Loss - EXTERNAL	11,889.2	3260	16.4	24.8	48.27533622	-102.94418388	2350.060	42	1:15	12%	0.83	0.56	1760	100%
40000003	Metal Loss - EXTERNAL	11,913.0	3260	40.2	1.0	48.27533656	-102.94428131	2351.102	98	3:15	17%	0.84	0.58	1760	100%
3270	WELD	11,914.0	3270	0.0	41.2	48.27533657	-102.94428518	2351.146							
3280	WELD	11,955.1	3280	0.0	41.4	48.27533661	-102.94445388	2351.775							
3290	WELD	11,996.6	3290	0.0	41.5	48.27533629	-102.94462321	2350.628							
3300	WELD	12,038.1	3300	0.0	41.5	48.27533631	-102.94482578	2350.225							
3310	WELD	12,079.6	3310	0.0	41.3	48.27533833	-102.94499540	2350.645							
3320	WELD	12,120.8	3320	0.0	36.7	48.27534094	-102.94516412	2351.263							
3330	WELD	12,157.5	3330	0.0	6.2	48.27534086	-102.94531421	2350.847							
3340	WELD	12,163.7	3340	0.0	33.0	48.27534069	-102.94533958	2350.813							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
3350	WELD	12,196.7	3350	0.0	40.5	48.27534058	-102.94547429	2349.801						
3360	WELD	12,237.2	3360	0.0	41.4	48.27534174	-102.94563999	2348.584						
3370	WELD	12,278.7	3370	0.0	41.3	48.27534226	-102.94580944	2347.694						
3380	WELD	12,319.9	3380	0.0	41.4	48.27534113	-102.94597812	2346.547						
3390	WELD	12,361.3	3390	0.0	41.4	48.27534041	-102.94614746	2345.643						
3400	WELD	12,402.7	3400	0.0	41.4	48.27533995	-102.94631641	2345.313						
3410	WELD	12,444.1	3410	0.0	41.3	48.27534032	-102.94648596	2345.759						
3420	WELD	12,485.4	3420	0.0	41.3	48.27534111	-102.94665533	2345.749						
3430	WELD	12,526.7	3430	0.0	41.3	48.27534203	-102.94682480	2345.604						
3440	WELD	12,568.0	3440	0.0	41.3	48.27534354	-102.94699424	2345.993						
3450	WELD	12,609.3	3450	0.0	41.4	48.27534526	-102.94716386	2346.490						
3460	WELD	12,650.7	3460	0.0	41.5	48.27534634	-102.94733335	2345.709						
3470	WELD	12,692.2	3470	0.0	41.4	48.27534759	-102.94750318	2344.309						
3480	WELD	12,733.5	3480	0.0	38.7	48.27534863	-102.94767258	2342.218						
11000020	WT CHANGE	12,772.1	3480	0.0	0.1	48.27534949	-102.94783111	2341.392			0.322	52000	0.72	
3490	WELD	12,772.2	3490	0.0	42.1	48.27534950	-102.94783135	2341.393						
3500	WELD	12,814.3	3500	0.0	42.2	48.27534940	-102.94800422	2340.812						
3510	WELD	12,856.4	3510	0.0	42.2	48.27534997	-102.94817735	2339.859						
3520	WELD	12,898.6	3520	0.0	42.2	48.27534989	-102.94835056	2338.922						
3530	WELD	12,940.8	3530	0.0	42.2	48.27534984	-102.94852346	2337.349						
3540	WELD	12,983.0	3540	0.0	42.2	48.27535048	-102.94869673	2337.320						
3550	WELD	13,025.2	3550	0.0	42.2	48.27535278	-102.94887001	2336.486						
3560	WELD	13,067.5	3560	0.0	42.3	48.27535052	-102.94904309	2336.477						
3570	WELD	13,109.8	3570	0.0	42.4	48.27534675	-102.94921622	2336.340						
3580	WELD	13,152.2	3580	0.0	42.3	48.27534803	-102.94938938	2337.833						
3590	WELD	13,194.5	3590	0.0	42.3	48.27535190	-102.94956253	2339.680						
3600	WELD	13,236.8	3600	0.0	42.3	48.27535508	-102.94973532	2341.544						
3610	WELD	13,279.1	3610	0.0	42.3	48.27535634	-102.94990810	2343.546						
3620	WELD	13,321.4	3620	0.0	42.3	48.27535600	-102.95008115	2345.242						
3630	WELD	13,363.7	3630	0.0	42.2	48.27535624	-102.95025419	2347.289						
3640	WELD	13,406.0	3640	0.0	42.3	48.27535728	-102.95042723	2349.630						
3650	WELD	13,448.2	3650	0.0	42.3	48.27535842	-102.95060043	2351.940						
3660	WELD	13,490.5	3660	0.0	42.3	48.27535763	-102.95077350	2353.965						
3670	WELD	13,532.8	3670	0.0	42.3	48.27535497	-102.95094661	2355.803						
3680	WELD	13,575.0	3680	0.0	42.3	48.27535641	-102.95111970	2358.106						
3690	WELD	13,617.3	3690	0.0	42.2	48.27536152	-102.95129230	2360.351						
3700	WELD	13,659.5	3700	0.0	42.2	48.27536441	-102.95146513	2362.660						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
3710	WELD	13,701.7	3710	0.0	15.6	48.27536434	-102.95163794	2365.877						
11000021	WT CHANGE	13,717.3	3710	0.0	0.1	48.27536338	-102.95170166	2366.439			0.188	52000	0.72	
3720	WELD	13,717.4	3720	0.0	37.3	48.27536338	-102.95170191	2366.440						
3730	WELD	13,754.7	3730	0.0	41.4	48.27536225	-102.95185501	2367.438						
3740	WELD	13,796.0	3740	0.0	41.3	48.27536379	-102.95202463	2368.280						
3750	WELD	13,837.4	3750	0.0	41.3	48.27536508	-102.95219377	2367.502						
3760	WELD	13,878.7	3760	0.0	41.3	48.27536638	-102.95236338	2366.973						
3770	WELD	13,920.0	3770	0.0	41.3	48.27536753	-102.95253266	2368.247						
3780	WELD	13,961.3	3780	0.0	41.4	48.27536864	-102.95270214	2368.918						
3790	WELD	14,002.6	3790	0.0	41.3	48.27536927	-102.95287165	2370.084						
3800	WELD	14,044.0	3800	0.0	41.4	48.27536909	-102.95304125	2370.651						
3810	WELD	14,085.4	3810	0.0	41.4	48.27536949	-102.95321094	2371.298						
3820	WELD	14,126.8	3820	0.0	41.3	48.27536937	-102.95338052	2372.039						
3830	WELD	14,168.2	3830	0.0	41.4	48.27536883	-102.95355014	2372.049						
3840	WELD	14,209.6	3840	0.0	41.5	48.27536811	-102.95371974	2371.615						
3850	WELD	14,251.1	3850	0.0	41.5	48.27536759	-102.95388920	2371.035						
3860	WELD	14,292.6	3860	0.0	41.4	48.27536813	-102.95405850	2370.389						
3870	WELD	14,334.0	3870	0.0	41.4	48.27536881	-102.95422775	2369.301						
3880	WELD	14,375.4	3880	0.0	41.3	48.27536925	-102.95439685	2367.304						
3890	WELD	14,416.7	3890	0.0	41.4	48.27536871	-102.95456613	2366.719						
3900	WELD	14,458.1	3900	0.0	41.4	48.27536820	-102.95473551	2366.401						
3910	WELD	14,499.5	3910	0.0	41.4	48.27536838	-102.95490487	2365.897						
3920	WELD	14,540.8	3920	0.0	41.4	48.27536862	-102.95507396	2365.372						
3930	WELD	14,582.2	3930	0.0	41.3	48.27536911	-102.95524330	2365.537						
3940	WELD	14,623.6	3940	0.0	41.3	48.27536956	-102.95541248	2366.587						
3950	WELD	14,664.8	3950	0.0	36.5	48.27536940	-102.95558167	2365.719						
11000022	WT CHANGE	14,701.2	3950	0.0	0.1	48.27536889	-102.95573089	2363.867			0.322	52000	0.72	
3960	WELD	14,701.3	3960	0.0	42.0	48.27536889	-102.95573121	2363.865						
3970	WELD	14,743.3	3970	0.0	42.2	48.27536969	-102.95590341	2361.417						
3980	WELD	14,785.5	3980	0.0	42.2	48.27536910	-102.95607630	2360.495						
3990	WELD	14,827.6	3990	0.0	42.2	48.27537039	-102.95624922	2360.943						
4000	WELD	14,869.8	4000	0.0	42.2	48.27537198	-102.95642200	2361.945						
4010	WELD	14,912.0	4010	0.0	42.3	48.27537280	-102.95659488	2362.935						
4020	WELD	14,954.4	4020	0.0	42.3	48.27537283	-102.95676778	2363.863						
4030	WELD	14,996.7	4030	0.0	42.3	48.27537345	-102.95694099	2364.703						
4040	WELD	15,039.0	4040	0.0	42.3	48.27537504	-102.95711364	2364.844						
4050	WELD	15,081.4	4050	0.0	42.3	48.27537539	-102.95728649	2365.018						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
4060	WELD	15,123.7	4060	0.0	42.3	48.27537471	-102.95745953	2365.354						
4070	WELD	15,166.0	4070	0.0	42.3	48.27537497	-102.95763250	2365.228						
4080	WELD	15,208.3	4080	0.0	42.2	48.27537679	-102.95780572	2365.021						
10000016	AGM 020, Sta. 146+84, CR 21 -- Survey Point	15,214.0	4080	5.7	36.6	48.27537709	-102.95782904	2365.052						
4090	WELD	15,250.5	4090	0.0	41.8	48.27537879	-102.95797857	2365.917						
11000023	WT CHANGE	15,292.2	4090	0.0	0.1	48.27537950	-102.95814917	2365.463			0.188	52000	0.72	
4100	WELD	15,292.3	4100	0.0	37.7	48.27537950	-102.95814950	2365.462						
4110	WELD	15,330.1	4110	0.0	41.4	48.27537857	-102.95830415	2365.313						
4120	WELD	15,371.4	4120	0.0	41.3	48.27537824	-102.95847330	2366.030						
4130	WELD	15,412.7	4130	0.0	41.2	48.27537783	-102.95864225	2366.048						
4140	WELD	15,453.9	4140	0.0	40.9	48.27537691	-102.95881083	2364.440						
4150	WELD	15,494.8	4150	0.0	41.3	48.27537657	-102.95897758	2361.369						
4160	WELD	15,536.1	4160	0.0	41.4	48.27537640	-102.95914661	2359.797						
4170	WELD	15,577.4	4170	0.0	41.3	48.27537637	-102.95931579	2361.499						
4180	WELD	15,618.7	4180	0.0	41.4	48.27537636	-102.95948447	2365.171						
4190	WELD	15,660.1	4190	0.0	41.3	48.27537919	-102.95965337	2367.497						
4200	WELD	15,701.4	4200	0.0	40.3	48.27538149	-102.95982229	2368.214						
4210	WELD	15,741.8	4210	0.0	41.4	48.27538147	-102.95998659	2367.577						
4220	WELD	15,783.2	4220	0.0	41.4	48.27537898	-102.96015568	2367.798						
4230	WELD	15,824.6	4230	0.0	41.4	48.27537772	-102.96032491	2368.614						
4240	WELD	15,866.0	4240	0.0	32.0	48.27537717	-102.96049402	2367.457						
4250	WELD	15,898.0	4250	0.0	40.9	48.27537709	-102.96062470	2366.208						
4260	WELD	15,938.9	4260	0.0	41.4	48.27537734	-102.96079175	2363.684						
4270	WELD	15,980.3	4270	0.0	41.3	48.27537800	-102.96096077	2360.936						
4280	WELD	16,021.6	4280	0.0	40.5	48.27537875	-102.96112935	2357.862						
4290	WELD	16,062.1	4290	0.0	41.2	48.27537931	-102.96129470	2354.498						
4300	WELD	16,103.4	4300	0.0	41.3	48.27537903	-102.96146322	2354.217						
4310	WELD	16,144.7	4310	0.0	41.4	48.27537844	-102.96163203	2355.775						
4320	WELD	16,186.1	4320	0.0	41.4	48.27537847	-102.96180080	2354.728						
4330	WELD	16,227.4	4330	0.0	41.4	48.27538003	-102.96196976	2353.562						
4340	WELD	16,268.8	4340	0.0	41.3	48.27538186	-102.96213855	2352.437						
4350	WELD	16,310.1	4350	0.0	41.4	48.27538354	-102.96230739	2351.335						
4360	WELD	16,351.5	4360	0.0	41.3	48.27538470	-102.96247631	2350.138						
4370	WELD	16,392.8	4370	0.0	41.3	48.27538517	-102.96264509	2349.576						
4380	WELD	16,434.1	4380	0.0	40.3	48.27538596	-102.96281393	2349.078						
4390	WELD	16,474.3	4390	0.0	33.7	48.27538770	-102.96297835	2348.370						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
4400	WELD	16,508.0	4400	0.0	36.9	48.27538998	-102.96311545	2346.929						
11000024	WT CHANGE	16,544.8	4400	0.0	0.1	48.27539188	-102.96326492	2343.678			0.322	52000	0.72	
4410	WELD	16,544.9	4410	0.0	41.0	48.27539189	-102.96326524	2343.675						
4420	WELD	16,585.9	4420	0.0	42.3	48.27539307	-102.96343238	2341.475						
4430	WELD	16,628.2	4430	0.0	42.4	48.27539318	-102.96360474	2340.554						
4440	WELD	16,670.6	4440	0.0	42.3	48.27539327	-102.96377707	2341.973						
11000025	WT CHANGE	16,712.8	4440	0.0	0.1	48.27539227	-102.96394920	2342.281			0.188	52000	0.72	
4450	WELD	16,712.9	4450	0.0	39.1	48.27539227	-102.96394948	2342.280						
4460	WELD	16,752.0	4460	0.0	41.5	48.27539214	-102.96410840	2342.177						
4470	WELD	16,793.4	4470	0.0	41.4	48.27539221	-102.96427704	2342.869						
4480	WELD	16,834.9	4480	0.0	41.5	48.27539324	-102.96444580	2344.109						
4490	WELD	16,876.3	4490	0.0	41.4	48.27539419	-102.96461458	2344.308						
4500	WELD	16,917.8	4500	0.0	41.4	48.27539472	-102.96478341	2344.117						
4510	WELD	16,959.1	4510	0.0	41.4	48.27539578	-102.96495233	2342.789						
4520	WELD	17,000.5	4520	0.0	41.3	48.27539644	-102.96512118	2342.572						
4530	WELD	17,041.8	4530	0.0	41.4	48.27539655	-102.96528997	2341.780						
4540	WELD	17,083.2	4540	0.0	41.4	48.27539667	-102.96545873	2340.865						
4550	WELD	17,124.6	4550	0.0	41.4	48.27539691	-102.96562743	2341.289						
4560	WELD	17,166.0	4560	0.0	41.4	48.27539770	-102.96579633	2340.375						
4570	WELD	17,207.3	4570	0.0	41.4	48.27539946	-102.96596486	2338.463						
4580	WELD	17,248.7	4580	0.0	41.4	48.27540094	-102.96613334	2336.810						
4590	WELD	17,290.1	4590	0.0	41.0	48.27540017	-102.96630238	2334.571						
4600	WELD	17,331.0	4600	0.0	10.7	48.27539934	-102.96647069	2333.676						
4610	WELD	17,341.8	4610	0.0	32.2	48.27539938	-102.96651456	2333.268						
11000026	WT CHANGE	17,373.9	4610	0.0	0.1	48.27540096	-102.96664506	2331.337			0.322	52000	0.72	
4620	WELD	17,374.0	4620	0.0	40.2	48.27540097	-102.96664537	2331.334						
4630	WELD	17,414.2	4630	0.0	42.2	48.27540248	-102.96680996	2329.791						
4640	WELD	17,456.4	4640	0.0	42.2	48.27540303	-102.96698192	2326.806						
4650	WELD	17,498.6	4650	0.0	42.2	48.27540309	-102.96715427	2327.561						
11000027	WT CHANGE	17,540.7	4650	0.0	0.1	48.27540167	-102.96732608	2327.332			0.188	52000	0.72	
4660	WELD	17,540.7	4660	0.0	37.3	48.27540167	-102.96732639	2327.331						
4670	WELD	17,578.0	4670	0.0	41.3	48.27540026	-102.96747867	2326.866						
4680	WELD	17,619.3	4680	0.0	41.4	48.27539870	-102.96764715	2326.081						
4690	WELD	17,660.7	4690	0.0	41.4	48.27539760	-102.96781582	2325.912						
4700	WELD	17,702.0	4700	0.0	41.3	48.27539731	-102.96798515	2325.308						
4710	WELD	17,743.3	4710	0.0	26.2	48.27539772	-102.96815380	2323.980						
4720	WELD	17,769.4	4720	0.0	41.4	48.27539833	-102.96826041	2322.908						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
12000001	Debris @ 4:00	17,769.7	4720	0.3	41.1	48.27539833	-102.96826162	2322.896						
4730	WELD	17,810.8	4730	0.0	41.2	48.27539826	-102.96842946	2320.398						
4740	WELD	17,852.0	4740	0.0	40.0	48.27539776	-102.96859781	2320.104						
4750	WELD	17,891.9	4750	0.0	41.4	48.27539755	-102.96876102	2322.523						
4760	WELD	17,933.3	4760	0.0	41.4	48.27539744	-102.96893049	2323.738						
4770	WELD	17,974.7	4770	0.0	41.4	48.27539787	-102.96909966	2323.144						
4780	WELD	18,016.0	4780	0.0	41.3	48.27539859	-102.96926910	2323.269						
4790	WELD	18,057.3	4790	0.0	41.3	48.27539904	-102.96943812	2323.163						
4800	WELD	18,098.6	4800	0.0	41.3	48.27539928	-102.96960734	2322.148						
4810	WELD	18,139.9	4810	0.0	41.3	48.27539987	-102.96977643	2321.046						
4820	WELD	18,181.1	4820	0.0	41.3	48.27540054	-102.96994585	2320.539						
4830	WELD	18,222.5	4830	0.0	41.4	48.27540076	-102.97011516	2320.500						
4840	WELD	18,263.8	4840	0.0	41.2	48.27540020	-102.97028429	2320.181						
4850	WELD	18,305.0	4850	0.0	14.9	48.27539821	-102.97045300	2319.630						
4860	WELD	18,319.9	4860	0.0	41.2	48.27539730	-102.97051381	2319.459						
11000028	WT CHANGE	18,361.0	4860	0.0	0.1	48.27539618	-102.97068193	2318.895			0.322	52000	0.72	
4870	WELD	18,361.1	4870	0.0	36.5	48.27539618	-102.97068232	2318.897						
4880	WELD	18,397.6	4880	0.0	42.3	48.27539759	-102.97083180	2318.346						
4890	WELD	18,439.9	4890	0.0	42.4	48.27539784	-102.97100431	2316.502						
4900	WELD	18,482.3	4900	0.0	42.3	48.27539357	-102.97117676	2316.296						
4910	WELD	18,524.5	4910	0.0	42.3	48.27539396	-102.97134966	2316.158						
4920	WELD	18,566.9	4920	0.0	42.3	48.27539810	-102.97152236	2316.431						
4930	WELD	18,609.1	4930	0.0	42.2	48.27539961	-102.97169508	2317.907						
11000029	WT CHANGE	18,651.3	4930	0.0	0.1	48.27540068	-102.97186727	2317.479			0.188	52000	0.72	
4940	WELD	18,651.4	4940	0.0	38.6	48.27540068	-102.97186763	2317.477						
4950	WELD	18,689.9	4950	0.0	41.4	48.27540084	-102.97202565	2317.312						
4960	WELD	18,731.3	4960	0.0	41.4	48.27540117	-102.97219508	2317.654						
4970	WELD	18,772.7	4970	0.0	41.4	48.27540122	-102.97236456	2318.452						
4980	WELD	18,814.0	4980	0.0	41.3	48.27540066	-102.97253396	2318.378						
4990	WELD	18,855.3	4990	0.0	41.4	48.27539946	-102.97270313	2318.118						
5000	WELD	18,896.7	5000	0.0	41.3	48.27539778	-102.97287229	2317.941						
5010	WELD	18,938.0	5010	0.0	41.3	48.27539580	-102.97304174	2317.868						
5020	WELD	18,979.3	5020	0.0	41.3	48.27539433	-102.97321114	2318.063						
5030	WELD	19,020.6	5030	0.0	41.0	48.27539255	-102.97338049	2318.581						
5040	WELD	19,061.6	5040	0.0	17.8	48.27539226	-102.97354849	2318.982						
11000030	WT CHANGE	19,079.2	5040	0.0	0.1	48.27539321	-102.97362073	2318.855			0.322	52000	0.72	
5050	WELD	19,079.3	5050	0.0	41.7	48.27539322	-102.97362109	2318.856						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
5060	WELD	19,121.1	5060	0.0	42.3	48.27539615	-102.97379207	2319.468							
5070	WELD	19,163.4	5070	0.0	42.3	48.27539654	-102.97396456	2316.554							
5080	WELD	19,205.6	5080	0.0	42.3	48.27539542	-102.97413677	2313.725							
5090	WELD	19,247.9	5090	0.0	42.3	48.27539618	-102.97430950	2314.790							
5100	WELD	19,290.2	5100	0.0	42.3	48.27539716	-102.97448226	2315.843							
5110	WELD	19,332.5	5110	0.0	42.3	48.27539757	-102.97465504	2315.711							
5120	WELD	19,374.8	5120	0.0	42.3	48.27539909	-102.97482774	2315.555							
5130	WELD	19,417.1	5130	0.0	40.9	48.27539919	-102.97500058	2317.269							
5140	WELD	19,458.0	5140	0.0	0.9	48.27540149	-102.97516784	2316.486							
10000017	Bend right - 30 deg., 1.5D	19,458.4	5140	0.1	0.9	48.27540174	-102.97516971	2316.471	0	12:00					
5150	WELD	19,458.9	5150	0.0	41.7	48.27540207	-102.97517153	2316.454							
5160	WELD	19,500.6	5160	0.0	42.2	48.27545578	-102.97532258	2314.578							
5170	WELD	19,542.9	5170	0.0	42.3	48.27550978	-102.97547534	2314.436							
5180	WELD	19,585.1	5180	0.0	42.3	48.27556554	-102.97562670	2314.940							
5190	WELD	19,627.5	5190	0.0	42.3	48.27562115	-102.97577826	2314.867							
5200	WELD	19,669.7	5200	0.0	42.2	48.27567538	-102.97593079	2314.405							
5210	WELD	19,711.9	5210	0.0	42.2	48.27572974	-102.97608313	2314.367							
5220	WELD	19,754.2	5220	0.0	42.2	48.27578464	-102.97623514	2314.724							
5230	WELD	19,796.4	5230	0.0	42.3	48.27583868	-102.97638803	2315.174							
5240	WELD	19,838.7	5240	0.0	42.3	48.27588999	-102.97654297	2315.201							
5250	WELD	19,881.0	5250	0.0	42.3	48.27594111	-102.97669779	2314.586							
5260	WELD	19,923.2	5260	0.0	42.3	48.27599579	-102.97685007	2313.995							
5270	WELD	19,965.5	5270	0.0	42.2	48.27604996	-102.97700291	2313.515							
5280	WELD	20,007.7	5280	0.0	42.3	48.27609857	-102.97715971	2313.416							
5290	WELD	20,050.1	5290	0.0	42.3	48.27614811	-102.97731600	2312.214							
5300	WELD	20,092.4	5300	0.0	42.3	48.27620589	-102.97746548	2310.870							
5310	WELD	20,134.7	5310	0.0	42.4	48.27626388	-102.97761483	2309.975							
5320	WELD	20,177.1	5320	0.0	42.3	48.27631831	-102.97776719	2309.777							
5330	WELD	20,219.4	5330	0.0	42.3	48.27637180	-102.97792007	2309.555							
5340	WELD	20,261.7	5340	0.0	42.3	48.27642668	-102.97807226	2309.144							
5350	WELD	20,304.0	5350	0.0	42.2	48.27648184	-102.97822406	2308.967							
5360	WELD	20,346.2	5360	0.0	42.3	48.27653450	-102.97837775	2309.135							
5370	WELD	20,388.5	5370	0.0	42.2	48.27658753	-102.97853142	2309.655							
5380	WELD	20,430.7	5380	0.0	42.2	48.27664176	-102.97868379	2309.924							
5390	WELD	20,472.9	5390	0.0	42.3	48.27669487	-102.97883727	2310.033							
5400	WELD	20,515.2	5400	0.0	42.2	48.27674708	-102.97899130	2311.610							
5410	WELD	20,557.4	5410	0.0	42.2	48.27680001	-102.97914455	2312.417							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
5420	WELD	20,599.6	5420	0.0	42.2	48.27685467	-102.97929654	2311.348						
5430	WELD	20,641.8	5430	0.0	41.7	48.27690995	-102.97944793	2311.114						
11000031	WT CHANGE	20,683.4	5430	0.0	0.1	48.27696517	-102.97959654	2312.064			0.188	52000	0.72	
5440	WELD	20,683.5	5440	0.0	34.6	48.27696530	-102.97959685	2312.065						
10000018	AGM 030, Sta. 201+54, 106th Ave NW -- Han #8043	20,710.9	5440	27.4	7.2	48.27700995	-102.97968651	2313.707						
5450	WELD	20,718.1	5450	0.0	35.7	48.27702278	-102.97970894	2313.911						
11000032	WT CHANGE	20,753.7	5450	0.0	0.1	48.27708705	-102.97981790	2313.741			0.322	52000	0.72	
5460	WELD	20,753.8	5460	0.0	42.2	48.27708719	-102.97981813	2313.745						
5470	WELD	20,796.0	5470	0.0	42.3	48.27716201	-102.97994881	2313.613						
5480	WELD	20,838.2	5480	0.0	42.3	48.27723582	-102.98008113	2313.740						
5490	WELD	20,880.5	5490	0.0	42.3	48.27731275	-102.98020951	2313.874						
5500	WELD	20,922.8	5500	0.0	42.3	48.27739150	-102.98033530	2314.173						
5510	WELD	20,965.1	5510	0.0	42.4	48.27746642	-102.98046623	2315.104						
5520	WELD	21,007.5	5520	0.0	42.4	48.27753825	-102.98060089	2316.093						
5530	WELD	21,049.9	5530	0.0	42.3	48.27760905	-102.98073677	2315.259						
11000033	WT CHANGE	21,092.1	5530	0.0	0.1	48.27767780	-102.98087408	2312.661			0.188	52000	0.72	
5540	WELD	21,092.2	5540	0.0	33.8	48.27767794	-102.98087437	2312.656						
5550	WELD	21,125.9	5550	0.0	41.5	48.27773236	-102.98098477	2312.498						
5560	WELD	21,167.4	5560	0.0	41.5	48.27779704	-102.98112330	2311.552						
5570	WELD	21,208.9	5570	0.0	41.4	48.27785985	-102.98126365	2310.408						
5580	WELD	21,250.3	5580	0.0	41.4	48.27792321	-102.98140346	2309.042						
5590	WELD	21,291.6	5590	0.0	43.1	48.27798682	-102.98154292	2307.402						
11000034	WT CHANGE	21,334.6	5590	0.0	0.1	48.27805314	-102.98168740	2306.029			0.322	52000	0.72	
5600	WELD	21,334.7	5600	0.0	42.1	48.27805330	-102.98168772	2306.028						
5610	WELD	21,376.8	5610	0.0	42.2	48.27812036	-102.98182781	2304.815						
5620	WELD	21,419.1	5620	0.0	42.3	48.27818521	-102.98196944	2302.908						
5630	WELD	21,461.4	5630	0.0	42.3	48.27824305	-102.98211836	2302.978						
5640	WELD	21,503.6	5640	0.0	42.2	48.27829959	-102.98226846	2302.220						
5650	WELD	21,545.9	5650	0.0	42.2	48.27835824	-102.98241653	2300.451						
5660	WELD	21,588.1	5660	0.0	42.3	48.27841727	-102.98256457	2298.837						
5670	WELD	21,630.4	5670	0.0	42.2	48.27847614	-102.98271276	2299.593						
11000035	WT CHANGE	21,672.5	5670	0.0	0.1	48.27853448	-102.98286050	2302.331			0.188	52000	0.72	
5680	WELD	21,672.6	5680	0.0	13.8	48.27853459	-102.98286078	2302.333						
5690	WELD	21,686.3	5690	0.0	41.3	48.27855410	-102.98290889	2302.932						
5700	WELD	21,727.6	5700	0.0	41.0	48.27861547	-102.98305070	2304.595						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
11000036	WT CHANGE	21,768.6	5700	0.0	0.1	48.27867951	-102.98318756	2304.322				0.322	52000	0.72	
5710	WELD	21,768.6	5710	0.0	1.2	48.27867960	-102.98318785	2304.321							
10000019	Bend left - 35 deg., 3D	21,769.2	5710	0.1	1.1	48.27868034	-102.98319000	2304.312	0	12:00					
5720	WELD	21,769.8	5720	0.0	39.8	48.27868058	-102.98319243	2304.289							
5730	WELD	21,809.6	5730	0.0	42.2	48.27868269	-102.98335602	2302.129							
5740	WELD	21,851.9	5740	0.0	42.2	48.27868641	-102.98352818	2303.833							
5750	WELD	21,894.1	5750	0.0	42.3	48.27868995	-102.98370022	2306.360							
5760	WELD	21,936.4	5760	0.0	42.3	48.27869260	-102.98387266	2308.363							
5770	WELD	21,978.6	5770	0.0	42.3	48.27869511	-102.98404504	2309.374							
5780	WELD	22,020.9	5780	0.0	42.3	48.27869754	-102.98421740	2310.699							
5790	WELD	22,063.2	5790	0.0	42.4	48.27869932	-102.98438974	2312.167							
5800	WELD	22,105.6	5800	0.0	42.3	48.27870313	-102.98456214	2313.499							
5810	WELD	22,147.9	5810	0.0	42.4	48.27870858	-102.98473446	2314.201							
5820	WELD	22,190.3	5820	0.0	42.3	48.27871548	-102.98490656	2314.988							
5830	WELD	22,232.6	5830	0.0	42.3	48.27872248	-102.98507842	2317.356							
5840	WELD	22,274.9	5840	0.0	42.3	48.27872475	-102.98525054	2319.896							
5850	WELD	22,317.2	5850	0.0	42.3	48.27872252	-102.98542272	2321.702							
5860	WELD	22,359.5	5860	0.0	42.2	48.27871875	-102.98559493	2323.110							
5870	WELD	22,401.7	5870	0.0	42.2	48.27871375	-102.98576714	2324.325							
5880	WELD	22,443.9	5880	0.0	42.2	48.27870861	-102.98593955	2324.996							
5890	WELD	22,486.2	5890	0.0	42.3	48.27870620	-102.98611191	2325.376							
5900	WELD	22,528.5	5900	0.0	42.3	48.27870492	-102.98628412	2326.558							
5910	WELD	22,570.7	5910	0.0	42.2	48.27870134	-102.98645628	2328.554							
5920	WELD	22,613.0	5920	0.0	42.2	48.27870163	-102.98662842	2330.466							
5930	WELD	22,655.2	5930	0.0	42.2	48.27870687	-102.98680092	2331.539							
5940	WELD	22,697.4	5940	0.0	42.2	48.27871074	-102.98697320	2333.575							
5950	WELD	22,739.6	5950	0.0	40.5	48.27871673	-102.98714546	2334.445							
11000037	WT CHANGE	22,780.0	5950	0.0	0.1	48.27872750	-102.98730933	2334.893				0.188	52000	0.72	
5960	WELD	22,780.1	5960	0.0	41.0	48.27872752	-102.98730965	2334.891							
5970	WELD	22,821.1	5970	0.0	41.3	48.27874215	-102.98747607	2333.496							
5980	WELD	22,862.4	5980	0.0	41.1	48.27875629	-102.98764348	2334.001							
5990	WELD	22,903.5	5990	0.0	41.0	48.27877034	-102.98781015	2335.207							
6000	WELD	22,944.6	6000	0.0	41.4	48.27878399	-102.98797627	2336.312							
6010	WELD	22,986.0	6010	0.0	41.1	48.27879793	-102.98814384	2337.118							
6020	WELD	23,027.1	6020	0.0	40.6	48.27881152	-102.98831045	2338.353							
6030	WELD	23,067.8	6030	0.0	40.7	48.27882486	-102.98847509	2339.288							
6040	WELD	23,108.4	6040	0.0	41.4	48.27883864	-102.98863946	2340.911							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
6050	WELD	23,149.8	6050	0.0	41.5	48.27885380	-102.98880659	2341.919							
6060	WELD	23,191.3	6060	0.0	41.4	48.27886987	-102.98897390	2342.082							
6070	WELD	23,232.6	6070	0.0	41.4	48.27888673	-102.98914108	2341.408							
6080	WELD	23,274.0	6080	0.0	41.3	48.27890357	-102.98930814	2342.129							
6090	WELD	23,315.3	6090	0.0	41.4	48.27891999	-102.98947532	2341.415							
6100	WELD	23,356.7	6100	0.0	41.3	48.27893536	-102.98964273	2339.128							
6110	WELD	23,398.0	6110	0.0	40.1	48.27894891	-102.98981045	2337.992							
6120	WELD	23,438.1	6120	0.0	0.6	48.27896266	-102.98997343	2337.465							
10000020	Bend left - 20 deg., 1.5D	23,438.4	6120	0.0	0.5	48.27896264	-102.98997454	2337.465	0	12:00					
6130	WELD	23,438.7	6130	0.0	29.8	48.27896263	-102.98997568	2337.466							
6140	WELD	23,468.5	6140	0.0	41.4	48.27894802	-102.99009595	2337.965							
6150	WELD	23,509.9	6150	0.0	36.4	48.27892749	-102.99026184	2340.297							
40000004	Metal Loss - EXTERNAL	23,542.3	6150	32.4	4.0	48.27891112	-102.99039207	2340.848	95	3:00	19%	0.43	0.39	1760	100%
6160	WELD	23,546.3	6160	0.0	40.9	48.27890911	-102.99040815	2340.911							
6170	WELD	23,587.2	6170	0.0	41.3	48.27888893	-102.99057182	2342.137							
6180	WELD	23,628.5	6180	0.0	41.1	48.27886832	-102.99073795	2342.975							
6190	WELD	23,669.6	6190	0.0	40.8	48.27884758	-102.99090302	2343.649							
6200	WELD	23,710.4	6200	0.0	41.3	48.27882736	-102.99106686	2344.096							
6210	WELD	23,751.7	6210	0.0	41.2	48.27880710	-102.99123315	2343.113							
6220	WELD	23,792.9	6220	0.0	41.3	48.27878653	-102.99139914	2341.475							
6230	WELD	23,834.2	6230	0.0	40.9	48.27876556	-102.99156513	2339.296							
6240	WELD	23,875.1	6240	0.0	40.7	48.27874491	-102.99172976	2338.669							
6250	WELD	23,915.8	6250	0.0	41.4	48.27872705	-102.99189382	2339.975							
6260	WELD	23,957.2	6260	0.0	41.4	48.27871250	-102.99206142	2339.729							
6270	WELD	23,998.6	6270	0.0	40.7	48.27870358	-102.99222984	2339.140							
6280	WELD	24,039.3	6280	0.0	41.0	48.27869930	-102.99239592	2337.871							
6290	WELD	24,080.4	6290	0.0	41.4	48.27869750	-102.99256308	2336.442							
6300	WELD	24,121.8	6300	0.0	41.4	48.27869728	-102.99273201	2335.331							
6310	WELD	24,163.2	6310	0.0	41.4	48.27869803	-102.99290104	2334.171							
6320	WELD	24,204.6	6320	0.0	41.4	48.27869937	-102.99307001	2333.350							
6330	WELD	24,246.1	6330	0.0	41.4	48.27870081	-102.99323898	2331.340							
6340	WELD	24,287.5	6340	0.0	41.4	48.27870225	-102.99340767	2329.753							
6350	WELD	24,328.8	6350	0.0	41.3	48.27870355	-102.99357666	2329.443							
6360	WELD	24,370.1	6360	0.0	41.4	48.27870430	-102.99374556	2328.887							
6370	WELD	24,411.5	6370	0.0	35.1	48.27870510	-102.99391452	2327.719							
6380	WELD	24,446.6	6380	0.0	6.1	48.27870568	-102.99405775	2325.615							
6390	WELD	24,452.7	6390	0.0	41.4	48.27870570	-102.99408235	2325.222							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
6400	WELD	24,494.0	6400	0.0	41.4	48.27870581	-102.99425098	2322.701							
6410	WELD	24,535.4	6410	0.0	41.3	48.27870530	-102.99442009	2322.061							
6420	WELD	24,576.7	6420	0.0	41.4	48.27870537	-102.99458871	2322.691							
6430	WELD	24,618.1	6430	0.0	41.3	48.27870525	-102.99475782	2322.353							
6440	WELD	24,659.4	6440	0.0	41.3	48.27870475	-102.99492677	2321.016							
6450	WELD	24,700.7	6450	0.0	41.3	48.27870430	-102.99509564	2319.011							
6460	WELD	24,742.0	6460	0.0	41.4	48.27870444	-102.99526458	2317.122							
6470	WELD	24,783.4	6470	0.0	41.4	48.27870541	-102.99543365	2315.587							
6480	WELD	24,824.7	6480	0.0	41.4	48.27870575	-102.99560257	2313.644							
6490	WELD	24,866.1	6490	0.0	35.9	48.27870553	-102.99577136	2311.412							
6500	WELD	24,902.0	6500	0.0	29.5	48.27870498	-102.99591784	2309.545							
6510	WELD	24,931.6	6510	0.0	40.3	48.27870453	-102.99603824	2308.501							
6520	WELD	24,971.9	6520	0.0	1.1	48.27870343	-102.99620303	2307.541							
10000021	Bend left - 32 deg., 3D	24,972.5	6520	0.1	1.0	48.27870316	-102.99620515	2307.535	0	12:00					
6530	WELD	24,973.0	6530	0.0	24.7	48.27870268	-102.99620719	2307.534							
6540	WELD	24,997.7	6540	0.0	41.4	48.27866897	-102.99629450	2307.648							
6550	WELD	25,039.2	6550	0.0	41.4	48.27861301	-102.99644097	2306.363							
6560	WELD	25,080.6	6560	0.0	41.4	48.27855666	-102.99658696	2303.500							
6570	WELD	25,122.1	6570	0.0	41.4	48.27849965	-102.99673253	2301.138							
6580	WELD	25,163.5	6580	0.0	41.3	48.27844261	-102.99687832	2299.613							
6590	WELD	25,204.7	6590	0.0	41.3	48.27838498	-102.99702326	2297.420							
6600	WELD	25,246.1	6600	0.0	41.3	48.27832731	-102.99716837	2295.187							
6610	WELD	25,287.4	6610	0.0	41.4	48.27826995	-102.99731376	2292.888							
6620	WELD	25,328.8	6620	0.0	40.6	48.27821319	-102.99745988	2291.259							
6630	WELD	25,369.3	6630	0.0	1.4	48.27815798	-102.99760374	2288.585							
10000022	Bend right - 40 deg., 3D	25,370.0	6630	0.1	1.3	48.27815755	-102.99760638	2288.550	0	12:00					
6640	WELD	25,370.7	6640	0.0	41.4	48.27815738	-102.99760908	2288.519							
6650	WELD	25,412.1	6650	0.0	41.3	48.27817577	-102.99777487	2287.171							
6660	WELD	25,453.3	6660	0.0	41.3	48.27819416	-102.99794224	2285.367							
6670	WELD	25,494.7	6670	0.0	41.4	48.27821220	-102.99810858	2281.723							
6680	WELD	25,536.1	6680	0.0	41.3	48.27823018	-102.99827466	2277.223							
6690	WELD	25,577.4	6690	0.0	41.4	48.27824740	-102.99844113	2273.716							
6700	WELD	25,618.8	6700	0.0	41.3	48.27826445	-102.99860821	2272.216							
6710	WELD	25,660.1	6710	0.0	21.9	48.27828036	-102.99877540	2270.551							
6720	WELD	25,682.0	6720	0.0	39.5	48.27828919	-102.99886402	2270.365							
6730	WELD	25,721.4	6730	0.0	41.4	48.27830518	-102.99902352	2270.640							
6740	WELD	25,762.8	6740	0.0	41.3	48.27832215	-102.99919043	2268.853							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
6750	WELD	25,804.1	6750	0.0	41.3	48.27833964	-102.99935736	2266.508							
6760	WELD	25,845.4	6760	0.0	41.3	48.27835730	-102.99952420	2264.132							
6770	WELD	25,886.7	6770	0.0	41.4	48.27837482	-102.99969119	2264.099							
6780	WELD	25,928.1	6780	0.0	41.4	48.27839231	-102.99985823	2264.700							
6790	WELD	25,969.5	6790	0.0	41.5	48.27841012	-103.00002492	2262.521							
6800	WELD	26,011.0	6800	0.0	41.4	48.27842842	-103.00019139	2259.198							
6810	WELD	26,052.4	6810	0.0	39.1	48.27844648	-103.00035788	2256.361							
6820	WELD	26,091.5	6820	0.0	0.7	48.27846230	-103.00051535	2254.326							
10000023	Bend right - 20 deg., 3D	26,091.8	6820	0.1	0.6	48.27846255	-103.00051677	2254.320	0	12:00					
6830	WELD	26,092.2	6830	0.0	23.9	48.27846290	-103.00051813	2254.321							
6840	WELD	26,116.1	6840	0.0	41.3	48.27849500	-103.00060341	2255.017							
10000024	AGM 040, Sta. 255+14, Two track -- Survey Point	26,144.8	6840	28.7	12.6	48.27853342	-103.00070597	2255.736							
6850	WELD	26,157.4	6850	0.0	41.4	48.27855026	-103.00075084	2255.820							
6860	WELD	26,198.7	6860	0.0	41.2	48.27860468	-103.00089891	2257.431							
6870	WELD	26,239.9	6870	0.0	34.5	48.27865881	-103.00104694	2258.229							
6880	WELD	26,274.4	6880	0.0	1.1	48.27870516	-103.00116996	2259.864							
10000025	Bend left - 35 deg., 1.5D	26,275.0	6880	0.1	1.0	48.27870553	-103.00117206	2259.912	0	12:00					
6890	WELD	26,275.5	6890	0.0	41.2	48.27870583	-103.00117407	2259.959							
6900	WELD	26,316.7	6900	0.0	41.2	48.27870517	-103.00134280	2263.485							
6910	WELD	26,357.9	6910	0.0	41.2	48.27870573	-103.00151153	2265.647							
6920	WELD	26,399.1	6920	0.0	41.3	48.27870651	-103.00168039	2267.297							
6930	WELD	26,440.4	6930	0.0	41.4	48.27870670	-103.00184913	2266.367							
6940	WELD	26,481.8	6940	0.0	41.4	48.27870649	-103.00201816	2265.298							
6950	WELD	26,523.1	6950	0.0	41.4	48.27870630	-103.00218726	2264.426							
6960	WELD	26,564.5	6960	0.0	41.3	48.27870697	-103.00235634	2264.287							
6970	WELD	26,605.8	6970	0.0	41.3	48.27870732	-103.00252529	2264.380							
6980	WELD	26,647.2	6980	0.0	41.3	48.27870739	-103.00269409	2263.494							
6990	WELD	26,688.4	6990	0.0	41.3	48.27870740	-103.00286258	2262.805							
7000	WELD	26,729.7	7000	0.0	41.3	48.27870771	-103.00303140	2261.974							
7010	WELD	26,771.0	7010	0.0	41.3	48.27870843	-103.00320040	2260.822							
7020	WELD	26,812.3	7020	0.0	41.3	48.27870925	-103.00336924	2259.545							
7030	WELD	26,853.6	7030	0.0	41.3	48.27870975	-103.00353803	2257.599							
7040	WELD	26,894.9	7040	0.0	41.4	48.27870891	-103.00370691	2256.613							
7050	WELD	26,936.3	7050	0.0	41.4	48.27870818	-103.00387589	2255.192							
7060	WELD	26,977.7	7060	0.0	41.4	48.27870741	-103.00404478	2253.557							
7070	WELD	27,019.0	7070	0.0	41.5	48.27870699	-103.00421350	2253.063							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
7080	WELD	27,060.5	7080	0.0	41.4	48.27870750	-103.00438262	2251.972						
7090	WELD	27,102.0	7090	0.0	41.4	48.27870888	-103.00455147	2250.833						
7100	WELD	27,143.4	7100	0.0	41.4	48.27871004	-103.00472043	2249.066						
7110	WELD	27,184.8	7110	0.0	41.4	48.27871128	-103.00488938	2248.212						
7120	WELD	27,226.2	7120	0.0	41.4	48.27871233	-103.00505819	2246.297						
7130	WELD	27,267.5	7130	0.0	41.3	48.27871200	-103.00522702	2244.227						
7140	WELD	27,308.8	7140	0.0	41.4	48.27871169	-103.00539546	2241.996						
7150	WELD	27,350.2	7150	0.0	41.4	48.27871186	-103.00556424	2239.461						
7160	WELD	27,391.6	7160	0.0	38.6	48.27871110	-103.00573317	2238.851						
7170	WELD	27,430.1	7170	0.0	41.4	48.27870974	-103.00589090	2238.720						
7180	WELD	27,471.5	7180	0.0	41.4	48.27870738	-103.00605980	2238.238						
7190	WELD	27,512.9	7190	0.0	41.4	48.27869832	-103.00622783	2236.713						
7200	WELD	27,554.2	7200	0.0	41.3	48.27868393	-103.00639556	2235.674						
7210	WELD	27,595.5	7210	0.0	41.3	48.27866906	-103.00656306	2235.242						
7220	WELD	27,636.8	7220	0.0	41.3	48.27865340	-103.00673041	2236.336						
7230	WELD	27,678.1	7230	0.0	41.3	48.27863775	-103.00689750	2237.655						
7240	WELD	27,719.4	7240	0.0	41.3	48.27862221	-103.00706437	2238.780						
7250	WELD	27,760.7	7250	0.0	41.4	48.27860624	-103.00723115	2241.420						
7260	WELD	27,802.0	7260	0.0	41.4	48.27858972	-103.00739803	2243.164						
7270	WELD	27,843.5	7270	0.0	41.4	48.27857205	-103.00756467	2245.138						
7280	WELD	27,884.9	7280	0.0	41.4	48.27855463	-103.00773122	2246.938						
7290	WELD	27,926.3	7290	0.0	41.4	48.27853760	-103.00789801	2247.647						
7300	WELD	27,967.8	7300	0.0	41.4	48.27852214	-103.00806528	2248.441						
7310	WELD	28,009.2	7310	0.0	41.4	48.27850689	-103.00823247	2250.084						
7320	WELD	28,050.6	7320	0.0	41.4	48.27849367	-103.00840001	2251.868						
7330	WELD	28,092.1	7330	0.0	41.4	48.27848134	-103.00856797	2251.511						
7340	WELD	28,133.5	7340	0.0	41.3	48.27846867	-103.00873570	2249.488						
7350	WELD	28,174.8	7350	0.0	41.3	48.27845581	-103.00890291	2246.062						
7360	WELD	28,216.2	7360	0.0	41.4	48.27844310	-103.00907044	2243.093						
7370	WELD	28,257.6	7370	0.0	41.3	48.27843046	-103.00923802	2240.190						
7380	WELD	28,298.9	7380	0.0	41.3	48.27841790	-103.00940593	2240.170						
7390	WELD	28,340.1	7390	0.0	41.3	48.27840591	-103.00957367	2240.965						
7400	WELD	28,381.4	7400	0.0	41.4	48.27839343	-103.00974153	2241.663						
7410	WELD	28,422.8	7410	0.0	36.3	48.27838113	-103.00990970	2241.759						
7420	WELD	28,459.1	7420	0.0	40.9	48.27837005	-103.01005711	2241.231						
7430	WELD	28,500.1	7430	0.0	41.5	48.27835737	-103.01022302	2242.263						
7440	WELD	28,541.6	7440	0.0	41.5	48.27834506	-103.01039106	2241.588						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
7450	WELD	28,583.0	7450	0.0	41.5	48.27833338	-103.01055913	2240.516						
7460	WELD	28,624.5	7460	0.0	41.4	48.27832216	-103.01072717	2239.775						
7470	WELD	28,665.9	7470	0.0	41.4	48.27831075	-103.01089533	2239.460						
7480	WELD	28,707.4	7480	0.0	41.4	48.27829871	-103.01106308	2238.074						
7490	WELD	28,748.8	7490	0.0	41.4	48.27828571	-103.01123074	2236.988						
7500	WELD	28,790.2	7500	0.0	41.5	48.27827244	-103.01139831	2236.583						
7510	WELD	28,831.7	7510	0.0	41.4	48.27825961	-103.01156598	2235.245						
7520	WELD	28,873.1	7520	0.0	41.4	48.27824728	-103.01173373	2233.784						
7530	WELD	28,914.6	7530	0.0	41.3	48.27823501	-103.01190142	2232.516						
7540	WELD	28,955.9	7540	0.0	41.3	48.27822312	-103.01206924	2230.885						
7550	WELD	28,997.2	7550	0.0	41.4	48.27821131	-103.01223696	2229.125						
7560	WELD	29,038.6	7560	0.0	41.4	48.27819965	-103.01240501	2227.639						
7570	WELD	29,080.0	7570	0.0	41.3	48.27818829	-103.01257314	2226.194						
7580	WELD	29,121.3	7580	0.0	41.2	48.27817627	-103.01274114	2224.185						
7590	WELD	29,162.5	7590	0.0	41.3	48.27816364	-103.01290853	2221.805						
7600	WELD	29,203.8	7600	0.0	41.3	48.27815049	-103.01307622	2219.261						
7610	WELD	29,245.1	7610	0.0	41.3	48.27813684	-103.01324364	2217.606						
7620	WELD	29,286.4	7620	0.0	41.4	48.27812322	-103.01341093	2214.885						
7630	WELD	29,327.7	7630	0.0	41.4	48.27811050	-103.01357858	2212.783						
7640	WELD	29,369.1	7640	0.0	41.4	48.27809853	-103.01374630	2210.553						
7650	WELD	29,410.5	7650	0.0	41.4	48.27808737	-103.01391410	2208.272						
7660	WELD	29,451.9	7660	0.0	41.5	48.27807708	-103.01408234	2206.387						
7670	WELD	29,493.4	7670	0.0	41.4	48.27806644	-103.01425049	2204.582						
7680	WELD	29,534.7	7680	0.0	41.5	48.27805496	-103.01441858	2203.722						
7690	WELD	29,576.2	7690	0.0	41.4	48.27804322	-103.01458662	2202.921						
7700	WELD	29,617.6	7700	0.0	41.3	48.27803098	-103.01475462	2201.854						
7710	WELD	29,658.9	7710	0.0	41.4	48.27801768	-103.01492245	2200.979						
7720	WELD	29,700.2	7720	0.0	41.4	48.27800503	-103.01509013	2198.367						
7730	WELD	29,741.6	7730	0.0	41.3	48.27799267	-103.01525786	2196.278						
7740	WELD	29,782.9	7740	0.0	41.4	48.27798062	-103.01542571	2194.701						
7750	WELD	29,824.3	7750	0.0	41.4	48.27796885	-103.01559390	2193.662						
7760	WELD	29,865.6	7760	0.0	41.4	48.27795722	-103.01576234	2193.314						
7770	WELD	29,907.0	7770	0.0	41.3	48.27794572	-103.01593042	2192.511						
7780	WELD	29,948.4	7780	0.0	41.3	48.27793328	-103.01609825	2190.378						
7790	WELD	29,989.7	7790	0.0	41.3	48.27792073	-103.01626591	2187.910						
7800	WELD	30,031.0	7800	0.0	41.4	48.27790869	-103.01643384	2186.250						
7810	WELD	30,072.4	7810	0.0	41.4	48.27789657	-103.01660161	2184.167						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
7820	WELD	30,113.8	7820	0.0	41.4	48.27788453	-103.01676956	2183.340						
7830	WELD	30,155.2	7830	0.0	41.4	48.27787272	-103.01693744	2182.425						
7840	WELD	30,196.7	7840	0.0	41.3	48.27786036	-103.01710544	2181.202						
7850	WELD	30,238.0	7850	0.0	41.4	48.27784758	-103.01727300	2179.393						
7860	WELD	30,279.4	7860	0.0	41.4	48.27783500	-103.01744081	2177.720						
7870	WELD	30,320.8	7870	0.0	41.3	48.27782246	-103.01760876	2176.643						
7880	WELD	30,362.1	7880	0.0	41.3	48.27780983	-103.01777657	2174.851						
7890	WELD	30,403.4	7890	0.0	41.3	48.27779688	-103.01794449	2173.520						
7900	WELD	30,444.7	7900	0.0	41.3	48.27778398	-103.01811234	2172.812						
7910	WELD	30,486.0	7910	0.0	41.4	48.27777186	-103.01828043	2172.351						
7920	WELD	30,527.4	7920	0.0	41.4	48.27776076	-103.01844860	2171.570						
7930	WELD	30,568.8	7930	0.0	41.4	48.27774958	-103.01861692	2170.423						
7940	WELD	30,610.2	7940	0.0	41.4	48.27773800	-103.01878482	2169.875						
7950	WELD	30,651.6	7950	0.0	41.4	48.27772669	-103.01895282	2171.635						
7960	WELD	30,693.0	7960	0.0	41.4	48.27771499	-103.01911982	2176.286						
7970	WELD	30,734.4	7970	0.0	41.4	48.27770239	-103.01928723	2179.708						
7980	WELD	30,775.7	7980	0.0	41.4	48.27768911	-103.01945517	2179.940						
7990	WELD	30,817.1	7990	0.0	41.4	48.27767520	-103.01962286	2179.122						
8000	WELD	30,858.5	8000	0.0	41.3	48.27766141	-103.01979068	2179.277						
8010	WELD	30,899.8	8010	0.0	41.3	48.27764885	-103.01995855	2179.493						
8020	WELD	30,941.1	8020	0.0	41.3	48.27763676	-103.02012656	2179.744						
8030	WELD	30,982.4	8030	0.0	41.3	48.27762462	-103.02029458	2179.667						
8040	WELD	31,023.8	8040	0.0	41.3	48.27761267	-103.02046266	2179.341						
8050	WELD	31,065.1	8050	0.0	41.3	48.27760027	-103.02063040	2178.948						
8060	WELD	31,106.4	8060	0.0	41.4	48.27758771	-103.02079840	2178.945						
8070	WELD	31,147.8	8070	0.0	41.4	48.27757517	-103.02096618	2178.565						
8080	WELD	31,189.2	8080	0.0	41.4	48.27756299	-103.02113437	2178.885						
8090	WELD	31,230.6	8090	0.0	41.5	48.27755134	-103.02130268	2179.515						
8100	WELD	31,272.1	8100	0.0	41.5	48.27753990	-103.02147072	2180.287						
8110	WELD	31,313.6	8110	0.0	41.5	48.27752831	-103.02163896	2181.453						
8120	WELD	31,355.0	8120	0.0	41.5	48.27751641	-103.02180653	2184.119						
8130	WELD	31,396.5	8130	0.0	41.4	48.27750336	-103.02197432	2186.297						
8140	WELD	31,438.0	8140	0.0	41.4	48.27749079	-103.02214185	2187.598						
8150	WELD	31,479.4	8150	0.0	41.4	48.27748129	-103.02231038	2187.794						
10000026	AGM 050, Sta. 308+04, ROW -- Han #8043	31,489.0	8150	9.6	31.8	48.27747978	-103.02234950	2187.754						
8160	WELD	31,520.8	8160	0.0	41.3	48.27747978	-103.02247969	2187.346						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
8170	WELD	31,562.1	8170	0.0	41.4	48.27748089	-103.02264867	2187.618						
8180	WELD	31,603.4	8180	0.0	41.4	48.27748124	-103.02281782	2187.579						
8190	WELD	31,644.8	8190	0.0	41.3	48.27748002	-103.02298714	2187.608						
8200	WELD	31,686.2	8200	0.0	41.4	48.27747803	-103.02315641	2187.551						
8210	WELD	31,727.6	8210	0.0	41.4	48.27747726	-103.02332582	2188.780						
8220	WELD	31,769.0	8220	0.0	41.4	48.27747774	-103.02349514	2189.900						
8230	WELD	31,810.4	8230	0.0	41.3	48.27747868	-103.02366427	2191.757						
8240	WELD	31,851.7	8240	0.0	41.3	48.27748017	-103.02383346	2193.536						
8250	WELD	31,893.0	8250	0.0	41.4	48.27748110	-103.02400230	2195.699						
8260	WELD	31,934.4	8260	0.0	41.4	48.27748150	-103.02417109	2198.995						
8270	WELD	31,975.7	8270	0.0	41.4	48.27748146	-103.02434016	2200.906						
8280	WELD	32,017.1	8280	0.0	41.4	48.27748216	-103.02450924	2202.823						
8290	WELD	32,058.5	8290	0.0	41.4	48.27748146	-103.02467824	2204.457						
8300	WELD	32,099.9	8300	0.0	41.4	48.27748075	-103.02484764	2205.047						
8310	WELD	32,141.3	8310	0.0	41.3	48.27748113	-103.02501660	2205.806						
8320	WELD	32,182.6	8320	0.0	41.4	48.27748204	-103.02518567	2205.845						
8330	WELD	32,224.0	8330	0.0	41.4	48.27748284	-103.02535498	2205.769						
8340	WELD	32,265.4	8340	0.0	41.3	48.27748303	-103.02552409	2205.214						
8350	WELD	32,306.7	8350	0.0	41.3	48.27748296	-103.02569317	2205.068						
8360	WELD	32,348.0	8360	0.0	41.4	48.27748282	-103.02586233	2205.273						
8370	WELD	32,389.4	8370	0.0	41.4	48.27748254	-103.02603121	2208.044						
8380	WELD	32,430.8	8380	0.0	41.4	48.27748289	-103.02620014	2210.306						
8390	WELD	32,472.2	8390	0.0	41.4	48.27748336	-103.02636947	2210.248						
8400	WELD	32,513.5	8400	0.0	41.4	48.27748366	-103.02653860	2208.528						
8410	WELD	32,554.9	8410	0.0	41.3	48.27748376	-103.02670737	2205.397						
8420	WELD	32,596.2	8420	0.0	41.4	48.27748431	-103.02687616	2203.105						
8430	WELD	32,637.6	8430	0.0	41.4	48.27748503	-103.02704518	2202.409						
8440	WELD	32,679.0	8440	0.0	26.6	48.27748578	-103.02721413	2201.735						
8450	WELD	32,705.5	8450	0.0	39.0	48.27748538	-103.02732278	2200.937						
8460	WELD	32,744.5	8460	0.0	41.5	48.27748357	-103.02748191	2200.673						
8470	WELD	32,786.0	8470	0.0	41.4	48.27748293	-103.02765091	2201.021						
8480	WELD	32,827.4	8480	0.0	41.5	48.27748346	-103.02782002	2201.954						
8490	WELD	32,868.9	8490	0.0	41.5	48.27748448	-103.02798917	2202.125						
8500	WELD	32,910.4	8500	0.0	41.4	48.27748567	-103.02815856	2200.674						
8510	WELD	32,951.7	8510	0.0	41.4	48.27748634	-103.02832772	2198.343						
8520	WELD	32,993.1	8520	0.0	41.4	48.27748710	-103.02849688	2196.285						
8530	WELD	33,034.5	8530	0.0	41.3	48.27748783	-103.02866611	2196.340						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
8540	WELD	33,075.9	8540	0.0	41.4	48.27748803	-103.02883517	2196.536						
8550	WELD	33,117.3	8550	0.0	41.4	48.27748818	-103.02900448	2196.825						
8560	WELD	33,158.6	8560	0.0	41.4	48.27748889	-103.02917328	2198.931						
8570	WELD	33,200.0	8570	0.0	41.4	48.27748899	-103.02934073	2204.826						
8580	WELD	33,241.4	8580	0.0	41.3	48.27748809	-103.02950955	2206.254						
8590	WELD	33,282.7	8590	0.0	41.3	48.27748693	-103.02967836	2203.489						
8600	WELD	33,324.0	8600	0.0	41.4	48.27748657	-103.02984778	2202.755						
8610	WELD	33,365.5	8610	0.0	41.3	48.27748754	-103.03001622	2199.476						
8620	WELD	33,406.8	8620	0.0	41.4	48.27748977	-103.03018411	2195.132						
8630	WELD	33,448.1	8630	0.0	41.5	48.27749079	-103.03035325	2194.893						
8640	WELD	33,489.6	8640	0.0	41.5	48.27749086	-103.03052256	2195.026						
8650	WELD	33,531.1	8650	0.0	41.4	48.27749082	-103.03069171	2195.209						
8660	WELD	33,572.5	8660	0.0	41.5	48.27749079	-103.03086092	2195.451						
8670	WELD	33,614.0	8670	0.0	41.5	48.27749219	-103.03103025	2195.660						
8680	WELD	33,655.4	8680	0.0	41.4	48.27749403	-103.03119945	2196.740						
8690	WELD	33,696.9	8690	0.0	41.4	48.27749561	-103.03136851	2197.980						
8700	WELD	33,738.3	8700	0.0	41.4	48.27749634	-103.03153786	2197.625						
8710	WELD	33,779.6	8710	0.0	41.3	48.27749665	-103.03170699	2197.811						
8720	WELD	33,820.9	8720	0.0	41.3	48.27749644	-103.03187609	2198.411						
8730	WELD	33,862.2	8730	0.0	41.4	48.27749675	-103.03204543	2198.298						
8740	WELD	33,903.6	8740	0.0	41.4	48.27749714	-103.03221481	2197.301						
8750	WELD	33,945.0	8750	0.0	41.4	48.27749699	-103.03238403	2196.780						
8760	WELD	33,986.3	8760	0.0	41.3	48.27749614	-103.03255321	2194.609						
8770	WELD	34,027.7	8770	0.0	41.3	48.27749479	-103.03272239	2192.829						
8780	WELD	34,069.0	8780	0.0	41.3	48.27749350	-103.03289154	2191.315						
8790	WELD	34,110.3	8790	0.0	41.4	48.27749251	-103.03306087	2189.534						
8800	WELD	34,151.6	8800	0.0	41.4	48.27749142	-103.03323014	2188.089						
8810	WELD	34,193.1	8810	0.0	41.4	48.27749082	-103.03339933	2186.243						
8820	WELD	34,234.5	8820	0.0	41.4	48.27749027	-103.03356824	2184.113						
8830	WELD	34,275.9	8830	0.0	41.5	48.27748942	-103.03373740	2182.131						
8840	WELD	34,317.4	8840	0.0	41.5	48.27748885	-103.03390645	2179.749						
8850	WELD	34,358.9	8850	0.0	41.5	48.27748887	-103.03407562	2177.487						
8860	WELD	34,400.4	8860	0.0	41.5	48.27748828	-103.03424484	2175.705						
8870	WELD	34,441.9	8870	0.0	41.5	48.27748781	-103.03441409	2174.047						
8880	WELD	34,483.4	8880	0.0	41.4	48.27748787	-103.03458351	2172.385						
8890	WELD	34,524.7	8890	0.0	41.4	48.27748804	-103.03475274	2170.634						
8900	WELD	34,566.1	8900	0.0	41.4	48.27748805	-103.03492218	2169.431						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
8910	WELD	34,607.5	8910	0.0	41.4	48.27748864	-103.03509158	2168.908						
8920	WELD	34,649.0	8920	0.0	41.4	48.27748938	-103.03526111	2168.980						
8930	WELD	34,690.3	8930	0.0	41.4	48.27749119	-103.03543050	2168.756						
8940	WELD	34,731.7	8940	0.0	41.4	48.27749309	-103.03559962	2167.511						
8950	WELD	34,773.1	8950	0.0	41.4	48.27749459	-103.03576888	2165.533						
8960	WELD	34,814.5	8960	0.0	41.3	48.27749463	-103.03593708	2161.002						
8970	WELD	34,855.8	8970	0.0	41.3	48.27749383	-103.03610509	2155.644						
8980	WELD	34,897.1	8980	0.0	41.3	48.27749349	-103.03627340	2151.002						
8990	WELD	34,938.5	8990	0.0	41.3	48.27749343	-103.03644223	2147.839						
9000	WELD	34,979.8	9000	0.0	41.4	48.27749321	-103.03661101	2144.530						
9010	WELD	35,021.1	9010	0.0	41.4	48.27749353	-103.03677979	2141.757						
9020	WELD	35,062.5	9020	0.0	41.4	48.27749440	-103.03694903	2140.416						
9030	WELD	35,104.0	9030	0.0	41.5	48.27749632	-103.03711813	2138.217						
9040	WELD	35,145.5	9040	0.0	41.5	48.27749634	-103.03728705	2135.639						
9050	WELD	35,187.0	9050	0.0	41.4	48.27749641	-103.03745623	2132.989						
9060	WELD	35,228.3	9060	0.0	41.4	48.27749685	-103.03762499	2129.532						
9070	WELD	35,269.7	9070	0.0	41.3	48.27749682	-103.03779404	2128.567						
9080	WELD	35,311.1	9080	0.0	41.4	48.27749694	-103.03796336	2127.348						
9090	WELD	35,352.4	9090	0.0	41.4	48.27749705	-103.03813241	2124.668						
9100	WELD	35,393.9	9100	0.0	41.4	48.27749666	-103.03830154	2121.947						
9110	WELD	35,435.2	9110	0.0	41.4	48.27749697	-103.03847035	2119.011						
9120	WELD	35,476.6	9120	0.0	41.3	48.27749668	-103.03863941	2116.849						
9130	WELD	35,517.9	9130	0.0	41.3	48.27749630	-103.03880849	2114.608						
9140	WELD	35,559.3	9140	0.0	41.3	48.27749628	-103.03897755	2112.266						
9150	WELD	35,600.6	9150	0.0	41.4	48.27749692	-103.03914667	2110.111						
9160	WELD	35,642.0	9160	0.0	41.4	48.27749749	-103.03931579	2108.232						
9170	WELD	35,683.4	9170	0.0	39.3	48.27749757	-103.03948501	2106.437						
9180	WELD	35,722.7	9180	0.0	7.1	48.27749661	-103.03964537	2104.455						
11000038	WT CHANGE	35,729.7	9180	0.0	0.1	48.27749647	-103.03967386	2104.039			0.322	52000	0.72	
9190	WELD	35,729.8	9190	0.0	42.2	48.27749647	-103.03967414	2104.036						
9200	WELD	35,772.0	9200	0.0	42.3	48.27749630	-103.03984624	2100.703						
9210	WELD	35,814.4	9210	0.0	42.3	48.27749580	-103.04001781	2095.892						
9220	WELD	35,856.7	9220	0.0	42.2	48.27749367	-103.04018981	2092.389						
9230	WELD	35,898.9	9230	0.0	42.2	48.27749004	-103.04036191	2089.904						
9240	WELD	35,941.1	9240	0.0	42.2	48.27748684	-103.04053406	2088.056						
9250	WELD	35,983.3	9250	0.0	42.2	48.27748615	-103.04070676	2086.743						
9260	WELD	36,025.6	9260	0.0	42.2	48.27748816	-103.04087923	2085.823						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
9270	WELD	36,067.8	9270	0.0	41.4	48.27749063	-103.04105173	2084.977							
9280	WELD	36,109.2	9280	0.0	41.5	48.27749250	-103.04122084	2083.963							
11000039	WT CHANGE	36,150.6	9280	0.0	0.1	48.27749947	-103.04138947	2082.866				0.188	52000	0.72	
9290	WELD	36,150.7	9290	0.0	23.0	48.27749949	-103.04138987	2082.860							
9300	WELD	36,173.7	9300	0.0	40.9	48.27750496	-103.04148392	2082.153							
9310	WELD	36,214.6	9310	0.0	41.3	48.27751769	-103.04165022	2081.605							
9320	WELD	36,256.0	9320	0.0	41.4	48.27753035	-103.04181847	2080.854							
9330	WELD	36,297.4	9330	0.0	41.4	48.27754119	-103.04198701	2079.929							
9340	WELD	36,338.7	9340	0.0	41.4	48.27755211	-103.04215536	2079.468							
9350	WELD	36,380.1	9350	0.0	49.6	48.27756376	-103.04232359	2079.262							
9360	WELD	36,429.7	9360	0.0	49.7	48.27756916	-103.04252494	2077.385							
9370	WELD	36,479.4	9370	0.0	49.6	48.27755745	-103.04272704	2075.941							
9380	WELD	36,529.0	9380	0.0	49.8	48.27754344	-103.04292823	2074.583							
20000005	Mill Anomaly	36,554.6	9380	25.6	24.2	48.27753546	-103.04303189	2073.584	63	2:00	-	0.42	0.33		
9390	WELD	36,578.8	9390	0.0	43.9	48.27752727	-103.04312942	2072.455							
11000040	WT CHANGE	36,622.6	9390	0.0	0.1	48.27751163	-103.04330630	2070.914				0.322	52000	0.72	
9400	WELD	36,622.7	9400	0.0	42.1	48.27751160	-103.04330666	2070.910							
9410	WELD	36,664.9	9410	0.0	42.2	48.27749784	-103.04347789	2068.770							
9420	WELD	36,707.1	9420	0.0	42.2	48.27749133	-103.04364997	2066.792							
10000027	AGM 060, Sta. 359+86, CR 19 -- Han #8836	36,708.7	9420	1.7	40.5	48.27749126	-103.04365681	2066.700							
9430	WELD	36,749.3	9430	0.0	42.2	48.27749132	-103.04382228	2064.188							
9440	WELD	36,791.5	9440	0.0	42.3	48.27749359	-103.04399456	2061.528							
9450	WELD	36,833.8	9450	0.0	42.2	48.27749655	-103.04416687	2058.917							
9460	WELD	36,876.0	9460	0.0	41.0	48.27749930	-103.04433942	2057.098							
11000041	WT CHANGE	36,916.9	9460	0.0	0.1	48.27750269	-103.04450680	2058.344				0.188	52000	0.72	
9470	WELD	36,917.0	9470	0.0	47.5	48.27750270	-103.04450712	2058.348							
9480	WELD	36,964.5	9480	0.0	12.1	48.27750786	-103.04470139	2059.918							
9490	WELD	36,976.7	9490	0.0	5.6	48.27750830	-103.04475108	2059.914							
9500	WELD	36,982.3	9500	0.0	49.0	48.27750825	-103.04477400	2059.850							
9510	WELD	37,031.3	9510	0.0	49.4	48.27750611	-103.04497485	2058.674							
9520	WELD	37,080.7	9520	0.0	49.4	48.27750624	-103.04517688	2056.948							
9530	WELD	37,130.1	9530	0.0	49.3	48.27750624	-103.04537871	2055.555							
9540	WELD	37,179.4	9540	0.0	49.5	48.27750605	-103.04558016	2054.314							
9550	WELD	37,228.9	9550	0.0	49.8	48.27750520	-103.04578224	2053.596							
9560	WELD	37,278.7	9560	0.0	49.0	48.27750615	-103.04598455	2053.463							
9570	WELD	37,327.7	9570	0.0	36.2	48.27750764	-103.04618453	2053.609							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
9580	WELD	37,363.9	9580	0.0	2.2	48.27751137	-103.04633239	2053.428							
10000028	Bend right - 60 deg., 3D	37,365.0	9580	0.1	2.1	48.27751240	-103.04633625	2053.431	0	12:00					
9590	WELD	37,366.1	9590	0.0	48.4	48.27751446	-103.04633918	2053.440							
9600	WELD	37,414.5	9600	0.0	49.1	48.27763002	-103.04643358	2053.450							
9610	WELD	37,463.6	9610	0.0	49.3	48.27774862	-103.04652636	2052.604							
9620	WELD	37,512.9	9620	0.0	29.2	48.27786840	-103.04661714	2051.583							
9630	WELD	37,542.1	9630	0.0	49.3	48.27793916	-103.04667090	2051.090							
11000042	WT CHANGE	37,591.3	9630	0.0	0.1	48.27805980	-103.04675769	2050.897				0.322	52000	0.72	
9640	WELD	37,591.4	9640	0.0	2.2	48.27805998	-103.04675785	2050.897							
10000029	Bend left - 60 deg., 3D	37,592.5	9640	0.1	2.1	48.27806185	-103.04676117	2050.824	0	12:00					
9650	WELD	37,593.5	9650	0.0	28.7	48.27806253	-103.04676530	2050.675							
9660	WELD	37,622.2	9660	0.0	45.1	48.27806180	-103.04688008	2045.160							
9670	WELD	37,667.3	9670	0.0	45.1	48.27806020	-103.04706234	2038.516							
9680	WELD	37,712.4	9680	0.0	44.0	48.27805683	-103.04724598	2034.181							
9690	WELD	37,756.4	9690	0.0	45.1	48.27806515	-103.04742540	2031.238							
9700	WELD	37,801.5	9700	0.0	45.1	48.27807312	-103.04760937	2030.571							
9710	WELD	37,846.6	9710	0.0	45.1	48.27806766	-103.04779364	2030.591							
9720	WELD	37,891.7	9720	0.0	44.7	48.27805983	-103.04797778	2030.495							
9730	WELD	37,936.4	9730	0.0	44.6	48.27806058	-103.04816047	2031.371							
9740	WELD	37,981.0	9740	0.0	44.7	48.27806685	-103.04834247	2032.695							
9750	WELD	38,025.7	9750	0.0	45.2	48.27807081	-103.04852482	2033.092							
9760	WELD	38,070.9	9760	0.0	44.0	48.27806763	-103.04870915	2035.166							
9770	WELD	38,114.9	9770	0.0	36.7	48.27806651	-103.04888713	2041.034							
11000043	WT CHANGE	38,151.5	9770	0.0	0.1	48.27806676	-103.04903580	2044.463				0.188	52000	0.72	
9780	WELD	38,151.6	9780	0.0	49.1	48.27806676	-103.04903616	2044.467							
9790	WELD	38,200.7	9790	0.0	49.5	48.27806630	-103.04923616	2044.227							
9800	WELD	38,250.2	9800	0.0	48.9	48.27806637	-103.04943767	2041.563							
9810	WELD	38,299.1	9810	0.0	49.4	48.27806770	-103.04963711	2037.972							
9820	WELD	38,348.5	9820	0.0	49.5	48.27806967	-103.04983868	2034.595							
9830	WELD	38,398.0	9830	0.0	49.4	48.27807100	-103.05004092	2033.181							
9840	WELD	38,447.4	9840	0.0	49.5	48.27807164	-103.05024284	2032.888							
9850	WELD	38,496.9	9850	0.0	49.4	48.27807211	-103.05044490	2033.916							
9860	WELD	38,546.3	9860	0.0	49.5	48.27807190	-103.05064734	2034.575							
9870	WELD	38,595.8	9870	0.0	49.6	48.27807209	-103.05084980	2034.399							
9880	WELD	38,645.3	9880	0.0	49.1	48.27807334	-103.05105256	2034.512							
9890	WELD	38,694.4	9890	0.0	49.4	48.27807428	-103.05125323	2036.370							
9900	WELD	38,743.8	9900	0.0	49.5	48.27807503	-103.05145453	2040.860							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
9910	WELD	38,793.3	9910	0.0	49.3	48.27807486	-103.05165655	2043.345							
9920	WELD	38,842.6	9920	0.0	49.6	48.27807503	-103.05185807	2044.149							
9930	WELD	38,892.2	9930	0.0	49.4	48.27807541	-103.05206082	2043.846							
9940	WELD	38,941.6	9940	0.0	49.4	48.27807532	-103.05226244	2042.806							
9950	WELD	38,991.0	9950	0.0	49.4	48.27807472	-103.05246389	2041.717							
9960	WELD	39,040.4	9960	0.0	49.2	48.27807451	-103.05266523	2040.255							
9970	WELD	39,089.6	9970	0.0	49.8	48.27807411	-103.05286611	2039.078							
9980	WELD	39,139.3	9980	0.0	49.8	48.27807387	-103.05306929	2037.895							
9990	WELD	39,189.1	9990	0.0	49.6	48.27807394	-103.05327212	2035.430							
10000	WELD	39,238.7	10000	0.0	49.5	48.27807455	-103.05347299	2028.624							
10010	WELD	39,288.2	10010	0.0	49.6	48.27807671	-103.05367359	2022.617							
10020	WELD	39,337.8	10020	0.0	48.9	48.27807748	-103.05387564	2019.219							
10030	WELD	39,386.7	10030	0.0	43.7	48.27807621	-103.05407596	2017.965							
11000044	WT CHANGE	39,430.4	10030	0.0	0.1	48.27807642	-103.05425410	2016.892				0.322	52000	0.72	
10040	WELD	39,430.5	10040	0.0	44.4	48.27807642	-103.05425446	2016.889							
10050	WELD	39,474.9	10050	0.0	44.7	48.27807669	-103.05443596	2013.532							
10060	WELD	39,519.6	10060	0.0	44.6	48.27807907	-103.05461689	2007.745							
10070	WELD	39,564.2	10070	0.0	44.7	48.27807882	-103.05479845	2004.624							
10080	WELD	39,609.0	10080	0.0	44.7	48.27807552	-103.05498114	2004.291							
10090	WELD	39,653.6	10090	0.0	44.6	48.27807760	-103.05516296	2007.944							
10100	WELD	39,698.3	10100	0.0	44.7	48.27807968	-103.05534236	2015.817							
10110	WELD	39,743.0	10110	0.0	44.0	48.27807648	-103.05551961	2026.575							
10120	WELD	39,787.0	10120	0.0	0.4	48.27808829	-103.05569435	2035.523							
10000030	Bend right - 15 deg., 1.5D	39,787.2	10120	0.0	0.4	48.27808848	-103.05569524	2035.535	0	12:00					
10130	WELD	39,787.4	10130	0.0	10.3	48.27808867	-103.05569613	2035.547							
11000045	WT CHANGE	39,797.7	10130	0.0	0.1	48.27809859	-103.05573513	2035.769				0.188	52000	0.72	
10140	WELD	39,797.8	10140	0.0	12.8	48.27809868	-103.05573546	2035.770							
10150	WELD	39,810.6	10150	0.0	49.0	48.27811182	-103.05578418	2035.870							
10160	WELD	39,859.6	10160	0.0	48.8	48.27816663	-103.05596704	2035.679							
10170	WELD	39,908.4	10170	0.0	49.0	48.27822320	-103.05614711	2037.856							
10180	WELD	39,957.4	10180	0.0	49.6	48.27828065	-103.05632767	2040.427							
10190	WELD	40,007.0	10190	0.0	49.5	48.27833807	-103.05651120	2041.214							
10200	WELD	40,056.5	10200	0.0	49.5	48.27839455	-103.05669441	2042.228							
10210	WELD	40,106.1	10210	0.0	49.6	48.27845019	-103.05687882	2042.938							
10220	WELD	40,155.7	10220	0.0	49.5	48.27850598	-103.05706320	2042.785							
10230	WELD	40,205.1	10230	0.0	49.4	48.27856311	-103.05724637	2042.990							
10240	WELD	40,254.6	10240	0.0	49.5	48.27862168	-103.05742804	2044.620							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
10250	WELD	40,304.1	10250	0.0	48.9	48.27868191	-103.05760906	2047.109							
10260	WELD	40,353.0	10260	0.0	49.7	48.27874215	-103.05778752	2048.918							
10270	WELD	40,402.7	10270	0.0	49.6	48.27880234	-103.05796949	2049.884							
10280	WELD	40,452.4	10280	0.0	49.6	48.27886143	-103.05815244	2050.099							
10290	WELD	40,502.0	10290	0.0	49.4	48.27891907	-103.05833608	2051.720							
10300	WELD	40,551.4	10300	0.0	49.3	48.27897630	-103.05851863	2053.324							
10310	WELD	40,600.7	10310	0.0	49.3	48.27903349	-103.05870134	2055.000							
10320	WELD	40,650.0	10320	0.0	49.6	48.27909018	-103.05888424	2056.337							
10330	WELD	40,699.6	10330	0.0	49.4	48.27914740	-103.05906839	2057.592							
10340	WELD	40,749.0	10340	0.0	48.8	48.27920415	-103.05925208	2058.892							
10350	WELD	40,797.8	10350	0.0	47.9	48.27926181	-103.05943209	2060.927							
10360	WELD	40,845.7	10360	0.0	49.5	48.27931906	-103.05960811	2063.822							
10370	WELD	40,895.2	10370	0.0	49.3	48.27937894	-103.05978927	2068.387							
10380	WELD	40,944.5	10380	0.0	46.6	48.27943693	-103.05997070	2073.191							
10390	WELD	40,991.1	10390	0.0	6.5	48.27949156	-103.06014136	2079.727							
10400	WELD	40,997.7	10400	0.0	0.8	48.27949923	-103.06016519	2080.760							
10000031	Bend left - 25 deg., 1.5D	40,998.1	10400	0.1	0.7	48.27949948	-103.06016674	2080.817	0	12:00					
10410	WELD	40,998.4	10410	0.0	49.4	48.27949971	-103.06016822	2080.872							
10420	WELD	41,047.8	10420	0.0	49.4	48.27950802	-103.06036815	2087.863							
10430	WELD	41,097.3	10430	0.0	49.3	48.27951190	-103.06056854	2094.385							
10440	WELD	41,146.6	10440	0.0	49.4	48.27951244	-103.06076770	2102.242							
10450	WELD	41,196.0	10450	0.0	49.9	48.27951218	-103.06096808	2108.427							
10460	WELD	41,245.9	10460	0.0	49.5	48.27951292	-103.06117118	2111.392							
10470	WELD	41,295.4	10470	0.0	49.3	48.27951413	-103.06137262	2115.509							
10480	WELD	41,344.7	10480	0.0	49.7	48.27951457	-103.06157258	2120.885							
10490	WELD	41,394.4	10490	0.0	49.6	48.27951489	-103.06177502	2124.102							
10500	WELD	41,444.0	10500	0.0	49.6	48.27951514	-103.06197739	2125.858							
10510	WELD	41,493.6	10510	0.0	49.6	48.27951578	-103.06218020	2125.761							
10520	WELD	41,543.2	10520	0.0	49.7	48.27951581	-103.06238327	2124.922							
10530	WELD	41,592.9	10530	0.0	49.5	48.27951610	-103.06258655	2122.436							
10540	WELD	41,642.4	10540	0.0	49.7	48.27951676	-103.06278853	2120.082							
10550	WELD	41,692.1	10550	0.0	49.6	48.27951654	-103.06299170	2122.231							
10560	WELD	41,741.7	10560	0.0	49.5	48.27951517	-103.06319439	2124.388							
10570	WELD	41,791.1	10570	0.0	49.2	48.27951546	-103.06339639	2122.371							
10580	WELD	41,840.4	10580	0.0	49.4	48.27951628	-103.06359783	2121.706							
10590	WELD	41,889.8	10590	0.0	49.5	48.27951665	-103.06379988	2120.194							
10600	WELD	41,939.3	10600	0.0	49.2	48.27951776	-103.06400227	2117.129							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
10610	WELD	41,988.5	10610	0.0	49.6	48.27951846	-103.06420334	2119.066							
10620	WELD	42,038.2	10620	0.0	49.6	48.27951828	-103.06440568	2123.305							
10630	WELD	42,087.8	10630	0.0	49.4	48.27951733	-103.06460854	2120.856							
10640	WELD	42,137.2	10640	0.0	49.7	48.27951698	-103.06480890	2113.874							
10650	WELD	42,186.9	10650	0.0	49.7	48.27951661	-103.06501120	2113.201							
10660	WELD	42,236.6	10660	0.0	48.1	48.27951653	-103.06521194	2120.432							
10000032	AGM 070, Sta. 414+88, ROW -- Han #100	42,270.9	10660	34.3	13.8	48.27951637	-103.06535198	2122.263							
10670	WELD	42,284.7	10670	0.0	49.7	48.27951636	-103.06540831	2121.889							
10680	WELD	42,334.4	10680	0.0	49.3	48.27951696	-103.06561088	2118.028							
10690	WELD	42,383.7	10690	0.0	49.5	48.27951855	-103.06581150	2113.468							
10700	WELD	42,433.2	10700	0.0	49.6	48.27952023	-103.06601218	2107.424							
20000006	Seam Variation	42,481.2	10700	47.9	1.7	48.27952147	-103.06620665	2102.181	5	12:00	-	0.56	0.41		
10710	WELD	42,482.8	10710	0.0	49.6	48.27952149	-103.06621330	2102.029							
10720	WELD	42,532.4	10720	0.0	49.2	48.27952182	-103.06641518	2097.815							
10730	WELD	42,581.6	10730	0.0	49.5	48.27952122	-103.06661583	2094.645							
10740	WELD	42,631.1	10740	0.0	49.2	48.27952019	-103.06681830	2093.089							
10750	WELD	42,680.3	10750	0.0	48.6	48.27952273	-103.06702000	2092.232							
11000046	WT CHANGE	42,728.8	10750	0.0	0.1	48.27952921	-103.06721833	2089.916				0.322	52000	0.72	
10760	WELD	42,728.9	10760	0.0	45.1	48.27952921	-103.06721861	2089.910							
10770	WELD	42,773.9	10770	0.0	44.7	48.27953017	-103.06740113	2083.361							
10780	WELD	42,818.7	10780	0.0	45.2	48.27952996	-103.06757969	2073.674							
10790	WELD	42,863.8	10790	0.0	44.6	48.27952950	-103.06776025	2064.186							
10800	WELD	42,908.4	10800	0.0	44.7	48.27953112	-103.06794088	2057.621							
10810	WELD	42,953.1	10810	0.0	45.1	48.27952930	-103.06812313	2054.119							
10820	WELD	42,998.3	10820	0.0	44.7	48.27952854	-103.06830770	2053.310							
10830	WELD	43,043.0	10830	0.0	45.1	48.27953019	-103.06849062	2055.445							
10840	WELD	43,088.1	10840	0.0	44.6	48.27952966	-103.06867401	2061.017							
10850	WELD	43,132.7	10850	0.0	45.1	48.27953301	-103.06885398	2069.333							
10860	WELD	43,177.8	10860	0.0	45.1	48.27954031	-103.06903249	2080.715							
10870	WELD	43,223.0	10870	0.0	45.2	48.27954434	-103.06920959	2093.637							
10880	WELD	43,268.1	10880	0.0	44.7	48.27954116	-103.06938914	2104.249							
10890	WELD	43,312.9	10890	0.0	44.7	48.27953398	-103.06956925	2111.776							
10900	WELD	43,357.6	10900	0.0	44.8	48.27953093	-103.06975047	2118.059							
10910	WELD	43,402.4	10910	0.0	28.0	48.27953073	-103.06993220	2123.735							
11000047	WT CHANGE	43,430.3	10910	0.0	0.1	48.27953092	-103.07004578	2125.470				0.188	52000	0.72	
10920	WELD	43,430.4	10920	0.0	41.3	48.27953091	-103.07004615	2125.474							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
10930	WELD	43,471.7	10930	0.0	49.6	48.27952774	-103.07021466	2126.810						
10940	WELD	43,521.3	10940	0.0	49.2	48.27952588	-103.07041720	2126.082						
10950	WELD	43,570.5	10950	0.0	49.8	48.27952615	-103.07061860	2126.852						
10960	WELD	43,620.4	10960	0.0	49.1	48.27952649	-103.07082216	2129.382						
10970	WELD	43,669.5	10970	0.0	47.8	48.27952695	-103.07102213	2133.538						
10980	WELD	43,717.2	10980	0.0	49.6	48.27952812	-103.07121777	2136.944						
10990	WELD	43,766.8	10990	0.0	49.4	48.27952907	-103.07142097	2139.159						
11000	WELD	43,816.2	11000	0.0	47.6	48.27953061	-103.07162320	2137.810						
11010	WELD	43,863.8	11010	0.0	41.9	48.27953205	-103.07181802	2136.854						
11020	WELD	43,905.7	11020	0.0	49.1	48.27953315	-103.07198939	2136.128						
11030	WELD	43,954.7	11030	0.0	46.4	48.27953468	-103.07219041	2136.503						
11040	WELD	44,001.2	11040	0.0	49.1	48.27953547	-103.07238061	2137.240						
11050	WELD	44,050.2	11050	0.0	49.4	48.27953553	-103.07258170	2138.186						
11060	WELD	44,099.7	11060	0.0	49.3	48.27953534	-103.07278415	2139.654						
11070	WELD	44,149.0	11070	0.0	48.9	48.27953502	-103.07298617	2142.068						
11080	WELD	44,197.9	11080	0.0	49.5	48.27953454	-103.07318632	2143.875						
11090	WELD	44,247.4	11090	0.0	49.4	48.27953533	-103.07338873	2144.410						
11100	WELD	44,296.8	11100	0.0	49.6	48.27953683	-103.07359108	2143.855						
11110	WELD	44,346.4	11110	0.0	49.7	48.27953709	-103.07379438	2144.572						
11120	WELD	44,396.1	11120	0.0	49.6	48.27953566	-103.07399755	2146.259						
11130	WELD	44,445.7	11130	0.0	49.8	48.27953390	-103.07420017	2146.820						
11140	WELD	44,495.5	11140	0.0	49.7	48.27953380	-103.07440365	2146.359						
11150	WELD	44,545.2	11150	0.0	40.5	48.27953593	-103.07460664	2145.502						
11160	WELD	44,585.7	11160	0.0	49.4	48.27953794	-103.07477190	2145.285						
11170	WELD	44,635.1	11170	0.0	49.6	48.27953974	-103.07497395	2145.665						
11180	WELD	44,684.7	11180	0.0	49.4	48.27954039	-103.07517679	2146.073						
11190	WELD	44,734.2	11190	0.0	49.5	48.27954051	-103.07537906	2146.258						
11200	WELD	44,783.7	11200	0.0	49.7	48.27954081	-103.07558155	2147.119						
11210	WELD	44,833.4	11210	0.0	49.6	48.27954092	-103.07578508	2148.200						
11220	WELD	44,883.0	11220	0.0	49.7	48.27954008	-103.07598843	2148.570						
11230	WELD	44,932.7	11230	0.0	49.7	48.27954075	-103.07619228	2147.894						
11240	WELD	44,982.4	11240	0.0	49.7	48.27954240	-103.07639583	2147.048						
11250	WELD	45,032.1	11250	0.0	49.6	48.27954356	-103.07659917	2148.025						
11260	WELD	45,081.7	11260	0.0	49.4	48.27954422	-103.07680198	2149.531						
11270	WELD	45,131.1	11270	0.0	49.5	48.27954519	-103.07700391	2151.312						
11280	WELD	45,180.6	11280	0.0	49.6	48.27954632	-103.07720623	2152.591						
11290	WELD	45,230.1	11290	0.0	49.5	48.27954724	-103.07740885	2153.510						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
11300	WELD	45,279.7	11300	0.0	49.5	48.27954793	-103.07761163	2153.916							
11310	WELD	45,329.2	11310	0.0	45.3	48.27954843	-103.07781462	2154.813							
11320	WELD	45,374.5	11320	0.0	49.3	48.27954842	-103.07799992	2156.044							
11330	WELD	45,423.8	11330	0.0	49.2	48.27954873	-103.07820122	2156.610							
11340	WELD	45,473.0	11340	0.0	49.7	48.27954912	-103.07840278	2157.347							
11350	WELD	45,522.7	11350	0.0	49.7	48.27954887	-103.07860598	2158.495							
11360	WELD	45,572.4	11360	0.0	49.7	48.27954832	-103.07880902	2159.083							
11370	WELD	45,622.1	11370	0.0	49.7	48.27954822	-103.07901202	2160.941							
11380	WELD	45,671.8	11380	0.0	49.5	48.27954828	-103.07921505	2162.893							
11390	WELD	45,721.3	11390	0.0	49.5	48.27954815	-103.07941710	2164.622							
11400	WELD	45,770.8	11400	0.0	49.5	48.27954822	-103.07961922	2166.022							
11410	WELD	45,820.2	11410	0.0	49.6	48.27954843	-103.07982123	2167.341							
11420	WELD	45,869.8	11420	0.0	49.3	48.27954841	-103.08002370	2169.702							
11430	WELD	45,919.1	11430	0.0	49.4	48.27954949	-103.08022473	2171.979							
11440	WELD	45,968.5	11440	0.0	49.6	48.27955085	-103.08042645	2174.327							
11450	WELD	46,018.1	11450	0.0	48.9	48.27955102	-103.08062958	2174.981							
11460	WELD	46,067.0	11460	0.0	43.9	48.27955087	-103.08082961	2175.221							
11470	WELD	46,110.9	11470	0.0	7.6	48.27955079	-103.08100906	2175.367							
10000033	Bend left - 85 deg., 7D	46,114.7	11470	0.4	7.2	48.27954592	-103.08102205	2175.373	0	12:00					
11480	WELD	46,118.4	11480	0.0	6.5	48.27953629	-103.08102610	2175.325							
11490	WELD	46,125.0	11490	0.0	48.6	48.27951859	-103.08102939	2175.161							
11500	WELD	46,173.5	11500	0.0	49.1	48.27938753	-103.08105713	2173.611							
11510	WELD	46,222.7	11510	0.0	49.6	48.27925565	-103.08109078	2172.140							
11520	WELD	46,272.2	11520	0.0	49.6	48.27912247	-103.08112641	2172.232							
11530	WELD	46,321.8	11530	0.0	49.6	48.27898920	-103.08116183	2172.082							
11540	WELD	46,371.4	11540	0.0	49.6	48.27885607	-103.08119879	2173.692							
11550	WELD	46,421.0	11550	0.0	49.3	48.27872271	-103.08123469	2174.558							
11560	WELD	46,470.3	11560	0.0	49.4	48.27859018	-103.08127062	2176.117							
11570	WELD	46,519.8	11570	0.0	49.3	48.27845725	-103.08130626	2178.424							
11580	WELD	46,569.1	11580	0.0	49.4	48.27832514	-103.08134175	2182.295							
11590	WELD	46,618.4	11590	0.0	49.4	48.27819273	-103.08137802	2181.980							
11600	WELD	46,667.8	11600	0.0	49.6	48.27806091	-103.08141441	2178.661							
11610	WELD	46,717.4	11610	0.0	49.6	48.27792872	-103.08145122	2175.836							
11620	WELD	46,767.0	11620	0.0	49.4	48.27779627	-103.08148909	2175.785							
11630	WELD	46,816.4	11630	0.0	49.6	48.27766418	-103.08152586	2178.789							
11640	WELD	46,865.9	11640	0.0	49.7	48.27753222	-103.08156239	2184.038							
11650	WELD	46,915.6	11650	0.0	49.4	48.27739959	-103.08159887	2187.528							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
11660 WELD		46,965.0	11660	0.0	49.6	48.27726719	-103.08163449	2188.284						
11670 WELD		47,014.6	11670	0.0	49.6	48.27713416	-103.08167065	2190.046						
11680 WELD		47,064.2	11680	0.0	49.5	48.27700109	-103.08170568	2192.410						
11690 WELD		47,113.8	11690	0.0	49.4	48.27686813	-103.08174115	2193.415						
11700 WELD		47,163.2	11700	0.0	49.4	48.27673566	-103.08177781	2193.969						
11710 WELD		47,212.5	11710	0.0	49.0	48.27660334	-103.08181466	2194.495						
11720 WELD		47,261.6	11720	0.0	49.5	48.27647194	-103.08185075	2195.415						
11730 WELD		47,311.1	11730	0.0	49.2	48.27633925	-103.08188729	2196.990						
11740 WELD		47,360.3	11740	0.0	49.5	48.27620745	-103.08192327	2198.677						
11750 WELD		47,409.8	11750	0.0	49.6	48.27607482	-103.08195942	2199.761						
11760 WELD		47,459.4	11760	0.0	49.4	48.27594150	-103.08199460	2200.611						
11770 WELD		47,508.8	11770	0.0	49.3	48.27580874	-103.08202901	2200.008						
11780 WELD		47,558.1	11780	0.0	49.7	48.27567627	-103.08206258	2197.766						
11790 WELD		47,607.7	11790	0.0	49.6	48.27554291	-103.08209590	2195.490						
11800 WELD		47,657.4	11800	0.0	49.7	48.27540930	-103.08212828	2193.797						
11810 WELD		47,707.0	11810	0.0	49.7	48.27527643	-103.08216192	2189.943						
11820 WELD		47,756.8	11820	0.0	49.5	48.27514327	-103.08219247	2185.277						
11830 WELD		47,806.3	11830	0.0	49.4	48.27500990	-103.08221825	2181.391						
11840 WELD		47,855.7	11840	0.0	34.6	48.27487745	-103.08224783	2178.334						
11850 WELD		47,890.3	11850	0.0	30.1	48.27478584	-103.08227884	2175.943						
11860 WELD		47,920.4	11860	0.0	26.2	48.27471198	-103.08232840	2172.909						
11870 WELD		47,946.6	11870	0.0	48.5	48.27465660	-103.08239383	2169.953						
11880 WELD		47,995.0	11880	0.0	49.3	48.27456327	-103.08253202	2165.751						
11890 WELD		48,044.3	11890	0.0	49.4	48.27446730	-103.08267224	2165.624						
11900 WELD		48,093.8	11900	0.0	49.5	48.27437110	-103.08281260	2168.374						
11910 WELD		48,143.2	11910	0.0	49.5	48.27427454	-103.08295367	2168.684						
11920 WELD		48,192.7	11920	0.0	49.3	48.27417791	-103.08309480	2167.951						
11930 WELD		48,242.0	11930	0.0	49.4	48.27408135	-103.08323541	2167.391						
11940 WELD		48,291.4	11940	0.0	49.3	48.27398435	-103.08337528	2165.916						
11950 WELD		48,340.7	11950	0.0	49.7	48.27388640	-103.08351326	2165.632						
11960 WELD		48,390.4	11960	0.0	49.7	48.27378786	-103.08365260	2167.126						
11970 WELD		48,440.1	11970	0.0	49.4	48.27368925	-103.08379175	2166.883						
11980 WELD		48,489.5	11980	0.0	49.3	48.27359149	-103.08393037	2166.688						
11990 WELD		48,538.8	11990	0.0	49.6	48.27349346	-103.08406838	2166.201						
12000 WELD		48,588.4	12000	0.0	46.3	48.27339499	-103.08420685	2166.204						
12010 WELD		48,634.6	12010	0.0	49.5	48.27330323	-103.08433636	2165.918						
12020 WELD		48,684.2	12020	0.0	49.3	48.27320568	-103.08447622	2164.233						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
12030	WELD	48,733.4	12030	0.0	49.6	48.27310855	-103.08461542	2165.469							
12040	WELD	48,783.1	12040	0.0	49.6	48.27300969	-103.08475350	2166.828							
12050	WELD	48,832.7	12050	0.0	49.5	48.27291071	-103.08489144	2168.363							
12060	WELD	48,882.1	12060	0.0	49.3	48.27281232	-103.08502978	2169.385							
12070	WELD	48,931.5	12070	0.0	49.7	48.27271426	-103.08516769	2170.992							
12080	WELD	48,981.2	12080	0.0	48.8	48.27261594	-103.08530662	2172.861							
12090	WELD	49,030.0	12090	0.0	47.1	48.27251947	-103.08544251	2176.814							
12100	WELD	49,077.0	12100	0.0	49.7	48.27242640	-103.08557373	2179.063							
12110	WELD	49,126.7	12110	0.0	49.7	48.27232800	-103.08571244	2181.356							
12120	WELD	49,176.4	12120	0.0	48.5	48.27222943	-103.08585073	2184.161							
12130	WELD	49,224.9	12130	0.0	49.6	48.27213317	-103.08598552	2185.840							
12140	WELD	49,274.5	12140	0.0	49.8	48.27203486	-103.08612359	2186.135							
12150	WELD	49,324.3	12150	0.0	49.5	48.27193588	-103.08626209	2187.068							
12160	WELD	49,373.7	12160	0.0	49.5	48.27183764	-103.08640008	2188.382							
12170	WELD	49,423.3	12170	0.0	49.5	48.27173942	-103.08653856	2187.916							
12180	WELD	49,472.8	12180	0.0	49.7	48.27164150	-103.08667757	2186.038							
12190	WELD	49,522.5	12190	0.0	47.5	48.27154288	-103.08681675	2184.066							
12200	WELD	49,570.0	12200	0.0	48.8	48.27144956	-103.08695088	2182.956							
12210	WELD	49,618.8	12210	0.0	41.3	48.27135393	-103.08708904	2183.480							
12220	WELD	49,660.1	12220	0.0	49.4	48.27127242	-103.08720497	2183.604							
12230	WELD	49,709.4	12230	0.0	43.3	48.27117425	-103.08734264	2184.575							
10000034	AGM 080, Sta. 488+53, Two track -- Survey Point	49,728.5	12230	19.0	24.2	48.27113627	-103.08739588	2185.524							
12240	WELD	49,752.7	12240	0.0	49.5	48.27108825	-103.08746337	2186.784							
12250	WELD	49,802.2	12250	0.0	49.3	48.27098994	-103.08760268	2186.816							
12260	WELD	49,851.5	12260	0.0	48.8	48.27089275	-103.08774222	2186.365							
12270	WELD	49,900.3	12270	0.0	49.5	48.27079710	-103.08788077	2185.558							
12280	WELD	49,949.8	12280	0.0	49.5	48.27069958	-103.08802059	2185.246							
12290	WELD	49,999.3	12290	0.0	49.4	48.27060191	-103.08816090	2184.600							
12300	WELD	50,048.7	12300	0.0	49.5	48.27050497	-103.08830154	2184.457							
12310	WELD	50,098.2	12310	0.0	49.6	48.27040830	-103.08844281	2183.127							
12320	WELD	50,147.8	12320	0.0	49.4	48.27031133	-103.08858381	2180.790							
12330	WELD	50,197.2	12330	0.0	49.3	48.27021504	-103.08872362	2177.713							
12340	WELD	50,246.6	12340	0.0	11.2	48.27012028	-103.08886577	2175.327							
12350	WELD	50,257.7	12350	0.0	1.5	48.27009893	-103.08889785	2174.824							
10000035	Bend right - 45 deg., 3D	50,258.5	12350	0.0	1.5	48.27009809	-103.08890065	2174.800	0	12:00					
12360	WELD	50,259.2	12360	0.0	15.4	48.27009764	-103.08890370	2174.782							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
12370	WELD	50,274.7	12370	0.0	24.3	48.27009649	-103.08896655	2174.707						
12380	WELD	50,298.9	12380	0.0	49.2	48.27009466	-103.08906534	2174.485						
12390	WELD	50,348.1	12390	0.0	49.6	48.27009279	-103.08926587	2174.858						
12400	WELD	50,397.7	12400	0.0	49.8	48.27009213	-103.08946778	2174.810						
12410	WELD	50,447.5	12410	0.0	49.7	48.27009184	-103.08967126	2176.034						
12420	WELD	50,497.2	12420	0.0	49.6	48.27009256	-103.08987383	2179.068						
12430	WELD	50,546.8	12430	0.0	49.5	48.27009333	-103.09007691	2181.701						
12440	WELD	50,596.3	12440	0.0	49.6	48.27009333	-103.09027938	2185.017						
12450	WELD	50,645.9	12450	0.0	49.6	48.27009332	-103.09048214	2187.477						
12460	WELD	50,695.6	12460	0.0	49.4	48.27009332	-103.09068504	2189.861						
12470	WELD	50,744.9	12470	0.0	45.2	48.27009389	-103.09088687	2191.093						
12480	WELD	50,790.1	12480	0.0	49.5	48.27009409	-103.09107176	2191.333						
12490	WELD	50,839.6	12490	0.0	49.7	48.27009422	-103.09127436	2191.600						
12500	WELD	50,889.3	12500	0.0	49.7	48.27009431	-103.09147770	2192.720						
12510	WELD	50,939.0	12510	0.0	48.8	48.27009399	-103.09168142	2193.866						
12520	WELD	50,987.8	12520	0.0	49.4	48.27009396	-103.09188098	2195.323						
12530	WELD	51,037.2	12530	0.0	49.2	48.27009364	-103.09208334	2197.257						
12540	WELD	51,086.4	12540	0.0	49.6	48.27009275	-103.09228464	2199.846						
12550	WELD	51,136.0	12550	0.0	49.6	48.27009202	-103.09248781	2201.285						
12560	WELD	51,185.7	12560	0.0	49.7	48.27009257	-103.09269117	2202.011						
12570	WELD	51,235.4	12570	0.0	49.7	48.27009403	-103.09289463	2201.631						
12580	WELD	51,285.1	12580	0.0	49.8	48.27009469	-103.09309834	2201.431						
12590	WELD	51,334.9	12590	0.0	49.5	48.27009368	-103.09330207	2202.279						
12600	WELD	51,384.3	12600	0.0	49.7	48.27009216	-103.09350400	2202.812						
12610	WELD	51,434.0	12610	0.0	49.7	48.27009227	-103.09370725	2202.136						
12620	WELD	51,483.7	12620	0.0	49.8	48.27009395	-103.09390991	2200.755						
12630	WELD	51,533.4	12630	0.0	48.9	48.27009343	-103.09411313	2199.421						
12640	WELD	51,582.3	12640	0.0	41.4	48.27009347	-103.09431300	2199.133						
12650	WELD	51,623.7	12650	0.0	41.4	48.27009370	-103.09448246	2197.694						
12660	WELD	51,665.1	12660	0.0	41.4	48.27009278	-103.09465172	2195.040						
12670	WELD	51,706.5	12670	0.0	41.3	48.27009193	-103.09482115	2193.755						
12680	WELD	51,747.9	12680	0.0	41.4	48.27009252	-103.09499067	2193.140						
12690	WELD	51,789.2	12690	0.0	41.4	48.27009365	-103.09516010	2193.300						
12700	WELD	51,830.6	12700	0.0	41.4	48.27009437	-103.09532962	2194.400						
12710	WELD	51,872.1	12710	0.0	41.4	48.27009440	-103.09549914	2196.226						
12720	WELD	51,913.4	12720	0.0	41.4	48.27009387	-103.09566876	2197.852						
12730	WELD	51,954.8	12730	0.0	41.4	48.27009375	-103.09583829	2198.026						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
12740	WELD	51,996.2	12740	0.0	41.3	48.27009382	-103.09600794	2197.789						
12750	WELD	52,037.6	12750	0.0	41.4	48.27009393	-103.09617766	2198.323						
12760	WELD	52,078.9	12760	0.0	41.4	48.27009345	-103.09634718	2199.689						
12770	WELD	52,120.4	12770	0.0	41.4	48.27009184	-103.09651676	2200.374						
12780	WELD	52,161.7	12780	0.0	41.4	48.27009077	-103.09668629	2200.201						
12790	WELD	52,203.1	12790	0.0	41.4	48.27009038	-103.09685605	2199.560						
12800	WELD	52,244.5	12800	0.0	41.5	48.27009049	-103.09702561	2199.059						
12810	WELD	52,286.0	12810	0.0	41.5	48.27009080	-103.09719544	2198.332						
12820	WELD	52,327.5	12820	0.0	41.5	48.27009151	-103.09736519	2198.153						
12830	WELD	52,369.0	12830	0.0	41.4	48.27009183	-103.09753489	2197.941						
12840	WELD	52,410.4	12840	0.0	41.5	48.27009233	-103.09770451	2197.846						
12850	WELD	52,451.9	12850	0.0	41.4	48.27009323	-103.09787419	2198.793						
12860	WELD	52,493.4	12860	0.0	41.4	48.27009309	-103.09804354	2200.790						
12870	WELD	52,534.8	12870	0.0	41.4	48.27009275	-103.09821296	2202.649						
12880	WELD	52,576.2	12880	0.0	41.4	48.27009259	-103.09838241	2204.442						
12890	WELD	52,617.6	12890	0.0	41.4	48.27009294	-103.09855155	2207.622						
12900	WELD	52,658.9	12900	0.0	41.3	48.27009326	-103.09872079	2210.829						
12910	WELD	52,700.3	12910	0.0	41.4	48.27009267	-103.09889011	2212.525						
12920	WELD	52,741.7	12920	0.0	41.4	48.27009073	-103.09905956	2215.088						
12930	WELD	52,783.1	12930	0.0	41.4	48.27008796	-103.09922916	2216.353						
12940	WELD	52,824.5	12940	0.0	41.4	48.27008637	-103.09939859	2218.100						
12950	WELD	52,865.8	12950	0.0	41.4	48.27008672	-103.09956834	2218.376						
12960	WELD	52,907.2	12960	0.0	41.3	48.27008749	-103.09973819	2218.529						
12970	WELD	52,948.5	12970	0.0	41.4	48.27008867	-103.09990772	2220.315						
12980	WELD	52,989.9	12980	0.0	41.4	48.27008891	-103.10007639	2224.652						
12990	WELD	53,031.4	12990	0.0	41.4	48.27008729	-103.10024498	2228.839						
13000	WELD	53,072.8	13000	0.0	41.4	48.27008551	-103.10041422	2231.217						
13010	WELD	53,114.2	13010	0.0	41.4	48.27008432	-103.10058374	2231.400						
13020	WELD	53,155.6	13020	0.0	41.4	48.27008453	-103.10075338	2229.820						
13030	WELD	53,197.0	13030	0.0	41.5	48.27008653	-103.10092266	2228.139						
13040	WELD	53,238.5	13040	0.0	41.4	48.27008822	-103.10109212	2227.421						
13050	WELD	53,280.0	13050	0.0	41.5	48.27008925	-103.10126146	2229.497						
13060	WELD	53,321.5	13060	0.0	41.4	48.27008979	-103.10143074	2231.888						
13070	WELD	53,362.9	13070	0.0	41.5	48.27008956	-103.10159969	2234.943						
13080	WELD	53,404.4	13080	0.0	41.4	48.27008849	-103.10176909	2237.324						
13090	WELD	53,445.9	13090	0.0	41.4	48.27008780	-103.10193886	2237.546						
13100	WELD	53,487.3	13100	0.0	41.4	48.27008823	-103.10210832	2236.182						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
13110	WELD	53,528.7	13110	0.0	41.4	48.27008925	-103.10227784	2234.083						
13120	WELD	53,570.0	13120	0.0	41.4	48.27009000	-103.10244721	2231.606						
13130	WELD	53,611.4	13130	0.0	41.4	48.27009005	-103.10261651	2229.174						
13140	WELD	53,652.8	13140	0.0	41.4	48.27008962	-103.10278603	2227.884						
13150	WELD	53,694.2	13150	0.0	41.4	48.27008915	-103.10295549	2228.796						
13160	WELD	53,735.6	13160	0.0	41.4	48.27008862	-103.10312497	2230.036						
13170	WELD	53,777.0	13170	0.0	41.3	48.27008827	-103.10329446	2229.367						
13180	WELD	53,818.3	13180	0.0	41.4	48.27008853	-103.10346370	2227.546						
13190	WELD	53,859.7	13190	0.0	41.3	48.27008859	-103.10363326	2225.228						
13200	WELD	53,901.0	13200	0.0	41.3	48.27008923	-103.10380286	2223.627						
13210	WELD	53,942.3	13210	0.0	41.3	48.27009011	-103.10397238	2222.074						
13220	WELD	53,983.6	13220	0.0	41.4	48.27009073	-103.10414182	2221.401						
13230	WELD	54,025.0	13230	0.0	41.4	48.27009077	-103.10431147	2221.329						
13240	WELD	54,066.4	13240	0.0	41.4	48.27009051	-103.10448119	2221.767						
13250	WELD	54,107.8	13250	0.0	41.4	48.27009076	-103.10465084	2222.138						
13260	WELD	54,149.3	13260	0.0	41.5	48.27009091	-103.10482040	2223.412						
13270	WELD	54,190.8	13270	0.0	41.5	48.27009021	-103.10498991	2225.136						
13280	WELD	54,232.2	13280	0.0	41.5	48.27008858	-103.10515907	2228.020						
13290	WELD	54,273.7	13290	0.0	41.5	48.27008705	-103.10532772	2232.170						
13300	WELD	54,315.2	13300	0.0	41.5	48.27008644	-103.10549648	2235.925						
13310	WELD	54,356.7	13310	0.0	41.5	48.27008597	-103.10566613	2236.889						
13320	WELD	54,398.2	13320	0.0	41.4	48.27008591	-103.10583578	2235.953						
13330	WELD	54,439.5	13330	0.0	41.4	48.27008568	-103.10600543	2235.101						
13340	WELD	54,481.0	13340	0.0	41.4	48.27008554	-103.10617507	2234.455						
13350	WELD	54,522.4	13350	0.0	41.4	48.27008572	-103.10634476	2233.508						
13360	WELD	54,563.7	13360	0.0	41.3	48.27008596	-103.10651439	2232.033						
13370	WELD	54,605.1	13370	0.0	41.4	48.27008631	-103.10668375	2229.855						
13380	WELD	54,646.5	13380	0.0	41.4	48.27008652	-103.10685341	2229.027						
13390	WELD	54,687.9	13390	0.0	41.4	48.27008673	-103.10702291	2229.808						
13400	WELD	54,729.3	13400	0.0	41.4	48.27008699	-103.10719269	2230.414						
13410	WELD	54,770.7	13410	0.0	41.4	48.27008687	-103.10736242	2230.910						
13420	WELD	54,812.0	13420	0.0	41.4	48.27008753	-103.10753194	2231.292						
13430	WELD	54,853.4	13430	0.0	41.3	48.27008838	-103.10770166	2230.822						
13440	WELD	54,894.7	13440	0.0	49.0	48.27008878	-103.10787112	2230.219						
13450	WELD	54,943.7	13450	0.0	18.0	48.27008942	-103.10807215	2229.384						
13460	WELD	54,961.7	13460	0.0	49.2	48.27008953	-103.10814583	2228.925						
13470	WELD	55,010.9	13470	0.0	49.5	48.27008840	-103.10834724	2228.523						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
10000036	AGM 090, Sta. 540+95, 112th Ave NW -- Han #100	55,034.2	13470	23.3	26.1	48.27008774	-103.10844251	2228.074							
11000048	WT CHANGE	55,060.3	13470	0.0	0.1	48.27008741	-103.10854883	2227.568				0.322	52000	0.72	
13480	WELD	55,060.4	13480	0.0	44.7	48.27008741	-103.10854915	2227.566							
40000005	Metal Loss - EXTERNAL	55,068.3	13480	7.9	36.8	48.27008747	-103.10858139	2227.336	327	10:45	12%	0.59	0.43	3014	100%
13490	WELD	55,105.1	13490	0.0	44.1	48.27008864	-103.10873154	2224.222							
13500	WELD	55,149.1	13500	0.0	44.8	48.27008936	-103.10891109	2220.816							
13510	WELD	55,193.9	13510	0.0	44.6	48.27008953	-103.10909391	2220.602							
11000049	WT CHANGE	55,238.5	13510	0.0	0.1	48.27008952	-103.10927583	2221.238				0.188	52000	0.72	
13520	WELD	55,238.6	13520	0.0	49.4	48.27008952	-103.10927619	2221.236							
13530	WELD	55,288.0	13530	0.0	31.0	48.27008945	-103.10947765	2223.535							
13540	WELD	55,319.0	13540	0.0	37.3	48.27008879	-103.10960412	2225.065							
13550	WELD	55,356.3	13550	0.0	49.4	48.27008898	-103.10975621	2225.084							
13560	WELD	55,405.7	13560	0.0	49.7	48.27008980	-103.10995793	2223.980							
13570	WELD	55,455.3	13570	0.0	49.6	48.27009138	-103.11016112	2224.174							
20000008	Seam Variation	55,487.9	13570	32.5	17.1	48.27009306	-103.11029438	2224.066	203	6:45	-	0.88	0.68		
13580	WELD	55,504.9	13580	0.0	49.6	48.27009382	-103.11036410	2223.847							
13590	WELD	55,554.5	13590	0.0	49.6	48.27009487	-103.11056691	2223.266							
13600	WELD	55,604.1	13600	0.0	49.1	48.27009460	-103.11076970	2225.356							
13610	WELD	55,653.2	13610	0.0	49.6	48.27009438	-103.11096998	2227.003							
13620	WELD	55,702.7	13620	0.0	49.6	48.27009451	-103.11117279	2226.908							
13630	WELD	55,752.3	13630	0.0	49.3	48.27009488	-103.11137558	2225.628							
13640	WELD	55,801.6	13640	0.0	47.8	48.27009568	-103.11157702	2225.062							
13650	WELD	55,849.4	13650	0.0	49.3	48.27009606	-103.11177209	2224.803							
13660	WELD	55,898.6	13660	0.0	49.1	48.27009591	-103.11197339	2223.704							
13670	WELD	55,947.7	13670	0.0	49.3	48.27009678	-103.11217434	2222.671							
13680	WELD	55,997.0	13680	0.0	6.0	48.27009905	-103.11237601	2221.324							
13690	WELD	56,003.0	13690	0.0	1.5	48.27009925	-103.11240036	2221.093							
10000037	Bend left - 45 deg., 3D	56,003.7	13690	0.1	1.4	48.27009860	-103.11240320	2221.068	0	12:00					
13700	WELD	56,004.5	13700	0.0	11.6	48.27009746	-103.11240583	2221.048							
13710	WELD	56,016.1	13710	0.0	47.0	48.27007529	-103.11244116	2220.864							
11000050	WT CHANGE	56,063.0	13710	0.0	0.1	48.26998768	-103.11258087	2221.020				0.322	52000	0.72	
13720	WELD	56,063.0	13720	0.0	45.0	48.26998752	-103.11258114	2221.023							
13730	WELD	56,108.1	13730	0.0	45.2	48.26990364	-103.11271619	2222.213							
13740	WELD	56,153.2	13740	0.0	44.8	48.26982181	-103.11285377	2225.681							
13750	WELD	56,198.0	13750	0.0	45.3	48.26974217	-103.11299166	2229.061							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
11000051	WT CHANGE	56,243.2	13750	0.0	0.1	48.26965956	-103.11312736	2231.530				0.188	52000	0.72	
13760	WELD	56,243.3	13760	0.0	49.2	48.26965940	-103.11312763	2231.532							
13770	WELD	56,292.5	13770	0.0	15.1	48.26956734	-103.11327298	2234.801							
13780	WELD	56,307.6	13780	0.0	1.6	48.26953950	-103.11331781	2235.762							
10000038	Bend right - 45 deg., 3D	56,308.4	13780	0.1	1.5	48.26953864	-103.11332068	2235.800	0	12:00					
13790	WELD	56,309.1	13790	0.0	33.2	48.26953826	-103.11332380	2235.828							
13800	WELD	56,342.3	13800	0.0	49.6	48.26953929	-103.11345845	2236.097							
13810	WELD	56,391.9	13810	0.0	49.4	48.26953988	-103.11366089	2235.630							
13820	WELD	56,441.3	13820	0.0	49.3	48.26954121	-103.11386222	2237.096							
13830	WELD	56,490.6	13830	0.0	49.4	48.26954278	-103.11406326	2238.489							
13840	WELD	56,540.0	13840	0.0	49.5	48.26954318	-103.11426542	2238.769							
13850	WELD	56,589.6	13850	0.0	49.6	48.26954396	-103.11446790	2237.511							
13860	WELD	56,639.2	13860	0.0	49.6	48.26954455	-103.11467074	2236.613							
13870	WELD	56,688.8	13870	0.0	46.3	48.26954433	-103.11487386	2235.569							
20000009	Seam Variation	56,696.9	13870	8.1	38.2	48.26954424	-103.11490691	2235.474	107	3:30	-	0.80	0.49		
13880	WELD	56,735.0	13880	0.0	49.7	48.26954444	-103.11506270	2235.270							
13890	WELD	56,784.7	13890	0.0	49.3	48.26954457	-103.11526584	2236.097							
13900	WELD	56,834.0	13900	0.0	45.7	48.26954416	-103.11546716	2236.795							
13910	WELD	56,879.8	13910	0.0	49.5	48.26954324	-103.11565441	2236.694							
20000010	Seam Variation	56,902.0	13910	22.3	27.2	48.26954280	-103.11574552	2236.294	200	6:30	-	1.08	0.41		
13920	WELD	56,929.2	13920	0.0	49.6	48.26954235	-103.11585666	2236.143							
13930	WELD	56,978.8	13930	0.0	49.6	48.26954222	-103.11605959	2235.067							
13940	WELD	57,028.4	13940	0.0	49.6	48.26954170	-103.11626240	2233.241							
13950	WELD	57,078.0	13950	0.0	49.6	48.26954283	-103.11646494	2230.871							
13960	WELD	57,127.6	13960	0.0	49.7	48.26954520	-103.11666764	2229.530							
13970	WELD	57,177.3	13970	0.0	41.3	48.26954740	-103.11687063	2227.552							
13980	WELD	57,218.6	13980	0.0	41.2	48.26954861	-103.11703937	2226.291							
13990	WELD	57,259.8	13990	0.0	41.4	48.26954929	-103.11720739	2225.450							
14000	WELD	57,301.1	14000	0.0	41.3	48.26954933	-103.11737621	2225.337							
14010	WELD	57,342.5	14010	0.0	41.5	48.26954924	-103.11754491	2225.282							
14020	WELD	57,383.9	14020	0.0	41.5	48.26954891	-103.11771427	2225.215							
14030	WELD	57,425.4	14030	0.0	41.5	48.26954901	-103.11788360	2225.383							
14040	WELD	57,466.9	14040	0.0	41.4	48.26954959	-103.11805279	2225.414							
14050	WELD	57,508.4	14050	0.0	41.4	48.26955002	-103.11822186	2225.246							
14060	WELD	57,549.8	14060	0.0	41.5	48.26955029	-103.11839142	2225.393							
14070	WELD	57,591.3	14070	0.0	41.4	48.26955048	-103.11856039	2226.268							
14080	WELD	57,632.6	14080	0.0	41.4	48.26955029	-103.11872951	2227.434							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
14090	WELD	57,674.1	14090	0.0	41.4	48.26955015	-103.11889866	2227.647						
14100	WELD	57,715.4	14100	0.0	41.4	48.26955011	-103.11906768	2226.605						
14110	WELD	57,756.8	14110	0.0	41.4	48.26955074	-103.11923684	2225.799						
14120	WELD	57,798.2	14120	0.0	41.4	48.26955109	-103.11940594	2224.729						
14130	WELD	57,839.5	14130	0.0	41.4	48.26955168	-103.11957532	2224.246						
14140	WELD	57,880.9	14140	0.0	41.4	48.26955231	-103.11974446	2224.286						
14150	WELD	57,922.3	14150	0.0	41.3	48.26955290	-103.11991384	2224.488						
14160	WELD	57,963.7	14160	0.0	41.3	48.26955359	-103.12008293	2224.757						
14170	WELD	58,005.0	14170	0.0	41.3	48.26955416	-103.12025160	2224.551						
14180	WELD	58,046.3	14180	0.0	41.3	48.26955475	-103.12042081	2224.887						
14190	WELD	58,087.7	14190	0.0	41.4	48.26955510	-103.12059021	2224.879						
14200	WELD	58,129.0	14200	0.0	41.4	48.26955550	-103.12075958	2225.029						
14210	WELD	58,170.4	14210	0.0	41.1	48.26955591	-103.12092893	2225.154						
14220	WELD	58,211.5	14220	0.0	41.4	48.26955542	-103.12109685	2225.485						
14230	WELD	58,252.9	14230	0.0	41.4	48.26955490	-103.12126573	2225.738						
14240	WELD	58,294.4	14240	0.0	41.4	48.26955498	-103.12143489	2225.659						
14250	WELD	58,335.8	14250	0.0	41.5	48.26955512	-103.12160373	2225.955						
14260	WELD	58,377.3	14260	0.0	41.5	48.26955569	-103.12177303	2226.548						
14270	WELD	58,418.7	14270	0.0	41.5	48.26955583	-103.12194242	2226.795						
14280	WELD	58,460.2	14280	0.0	41.5	48.26955605	-103.12211164	2225.418						
14290	WELD	58,501.7	14290	0.0	41.5	48.26955610	-103.12228083	2224.380						
14300	WELD	58,543.2	14300	0.0	41.4	48.26955600	-103.12245016	2224.160						
14310	WELD	58,584.6	14310	0.0	41.4	48.26955607	-103.12261941	2223.500						
14320	WELD	58,626.0	14320	0.0	41.4	48.26955576	-103.12278865	2223.296						
14330	WELD	58,667.4	14330	0.0	41.3	48.26955618	-103.12295781	2223.357						
14340	WELD	58,708.7	14340	0.0	41.4	48.26955703	-103.12312688	2223.370						
14350	WELD	58,750.1	14350	0.0	41.4	48.26955766	-103.12329618	2222.825						
14360	WELD	58,791.5	14360	0.0	41.4	48.26955796	-103.12346538	2222.492						
14370	WELD	58,832.9	14370	0.0	41.3	48.26955829	-103.12363471	2222.077						
14380	WELD	58,874.2	14380	0.0	41.3	48.26955857	-103.12380361	2221.815						
14390	WELD	58,915.5	14390	0.0	41.2	48.26955882	-103.12397257	2221.705						
14400	WELD	58,956.7	14400	0.0	41.2	48.26955907	-103.12414107	2221.266						
14410	WELD	58,997.9	14410	0.0	41.3	48.26955936	-103.12430979	2221.293						
14420	WELD	59,039.2	14420	0.0	41.3	48.26955944	-103.12447871	2221.147						
14430	WELD	59,080.5	14430	0.0	41.2	48.26955886	-103.12464783	2221.342						
14440	WELD	59,121.7	14440	0.0	40.7	48.26955687	-103.12481666	2221.278						
14450	WELD	59,162.5	14450	0.0	28.1	48.26955606	-103.12498363	2221.569						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
11000052	WT CHANGE	59,190.5	14450	0.0	0.1	48.26955568	-103.12509803	2220.605				0.322	52000	0.72	
14460	WELD	59,190.6	14460	0.0	1.5	48.26955573	-103.12509834	2220.602							
10000039	Bend right - 45 deg., 3D	59,191.3	14460	0.0	1.4	48.26955624	-103.12510134	2220.575	0	12:00					
14470	WELD	59,192.1	14470	0.0	29.3	48.26955761	-103.12510394	2220.537							
14480	WELD	59,221.4	14480	0.0	39.9	48.26961485	-103.12518932	2219.094							
14490	WELD	59,261.4	14490	0.0	44.6	48.26969219	-103.12530430	2217.096							
14500	WELD	59,306.0	14500	0.0	44.3	48.26977830	-103.12543336	2215.564							
14510	WELD	59,350.2	14510	0.0	44.0	48.26986457	-103.12556006	2214.265							
14520	WELD	59,394.3	14520	0.0	44.7	48.26994885	-103.12568851	2213.154							
14530	WELD	59,439.0	14530	0.0	40.2	48.27003447	-103.12581841	2212.677							
14540	WELD	59,479.2	14540	0.0	1.6	48.27011281	-103.12593390	2212.471							
10000040	Bend left - 45 deg., 3D	59,480.0	14540	0.1	1.5	48.27011378	-103.12593647	2212.461	0	12:00					
11000053	WT CHANGE	59,480.8	14540	0.0	0.1	48.27011418	-103.12593939	2212.463				0.188	52000	0.72	
14550	WELD	59,480.9	14550	0.0	41.2	48.27011422	-103.12593968	2212.463							
14560	WELD	59,522.1	14560	0.0	38.2	48.27011591	-103.12610853	2213.936							
14570	WELD	59,560.3	14570	0.0	40.9	48.27011725	-103.12626472	2216.034							
14580	WELD	59,601.2	14580	0.0	41.2	48.27011902	-103.12643170	2217.447							
14590	WELD	59,642.5	14590	0.0	41.3	48.27011998	-103.12660032	2217.818							
14600	WELD	59,683.8	14600	0.0	41.3	48.27012055	-103.12676927	2217.202							
14610	WELD	59,725.1	14610	0.0	41.3	48.27012039	-103.12693773	2215.518							
14620	WELD	59,766.3	14620	0.0	41.3	48.27012022	-103.12710642	2214.650							
14630	WELD	59,807.6	14630	0.0	41.2	48.27011993	-103.12727521	2214.427							
14640	WELD	59,848.8	14640	0.0	41.3	48.27012008	-103.12744391	2213.684							
14650	WELD	59,890.1	14650	0.0	41.2	48.27012072	-103.12761273	2212.594							
14660	WELD	59,931.3	14660	0.0	41.2	48.27012065	-103.12778139	2211.481							
14670	WELD	59,972.6	14670	0.0	41.1	48.27011939	-103.12795011	2210.497							
14680	WELD	60,013.7	14680	0.0	15.7	48.27011666	-103.12811827	2209.098							
11000054	WT CHANGE	60,029.3	14680	0.0	0.1	48.27011531	-103.12818172	2208.632				0.322	52000	0.72	
14690	WELD	60,029.4	14690	0.0	44.0	48.27011530	-103.12818208	2208.631							
14700	WELD	60,073.4	14700	0.0	44.6	48.27011248	-103.12836221	2208.837							
14710	WELD	60,118.0	14710	0.0	42.2	48.27011191	-103.12854446	2208.302							
14720	WELD	60,160.2	14720	0.0	42.2	48.27011613	-103.12871445	2201.429							
14730	WELD	60,202.4	14730	0.0	42.2	48.27012295	-103.12888348	2193.644							
14740	WELD	60,244.6	14740	0.0	42.1	48.27012903	-103.12905296	2185.989							
14750	WELD	60,286.7	14750	0.0	44.7	48.27013145	-103.12922387	2180.275							
14760	WELD	60,331.4	14760	0.0	44.8	48.27012818	-103.12940598	2176.596							
14770	WELD	60,376.2	14770	0.0	44.8	48.27012387	-103.12958856	2176.256							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
14780	WELD	60,421.0	14780	0.0	44.1	48.27012282	-103.12977111	2179.190							
14790	WELD	60,465.1	14790	0.0	44.7	48.27012374	-103.12994977	2184.766							
14800	WELD	60,509.8	14800	0.0	44.8	48.27012325	-103.13012962	2192.134							
14810	WELD	60,554.6	14810	0.0	43.1	48.27012299	-103.13030856	2201.498							
11000055	WT CHANGE	60,597.7	14810	0.0	0.1	48.27012478	-103.13048066	2209.486				0.188	52000	0.72	
14820	WELD	60,597.8	14820	0.0	16.8	48.27012478	-103.13048107	2209.495							
14830	WELD	60,614.6	14830	0.0	40.9	48.27012581	-103.13054955	2211.148							
14840	WELD	60,655.5	14840	0.0	41.3	48.27012670	-103.13071566	2214.876							
14850	WELD	60,696.8	14850	0.0	41.1	48.27012542	-103.13088330	2218.999							
14860	WELD	60,737.9	14860	0.0	35.1	48.27012282	-103.13105067	2222.590							
40000006	Metal Loss - EXTERNAL	60,740.3	14860	2.4	32.7	48.27012275	-103.13106047	2222.825	249	8:15	14%	0.93	0.79	1760	100%
14870	WELD	60,772.9	14870	0.0	38.8	48.27012326	-103.13119390	2225.262							
14880	WELD	60,811.8	14880	0.0	41.3	48.27012426	-103.13135211	2227.417							
40000007	Metal Loss - EXTERNAL	60,815.7	14880	3.9	37.4	48.27012436	-103.13136829	2227.532	0	12:00	16%	1.22	0.71	1760	100%
14890	WELD	60,853.0	14890	0.0	41.3	48.27012511	-103.13152106	2228.032							
14900	WELD	60,894.3	14900	0.0	41.3	48.27012552	-103.13168984	2228.409							
14910	WELD	60,935.5	14910	0.0	41.2	48.27012527	-103.13185879	2228.731							
14920	WELD	60,976.8	14920	0.0	41.2	48.27012486	-103.13202773	2229.643							
14930	WELD	61,018.0	14930	0.0	41.2	48.27012505	-103.13219667	2230.437							
14940	WELD	61,059.2	14940	0.0	41.4	48.27012538	-103.13236552	2231.103							
14950	WELD	61,100.6	14950	0.0	41.2	48.27012591	-103.13253531	2231.585							
14960	WELD	61,141.8	14960	0.0	41.2	48.27012576	-103.13270414	2232.013							
14970	WELD	61,183.1	14970	0.0	41.2	48.27012609	-103.13287307	2231.995							
14980	WELD	61,224.3	14980	0.0	41.3	48.27012676	-103.13304154	2231.878							
14990	WELD	61,265.6	14990	0.0	41.3	48.27012664	-103.13321061	2231.575							
15000	WELD	61,306.9	15000	0.0	41.3	48.27012628	-103.13337963	2230.453							
15010	WELD	61,348.2	15010	0.0	41.3	48.27012663	-103.13354854	2228.938							
15020	WELD	61,389.5	15020	0.0	41.3	48.27012749	-103.13371755	2227.496							
15030	WELD	61,430.8	15030	0.0	41.5	48.27012789	-103.13388659	2226.062							
15040	WELD	61,472.3	15040	0.0	41.4	48.27012811	-103.13405613	2225.044							
15050	WELD	61,513.6	15050	0.0	41.4	48.27012817	-103.13422500	2224.838							
15060	WELD	61,555.0	15060	0.0	41.4	48.27012774	-103.13439406	2224.675							
15070	WELD	61,596.4	15070	0.0	41.3	48.27012687	-103.13456298	2224.145							
15080	WELD	61,637.8	15080	0.0	41.4	48.27012601	-103.13473191	2223.117							
15090	WELD	61,679.1	15090	0.0	41.3	48.27012556	-103.13490093	2221.559							
15100	WELD	61,720.5	15100	0.0	41.3	48.27012580	-103.13507002	2220.679							
15110	WELD	61,761.7	15110	0.0	41.3	48.27012531	-103.13523894	2220.796							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
15120	WELD	61,803.0	15120	0.0	41.3	48.27012556	-103.13540802	2220.049							
15130	WELD	61,844.3	15130	0.0	41.3	48.27012532	-103.13557716	2219.890							
15140	WELD	61,885.6	15140	0.0	41.3	48.27012428	-103.13574613	2221.386							
15150	WELD	61,926.9	15150	0.0	41.3	48.27012286	-103.13591469	2224.605							
10000041	AGM 100, Sta. 609+71, CR 117 -- Han #8611	61,961.1	15150	34.2	7.1	48.27012147	-103.13605437	2226.954							
15160	WELD	61,968.2	15160	0.0	41.3	48.27012113	-103.13608330	2227.366							
15170	WELD	62,009.5	15170	0.0	41.3	48.27012013	-103.13625177	2229.817							
15180	WELD	62,050.7	15180	0.0	41.2	48.27011961	-103.13642050	2230.534							
15190	WELD	62,092.0	15190	0.0	41.2	48.27011933	-103.13658911	2231.669							
15200	WELD	62,133.2	15200	0.0	41.3	48.27011822	-103.13675760	2232.970							
15210	WELD	62,174.5	15210	0.0	41.2	48.27011673	-103.13692624	2234.040							
15220	WELD	62,215.7	15220	0.0	41.4	48.27011487	-103.13709482	2234.573							
15230	WELD	62,257.0	15230	0.0	41.3	48.27011254	-103.13726353	2235.235							
40000008	Metal Loss - EXTERNAL	62,259.5	15230	2.4	38.9	48.27011244	-103.13727343	2235.266	90	3:00	18%	0.85	0.81	1760	100%
40000009	Metal Loss - EXTERNAL	62,279.3	15230	22.2	19.1	48.27011174	-103.13735429	2235.493	29	12:45	12%	0.65	0.73	1760	100%
40000010	Metal Loss - EXTERNAL	62,297.4	15230	40.3	1.0	48.27011136	-103.13742844	2235.671	27	12:45	21%	0.81	0.61	1760	100%
15240	WELD	62,298.4	15240	0.0	41.3	48.27011134	-103.13743244	2235.690							
15250	WELD	62,339.7	15250	0.0	41.4	48.27011019	-103.13760118	2236.580							
15260	WELD	62,381.1	15260	0.0	41.4	48.27010906	-103.13777004	2236.652							
15270	WELD	62,422.5	15270	0.0	41.4	48.27010896	-103.13793905	2235.185							
15280	WELD	62,463.9	15280	0.0	41.4	48.27010897	-103.13810798	2234.739							
15290	WELD	62,505.3	15290	0.0	41.4	48.27010847	-103.13827701	2235.229							
15300	WELD	62,546.7	15300	0.0	41.4	48.27010829	-103.13844596	2236.107							
15310	WELD	62,588.1	15310	0.0	41.3	48.27010888	-103.13861510	2237.098							
40000011	Metal Loss - EXTERNAL	62,614.5	15310	26.4	14.9	48.27010888	-103.13872303	2238.063	305	10:00	13%	0.45	0.37	1760	100%
15320	WELD	62,629.4	15320	0.0	41.3	48.27010858	-103.13878383	2238.829							
15330	WELD	62,670.7	15330	0.0	41.3	48.27010759	-103.13895256	2240.736							
15340	WELD	62,712.0	15340	0.0	41.3	48.27010738	-103.13912146	2242.585							
15350	WELD	62,753.3	15350	0.0	41.3	48.27010820	-103.13929025	2243.713							
15360	WELD	62,794.6	15360	0.0	41.3	48.27010905	-103.13945897	2244.809							
15370	WELD	62,835.9	15370	0.0	41.3	48.27010983	-103.13962778	2245.764							
15380	WELD	62,877.2	15380	0.0	41.3	48.27011074	-103.13979665	2246.532							
15390	WELD	62,918.5	15390	0.0	41.3	48.27011120	-103.13996550	2247.270							
15400	WELD	62,959.7	15400	0.0	41.2	48.27011125	-103.14013415	2247.333							
15410	WELD	63,000.9	15410	0.0	41.3	48.27011145	-103.14030279	2247.247							
15420	WELD	63,042.2	15420	0.0	41.3	48.27011224	-103.14047149	2247.424							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
15430	WELD	63,083.5	15430	0.0	41.0	48.27011283	-103.14064050	2248.049						
15440	WELD	63,124.5	15440	0.0	41.2	48.27011414	-103.14080823	2248.643						
15450	WELD	63,165.7	15450	0.0	41.3	48.27011548	-103.14097699	2249.574						
15460	WELD	63,207.0	15460	0.0	41.2	48.27011666	-103.14114570	2250.294						
15470	WELD	63,248.2	15470	0.0	41.2	48.27011725	-103.14131436	2251.092						
15480	WELD	63,289.5	15480	0.0	41.2	48.27011763	-103.14148289	2252.338						
15490	WELD	63,330.7	15490	0.0	41.3	48.27011793	-103.14165143	2253.420						
15500	WELD	63,372.0	15500	0.0	41.3	48.27011828	-103.14182006	2254.630						
15510	WELD	63,413.2	15510	0.0	41.4	48.27011944	-103.14198869	2255.529						
15520	WELD	63,454.6	15520	0.0	41.4	48.27012071	-103.14215753	2256.297						
15530	WELD	63,495.9	15530	0.0	41.4	48.27012166	-103.14232618	2257.695						
15540	WELD	63,537.3	15540	0.0	41.4	48.27012238	-103.14249490	2259.608						
15550	WELD	63,578.6	15550	0.0	41.3	48.27012341	-103.14266349	2261.609						
15560	WELD	63,619.9	15560	0.0	41.2	48.27012415	-103.14283210	2262.915						
15570	WELD	63,661.1	15570	0.0	41.2	48.27012488	-103.14300028	2264.223						
15580	WELD	63,702.3	15580	0.0	41.1	48.27012599	-103.14316878	2265.286						
15590	WELD	63,743.5	15590	0.0	41.3	48.27012726	-103.14333696	2266.254						
15600	WELD	63,784.8	15600	0.0	41.3	48.27012848	-103.14350580	2267.460						
15610	WELD	63,826.1	15610	0.0	41.2	48.27013003	-103.14367429	2268.841						
15620	WELD	63,867.3	15620	0.0	41.3	48.27013126	-103.14384294	2270.171						
15630	WELD	63,908.6	15630	0.0	41.3	48.27013197	-103.14401161	2271.635						
15640	WELD	63,949.9	15640	0.0	41.2	48.27013282	-103.14418043	2273.053						
15650	WELD	63,991.1	15650	0.0	41.3	48.27013350	-103.14434874	2274.072						
15660	WELD	64,032.4	15660	0.0	41.3	48.27013389	-103.14451722	2275.244						
15670	WELD	64,073.7	15670	0.0	41.3	48.27013451	-103.14468631	2276.193						
15680	WELD	64,114.9	15680	0.0	41.2	48.27013479	-103.14485485	2277.363						
15690	WELD	64,156.1	15690	0.0	41.2	48.27013584	-103.14502331	2277.639						
15700	WELD	64,197.4	15700	0.0	41.4	48.27013657	-103.14519196	2278.591						
15710	WELD	64,238.8	15710	0.0	41.2	48.27013648	-103.14536114	2279.694						
15720	WELD	64,279.9	15720	0.0	41.3	48.27013531	-103.14552965	2280.443						
15730	WELD	64,321.2	15730	0.0	41.2	48.27013404	-103.14569850	2281.311						
15740	WELD	64,362.4	15740	0.0	41.0	48.27013260	-103.14586745	2281.562						
15750	WELD	64,403.4	15750	0.0	41.3	48.27013213	-103.14603522	2281.184						
15760	WELD	64,444.7	15760	0.0	49.0	48.27013287	-103.14620426	2280.732						
15770	WELD	64,493.7	15770	0.0	49.6	48.27013406	-103.14640462	2280.363						
15780	WELD	64,543.3	15780	0.0	49.0	48.27013384	-103.14660711	2279.765						
15790	WELD	64,592.2	15790	0.0	49.8	48.27013416	-103.14680706	2279.268						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
15800	WELD	64,642.0	15800	0.0	49.7	48.27013507	-103.14701004	2278.822						
15810	WELD	64,691.7	15810	0.0	49.5	48.27013557	-103.14721291	2277.293						
15820	WELD	64,741.2	15820	0.0	49.6	48.27013677	-103.14741528	2276.272						
15830	WELD	64,790.8	15830	0.0	48.9	48.27013758	-103.14761791	2275.701						
15840	WELD	64,839.7	15840	0.0	49.1	48.27013763	-103.14781794	2275.851						
15850	WELD	64,888.8	15850	0.0	49.5	48.27013751	-103.14801852	2276.091						
15860	WELD	64,938.3	15860	0.0	49.3	48.27013805	-103.14822111	2276.472						
15870	WELD	64,987.6	15870	0.0	47.2	48.27013824	-103.14842220	2277.282						
15880	WELD	65,034.8	15880	0.0	49.6	48.27013864	-103.14861481	2278.186						
15890	WELD	65,084.4	15890	0.0	48.9	48.27013850	-103.14881678	2280.338						
15900	WELD	65,133.3	15900	0.0	49.5	48.27013890	-103.14901683	2281.544						
15910	WELD	65,182.8	15910	0.0	49.7	48.27013886	-103.14921880	2283.224						
15920	WELD	65,232.5	15920	0.0	49.7	48.27013856	-103.14942161	2284.423						
15930	WELD	65,282.2	15930	0.0	49.6	48.27013777	-103.14962458	2286.293						
15940	WELD	65,331.8	15940	0.0	49.5	48.27013746	-103.14982707	2287.307						
15950	WELD	65,381.3	15950	0.0	49.6	48.27013759	-103.15002946	2289.075						
15960	WELD	65,430.9	15960	0.0	44.1	48.27013809	-103.15023229	2290.173						
15970	WELD	65,475.0	15970	0.0	49.5	48.27013829	-103.15041295	2290.940						
15980	WELD	65,524.6	15980	0.0	49.4	48.27013886	-103.15061532	2291.568						
15990	WELD	65,573.9	15990	0.0	49.7	48.27014023	-103.15081688	2291.999						
16000	WELD	65,623.6	16000	0.0	49.3	48.27014067	-103.15102007	2292.278						
16010	WELD	65,672.9	16010	0.0	49.2	48.27013962	-103.15122147	2291.808						
16020	WELD	65,722.1	16020	0.0	30.9	48.27013779	-103.15142245	2291.826						
16030	WELD	65,753.0	16030	0.0	32.6	48.27014063	-103.15154827	2291.329						
11000056	WT CHANGE	65,785.5	16030	0.0	0.1	48.27014186	-103.15168034	2290.644			0.322	52000	0.72	
16040	WELD	65,785.5	16040	0.0	42.2	48.27014187	-103.15168070	2290.642						
10000042	AGM 110, Sta. 647+85, 114th Ave NW -- Survey Point	65,795.5	16040	10.0	32.2	48.27014177	-103.15172141	2290.235						
16050	WELD	65,827.8	16050	0.0	42.3	48.27014152	-103.15185259	2287.454						
16060	WELD	65,870.1	16060	0.0	42.4	48.27014255	-103.15202498	2285.568						
16070	WELD	65,912.4	16070	0.0	42.4	48.27014580	-103.15219752	2287.280						
16080	WELD	65,954.8	16080	0.0	42.3	48.27014857	-103.15236927	2291.409						
16090	WELD	65,997.1	16090	0.0	42.2	48.27014921	-103.15254066	2296.196						
11000057	WT CHANGE	66,039.2	16090	0.0	0.1	48.27014754	-103.15271220	2299.214			0.188	52000	0.72	
16100	WELD	66,039.3	16100	0.0	49.3	48.27014753	-103.15271256	2299.216						
16110	WELD	66,088.6	16110	0.0	15.1	48.27014524	-103.15291391	2299.409						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
16120	WELD	66,103.7	16120	0.0	49.2	48.27014440	-103.15297562	2299.623							
16130	WELD	66,152.8	16130	0.0	49.7	48.27014163	-103.15317645	2299.878							
20000017	Seam Variation	66,154.7	16130	1.8	47.9	48.27014157	-103.15318397	2299.875	302	10:00	-	0.64	0.48		
16140	WELD	66,202.5	16140	0.0	49.5	48.27014078	-103.15337967	2300.657							
16150	WELD	66,252.1	16150	0.0	49.4	48.27014034	-103.15358202	2301.491							
16160	WELD	66,301.5	16160	0.0	49.6	48.27014037	-103.15378415	2301.936							
16170	WELD	66,351.1	16170	0.0	49.5	48.27014228	-103.15398694	2302.857							
16180	WELD	66,400.6	16180	0.0	49.5	48.27014381	-103.15418892	2303.371							
16190	WELD	66,450.1	16190	0.0	49.5	48.27014464	-103.15439125	2304.680							
16200	WELD	66,499.6	16200	0.0	49.4	48.27014502	-103.15459388	2306.365							
16210	WELD	66,549.0	16210	0.0	45.7	48.27014500	-103.15479609	2307.941							
16220	WELD	66,594.7	16220	0.0	48.0	48.27014456	-103.15498341	2309.217							
20000018	Seam Variation	66,611.0	16220	16.2	31.8	48.27014459	-103.15504996	2309.620	22	12:30	-	0.84	0.54		
20000019	Seam Variation	66,612.3	16220	17.6	30.5	48.27014459	-103.15505544	2309.649	21	12:30	-	0.90	0.39		
16230	WELD	66,642.7	16230	0.0	49.4	48.27014497	-103.15518025	2310.091							
16240	WELD	66,692.1	16240	0.0	49.6	48.27014569	-103.15538239	2311.229							
16250	WELD	66,741.8	16250	0.0	49.5	48.27014536	-103.15558537	2312.742							
16260	WELD	66,791.3	16260	0.0	49.8	48.27014477	-103.15578747	2313.110							
16270	WELD	66,841.0	16270	0.0	49.8	48.27014483	-103.15599053	2314.308							
16280	WELD	66,890.9	16280	0.0	49.6	48.27014530	-103.15619351	2315.454							
16290	WELD	66,940.5	16290	0.0	49.8	48.27014621	-103.15639575	2316.642							
16300	WELD	66,990.3	16300	0.0	49.8	48.27014690	-103.15659863	2317.513							
16310	WELD	67,040.1	16310	0.0	49.6	48.27014701	-103.15680162	2318.337							
16320	WELD	67,089.7	16320	0.0	49.4	48.27014615	-103.15700356	2321.007							
16330	WELD	67,139.1	16330	0.0	49.7	48.27014732	-103.15720508	2324.234							
16340	WELD	67,188.8	16340	0.0	49.7	48.27014776	-103.15740703	2329.358							
16350	WELD	67,238.5	16350	0.0	49.4	48.27014814	-103.15760688	2337.622							
16360	WELD	67,287.8	16360	0.0	49.6	48.27014808	-103.15780591	2345.141							
16370	WELD	67,337.5	16370	0.0	49.6	48.27014831	-103.15800747	2349.417							
16380	WELD	67,387.1	16380	0.0	49.6	48.27014730	-103.15820982	2352.851							
16390	WELD	67,436.7	16390	0.0	49.3	48.27014653	-103.15841259	2354.676							
16400	WELD	67,486.0	16400	0.0	48.6	48.27014672	-103.15861423	2355.482							
16410	WELD	67,534.6	16410	0.0	49.6	48.27014617	-103.15881354	2354.909							
16420	WELD	67,584.3	16420	0.0	49.6	48.27014598	-103.15901659	2354.324							
16430	WELD	67,633.9	16430	0.0	49.5	48.27014574	-103.15921924	2351.137							
16440	WELD	67,683.4	16440	0.0	49.6	48.27014700	-103.15942063	2344.693							
16450	WELD	67,733.0	16450	0.0	49.5	48.27014878	-103.15962121	2337.154							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
16460	WELD	67,782.5	16460	0.0	49.3	48.27015002	-103.15982358	2333.403						
16470	WELD	67,831.8	16470	0.0	49.2	48.27015085	-103.16002533	2332.649						
16480	WELD	67,881.0	16480	0.0	49.3	48.27015092	-103.16022692	2332.986						
16490	WELD	67,930.3	16490	0.0	49.8	48.27015177	-103.16042840	2332.676						
16500	WELD	67,980.0	16500	0.0	45.0	48.27015285	-103.16063118	2332.354						
16510	WELD	68,025.1	16510	0.0	49.8	48.27015395	-103.16081452	2332.516						
16520	WELD	68,074.9	16520	0.0	49.7	48.27015359	-103.16101732	2334.249						
16530	WELD	68,124.6	16530	0.0	49.8	48.27015162	-103.16122007	2336.369						
16540	WELD	68,174.4	16540	0.0	49.8	48.27015135	-103.16142344	2335.815						
16550	WELD	68,224.2	16550	0.0	49.8	48.27015205	-103.16162669	2334.618						
16560	WELD	68,274.0	16560	0.0	41.3	48.27015249	-103.16183019	2334.600						
16570	WELD	68,315.3	16570	0.0	41.3	48.27015271	-103.16199825	2335.917						
16580	WELD	68,356.6	16580	0.0	41.3	48.27015336	-103.16216645	2337.603						
16590	WELD	68,398.0	16590	0.0	41.3	48.27015430	-103.16233492	2339.301						
16600	WELD	68,439.2	16600	0.0	41.3	48.27015451	-103.16250309	2341.254						
16610	WELD	68,480.5	16610	0.0	41.2	48.27015405	-103.16267138	2343.351						
16620	WELD	68,521.7	16620	0.0	41.2	48.27015288	-103.16283982	2345.704						
16630	WELD	68,562.8	16630	0.0	41.2	48.27015187	-103.16300787	2348.367						
16640	WELD	68,604.0	16640	0.0	41.3	48.27015122	-103.16317622	2350.209						
16650	WELD	68,645.3	16650	0.0	41.2	48.27015123	-103.16334487	2351.897						
16660	WELD	68,686.5	16660	0.0	41.2	48.27015113	-103.16351357	2351.303						
16670	WELD	68,727.7	16670	0.0	41.4	48.27015153	-103.16368206	2349.511						
16680	WELD	68,769.1	16680	0.0	41.2	48.27015141	-103.16385143	2347.753						
16690	WELD	68,810.4	16690	0.0	41.3	48.27015150	-103.16401989	2345.918						
16700	WELD	68,851.6	16700	0.0	41.3	48.27015141	-103.16418834	2343.719						
16710	WELD	68,892.9	16710	0.0	41.4	48.27015119	-103.16435704	2342.052						
16720	WELD	68,934.3	16720	0.0	41.3	48.27015097	-103.16452567	2340.297						
16730	WELD	68,975.6	16730	0.0	41.3	48.27015076	-103.16469441	2338.648						
16740	WELD	69,016.9	16740	0.0	41.4	48.27015185	-103.16486291	2337.304						
16750	WELD	69,058.2	16750	0.0	41.3	48.27015176	-103.16503182	2335.357						
16760	WELD	69,099.5	16760	0.0	41.4	48.27015119	-103.16520001	2333.606						
16770	WELD	69,140.9	16770	0.0	41.4	48.27015117	-103.16536877	2332.315						
16780	WELD	69,182.2	16780	0.0	41.4	48.27015262	-103.16553747	2331.006						
16790	WELD	69,223.6	16790	0.0	41.3	48.27015381	-103.16570636	2330.178						
16800	WELD	69,264.9	16800	0.0	41.3	48.27015470	-103.16587485	2329.108						
16810	WELD	69,306.2	16810	0.0	41.2	48.27015542	-103.16604356	2328.765						
16820	WELD	69,347.4	16820	0.0	41.2	48.27015554	-103.16621177	2328.796						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
16830	WELD	69,388.6	16830	0.0	49.6	48.27015542	-103.16638017	2328.778							
16840	WELD	69,438.2	16840	0.0	41.3	48.27015603	-103.16658248	2328.988							
16850	WELD	69,479.5	16850	0.0	40.9	48.27015637	-103.16675142	2329.386							
16860	WELD	69,520.4	16860	0.0	41.2	48.27015675	-103.16691874	2329.803							
16870	WELD	69,561.6	16870	0.0	41.2	48.27015760	-103.16708721	2330.211							
16880	WELD	69,602.7	16880	0.0	41.3	48.27015838	-103.16725522	2331.212							
16890	WELD	69,644.0	16890	0.0	40.9	48.27015949	-103.16742348	2332.078							
40000012	Metal Loss - EXTERNAL	69,683.4	16890	39.4	1.6	48.27015974	-103.16758439	2333.948	64	2:00	11%	0.55	0.53	1760	100%
16900	WELD	69,684.9	16900	0.0	41.2	48.27015975	-103.16759083	2334.010							
16910	WELD	69,726.1	16910	0.0	49.5	48.27016017	-103.16775861	2335.487							
16920	WELD	69,775.6	16920	0.0	49.0	48.27016204	-103.16796041	2337.093							
16930	WELD	69,824.5	16930	0.0	31.4	48.27016422	-103.16816032	2337.136							
16940	WELD	69,855.9	16940	0.0	41.2	48.27016360	-103.16828850	2337.541							
16950	WELD	69,897.1	16950	0.0	21.3	48.27015941	-103.16845719	2338.444							
16960	WELD	69,918.5	16960	0.0	49.2	48.27015779	-103.16854451	2338.433							
16970	WELD	69,967.7	16970	0.0	49.4	48.27015577	-103.16874569	2338.560							
16980	WELD	70,017.0	16980	0.0	41.4	48.27015434	-103.16894767	2338.957							
16990	WELD	70,058.4	16990	0.0	41.4	48.27015255	-103.16911684	2339.611							
17000	WELD	70,099.8	17000	0.0	41.4	48.27015038	-103.16928590	2340.455							
17010	WELD	70,141.2	17010	0.0	41.4	48.27014891	-103.16945514	2341.311							
17020	WELD	70,182.6	17020	0.0	41.4	48.27014786	-103.16962397	2342.178							
17030	WELD	70,224.1	17030	0.0	41.5	48.27014644	-103.16979303	2343.384							
17040	WELD	70,265.6	17040	0.0	41.4	48.27014535	-103.16996192	2344.041							
17050	WELD	70,306.9	17050	0.0	41.4	48.27014431	-103.17013071	2344.400							
17060	WELD	70,348.4	17060	0.0	41.4	48.27014384	-103.17029954	2344.596							
17070	WELD	70,389.8	17070	0.0	41.4	48.27014343	-103.17046817	2344.662							
17080	WELD	70,431.2	17080	0.0	41.4	48.27014247	-103.17063753	2344.668							
17090	WELD	70,472.5	17090	0.0	41.4	48.27014211	-103.17080683	2344.854							
17100	WELD	70,513.9	17100	0.0	41.3	48.27014230	-103.17097563	2345.013							
17110	WELD	70,555.2	17110	0.0	41.4	48.27014208	-103.17114464	2345.318							
17120	WELD	70,596.6	17120	0.0	41.4	48.27014176	-103.17131390	2345.839							
17130	WELD	70,638.0	17130	0.0	41.3	48.27014124	-103.17148318	2346.243							
17140	WELD	70,679.3	17140	0.0	41.3	48.27014113	-103.17165225	2345.845							
17150	WELD	70,720.6	17150	0.0	41.4	48.27014116	-103.17182135	2345.088							
17160	WELD	70,761.9	17160	0.0	41.3	48.27014090	-103.17199052	2344.511							
17170	WELD	70,803.3	17170	0.0	41.3	48.27013986	-103.17215977	2343.927							
17180	WELD	70,844.6	17180	0.0	41.3	48.27013836	-103.17232900	2343.128							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
17190	WELD	70,885.8	17190	0.0	41.3	48.27013691	-103.17249793	2342.493						
17200	WELD	70,927.1	17200	0.0	41.4	48.27013554	-103.17266694	2341.662						
17210	WELD	70,968.5	17210	0.0	41.4	48.27013512	-103.17283640	2340.726						
17220	WELD	71,009.8	17220	0.0	41.4	48.27013534	-103.17300545	2339.701						
17230	WELD	71,051.2	17230	0.0	41.4	48.27013595	-103.17317472	2338.698						
17240	WELD	71,092.6	17240	0.0	41.4	48.27013676	-103.17334398	2338.193						
17250	WELD	71,134.0	17250	0.0	41.4	48.27013797	-103.17351315	2337.874						
17260	WELD	71,175.4	17260	0.0	41.4	48.27013880	-103.17368236	2338.128						
17270	WELD	71,216.9	17270	0.0	41.4	48.27013988	-103.17385142	2337.807						
17280	WELD	71,258.3	17280	0.0	41.4	48.27014034	-103.17402090	2337.707						
17290	WELD	71,299.7	17290	0.0	41.4	48.27014000	-103.17418994	2337.497						
17300	WELD	71,341.1	17300	0.0	41.3	48.27014061	-103.17435898	2337.451						
17310	WELD	71,382.4	17310	0.0	41.3	48.27014157	-103.17452828	2336.937						
17320	WELD	71,423.7	17320	0.0	41.3	48.27014109	-103.17469739	2335.396						
17330	WELD	71,465.1	17330	0.0	41.3	48.27014032	-103.17486660	2335.144						
17340	WELD	71,506.4	17340	0.0	41.4	48.27013938	-103.17503567	2334.671						
17350	WELD	71,547.8	17350	0.0	41.4	48.27013816	-103.17520500	2334.740						
17360	WELD	71,589.1	17360	0.0	41.3	48.27013709	-103.17537424	2334.796						
17370	WELD	71,630.5	17370	0.0	41.3	48.27013657	-103.17554346	2334.403						
17380	WELD	71,671.8	17380	0.0	41.3	48.27013664	-103.17571266	2333.570						
17390	WELD	71,713.1	17390	0.0	41.3	48.27013699	-103.17588199	2332.848						
17400	WELD	71,754.5	17400	0.0	41.3	48.27013712	-103.17605101	2332.807						
17410	WELD	71,795.8	17410	0.0	41.4	48.27013684	-103.17622031	2332.694						
17420	WELD	71,837.1	17420	0.0	41.2	48.27013652	-103.17638952	2332.852						
17430	WELD	71,878.4	17430	0.0	41.3	48.27013633	-103.17655874	2333.244						
10000043	AGM 120, Sta. 708+33, 59th St. NW -- Han #8611	71,916.0	17430	37.6	3.7	48.27013628	-103.17671312	2332.827						
17440	WELD	71,919.6	17440	0.0	41.4	48.27013641	-103.17672811	2332.812						
17450	WELD	71,961.0	17450	0.0	41.3	48.27013738	-103.17689738	2332.682						
17460	WELD	72,002.3	17460	0.0	41.4	48.27013764	-103.17706649	2333.595						
17470	WELD	72,043.7	17470	0.0	41.4	48.27013740	-103.17723566	2333.605						
17480	WELD	72,085.1	17480	0.0	49.5	48.27013736	-103.17740495	2333.887						
17490	WELD	72,134.6	17490	0.0	49.5	48.27013778	-103.17760717	2333.468						
17500	WELD	72,184.2	17500	0.0	41.5	48.27013840	-103.17780950	2333.587						
17510	WELD	72,225.6	17510	0.0	41.4	48.27013838	-103.17797902	2333.811						
17520	WELD	72,267.1	17520	0.0	41.5	48.27013768	-103.17814781	2334.478						
17530	WELD	72,308.5	17530	0.0	41.4	48.27013712	-103.17831721	2335.164						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
17540	WELD	72,350.0	17540	0.0	41.4	48.27013689	-103.17848587	2336.402						
17550	WELD	72,391.3	17550	0.0	41.3	48.27013609	-103.17865453	2338.318						
17560	WELD	72,432.6	17560	0.0	41.3	48.27013571	-103.17882346	2339.794						
17570	WELD	72,474.0	17570	0.0	41.4	48.27013621	-103.17899269	2340.331						
17580	WELD	72,515.4	17580	0.0	41.4	48.27013646	-103.17916194	2340.775						
17590	WELD	72,556.7	17590	0.0	41.3	48.27013659	-103.17933103	2340.573						
17600	WELD	72,598.1	17600	0.0	41.4	48.27013635	-103.17949993	2340.821						
17610	WELD	72,639.4	17610	0.0	41.4	48.27013614	-103.17966899	2341.534						
17620	WELD	72,680.8	17620	0.0	41.3	48.27013595	-103.17983814	2343.002						
17630	WELD	72,722.1	17630	0.0	41.4	48.27013593	-103.18000729	2344.189						
17640	WELD	72,763.5	17640	0.0	41.3	48.27013615	-103.18017652	2345.905						
17650	WELD	72,804.8	17650	0.0	41.3	48.27013596	-103.18034579	2347.076						
17660	WELD	72,846.1	17660	0.0	41.3	48.27013634	-103.18051480	2348.728						
17670	WELD	72,887.4	17670	0.0	41.3	48.27013694	-103.18068397	2350.054						
17680	WELD	72,928.6	17680	0.0	41.3	48.27013745	-103.18085312	2351.067						
17690	WELD	72,970.0	17690	0.0	41.4	48.27013762	-103.18102232	2351.893						
17700	WELD	73,011.3	17700	0.0	41.4	48.27013750	-103.18119161	2352.121						
17710	WELD	73,052.7	17710	0.0	41.4	48.27013736	-103.18136029	2352.945						
17720	WELD	73,094.1	17720	0.0	41.4	48.27013741	-103.18152925	2353.888						
17730	WELD	73,135.6	17730	0.0	41.5	48.27013747	-103.18169808	2355.400						
17740	WELD	73,177.0	17740	0.0	41.5	48.27013800	-103.18186693	2357.416						
17750	WELD	73,218.5	17750	0.0	41.4	48.27013799	-103.18203593	2359.516						
17760	WELD	73,260.0	17760	0.0	41.4	48.27013756	-103.18220528	2360.465						
17770	WELD	73,301.4	17770	0.0	41.4	48.27013689	-103.18237462	2360.489						
17780	WELD	73,342.8	17780	0.0	21.1	48.27013502	-103.18254386	2360.701						
17790	WELD	73,363.9	17790	0.0	16.6	48.27013360	-103.18263035	2360.669						
17800	WELD	73,380.5	17800	0.0	40.7	48.27013282	-103.18269793	2360.830						
17810	WELD	73,421.1	17810	0.0	41.1	48.27013363	-103.18286452	2362.356						
17820	WELD	73,462.3	17820	0.0	41.4	48.27014036	-103.18303290	2362.964						
17830	WELD	73,503.6	17830	0.0	40.9	48.27015157	-103.18320124	2364.149						
17840	WELD	73,544.5	17840	0.0	41.2	48.27016327	-103.18336740	2366.155						
17850	WELD	73,585.7	17850	0.0	41.4	48.27017162	-103.18353546	2367.111						
17860	WELD	73,627.1	17860	0.0	41.4	48.27017873	-103.18370433	2367.475						
17870	WELD	73,668.5	17870	0.0	41.3	48.27018607	-103.18387334	2368.232						
17880	WELD	73,709.8	17880	0.0	41.4	48.27019395	-103.18404216	2368.484						
17890	WELD	73,751.2	17890	0.0	41.4	48.27020255	-103.18421088	2369.131						
17900	WELD	73,792.6	17900	0.0	41.3	48.27021085	-103.18437985	2368.463						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
17910	WELD	73,833.9	17910	0.0	41.4	48.27021921	-103.18454869	2369.321							
17920	WELD	73,875.3	17920	0.0	41.4	48.27022681	-103.18471772	2370.779							
17930	WELD	73,916.6	17930	0.0	41.3	48.27023428	-103.18488622	2373.492							
17940	WELD	73,958.0	17940	0.0	41.4	48.27024129	-103.18505476	2376.163							
17950	WELD	73,999.4	17950	0.0	41.4	48.27024853	-103.18522362	2377.397							
13000003	GAIN	74,002.4	17950	3.0	38.4	48.27024909	-103.18523616	2377.520	261	8:30					
17960	WELD	74,040.8	17960	0.0	41.5	48.27025661	-103.18539233	2379.269							
17970	WELD	74,082.2	17970	0.0	41.4	48.27026442	-103.18556085	2381.395							
13000006	GAIN	74,115.9	17970	33.5	7.9	48.27027115	-103.18569772	2383.087	136	4:30					
17980	WELD	74,123.7	17980	0.0	41.4	48.27027274	-103.18572939	2383.573							
17990	WELD	74,165.1	17990	0.0	41.5	48.27028092	-103.18589797	2386.362							
18000	WELD	74,206.6	18000	0.0	49.4	48.27028812	-103.18606655	2388.922							
18010	WELD	74,256.0	18010	0.0	49.4	48.27029300	-103.18626809	2390.885							
20000021	Seam Variation	74,300.3	18010	44.2	5.1	48.27029188	-103.18644871	2391.129	186	6:00	-	0.94	0.52		
14000000	DENT	74,302.8	18010	46.7	2.7	48.27029168	-103.18645886	2391.155	241	8:00	2.3%				
18020	WELD	74,305.4	18020	0.0	49.6	48.27029144	-103.18646945	2391.178							
18030	WELD	74,355.0	18030	0.0	49.8	48.27028416	-103.18667178	2389.631							
18040	WELD	74,404.8	18040	0.0	49.8	48.27027446	-103.18687391	2385.931							
18050	WELD	74,454.6	18050	0.0	49.8	48.27026486	-103.18707595	2381.378							
18060	WELD	74,504.3	18060	0.0	49.8	48.27025518	-103.18727777	2377.473							
18070	WELD	74,554.1	18070	0.0	49.7	48.27024607	-103.18748038	2374.768							
18080	WELD	74,603.8	18080	0.0	49.7	48.27023738	-103.18768348	2374.687							
18090	WELD	74,653.5	18090	0.0	49.5	48.27022779	-103.18788624	2375.700							
18100	WELD	74,703.0	18100	0.0	49.7	48.27021817	-103.18808805	2376.710							
18110	WELD	74,752.7	18110	0.0	49.7	48.27020848	-103.18829048	2376.823							
18120	WELD	74,802.4	18120	0.0	49.7	48.27019865	-103.18849292	2380.370							
18130	WELD	74,852.1	18130	0.0	49.6	48.27018882	-103.18869446	2385.527							
18140	WELD	74,901.7	18140	0.0	49.7	48.27017931	-103.18889613	2390.033							
18150	WELD	74,951.4	18150	0.0	49.8	48.27016849	-103.18909789	2394.803							
18160	WELD	75,001.2	18160	0.0	49.6	48.27015810	-103.18930033	2397.106							
18170	WELD	75,050.8	18170	0.0	49.7	48.27015057	-103.18950308	2398.295							
18180	WELD	75,100.5	18180	0.0	49.7	48.27014707	-103.18970628	2399.486							
18190	WELD	75,150.2	18190	0.0	49.6	48.27014670	-103.18990923	2398.544							
18200	WELD	75,199.7	18200	0.0	49.4	48.27014778	-103.19011206	2396.664							
18210	WELD	75,249.1	18210	0.0	49.6	48.27014846	-103.19031418	2396.207							
18220	WELD	75,298.7	18220	0.0	49.6	48.27014897	-103.19051665	2396.418							
18230	WELD	75,348.3	18230	0.0	49.3	48.27014921	-103.19071950	2394.523							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
18240	WELD	75,397.6	18240	0.0	49.7	48.27014879	-103.19092080	2392.648							
18250	WELD	75,447.2	18250	0.0	49.7	48.27014907	-103.19112375	2392.843							
18260	WELD	75,497.0	18260	0.0	49.7	48.27014983	-103.19132652	2394.354							
18270	WELD	75,546.6	18270	0.0	49.4	48.27014872	-103.19152925	2396.574							
18280	WELD	75,596.1	18280	0.0	49.7	48.27014819	-103.19173066	2398.634							
18290	WELD	75,645.8	18290	0.0	49.8	48.27014748	-103.19193347	2400.527							
18300	WELD	75,695.6	18300	0.0	49.1	48.27014804	-103.19213631	2401.963							
18310	WELD	75,744.7	18310	0.0	30.1	48.27014906	-103.19233666	2401.739							
18320	WELD	75,774.8	18320	0.0	39.6	48.27014877	-103.19245954	2401.798							
14000001	DENT	75,798.2	18320	23.4	16.2	48.27014899	-103.19255520	2401.165	196	6:30	4.8%				
18330	WELD	75,814.4	18330	0.0	31.5	48.27014857	-103.19262100	2401.133							
18340	WELD	75,845.9	18340	0.0	33.7	48.27014640	-103.19274886	2403.941							
18350	WELD	75,879.5	18350	0.0	6.5	48.27014172	-103.19288538	2407.395							
18360	WELD	75,886.0	18360	0.0	1.5	48.27014056	-103.19291140	2408.060							
10000044	Bend right - 45 deg., 3D	75,886.7	18360	0.1	1.4	48.27014124	-103.19291434	2408.133	0	12:00					
18370	WELD	75,887.5	18370	0.0	48.1	48.27014231	-103.19291700	2408.208							
18380	WELD	75,935.6	18380	0.0	45.6	48.27022757	-103.19306624	2412.809							
18390	WELD	75,981.1	18390	0.0	46.4	48.27030711	-103.19320917	2413.610							
18400	WELD	76,027.5	18400	0.0	49.6	48.27038797	-103.19335492	2412.534							
18410	WELD	76,077.1	18410	0.0	49.6	48.27047475	-103.19351049	2411.152							
18420	WELD	76,126.7	18420	0.0	44.9	48.27056144	-103.19366574	2411.990							
18430	WELD	76,171.6	18430	0.0	49.4	48.27063923	-103.19380666	2412.966							
18440	WELD	76,220.9	18440	0.0	49.3	48.27072584	-103.19396108	2412.230							
18450	WELD	76,270.2	18450	0.0	49.6	48.27081129	-103.19411662	2413.838							
18460	WELD	76,319.8	18460	0.0	49.7	48.27089598	-103.19427411	2417.141							
18470	WELD	76,369.5	18470	0.0	49.3	48.27098138	-103.19443190	2419.258							
18480	WELD	76,418.8	18480	0.0	49.5	48.27106670	-103.19458784	2420.450							
18490	WELD	76,468.3	18490	0.0	49.6	48.27115310	-103.19474398	2422.606							
18500	WELD	76,517.9	18500	0.0	49.6	48.27123964	-103.19489961	2424.575							
18510	WELD	76,567.5	18510	0.0	37.7	48.27132619	-103.19505443	2428.629							
18520	WELD	76,605.2	18520	0.0	7.5	48.27139044	-103.19517426	2432.236							
18530	WELD	76,612.7	18530	0.0	49.2	48.27140330	-103.19519826	2432.777							
11000058	WT CHANGE	76,661.9	18530	0.0	0.1	48.27148861	-103.19535262	2433.141				0.322	52000	0.72	
18540	WELD	76,662.0	18540	0.0	42.2	48.27148874	-103.19535286	2433.139							
18550	WELD	76,704.1	18550	0.0	42.3	48.27156388	-103.19548330	2432.210							
18560	WELD	76,746.4	18560	0.0	42.3	48.27163788	-103.19561559	2431.783							
18570	WELD	76,788.8	18570	0.0	42.1	48.27171002	-103.19574946	2433.757							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
11000059	WT CHANGE	76,830.8	18570	0.0	0.1	48.27178318	-103.19588038	2436.908				0.188	52000	0.72	
18580	WELD	76,830.8	18580	0.0	49.0	48.27178333	-103.19588065	2436.911							
10000045	AGM 130, Sta. 757+29, 116th Ave NW -- Survey Point	76,853.3	18580	22.4	26.6	48.27182565	-103.19594650	2438.038							
18590	WELD	76,879.9	18590	0.0	12.7	48.27187884	-103.19602001	2439.090							
18600	WELD	76,892.6	18600	0.0	1.6	48.27190440	-103.19605475	2439.493							
10000046	Bend right - 40 deg., 3D	76,893.4	18600	0.1	1.5	48.27190628	-103.19605607	2439.532	0	12:00					
18610	WELD	76,894.1	18610	0.0	14.6	48.27190835	-103.19605637	2439.569							
18620	WELD	76,908.7	18620	0.0	41.1	48.27194790	-103.19605345	2440.349							
18630	WELD	76,949.8	18630	0.0	41.4	48.27205953	-103.19604863	2440.327							
18640	WELD	76,991.2	18640	0.0	41.4	48.27217214	-103.19604710	2439.905							
18650	WELD	77,032.6	18650	0.0	41.4	48.27228507	-103.19604770	2439.957							
18660	WELD	77,074.0	18660	0.0	41.4	48.27239803	-103.19604790	2440.000							
18670	WELD	77,115.4	18670	0.0	41.3	48.27251089	-103.19604850	2441.079							
18680	WELD	77,156.7	18680	0.0	41.3	48.27262370	-103.19604890	2440.783							
18690	WELD	77,198.0	18690	0.0	41.4	48.27273653	-103.19604930	2439.886							
18700	WELD	77,239.4	18700	0.0	41.4	48.27284935	-103.19604930	2438.617							
18710	WELD	77,280.7	18710	0.0	41.4	48.27296226	-103.19604990	2438.112							
18720	WELD	77,322.1	18720	0.0	41.4	48.27307504	-103.19605040	2438.022							
18730	WELD	77,363.5	18730	0.0	41.3	48.27318812	-103.19605070	2437.715							
18740	WELD	77,404.9	18740	0.0	41.4	48.27330103	-103.19605260	2437.874							
18750	WELD	77,446.3	18750	0.0	41.3	48.27341395	-103.19605390	2438.936							
18760	WELD	77,487.6	18760	0.0	41.3	48.27352682	-103.19605380	2439.173							
18770	WELD	77,528.9	18770	0.0	41.3	48.27363960	-103.19605410	2438.968							
18780	WELD	77,570.3	18780	0.0	41.3	48.27375234	-103.19605456	2438.276							
18790	WELD	77,611.6	18790	0.0	41.3	48.27386524	-103.19605390	2436.601							
18800	WELD	77,652.9	18800	0.0	41.3	48.27397791	-103.19605300	2434.941							
18810	WELD	77,694.2	18810	0.0	41.4	48.27409082	-103.19605378	2432.926							
18820	WELD	77,735.6	18820	0.0	41.4	48.27420370	-103.19605640	2431.395							
18830	WELD	77,777.0	18830	0.0	41.4	48.27431647	-103.19605780	2429.638							
18840	WELD	77,818.4	18840	0.0	41.4	48.27442930	-103.19605780	2428.669							
18850	WELD	77,859.8	18850	0.0	41.4	48.27454201	-103.19605744	2427.497							
18860	WELD	77,901.1	18860	0.0	41.4	48.27465487	-103.19605660	2426.260							
18870	WELD	77,942.5	18870	0.0	41.4	48.27476737	-103.19605630	2425.043							
18880	WELD	77,983.9	18880	0.0	41.4	48.27488008	-103.19605720	2423.789							
18890	WELD	78,025.4	18890	0.0	41.5	48.27499283	-103.19605740	2422.547							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
18900	WELD	78,066.8	18900	0.0	41.4	48.27510559	-103.19605660	2420.331							
18910	WELD	78,108.2	18910	0.0	41.5	48.27521835	-103.19605620	2419.094							
18920	WELD	78,149.7	18920	0.0	41.4	48.27533114	-103.19605620	2418.190							
40000013	Metal Loss - INTERNAL	78,168.0	18920	18.3	23.2	48.27538104	-103.19605620	2417.672	128	4:15	16%	0.81	0.57	1760	100%
18930	WELD	78,191.2	18930	0.0	41.4	48.27544404	-103.19605590	2416.881							
18940	WELD	78,232.5	18940	0.0	41.4	48.27555689	-103.19605580	2416.197							
18950	WELD	78,273.9	18950	0.0	41.3	48.27566972	-103.19605510	2415.326							
18960	WELD	78,315.2	18960	0.0	41.4	48.27578246	-103.19605470	2413.576							
18970	WELD	78,356.6	18970	0.0	41.4	48.27589535	-103.19605520	2412.763							
18980	WELD	78,398.0	18980	0.0	41.4	48.27600816	-103.19605530	2411.945							
18990	WELD	78,439.4	18990	0.0	41.4	48.27612106	-103.19605550	2411.508							
19000	WELD	78,480.7	19000	0.0	41.4	48.27623370	-103.19605631	2411.398							
19010	WELD	78,522.1	19010	0.0	41.3	48.27634634	-103.19605712	2410.856							
19020	WELD	78,563.4	19020	0.0	41.3	48.27645908	-103.19605790	2410.619							
19030	WELD	78,604.8	19030	0.0	41.3	48.27657177	-103.19605820	2409.888							
19040	WELD	78,646.1	19040	0.0	41.3	48.27668449	-103.19605760	2410.066							
19050	WELD	78,687.4	19050	0.0	41.3	48.27679721	-103.19605710	2408.963							
19060	WELD	78,728.7	19060	0.0	41.3	48.27690989	-103.19605729	2408.387							
19070	WELD	78,770.0	19070	0.0	41.3	48.27702251	-103.19605791	2408.422							
19080	WELD	78,811.3	19080	0.0	41.3	48.27713523	-103.19605850	2408.027							
19090	WELD	78,852.7	19090	0.0	41.4	48.27724786	-103.19605880	2407.270							
19100	WELD	78,894.0	19100	0.0	41.3	48.27736050	-103.19605870	2407.046							
19110	WELD	78,935.3	19110	0.0	41.4	48.27747312	-103.19605810	2406.693							
19120	WELD	78,976.7	19120	0.0	41.4	48.27758569	-103.19605780	2405.748							
19130	WELD	79,018.1	19130	0.0	41.4	48.27769841	-103.19605907	2404.835							
19140	WELD	79,059.5	19140	0.0	41.4	48.27781109	-103.19606090	2404.169							
19150	WELD	79,100.9	19150	0.0	41.4	48.27792389	-103.19606293	2404.337							
19160	WELD	79,142.3	19160	0.0	41.4	48.27803654	-103.19606300	2404.275							
19170	WELD	79,183.8	19170	0.0	41.4	48.27814920	-103.19606210	2404.246							
19180	WELD	79,225.1	19180	0.0	41.3	48.27826193	-103.19606170	2404.048							
19190	WELD	79,266.4	19190	0.0	41.4	48.27837467	-103.19606270	2403.463							
19200	WELD	79,307.8	19200	0.0	41.3	48.27848727	-103.19606410	2403.346							
19210	WELD	79,349.1	19210	0.0	41.4	48.27860002	-103.19606340	2403.355							
19220	WELD	79,390.5	19220	0.0	41.3	48.27871287	-103.19606240	2403.619							
19230	WELD	79,431.8	19230	0.0	41.4	48.27882551	-103.19606280	2403.530							
19240	WELD	79,473.1	19240	0.0	41.3	48.27893824	-103.19606330	2403.819							
19250	WELD	79,514.5	19250	0.0	41.3	48.27905093	-103.19606380	2403.700							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
19260	WELD	79,555.8	19260	0.0	41.3	48.27916364	-103.19606522	2403.210							
19270	WELD	79,597.2	19270	0.0	41.4	48.27927634	-103.19606620	2403.302							
19280	WELD	79,638.5	19280	0.0	41.3	48.27938905	-103.19606774	2403.657							
19290	WELD	79,679.8	19290	0.0	41.3	48.27950184	-103.19606950	2403.857							
19300	WELD	79,721.1	19300	0.0	41.3	48.27961443	-103.19606970	2403.718							
19310	WELD	79,762.5	19310	0.0	41.3	48.27972702	-103.19606940	2403.651							
19320	WELD	79,803.8	19320	0.0	41.3	48.27983965	-103.19606920	2403.867							
19330	WELD	79,845.1	19330	0.0	41.4	48.27995230	-103.19606920	2404.738							
19340	WELD	79,886.5	19340	0.0	41.4	48.28006509	-103.19607030	2404.646							
19350	WELD	79,928.0	19350	0.0	41.4	48.28017777	-103.19607060	2404.547							
19360	WELD	79,969.4	19360	0.0	41.4	48.28029048	-103.19607080	2404.977							
19370	WELD	80,010.8	19370	0.0	41.4	48.28040325	-103.19607020	2405.138							
19380	WELD	80,052.3	19380	0.0	41.4	48.28051596	-103.19606934	2405.597							
19390	WELD	80,093.7	19390	0.0	41.4	48.28062866	-103.19606820	2405.187							
19400	WELD	80,135.0	19400	0.0	41.3	48.28074145	-103.19606740	2404.795							
19410	WELD	80,176.4	19410	0.0	41.4	48.28085406	-103.19606827	2404.078							
19420	WELD	80,217.7	19420	0.0	41.3	48.28096672	-103.19606930	2404.352							
19430	WELD	80,259.1	19430	0.0	41.4	48.28107944	-103.19606890	2404.782							
19440	WELD	80,300.5	19440	0.0	41.4	48.28119221	-103.19606920	2405.907							
19450	WELD	80,341.8	19450	0.0	41.4	48.28130496	-103.19606950	2406.764							
19460	WELD	80,383.2	19460	0.0	41.3	48.28141762	-103.19606905	2406.900							
19470	WELD	80,424.5	19470	0.0	41.3	48.28153037	-103.19606890	2407.236							
19480	WELD	80,465.8	19480	0.0	41.4	48.28164306	-103.19606960	2407.262							
19490	WELD	80,507.2	19490	0.0	38.4	48.28175586	-103.19607010	2407.134							
19500	WELD	80,545.6	19500	0.0	34.9	48.28186091	-103.19606960	2406.214							
19510	WELD	80,580.5	19510	0.0	6.2	48.28195605	-103.19606870	2406.689							
19520	WELD	80,586.7	19520	0.0	1.0	48.28197299	-103.19606879	2406.823							
10000047	Bend left - 25 deg., 3D	80,587.2	19520	0.1	0.9	48.28197415	-103.19606928	2406.822	0	12:00					
19530	WELD	80,587.6	19530	0.0	48.1	48.28197527	-103.19606981	2406.820							
19540	WELD	80,635.7	19540	0.0	41.3	48.28209131	-103.19616299	2406.686							
19550	WELD	80,677.0	19550	0.0	38.3	48.28219137	-103.19624048	2406.883							
19560	WELD	80,715.4	19560	0.0	1.1	48.28228452	-103.19631172	2406.869							
10000048	Bend left - 32 deg., 3D	80,715.9	19560	0.1	1.0	48.28228565	-103.19631320	2406.861	0	12:00					
19570	WELD	80,716.5	19570	0.0	27.0	48.28228662	-103.19631481	2406.857							
19580	WELD	80,743.4	19580	0.0	1.1	48.28232633	-103.19640776	2407.574							
10000049	Bend left - 32 deg., 3D	80,744.0	19580	0.1	1.0	48.28232668	-103.19640964	2407.587	0	12:00					
19590	WELD	80,744.5	19590	0.0	21.5	48.28232691	-103.19641161	2407.602							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
19600	WELD	80,766.0	19600	0.0	41.3	48.28232788	-103.19649910	2408.136						
19610	WELD	80,807.3	19610	0.0	49.4	48.28232885	-103.19666799	2408.665						
19620	WELD	80,856.8	19620	0.0	49.6	48.28232892	-103.19686952	2409.871						
19630	WELD	80,906.4	19630	0.0	49.6	48.28232851	-103.19707172	2411.260						
19640	WELD	80,955.9	19640	0.0	49.7	48.28232914	-103.19727415	2411.596						
19650	WELD	81,005.6	19650	0.0	49.2	48.28233068	-103.19747688	2411.801						
19660	WELD	81,054.8	19660	0.0	49.5	48.28233134	-103.19767778	2411.983						
19670	WELD	81,104.4	19670	0.0	49.6	48.28233131	-103.19788028	2412.344						
19680	WELD	81,154.0	19680	0.0	49.6	48.28233198	-103.19808292	2413.356						
19690	WELD	81,203.6	19690	0.0	49.5	48.28233323	-103.19828557	2414.218						
19700	WELD	81,253.1	19700	0.0	49.6	48.28233357	-103.19848766	2414.831						
19710	WELD	81,302.7	19710	0.0	49.6	48.28233351	-103.19869037	2415.180						
19720	WELD	81,352.3	19720	0.0	49.6	48.28233350	-103.19889298	2415.363						
19730	WELD	81,401.9	19730	0.0	49.6	48.28233543	-103.19909583	2415.655						
19740	WELD	81,451.6	19740	0.0	49.6	48.28233744	-103.19929887	2416.635						
19750	WELD	81,501.1	19750	0.0	49.4	48.28233786	-103.19950174	2417.372						
19760	WELD	81,550.6	19760	0.0	49.5	48.28233799	-103.19970359	2417.663						
19770	WELD	81,600.1	19770	0.0	49.7	48.28233866	-103.19990554	2418.642						
19780	WELD	81,649.8	19780	0.0	49.8	48.28233966	-103.20010812	2419.356						
19790	WELD	81,699.5	19790	0.0	49.7	48.28234121	-103.20031092	2418.957						
19800	WELD	81,749.3	19800	0.0	49.8	48.28234300	-103.20051360	2419.109						
19810	WELD	81,799.0	19810	0.0	49.4	48.28234479	-103.20071612	2421.159						
19820	WELD	81,848.4	19820	0.0	49.7	48.28234481	-103.20091771	2422.399						
19830	WELD	81,898.1	19830	0.0	49.4	48.28234484	-103.20112086	2422.911						
19840	WELD	81,947.5	19840	0.0	49.6	48.28234441	-103.20132246	2422.323						
19850	WELD	81,997.0	19850	0.0	49.7	48.28234500	-103.20152478	2422.024						
19860	WELD	82,046.7	19860	0.0	49.4	48.28234677	-103.20172751	2422.390						
19870	WELD	82,096.1	19870	0.0	49.6	48.28234745	-103.20192933	2422.145						
19880	WELD	82,145.8	19880	0.0	49.6	48.28234786	-103.20213210	2421.798						
19890	WELD	82,195.4	19890	0.0	49.6	48.28234871	-103.20233482	2421.794						
19900	WELD	82,245.0	19900	0.0	49.6	48.28234956	-103.20253761	2421.030						
19910	WELD	82,294.5	19910	0.0	49.5	48.28234951	-103.20274032	2420.576						
19920	WELD	82,344.0	19920	0.0	49.5	48.28234912	-103.20294265	2420.750						
19930	WELD	82,393.5	19930	0.0	49.6	48.28234967	-103.20314498	2420.873						
19940	WELD	82,443.1	19940	0.0	49.4	48.28235008	-103.20334749	2421.041						
19950	WELD	82,492.5	19950	0.0	49.7	48.28235045	-103.20354946	2420.164						
19960	WELD	82,542.2	19960	0.0	49.6	48.28235079	-103.20375186	2419.925						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
19970	WELD	82,591.8	19970	0.0	49.6	48.28235133	-103.20395419	2420.483							
19980	WELD	82,641.5	19980	0.0	49.8	48.28235201	-103.20415644	2419.619							
19990	WELD	82,691.3	19990	0.0	49.7	48.28235289	-103.20435966	2419.494							
20000	WELD	82,741.0	20000	0.0	49.7	48.28235286	-103.20456252	2420.209							
20010	WELD	82,790.7	20010	0.0	49.7	48.28235290	-103.20476576	2420.465							
20020	WELD	82,840.4	20020	0.0	49.7	48.28235244	-103.20496883	2420.350							
20030	WELD	82,890.1	20030	0.0	49.5	48.28235237	-103.20517177	2421.775							
20040	WELD	82,939.7	20040	0.0	49.6	48.28235314	-103.20537429	2421.886							
20050	WELD	82,989.3	20050	0.0	49.7	48.28235344	-103.20557722	2421.744							
20060	WELD	83,039.1	20060	0.0	40.6	48.28235362	-103.20578052	2420.926							
20070	WELD	83,079.7	20070	0.0	41.4	48.28235334	-103.20594646	2420.361							
20080	WELD	83,121.0	20080	0.0	41.4	48.28235270	-103.20611531	2420.145							
20090	WELD	83,162.4	20090	0.0	41.3	48.28235347	-103.20628399	2419.178							
20100	WELD	83,203.7	20100	0.0	41.3	48.28235444	-103.20645283	2418.122							
20110	WELD	83,245.0	20110	0.0	41.3	48.28235463	-103.20662156	2417.797							
20120	WELD	83,286.4	20120	0.0	41.3	48.28235469	-103.20679017	2417.070							
20130	WELD	83,327.7	20130	0.0	41.4	48.28235453	-103.20695880	2416.372							
20140	WELD	83,369.0	20140	0.0	41.3	48.28235344	-103.20712753	2416.411							
20150	WELD	83,410.4	20150	0.0	41.4	48.28235298	-103.20729603	2415.816							
20160	WELD	83,451.7	20160	0.0	41.4	48.28235298	-103.20746456	2415.386							
20170	WELD	83,493.1	20170	0.0	41.4	48.28235319	-103.20763293	2414.645							
20180	WELD	83,534.5	20180	0.0	41.4	48.28235375	-103.20780118	2414.435							
20190	WELD	83,575.8	20190	0.0	41.4	48.28235463	-103.20796991	2414.262							
20200	WELD	83,617.3	20200	0.0	41.5	48.28235580	-103.20813869	2413.465							
20210	WELD	83,658.7	20210	0.0	41.4	48.28235650	-103.20830753	2412.451							
20220	WELD	83,700.2	20220	0.0	41.5	48.28235699	-103.20847639	2412.339							
20000023	Mill Anomaly	83,710.5	20220	10.2	31.3	48.28235696	-103.20851831	2412.426	135	4:30	-	2.30	0.33		
20230	WELD	83,741.6	20230	0.0	41.5	48.28235707	-103.20864484	2412.170							
20240	WELD	83,783.1	20240	0.0	41.4	48.28235788	-103.20881382	2411.694							
20250	WELD	83,824.5	20250	0.0	41.3	48.28235890	-103.20898265	2411.597							
20260	WELD	83,865.8	20260	0.0	41.3	48.28235914	-103.20915137	2410.594							
20270	WELD	83,907.1	20270	0.0	41.4	48.28235867	-103.20932038	2410.107							
20280	WELD	83,948.5	20280	0.0	41.3	48.28235766	-103.20948937	2409.451							
20290	WELD	83,989.8	20290	0.0	41.4	48.28235764	-103.20965818	2408.398							
20300	WELD	84,031.2	20300	0.0	41.4	48.28235870	-103.20982699	2407.225							
20310	WELD	84,072.6	20310	0.0	41.3	48.28235944	-103.20999602	2406.315							
20320	WELD	84,113.9	20320	0.0	41.4	48.28235975	-103.21016498	2406.001							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
20330	WELD	84,155.3	20330	0.0	41.3	48.28235972	-103.21033388	2404.874						
20340	WELD	84,196.6	20340	0.0	41.3	48.28235978	-103.21050276	2404.095						
20350	WELD	84,238.0	20350	0.0	41.3	48.28235996	-103.21067161	2402.933						
20360	WELD	84,279.3	20360	0.0	41.3	48.28236032	-103.21084064	2402.476						
20370	WELD	84,320.6	20370	0.0	41.3	48.28236020	-103.21100948	2402.648						
20380	WELD	84,361.9	20380	0.0	41.3	48.28235910	-103.21117838	2402.460						
20390	WELD	84,403.2	20390	0.0	41.3	48.28235809	-103.21134726	2401.991						
20400	WELD	84,444.5	20400	0.0	41.4	48.28235741	-103.21151586	2401.585						
20410	WELD	84,485.9	20410	0.0	41.4	48.28235707	-103.21168468	2400.094						
20420	WELD	84,527.4	20420	0.0	41.4	48.28235729	-103.21185367	2399.267						
20430	WELD	84,568.8	20430	0.0	41.5	48.28235815	-103.21202263	2398.310						
20440	WELD	84,610.3	20440	0.0	41.4	48.28235889	-103.21219168	2397.771						
20450	WELD	84,651.7	20450	0.0	41.4	48.28235964	-103.21236057	2397.110						
20460	WELD	84,693.0	20460	0.0	41.4	48.28236089	-103.21252882	2396.169						
20470	WELD	84,734.4	20470	0.0	41.4	48.28236150	-103.21269777	2396.484						
20480	WELD	84,775.8	20480	0.0	41.3	48.28236008	-103.21286668	2397.185						
20490	WELD	84,817.1	20490	0.0	41.4	48.28235946	-103.21303576	2397.542						
20500	WELD	84,858.5	20500	0.0	41.3	48.28236017	-103.21320470	2398.127						
20510	WELD	84,899.8	20510	0.0	41.4	48.28236243	-103.21337354	2398.114						
20520	WELD	84,941.2	20520	0.0	41.3	48.28236353	-103.21354215	2398.030						
20530	WELD	84,982.5	20530	0.0	41.3	48.28236358	-103.21371119	2397.534						
20540	WELD	85,023.9	20540	0.0	41.3	48.28237223	-103.21387903	2397.460						
20550	WELD	85,065.1	20550	0.0	41.3	48.28240083	-103.21404231	2397.261						
20560	WELD	85,106.4	20560	0.0	41.3	48.28243215	-103.21420464	2397.293						
20570	WELD	85,147.7	20570	0.0	41.4	48.28246380	-103.21436638	2396.996						
20580	WELD	85,189.1	20580	0.0	41.4	48.28249560	-103.21452829	2395.941						
20590	WELD	85,230.5	20590	0.0	41.4	48.28252764	-103.21469013	2394.253						
20600	WELD	85,271.9	20600	0.0	41.4	48.28255962	-103.21485190	2393.120						
20610	WELD	85,313.4	20610	0.0	41.4	48.28259176	-103.21501379	2392.474						
20620	WELD	85,354.8	20620	0.0	41.4	48.28262390	-103.21517561	2392.162						
20630	WELD	85,396.2	20630	0.0	41.3	48.28265634	-103.21533735	2391.682						
20640	WELD	85,437.5	20640	0.0	41.4	48.28268801	-103.21549955	2391.657						
20650	WELD	85,478.9	20650	0.0	41.2	48.28272145	-103.21566100	2391.158						
20660	WELD	85,520.1	20660	0.0	19.9	48.28275605	-103.21582132	2390.676						
20670	WELD	85,540.0	20670	0.0	31.0	48.28277424	-103.21589825	2390.854						
20680	WELD	85,571.0	20680	0.0	41.3	48.28280319	-103.21601713	2391.104						
11000060	WT CHANGE	85,612.3	20680	0.0	0.1	48.28283948	-103.21617643	2390.986			0.322	52000	0.72	

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
20690	WELD	85,612.4	20690	0.0	0.9	48.28283951	-103.21617674	2390.986							
10000050	Bend left - 30 deg., 3D	85,612.8	20690	0.0	0.8	48.28283967	-103.21617862	2390.984	0	12:00					
20700	WELD	85,613.2	20700	0.0	42.3	48.28283956	-103.21618046	2390.972							
20710	WELD	85,655.6	20710	0.0	42.2	48.28282072	-103.21635041	2388.945							
20720	WELD	85,697.7	20720	0.0	42.2	48.28280099	-103.21652014	2388.714							
20730	WELD	85,740.0	20730	0.0	42.3	48.28278328	-103.21669075	2389.431							
11000061	WT CHANGE	85,782.1	20730	0.0	0.1	48.28276515	-103.21686056	2390.281				0.188	52000	0.72	
20740	WELD	85,782.2	20740	0.0	41.1	48.28276511	-103.21686087	2390.282							
20750	WELD	85,823.3	20750	0.0	8.8	48.28274853	-103.21702685	2391.162							
20760	WELD	85,832.1	20760	0.0	25.1	48.28274521	-103.21706251	2391.273							
20770	WELD	85,857.2	20770	0.0	41.1	48.28273893	-103.21716458	2391.511							
20780	WELD	85,898.3	20780	0.0	41.4	48.28273622	-103.21733203	2391.631							
10000051	AGM 140, Sta. 848+51, 117th Ave NW -- Han #8611	85,903.6	20780	5.3	36.1	48.28273591	-103.21735376	2391.593							
20790	WELD	85,939.7	20790	0.0	41.5	48.28273320	-103.21750129	2390.986							
20800	WELD	85,981.2	20800	0.0	41.5	48.28273029	-103.21767048	2391.670							
20810	WELD	86,022.7	20810	0.0	41.4	48.28272805	-103.21783980	2391.646							
20820	WELD	86,064.1	20820	0.0	41.4	48.28272633	-103.21800919	2391.421							
20830	WELD	86,105.5	20830	0.0	41.4	48.28272458	-103.21817852	2391.507							
20840	WELD	86,146.9	20840	0.0	41.4	48.28272156	-103.21834769	2391.240							
20850	WELD	86,188.3	20850	0.0	41.4	48.28271778	-103.21851694	2391.860							
20860	WELD	86,229.6	20860	0.0	41.4	48.28271458	-103.21868630	2391.551							
20870	WELD	86,271.1	20870	0.0	41.4	48.28271257	-103.21885581	2391.500							
20880	WELD	86,312.5	20880	0.0	41.4	48.28271062	-103.21902518	2391.100							
20890	WELD	86,353.8	20890	0.0	41.4	48.28270881	-103.21919435	2391.457							
20900	WELD	86,395.2	20900	0.0	41.4	48.28270642	-103.21936370	2391.355							
20910	WELD	86,436.6	20910	0.0	41.4	48.28270395	-103.21953289	2391.519							
20920	WELD	86,478.0	20920	0.0	41.4	48.28270114	-103.21970227	2391.446							
20930	WELD	86,519.3	20930	0.0	41.4	48.28269837	-103.21987164	2391.463							
20940	WELD	86,560.7	20940	0.0	41.3	48.28269587	-103.22004114	2391.646							
20950	WELD	86,602.0	20950	0.0	41.4	48.28269331	-103.22021052	2391.649							
20960	WELD	86,643.4	20960	0.0	41.3	48.28269044	-103.22038001	2392.005							
20970	WELD	86,684.8	20970	0.0	41.3	48.28268710	-103.22054957	2392.175							
20980	WELD	86,726.1	20980	0.0	41.4	48.28268436	-103.22071878	2392.198							
20990	WELD	86,767.5	20990	0.0	41.4	48.28268096	-103.22088798	2391.445							
21000	WELD	86,808.9	21000	0.0	41.4	48.28267781	-103.22105732	2391.042							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
21010	WELD	86,850.3	21010	0.0	41.5	48.28267486	-103.22122672	2390.508							
21020	WELD	86,891.8	21020	0.0	41.5	48.28267175	-103.22139623	2390.269							
21030	WELD	86,933.3	21030	0.0	41.5	48.28266875	-103.22156552	2389.737							
21040	WELD	86,974.8	21040	0.0	41.4	48.28266592	-103.22173492	2389.077							
21050	WELD	87,016.1	21050	0.0	41.4	48.28266250	-103.22190429	2388.943							
21060	WELD	87,057.6	21060	0.0	41.4	48.28265962	-103.22207347	2389.893							
21070	WELD	87,099.0	21070	0.0	41.4	48.28265637	-103.22224268	2390.140							
21080	WELD	87,140.3	21080	0.0	41.4	48.28265382	-103.22241191	2390.914							
21090	WELD	87,181.7	21090	0.0	41.5	48.28265125	-103.22258106	2392.181							
21100	WELD	87,223.2	21100	0.0	41.4	48.28264822	-103.22275039	2392.568							
21110	WELD	87,264.5	21110	0.0	41.4	48.28264475	-103.22291969	2393.110							
21120	WELD	87,305.9	21120	0.0	41.3	48.28264143	-103.22308901	2392.945							
21130	WELD	87,347.2	21130	0.0	41.3	48.28263917	-103.22325843	2392.511							
21140	WELD	87,388.5	21140	0.0	41.4	48.28263700	-103.22342767	2392.960							
21150	WELD	87,429.9	21150	0.0	41.4	48.28263459	-103.22359698	2392.639							
21160	WELD	87,471.3	21160	0.0	41.4	48.28263177	-103.22376623	2392.252							
21170	WELD	87,512.7	21170	0.0	41.4	48.28262976	-103.22393529	2391.628							
21180	WELD	87,554.1	21180	0.0	41.5	48.28262810	-103.22410478	2391.774							
21190	WELD	87,595.7	21190	0.0	41.4	48.28262462	-103.22427403	2392.816							
21200	WELD	87,637.1	21200	0.0	41.4	48.28261997	-103.22444321	2393.783							
21210	WELD	87,678.5	21210	0.0	21.1	48.28261504	-103.22461232	2392.841							
21220	WELD	87,699.6	21220	0.0	17.7	48.28261254	-103.22469866	2392.878							
21230	WELD	87,717.3	21230	0.0	41.4	48.28261051	-103.22477104	2393.064							
21240	WELD	87,758.7	21240	0.0	41.4	48.28260665	-103.22494031	2392.556							
21250	WELD	87,800.1	21250	0.0	41.3	48.28260431	-103.22510946	2393.139							
21260	WELD	87,841.4	21260	0.0	41.1	48.28260389	-103.22527862	2393.693							
21270	WELD	87,882.5	21270	0.0	24.0	48.28260227	-103.22544697	2394.180							
21280	WELD	87,906.4	21280	0.0	40.6	48.28260131	-103.22554516	2394.638							
21290	WELD	87,947.0	21290	0.0	40.8	48.28260289	-103.22571142	2393.991							
11000062	WT CHANGE	87,987.7	21290	0.0	0.1	48.28260155	-103.22587725	2392.839				0.322	52000	0.72	
21300	WELD	87,987.7	21300	0.0	1.1	48.28260154	-103.22587761	2392.841							
10000052	Tee at 90 deg.	87,988.2	21300	0.2	0.9	48.28260145	-103.22587975	2392.848	64	2:00					
21310	WELD	87,988.8	21310	0.0	33.8	48.28260134	-103.22588229	2392.857							
21320	WELD	88,022.6	21320	0.0	42.3	48.28259609	-103.22601972	2392.556							
21330	WELD	88,064.9	21330	0.0	42.3	48.28258925	-103.22619150	2390.685							
21340	WELD	88,107.2	21340	0.0	42.3	48.28258246	-103.22636323	2388.563							
21350	WELD	88,149.5	21350	0.0	42.3	48.28257821	-103.22653573	2387.987							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
21360	WELD	88,191.8	21360	0.0	42.3	48.28257531	-103.22670798	2388.151						
21370	WELD	88,234.1	21370	0.0	42.2	48.28257200	-103.22688022	2388.519						
21380	WELD	88,276.3	21380	0.0	42.3	48.28256806	-103.22705253	2390.328						
21390	WELD	88,318.6	21390	0.0	42.2	48.28256354	-103.22722486	2391.967						
21400	WELD	88,360.8	21400	0.0	42.2	48.28256025	-103.22739713	2392.380						
21410	WELD	88,403.0	21410	0.0	42.3	48.28255937	-103.22756961	2392.456						
11000063	WT CHANGE	88,445.2	21410	0.0	0.1	48.28255863	-103.22774143	2392.686			0.188	52000	0.72	
21420	WELD	88,445.3	21420	0.0	19.3	48.28255863	-103.22774179	2392.685						
21430	WELD	88,464.6	21430	0.0	40.9	48.28255721	-103.22782080	2393.000						
21440	WELD	88,505.5	21440	0.0	41.3	48.28255287	-103.22798759	2393.622						
21450	WELD	88,546.8	21450	0.0	41.3	48.28255111	-103.22815663	2393.714						
21460	WELD	88,588.1	21460	0.0	41.3	48.28255051	-103.22832582	2393.630						
21470	WELD	88,629.4	21470	0.0	41.3	48.28254895	-103.22849495	2393.716						
21480	WELD	88,670.7	21480	0.0	41.4	48.28254642	-103.22866408	2393.373						
21490	WELD	88,712.1	21490	0.0	41.3	48.28254348	-103.22883333	2393.971						
21500	WELD	88,753.4	21500	0.0	41.3	48.28254050	-103.22900230	2394.415						
21510	WELD	88,794.8	21510	0.0	41.4	48.28253752	-103.22917126	2394.925						
21520	WELD	88,836.2	21520	0.0	41.5	48.28253409	-103.22934008	2395.142						
21530	WELD	88,877.6	21530	0.0	41.5	48.28253089	-103.22950915	2393.822						
21540	WELD	88,919.1	21540	0.0	41.5	48.28252758	-103.22967831	2392.817						
21550	WELD	88,960.6	21550	0.0	41.4	48.28252479	-103.22984764	2392.091						
21560	WELD	89,002.0	21560	0.0	41.4	48.28252164	-103.23001666	2392.101						
21570	WELD	89,043.3	21570	0.0	41.4	48.28251829	-103.23018575	2392.615						
21580	WELD	89,084.7	21580	0.0	41.3	48.28251517	-103.23035496	2393.364						
21590	WELD	89,126.1	21590	0.0	41.4	48.28251245	-103.23052424	2394.184						
21600	WELD	89,167.4	21600	0.0	41.4	48.28251027	-103.23069362	2394.585						
21610	WELD	89,208.9	21610	0.0	41.5	48.28250779	-103.23086292	2394.296						
21620	WELD	89,250.3	21620	0.0	41.4	48.28250520	-103.23103221	2393.902						
21630	WELD	89,291.8	21630	0.0	41.4	48.28250265	-103.23120137	2393.920						
21640	WELD	89,333.2	21640	0.0	41.4	48.28250016	-103.23137054	2394.416						
21650	WELD	89,374.6	21650	0.0	41.4	48.28249755	-103.23153984	2394.676						
21660	WELD	89,416.0	21660	0.0	41.3	48.28249562	-103.23170899	2395.819						
21670	WELD	89,457.3	21670	0.0	41.4	48.28249287	-103.23187846	2396.742						
21680	WELD	89,498.7	21680	0.0	41.5	48.28248907	-103.23204760	2398.630						
21690	WELD	89,540.2	21690	0.0	41.4	48.28248585	-103.23221670	2400.066						
21700	WELD	89,581.7	21700	0.0	41.3	48.28248374	-103.23238600	2400.614						
21710	WELD	89,623.0	21710	0.0	41.4	48.28248166	-103.23255529	2401.159						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
21720	WELD	89,664.4	21720	0.0	41.3	48.28247968	-103.23272446	2401.087						
21730	WELD	89,705.7	21730	0.0	41.3	48.28247686	-103.23289349	2401.097						
21740	WELD	89,747.0	21740	0.0	41.4	48.28247421	-103.23306275	2401.237						
21750	WELD	89,788.5	21750	0.0	41.4	48.28247172	-103.23323192	2401.116						
21760	WELD	89,829.9	21760	0.0	41.4	48.28246883	-103.23340127	2401.112						
21770	WELD	89,871.3	21770	0.0	41.4	48.28246577	-103.23357058	2401.030						
21780	WELD	89,912.6	21780	0.0	41.4	48.28246296	-103.23373961	2400.853						
21790	WELD	89,954.0	21790	0.0	41.3	48.28246062	-103.23390887	2401.002						
21800	WELD	89,995.4	21800	0.0	41.4	48.28245750	-103.23407810	2401.913						
21810	WELD	90,036.7	21810	0.0	41.5	48.28245455	-103.23424724	2402.436						
21820	WELD	90,078.3	21820	0.0	41.4	48.28245261	-103.23441676	2401.336						
21830	WELD	90,119.7	21830	0.0	41.4	48.28245054	-103.23458544	2398.821						
21840	WELD	90,161.1	21840	0.0	41.3	48.28244860	-103.23475380	2394.601						
21850	WELD	90,202.4	21850	0.0	41.4	48.28244624	-103.23492242	2391.139						
21860	WELD	90,243.8	21860	0.0	41.4	48.28244351	-103.23509152	2389.486						
21870	WELD	90,285.2	21870	0.0	41.4	48.28244041	-103.23526050	2389.573						
21880	WELD	90,326.6	21880	0.0	41.4	48.28243755	-103.23542984	2390.240						
21890	WELD	90,368.0	21890	0.0	41.4	48.28243447	-103.23559872	2390.981						
21900	WELD	90,409.4	21900	0.0	41.5	48.28243211	-103.23576784	2391.730						
21910	WELD	90,450.9	21910	0.0	41.4	48.28242990	-103.23593701	2391.870						
21920	WELD	90,492.2	21920	0.0	41.3	48.28242756	-103.23610591	2392.737						
21930	WELD	90,533.5	21930	0.0	41.3	48.28242478	-103.23627479	2394.869						
21940	WELD	90,574.9	21940	0.0	41.4	48.28242140	-103.23644334	2397.201						
21950	WELD	90,616.2	21950	0.0	41.3	48.28241819	-103.23661214	2399.061						
21960	WELD	90,657.6	21960	0.0	41.3	48.28241572	-103.23678105	2400.660						
21970	WELD	90,698.9	21970	0.0	41.3	48.28241362	-103.23695013	2400.446						
21980	WELD	90,740.2	21980	0.0	41.3	48.28241195	-103.23711935	2399.750						
21990	WELD	90,781.6	21990	0.0	41.0	48.28241048	-103.23728839	2399.247						
22000	WELD	90,822.6	22000	0.0	10.5	48.28240894	-103.23745588	2398.105						
22010	WELD	90,833.0	22010	0.0	41.2	48.28240862	-103.23749834	2397.516						
11000064	WT CHANGE	90,874.2	22010	0.0	0.1	48.28240571	-103.23766588	2395.918			0.322	52000	0.72	
22020	WELD	90,874.3	22020	0.0	42.2	48.28240570	-103.23766624	2395.922						
22030	WELD	90,916.5	22030	0.0	42.2	48.28240218	-103.23783861	2396.641						
10000053	AGM 150, Sta. 898+81, 118th Ave NW -- Han #100	90,944.7	22030	28.2	14.0	48.28239995	-103.23795394	2396.066						
22040	WELD	90,958.7	22040	0.0	42.2	48.28239889	-103.23801125	2395.706						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
22050	WELD	91,000.9	22050	0.0	42.2	48.28239715	-103.23818377	2394.469						
11000065	WT CHANGE	91,043.1	22050	0.0	0.1	48.28239773	-103.23835546	2392.425			0.188	52000	0.72	
22060	WELD	91,043.1	22060	0.0	41.0	48.28239773	-103.23835579	2392.421						
22070	WELD	91,084.1	22070	0.0	32.3	48.28239603	-103.23852298	2391.601						
22080	WELD	91,116.4	22080	0.0	41.0	48.28239308	-103.23865551	2391.083						
22090	WELD	91,157.4	22090	0.0	41.4	48.28239088	-103.23882345	2389.317						
22100	WELD	91,198.8	22100	0.0	41.4	48.28238731	-103.23899231	2389.141						
22110	WELD	91,240.2	22110	0.0	41.4	48.28238424	-103.23916095	2388.760						
22120	WELD	91,281.6	22120	0.0	41.3	48.28238155	-103.23932995	2388.101						
22130	WELD	91,322.9	22130	0.0	41.3	48.28237827	-103.23949883	2386.903						
22140	WELD	91,364.2	22140	0.0	41.4	48.28237424	-103.23966796	2386.107						
22150	WELD	91,405.5	22150	0.0	41.3	48.28236968	-103.23983690	2385.996						
22160	WELD	91,446.8	22160	0.0	41.2	48.28236566	-103.24000578	2385.137						
22170	WELD	91,488.1	22170	0.0	41.3	48.28236251	-103.24017479	2385.258						
22180	WELD	91,529.4	22180	0.0	41.3	48.28235991	-103.24034398	2384.419						
22190	WELD	91,570.7	22190	0.0	41.4	48.28235792	-103.24051254	2383.748						
22200	WELD	91,612.1	22200	0.0	41.5	48.28235549	-103.24068179	2384.083						
22210	WELD	91,653.6	22210	0.0	41.4	48.28235248	-103.24085098	2385.581						
22220	WELD	91,695.0	22220	0.0	41.4	48.28234842	-103.24101986	2387.065						
22230	WELD	91,736.3	22230	0.0	41.4	48.28234389	-103.24118883	2388.200						
22240	WELD	91,777.7	22240	0.0	41.4	48.28233909	-103.24135765	2390.043						
22250	WELD	91,819.1	22250	0.0	41.3	48.28233555	-103.24152666	2391.727						
22260	WELD	91,860.3	22260	0.0	41.4	48.28233247	-103.24169548	2393.496						
22270	WELD	91,901.7	22270	0.0	41.4	48.28232974	-103.24186460	2393.984						
22280	WELD	91,943.1	22280	0.0	41.4	48.28232678	-103.24203359	2393.655						
22290	WELD	91,984.5	22290	0.0	41.4	48.28232296	-103.24220268	2393.573						
22300	WELD	92,025.9	22300	0.0	41.4	48.28231856	-103.24237187	2393.698						
22310	WELD	92,067.2	22310	0.0	41.2	48.28231529	-103.24254022	2392.774						
22320	WELD	92,108.5	22320	0.0	41.4	48.28231367	-103.24270925	2391.968						
22330	WELD	92,149.9	22330	0.0	41.4	48.28231244	-103.24287834	2392.132						
22340	WELD	92,191.2	22340	0.0	41.4	48.28231004	-103.24304722	2392.145						
22350	WELD	92,232.7	22350	0.0	41.4	48.28230657	-103.24321597	2392.254						
22360	WELD	92,274.0	22360	0.0	41.3	48.28230275	-103.24338496	2392.935						
22370	WELD	92,315.3	22370	0.0	41.4	48.28229882	-103.24355413	2393.970						
22380	WELD	92,356.7	22380	0.0	41.4	48.28229445	-103.24372296	2395.277						
22390	WELD	92,398.1	22390	0.0	41.3	48.28229032	-103.24389178	2396.631						
22400	WELD	92,439.4	22400	0.0	41.3	48.28228658	-103.24406067	2397.446						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
22410 WELD		92,480.7	22410	0.0	41.3	48.28228338	-103.24422977	2398.256						
22420 WELD		92,522.0	22420	0.0	41.4	48.28227993	-103.24439876	2398.938						
22430 WELD		92,563.5	22430	0.0	41.4	48.28227695	-103.24456801	2399.005						
22440 WELD		92,604.9	22440	0.0	41.3	48.28227331	-103.24473714	2398.177						
22450 WELD		92,646.2	22450	0.0	41.3	48.28226975	-103.24490619	2397.752						
22460 WELD		92,687.5	22460	0.0	41.4	48.28226776	-103.24507520	2397.173						
22470 WELD		92,728.8	22470	0.0	41.3	48.28226835	-103.24524432	2397.059						
22480 WELD		92,770.2	22480	0.0	41.3	48.28227295	-103.24541325	2395.762						
22490 WELD		92,811.4	22490	0.0	41.4	48.28227815	-103.24558216	2396.358						
22500 WELD		92,852.8	22500	0.0	41.4	48.28228476	-103.24575087	2397.497						
22510 WELD		92,894.2	22510	0.0	41.3	48.28229205	-103.24591958	2397.963						
22520 WELD		92,935.6	22520	0.0	41.4	48.28229968	-103.24608825	2397.474						
22530 WELD		92,976.9	22530	0.0	41.3	48.28230758	-103.24625694	2398.409						
22540 WELD		93,018.2	22540	0.0	41.3	48.28231538	-103.24642556	2400.090						
22550 WELD		93,059.5	22550	0.0	41.3	48.28232272	-103.24659432	2401.222						
22560 WELD		93,100.8	22560	0.0	41.4	48.28233000	-103.24676302	2402.349						
22570 WELD		93,142.2	22570	0.0	41.4	48.28233755	-103.24693147	2402.687						
22580 WELD		93,183.6	22580	0.0	41.3	48.28234446	-103.24710035	2402.739						
22590 WELD		93,224.9	22590	0.0	41.3	48.28235170	-103.24726900	2403.314						
22600 WELD		93,266.3	22600	0.0	41.4	48.28235863	-103.24743717	2406.266						
22610 WELD		93,307.6	22610	0.0	41.3	48.28236616	-103.24760565	2409.131						
22620 WELD		93,348.9	22620	0.0	41.3	48.28237440	-103.24777410	2410.972						
22630 WELD		93,390.2	22630	0.0	41.3	48.28238265	-103.24794262	2411.546						
22640 WELD		93,431.5	22640	0.0	41.2	48.28239056	-103.24811132	2411.763						
22650 WELD		93,472.7	22650	0.0	41.3	48.28239753	-103.24827909	2411.840						
22660 WELD		93,514.0	22660	0.0	39.7	48.28240453	-103.24844748	2411.505						
22670 WELD		93,553.6	22670	0.0	39.9	48.28241100	-103.24860937	2409.991						
22680 WELD		93,593.5	22680	0.0	41.3	48.28241637	-103.24877220	2408.291						
22690 WELD		93,634.9	22690	0.0	41.3	48.28242005	-103.24894112	2406.290						
22700 WELD		93,676.2	22700	0.0	41.3	48.28242350	-103.24910961	2403.922						
22710 WELD		93,717.5	22710	0.0	41.2	48.28242533	-103.24927848	2402.465						
22720 WELD		93,758.7	22720	0.0	41.4	48.28242538	-103.24944760	2401.395						
22730 WELD		93,800.1	22730	0.0	41.3	48.28242526	-103.24961674	2399.999						
22740 WELD		93,841.4	22740	0.0	41.4	48.28242412	-103.24978554	2398.870						
22750 WELD		93,882.8	22750	0.0	41.5	48.28242322	-103.24995425	2397.207						
22760 WELD		93,924.3	22760	0.0	41.3	48.28242237	-103.25012336	2395.945						
22770 WELD		93,965.6	22770	0.0	41.3	48.28242315	-103.25029250	2394.281						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
22780	WELD	94,006.8	22780	0.0	41.3	48.28242376	-103.25046112	2391.702							
22790	WELD	94,048.1	22790	0.0	41.3	48.28242352	-103.25062950	2389.292							
22800	WELD	94,089.4	22800	0.0	41.3	48.28242415	-103.25079809	2386.579							
22810	WELD	94,130.7	22810	0.0	41.3	48.28242501	-103.25096710	2384.974							
22820	WELD	94,172.0	22820	0.0	41.3	48.28242543	-103.25113608	2383.284							
22830	WELD	94,213.4	22830	0.0	41.4	48.28242545	-103.25130489	2381.839							
22840	WELD	94,254.8	22840	0.0	41.4	48.28242543	-103.25147398	2380.840							
22850	WELD	94,296.2	22850	0.0	41.4	48.28242545	-103.25164297	2379.620							
22860	WELD	94,337.6	22860	0.0	41.3	48.28242560	-103.25181228	2378.720							
22870	WELD	94,378.9	22870	0.0	41.4	48.28242600	-103.25198124	2377.459							
22880	WELD	94,420.2	22880	0.0	41.4	48.28242636	-103.25215036	2376.409							
22890	WELD	94,461.6	22890	0.0	41.3	48.28242655	-103.25231938	2375.334							
22900	WELD	94,502.9	22900	0.0	41.3	48.28242651	-103.25248824	2373.811							
22910	WELD	94,544.2	22910	0.0	41.1	48.28242651	-103.25265718	2373.230							
22920	WELD	94,585.4	22920	0.0	1.1	48.28242718	-103.25282518	2372.309							
10000054	Tee at 90 deg.	94,585.9	22920	0.3	0.8	48.28242719	-103.25282749	2372.301	74	2:15					
22930	WELD	94,586.5	22930	0.0	40.5	48.28242721	-103.25282978	2372.289							
22940	WELD	94,626.9	22940	0.0	41.3	48.28242767	-103.25299487	2371.435							
22950	WELD	94,668.3	22950	0.0	41.4	48.28242887	-103.25316383	2370.551							
22960	WELD	94,709.7	22960	0.0	41.4	48.28242984	-103.25333307	2369.683							
22970	WELD	94,751.1	22970	0.0	41.3	48.28243008	-103.25350202	2369.900							
22980	WELD	94,792.4	22980	0.0	41.3	48.28242942	-103.25367094	2369.455							
22990	WELD	94,833.7	22990	0.0	41.3	48.28242874	-103.25383978	2369.310							
23000	WELD	94,875.0	23000	0.0	41.3	48.28242784	-103.25400890	2369.809							
23010	WELD	94,916.3	23010	0.0	41.3	48.28242646	-103.25417739	2370.405							
23020	WELD	94,957.6	23020	0.0	41.3	48.28242617	-103.25434635	2370.813							
23030	WELD	94,998.9	23030	0.0	41.4	48.28242654	-103.25451541	2370.689							
23040	WELD	95,040.2	23040	0.0	41.4	48.28242704	-103.25468457	2370.577							
23050	WELD	95,081.6	23050	0.0	41.4	48.28242762	-103.25485374	2369.983							
23060	WELD	95,123.1	23060	0.0	41.4	48.28242833	-103.25502289	2368.691							
23070	WELD	95,164.4	23070	0.0	41.3	48.28242948	-103.25519182	2367.010							
23080	WELD	95,205.7	23080	0.0	41.3	48.28243117	-103.25536084	2365.385							
23090	WELD	95,247.1	23090	0.0	41.0	48.28243271	-103.25552997	2363.738							
23100	WELD	95,288.1	23100	0.0	32.0	48.28243375	-103.25569797	2361.408							
11000066	WT CHANGE	95,320.0	23100	0.0	0.1	48.28243458	-103.25582823	2360.222				0.322	52000	0.72	
23110	WELD	95,320.1	23110	0.0	42.1	48.28243458	-103.25582855	2360.219							
23120	WELD	95,362.3	23120	0.0	42.2	48.28243709	-103.25600100	2357.904							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
23130	WELD	95,404.4	23130	0.0	42.2	48.28243976	-103.25617328	2356.265						
23140	WELD	95,446.6	23140	0.0	42.2	48.28243812	-103.25634557	2354.343						
23150	WELD	95,488.9	23150	0.0	42.3	48.28243543	-103.25651809	2353.392						
23160	WELD	95,531.1	23160	0.0	42.3	48.28243844	-103.25669064	2353.240						
23170	WELD	95,573.5	23170	0.0	42.3	48.28243813	-103.25686335	2353.602						
23180	WELD	95,615.8	23180	0.0	42.3	48.28243825	-103.25703635	2353.460						
23190	WELD	95,658.1	23190	0.0	42.2	48.28244016	-103.25720859	2354.864						
11000067	WT CHANGE	95,700.2	23190	0.0	0.1	48.28243944	-103.25738089	2355.553			0.188	52000	0.72	
23200	WELD	95,700.3	23200	0.0	7.6	48.28243944	-103.25738121	2355.555						
23210	WELD	95,707.8	23210	0.0	30.1	48.28243971	-103.25741232	2355.964						
23220	WELD	95,737.9	23220	0.0	40.9	48.28244079	-103.25753528	2357.459						
23230	WELD	95,778.8	23230	0.0	41.4	48.28244046	-103.25770194	2359.388						
23240	WELD	95,820.2	23240	0.0	41.3	48.28243929	-103.25787134	2358.756						
23250	WELD	95,861.5	23250	0.0	41.3	48.28243914	-103.25804067	2359.174						
23260	WELD	95,902.8	23260	0.0	41.4	48.28243968	-103.25820894	2359.705						
23270	WELD	95,944.2	23270	0.0	41.4	48.28244008	-103.25837875	2360.713						
23280	WELD	95,985.6	23280	0.0	41.4	48.28244092	-103.25854779	2362.011						
23290	WELD	96,027.0	23290	0.0	41.3	48.28244203	-103.25871661	2362.538						
23300	WELD	96,068.4	23300	0.0	41.1	48.28244130	-103.25888516	2362.606						
23310	WELD	96,109.5	23310	0.0	37.0	48.28244552	-103.25905364	2363.004						
23320	WELD	96,146.5	23320	0.0	16.9	48.28244736	-103.25920465	2361.245						
11000068	WT CHANGE	96,163.3	23320	0.0	0.1	48.28244498	-103.25927278	2359.614			0.322	52000	0.72	
23330	WELD	96,163.4	23330	0.0	42.2	48.28244496	-103.25927310	2359.607						
23340	WELD	96,205.6	23340	0.0	42.2	48.28243543	-103.25944504	2356.804						
23350	WELD	96,247.8	23350	0.0	42.2	48.28243639	-103.25961771	2355.262						
23360	WELD	96,290.1	23360	0.0	42.2	48.28244277	-103.25979014	2355.322						
23370	WELD	96,332.3	23370	0.0	42.3	48.28244319	-103.25996276	2355.033						
10000055	AGM 160, Sta. 952+38, 119th Ave NW -- Han #8611	96,347.0	23370	14.8	27.5	48.28244281	-103.26002339	2354.737						
23380	WELD	96,374.5	23380	0.0	42.1	48.28244293	-103.26013557	2353.751						
11000069	WT CHANGE	96,416.6	23380	0.0	0.1	48.28244480	-103.26030685	2351.800			0.188	52000	0.72	
23390	WELD	96,416.6	23390	0.0	41.0	48.28244480	-103.26030718	2351.800						
23400	WELD	96,457.6	23400	0.0	11.8	48.28244218	-103.26047410	2353.740						
23410	WELD	96,469.4	23410	0.0	37.9	48.28244078	-103.26052238	2354.351						
23420	WELD	96,507.3	23420	0.0	41.4	48.28243586	-103.26067573	2357.476						
23430	WELD	96,548.7	23430	0.0	41.4	48.28243215	-103.26084437	2359.852						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
23440	WELD	96,590.0	23440	0.0	41.3	48.28243020	-103.26101290	2363.013						
23450	WELD	96,631.3	23450	0.0	41.4	48.28242869	-103.26118147	2366.480						
23460	WELD	96,672.7	23460	0.0	41.4	48.28242685	-103.26135012	2369.650						
23470	WELD	96,714.1	23470	0.0	41.3	48.28242396	-103.26151897	2371.847						
23480	WELD	96,755.4	23480	0.0	41.3	48.28241966	-103.26168772	2374.515						
23490	WELD	96,796.7	23490	0.0	41.4	48.28241551	-103.26185660	2376.147						
23500	WELD	96,838.1	23500	0.0	41.4	48.28241275	-103.26202566	2375.238						
23510	WELD	96,879.4	23510	0.0	41.4	48.28241074	-103.26219446	2372.628						
23520	WELD	96,920.8	23520	0.0	41.4	48.28240918	-103.26236324	2369.992						
23530	WELD	96,962.3	23530	0.0	41.5	48.28240861	-103.26253224	2368.180						
23540	WELD	97,003.7	23540	0.0	41.4	48.28240953	-103.26270143	2366.892						
23550	WELD	97,045.1	23550	0.0	41.3	48.28241883	-103.26286995	2366.811						
23560	WELD	97,086.4	23560	0.0	49.6	48.28243000	-103.26303810	2368.255						
23570	WELD	97,136.0	23570	0.0	49.7	48.28244325	-103.26323997	2370.296						
23580	WELD	97,185.7	23580	0.0	49.6	48.28245735	-103.26344214	2371.213						
23590	WELD	97,235.4	23590	0.0	49.3	48.28247271	-103.26364397	2369.550						
23600	WELD	97,284.7	23600	0.0	49.3	48.28248835	-103.26384424	2366.198						
23610	WELD	97,334.0	23610	0.0	49.7	48.28250299	-103.26404435	2362.891						
23620	WELD	97,383.7	23620	0.0	49.7	48.28251641	-103.26424562	2358.663						
23630	WELD	97,433.3	23630	0.0	49.8	48.28252915	-103.26444703	2355.866						
23640	WELD	97,483.1	23640	0.0	49.6	48.28254169	-103.26464911	2353.104						
23650	WELD	97,532.7	23650	0.0	48.9	48.28255165	-103.26485087	2349.783						
23660	WELD	97,581.7	23660	0.0	39.2	48.28255772	-103.26505057	2347.489						
23670	WELD	97,620.8	23670	0.0	9.9	48.28255961	-103.26521060	2347.974						
10000056	Bend left - 90 deg., 6D	97,625.9	23670	1.6	8.3	48.28255572	-103.26522960	2347.827	0	12:00				
23680	WELD	97,630.7	23680	0.0	35.1	48.28254304	-103.26523447	2347.562						
23690	WELD	97,665.9	23690	0.0	49.4	48.28244707	-103.26523867	2346.162						
23700	WELD	97,715.2	23700	0.0	49.3	48.28231224	-103.26523930	2345.664						
23710	WELD	97,764.5	23710	0.0	48.8	48.28217728	-103.26524170	2344.695						
23720	WELD	97,813.4	23720	0.0	49.6	48.28204366	-103.26524490	2343.956						
23730	WELD	97,863.0	23730	0.0	49.7	48.28190799	-103.26524803	2343.263						
23740	WELD	97,912.6	23740	0.0	49.8	48.28177236	-103.26525067	2342.760						
23750	WELD	97,962.4	23750	0.0	49.7	48.28163667	-103.26525340	2342.753						
23760	WELD	98,012.1	23760	0.0	49.6	48.28150114	-103.26525613	2342.766						
23770	WELD	98,061.7	23770	0.0	33.9	48.28136613	-103.26525577	2341.409						
23780	WELD	98,095.6	23780	0.0	17.6	48.28127363	-103.26525983	2341.766						
23790	WELD	98,113.2	23790	0.0	1.5	48.28122544	-103.26526355	2341.514						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
10000057	Bend right - 40 deg., 3D	98,114.0	23790	0.1	1.4	48.28122356	-103.26526457	2341.547	0	12:00					
23800	WELD	98,114.8	23800	0.0	6.1	48.28122205	-103.26526652	2341.617							
23810	WELD	98,120.9	23810	0.0	32.1	48.28121035	-103.26528465	2342.253							
23820	WELD	98,153.0	23820	0.0	13.4	48.28115431	-103.26538502	2344.858							
23830	WELD	98,166.5	23830	0.0	49.6	48.28113221	-103.26542865	2345.768							
23840	WELD	98,216.1	23840	0.0	49.2	48.28105918	-103.26559992	2346.881							
23850	WELD	98,265.3	23850	0.0	49.5	48.28099047	-103.26577323	2346.098							
23860	WELD	98,314.9	23860	0.0	49.5	48.28092058	-103.26594739	2346.214							
23870	WELD	98,364.4	23870	0.0	49.2	48.28085113	-103.26612115	2346.611							
23880	WELD	98,413.6	23880	0.0	49.8	48.28078192	-103.26629313	2348.642							
23890	WELD	98,463.3	23890	0.0	49.8	48.28071101	-103.26646602	2349.736							
23900	WELD	98,513.1	23900	0.0	49.6	48.28064178	-103.26664047	2350.609							
23910	WELD	98,562.7	23910	0.0	49.5	48.28057383	-103.26681540	2351.626							
23920	WELD	98,612.2	23920	0.0	49.7	48.28050385	-103.26698864	2351.789							
10000058	Bend left - 20 deg., 34D	98,647.6	23920	26.3	23.4	48.28044972	-103.26710763	2350.580	0	12:00					
23930	WELD	98,661.9	23930	0.0	49.4	48.28042060	-103.26714583	2349.812							
23940	WELD	98,711.3	23940	0.0	49.4	48.28031428	-103.26726934	2346.699							
23950	WELD	98,760.7	23950	0.0	49.6	48.28020643	-103.26739022	2344.884							
23960	WELD	98,810.2	23960	0.0	49.5	48.28009767	-103.26751108	2344.612							
23970	WELD	98,859.8	23970	0.0	49.7	48.27998956	-103.26763290	2344.678							
23980	WELD	98,909.4	23980	0.0	49.8	48.27988180	-103.26775572	2344.362							
23990	WELD	98,959.2	23990	0.0	49.4	48.27977337	-103.26787746	2344.024							
20000024	Seam Variation	98,974.2	23990	15.0	34.4	48.27974055	-103.26791395	2344.094	44	1:15	-	1.13	0.58		
20000025	Seam Variation	98,974.9	23990	15.6	33.8	48.27973911	-103.26791552	2344.094	43	1:15	-	1.09	0.67		
24000	WELD	99,008.6	24000	0.0	49.6	48.27966545	-103.26799752	2342.966							
24010	WELD	99,058.2	24010	0.0	49.4	48.27955768	-103.26812005	2340.066							
24020	WELD	99,107.6	24020	0.0	48.8	48.27945052	-103.26824182	2337.740							
24030	WELD	99,156.4	24030	0.0	11.1	48.27934503	-103.26836240	2334.415							
24040	WELD	99,167.5	24040	0.0	1.5	48.27932143	-103.26838993	2333.826							
10000059	Bend right - 45 deg., 3D	99,168.2	24040	0.1	1.4	48.27932031	-103.26839243	2333.827	0	12:00					
24050	WELD	99,168.9	24050	0.0	40.3	48.27931963	-103.26839538	2333.853							
24060	WELD	99,209.2	24060	0.0	7.2	48.27931450	-103.26855884	2334.770							
24070	WELD	99,216.4	24070	0.0	49.6	48.27931436	-103.26858787	2334.826							
24080	WELD	99,266.0	24080	0.0	49.1	48.27931205	-103.26879040	2335.732							
24090	WELD	99,315.1	24090	0.0	49.5	48.27930887	-103.26899088	2338.192							
24100	WELD	99,364.6	24100	0.0	41.3	48.27930497	-103.26919188	2341.897							
24110	WELD	99,405.9	24110	0.0	41.4	48.27930188	-103.26936019	2344.719							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
24120	WELD	99,447.3	24120	0.0	41.4	48.27929956	-103.26952883	2345.838							
24130	WELD	99,488.7	24130	0.0	41.4	48.27929840	-103.26969744	2344.980							
24140	WELD	99,530.2	24140	0.0	41.3	48.27929821	-103.26986583	2342.458							
24150	WELD	99,571.5	24150	0.0	41.4	48.27929784	-103.27003435	2340.169							
24160	WELD	99,612.8	24160	0.0	41.3	48.27929845	-103.27020276	2337.330							
24170	WELD	99,654.1	24170	0.0	41.4	48.27929846	-103.27037137	2335.772							
24180	WELD	99,695.5	24180	0.0	41.3	48.27929823	-103.27054024	2334.566							
24190	WELD	99,736.8	24190	0.0	41.3	48.27929845	-103.27070888	2333.503							
24200	WELD	99,778.1	24200	0.0	41.3	48.27929863	-103.27087758	2332.526							
24210	WELD	99,819.3	24210	0.0	41.3	48.27929940	-103.27104621	2330.987							
24220	WELD	99,860.6	24220	0.0	41.4	48.27930017	-103.27121488	2330.164							
24230	WELD	99,902.0	24230	0.0	41.4	48.27930040	-103.27138366	2329.984							
24240	WELD	99,943.4	24240	0.0	41.4	48.27930079	-103.27155237	2329.001							
14000002	DENT	99,964.4	24240	20.9	20.5	48.27930045	-103.27163800	2329.210	140	4:30	5.0%				
24250	WELD	99,984.8	24250	0.0	41.4	48.27930020	-103.27172116	2329.374							
24260	WELD	100,026.3	24260	0.0	41.4	48.27929985	-103.27188979	2329.718							
24270	WELD	100,067.6	24270	0.0	41.3	48.27930081	-103.27205896	2330.428							
24280	WELD	100,108.9	24280	0.0	41.4	48.27930149	-103.27222811	2330.324							
24290	WELD	100,150.3	24290	0.0	41.3	48.27930303	-103.27239677	2330.552							
24300	WELD	100,191.6	24300	0.0	41.4	48.27930340	-103.27256564	2331.067							
24310	WELD	100,233.0	24310	0.0	41.3	48.27930357	-103.27273429	2330.844							
24320	WELD	100,274.3	24320	0.0	41.3	48.27930375	-103.27290288	2329.875							
24330	WELD	100,315.6	24330	0.0	41.4	48.27930406	-103.27307154	2328.627							
24340	WELD	100,357.0	24340	0.0	41.4	48.27930512	-103.27324040	2327.884							
24350	WELD	100,398.4	24350	0.0	41.4	48.27930545	-103.27340923	2326.801							
40000014	Metal Loss - EXTERNAL	100,421.5	24350	23.1	18.4	48.27930559	-103.27350314	2326.002	106	3:30	14%	1.04	1.05	1760	100%
24360	WELD	100,439.8	24360	0.0	41.4	48.27930595	-103.27357776	2325.149							
24370	WELD	100,481.2	24370	0.0	41.4	48.27930697	-103.27374591	2322.942							
24380	WELD	100,522.6	24380	0.0	41.3	48.27930702	-103.27391429	2321.162							
24390	WELD	100,563.9	24390	0.0	41.4	48.27930649	-103.27408270	2320.030							
24400	WELD	100,605.3	24400	0.0	41.3	48.27930586	-103.27425098	2321.932							
24410	WELD	100,646.6	24410	0.0	41.3	48.27930596	-103.27441932	2323.417							
24420	WELD	100,688.0	24420	0.0	41.4	48.27930576	-103.27458778	2322.530							
24430	WELD	100,729.4	24430	0.0	41.3	48.27930555	-103.27475625	2322.121							
24440	WELD	100,770.7	24440	0.0	41.3	48.27930578	-103.27492455	2322.597							
24450	WELD	100,812.0	24450	0.0	41.4	48.27930617	-103.27509303	2323.675							
24460	WELD	100,853.3	24460	0.0	40.2	48.27930794	-103.27526134	2324.156							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
24470	WELD	100,893.5	24470	0.0	16.4	48.27931041	-103.27542491	2322.964							
24480	WELD	100,909.9	24480	0.0	9.9	48.27931176	-103.27549147	2322.375							
10000060	Bend left - 90 deg., 6D	100,914.9	24480	1.4	8.5	48.27930812	-103.27551032	2322.271	0	12:00					
24490	WELD	100,919.8	24490	0.0	29.7	48.27929535	-103.27551545	2322.394							
24500	WELD	100,949.5	24500	0.0	41.3	48.27921458	-103.27552017	2323.106							
24510	WELD	100,990.8	24510	0.0	41.3	48.27910202	-103.27552850	2322.969							
24520	WELD	101,032.2	24520	0.0	40.8	48.27898927	-103.27553438	2322.827							
24530	WELD	101,073.0	24530	0.0	41.2	48.27887814	-103.27554101	2323.349							
24540	WELD	101,114.2	24540	0.0	41.3	48.27876585	-103.27554894	2325.381							
24550	WELD	101,155.5	24550	0.0	41.3	48.27865357	-103.27555816	2327.671							
24560	WELD	101,196.7	24560	0.0	41.4	48.27854112	-103.27556806	2328.855							
24570	WELD	101,238.1	24570	0.0	41.4	48.27842870	-103.27557735	2329.770							
24580	WELD	101,279.5	24580	0.0	41.4	48.27831593	-103.27558589	2330.134							
24590	WELD	101,320.9	24590	0.0	41.4	48.27820317	-103.27559490	2330.541							
24600	WELD	101,362.4	24600	0.0	41.4	48.27809051	-103.27560425	2330.787							
24610	WELD	101,403.7	24610	0.0	41.3	48.27797785	-103.27561472	2330.921							
24620	WELD	101,445.1	24620	0.0	41.3	48.27786515	-103.27562480	2331.358							
24630	WELD	101,486.4	24630	0.0	41.4	48.27775248	-103.27563420	2331.678							
24640	WELD	101,527.8	24640	0.0	41.3	48.27763982	-103.27564286	2332.335							
24650	WELD	101,569.1	24650	0.0	41.3	48.27752756	-103.27565173	2333.350							
24660	WELD	101,610.4	24660	0.0	41.3	48.27741507	-103.27566095	2334.675							
24670	WELD	101,651.7	24670	0.0	41.3	48.27730254	-103.27567010	2336.100							
24680	WELD	101,693.0	24680	0.0	41.3	48.27718992	-103.27567819	2337.583							
24690	WELD	101,734.4	24690	0.0	41.3	48.27707716	-103.27568636	2338.988							
24700	WELD	101,775.7	24700	0.0	41.4	48.27696446	-103.27569541	2340.278							
24710	WELD	101,817.1	24710	0.0	41.4	48.27685192	-103.27570416	2342.162							
24720	WELD	101,858.4	24720	0.0	41.4	48.27673925	-103.27571293	2343.243							
24730	WELD	101,899.9	24730	0.0	41.3	48.27662672	-103.27572197	2343.406							
24740	WELD	101,941.2	24740	0.0	41.2	48.27651412	-103.27573189	2343.258							
24750	WELD	101,982.4	24750	0.0	41.4	48.27640180	-103.27574258	2342.679							
24760	WELD	102,023.7	24760	0.0	41.3	48.27628919	-103.27575267	2343.311							
24770	WELD	102,065.1	24770	0.0	41.3	48.27617675	-103.27576246	2343.639							
24780	WELD	102,106.4	24780	0.0	41.3	48.27606420	-103.27577101	2344.641							
24790	WELD	102,147.7	24790	0.0	41.3	48.27595150	-103.27577997	2344.461							
24800	WELD	102,189.0	24800	0.0	49.6	48.27583879	-103.27578915	2344.308							
24810	WELD	102,238.7	24810	0.0	49.7	48.27570346	-103.27580021	2344.694							
24820	WELD	102,288.4	24820	0.0	49.3	48.27556820	-103.27581279	2345.387							

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
24830	WELD	102,337.7	24830	0.0	49.7	48.27543376	-103.27582498	2346.322						
24840	WELD	102,387.3	24840	0.0	49.7	48.27529842	-103.27583512	2347.247						
24850	WELD	102,437.0	24850	0.0	49.5	48.27516301	-103.27584448	2347.680						
24860	WELD	102,486.5	24860	0.0	49.7	48.27502789	-103.27585365	2348.780						
24870	WELD	102,536.2	24870	0.0	49.8	48.27489247	-103.27586328	2350.724						
24880	WELD	102,586.0	24880	0.0	49.7	48.27475719	-103.27587409	2351.882						
24890	WELD	102,635.7	24890	0.0	47.3	48.27462201	-103.27588574	2351.737						
24900	WELD	102,683.0	24900	0.0	49.3	48.27449314	-103.27589669	2351.719						
24910	WELD	102,732.4	24910	0.0	49.7	48.27435880	-103.27590866	2352.705						
24920	WELD	102,782.1	24920	0.0	49.5	48.27422346	-103.27591963	2354.823						
24930	WELD	102,831.6	24930	0.0	49.7	48.27408864	-103.27593122	2356.352						
24940	WELD	102,881.2	24940	0.0	49.3	48.27395346	-103.27594216	2358.155						
24950	WELD	102,930.6	24950	0.0	49.3	48.27381899	-103.27595281	2358.236						
24960	WELD	102,979.9	24960	0.0	49.5	48.27368431	-103.27596344	2358.860						
24970	WELD	103,029.4	24970	0.0	49.5	48.27354934	-103.27597463	2360.461						
24980	WELD	103,078.9	24980	0.0	49.3	48.27341444	-103.27598500	2362.586						
24990	WELD	103,128.1	24990	0.0	45.7	48.27328011	-103.27599603	2364.598						
25000	WELD	103,173.9	25000	0.0	49.9	48.27315566	-103.27600689	2366.033						
25010	WELD	103,223.7	25010	0.0	49.8	48.27302025	-103.27601933	2367.145						
25020	WELD	103,273.5	25020	0.0	49.7	48.27288488	-103.27602964	2367.509						
25030	WELD	103,323.2	25030	0.0	49.4	48.27274965	-103.27603997	2367.822						
25040	WELD	103,372.6	25040	0.0	49.7	48.27261459	-103.27604959	2368.479						
25050	WELD	103,422.3	25050	0.0	49.7	48.27247925	-103.27605932	2369.067						
25060	WELD	103,472.0	25060	0.0	49.5	48.27234387	-103.27606906	2368.912						
25070	WELD	103,521.6	25070	0.0	49.6	48.27220885	-103.27607858	2369.129						
25080	WELD	103,571.2	25080	0.0	49.7	48.27207338	-103.27608950	2369.662						
25090	WELD	103,620.9	25090	0.0	49.5	48.27193786	-103.27610108	2370.272						
25100	WELD	103,670.4	25100	0.0	49.7	48.27180264	-103.27611281	2370.896						
25110	WELD	103,720.1	25110	0.0	49.5	48.27166713	-103.27612334	2371.030						
25120	WELD	103,769.5	25120	0.0	49.7	48.27153213	-103.27613412	2370.900						
25130	WELD	103,819.3	25130	0.0	49.9	48.27139675	-103.27614550	2370.903						
25140	WELD	103,869.1	25140	0.0	41.4	48.27126105	-103.27615808	2370.324						
25150	WELD	103,910.5	25150	0.0	41.4	48.27114857	-103.27616831	2370.098						
25160	WELD	103,951.9	25160	0.0	41.3	48.27103590	-103.27617773	2370.756						
25170	WELD	103,993.3	25170	0.0	41.3	48.27092335	-103.27618891	2370.633						
25180	WELD	104,034.6	25180	0.0	41.3	48.27081055	-103.27619820	2370.597						
25190	WELD	104,075.9	25190	0.0	41.3	48.27069783	-103.27620741	2369.431						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
25200	WELD	104,117.2	25200	0.0	41.1	48.27058502	-103.27621404	2368.349						
25210	WELD	104,158.3	25210	0.0	12.5	48.27047267	-103.27622307	2367.332						
25220	WELD	104,170.8	25220	0.0	41.2	48.27043863	-103.27622621	2367.327						
25230	WELD	104,212.0	25230	0.0	41.0	48.27032642	-103.27623641	2367.240						
11000070	WT CHANGE	104,252.9	25230	0.0	0.1	48.27021476	-103.27624393	2366.092			0.322	52000	0.72	
25240	WELD	104,253.0	25240	0.0	43.3	48.27021454	-103.27624394	2366.095						
10000061	AGM 170, Sta. 1027+08, Two track -- Han #100	104,265.3	25240	12.3	31.0	48.27018086	-103.27624591	2366.437						
25250	WELD	104,296.3	25250	0.0	42.2	48.27009630	-103.27624906	2366.444						
25260	WELD	104,338.5	25260	0.0	42.3	48.26998113	-103.27624970	2366.568						
25270	WELD	104,380.8	25270	0.0	42.2	48.26986588	-103.27625284	2367.214						
11000071	WT CHANGE	104,423.0	25270	0.0	0.1	48.26975097	-103.27625540	2366.448			0.188	52000	0.72	
25280	WELD	104,423.0	25280	0.0	31.6	48.26975078	-103.27625540	2366.449						
25290	WELD	104,454.7	25290	0.0	14.4	48.26966431	-103.27625610	2366.973						
25300	WELD	104,469.1	25300	0.0	41.1	48.26962487	-103.27625597	2366.509						
25310	WELD	104,510.2	25310	0.0	41.3	48.26951250	-103.27625754	2365.731						
25320	WELD	104,551.5	25320	0.0	41.4	48.26939964	-103.27626321	2365.539						
25330	WELD	104,592.9	25330	0.0	41.4	48.26928661	-103.27626650	2364.992						
25340	WELD	104,634.4	25340	0.0	41.4	48.26917369	-103.27626640	2363.935						
25350	WELD	104,675.8	25350	0.0	41.3	48.26906059	-103.27626480	2363.601						
25360	WELD	104,717.1	25360	0.0	41.4	48.26894753	-103.27626291	2363.377						
25370	WELD	104,758.4	25370	0.0	41.4	48.26883436	-103.27626110	2363.084						
25380	WELD	104,799.8	25380	0.0	41.3	48.26872119	-103.27626032	2362.056						
25390	WELD	104,841.1	25390	0.0	41.3	48.26860840	-103.27626060	2360.537						
25400	WELD	104,882.4	25400	0.0	41.4	48.26849546	-103.27626110	2359.427						
25410	WELD	104,923.8	25410	0.0	41.4	48.26838245	-103.27626230	2358.533						
25420	WELD	104,965.2	25420	0.0	41.4	48.26826959	-103.27626390	2357.857						
25430	WELD	105,006.7	25430	0.0	41.4	48.26815674	-103.27626380	2356.979						
25440	WELD	105,048.1	25440	0.0	41.4	48.26804393	-103.27626210	2355.851						
25450	WELD	105,089.5	25450	0.0	41.4	48.26793113	-103.27626160	2354.142						
25460	WELD	105,130.9	25460	0.0	41.4	48.26781826	-103.27626150	2352.821						
25470	WELD	105,172.3	25470	0.0	41.4	48.26770560	-103.27626160	2351.431						
25480	WELD	105,213.7	25480	0.0	16.3	48.26759281	-103.27626140	2350.250						
25490	WELD	105,230.0	25490	0.0	11.9	48.26754847	-103.27626150	2349.365						
25500	WELD	105,241.9	25500	0.0	13.2	48.26751610	-103.27626160	2349.392						
25510	WELD	105,255.1	25510	0.0	41.5	48.26748009	-103.27626150	2349.764						
25520	WELD	105,296.6	25520	0.0	41.4	48.26736751	-103.27626190	2348.892						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
25530	WELD	105,338.0	25530	0.0	41.5	48.26725472	-103.27626249	2348.409						
25540	WELD	105,379.5	25540	0.0	41.4	48.26714180	-103.27626370	2347.251						
25550	WELD	105,420.9	25550	0.0	41.4	48.26702907	-103.27626430	2346.727						
25560	WELD	105,462.4	25560	0.0	41.4	48.26691622	-103.27626387	2346.568						
25570	WELD	105,503.8	25570	0.0	41.4	48.26680335	-103.27626190	2346.463						
25580	WELD	105,545.3	25580	0.0	41.5	48.26669053	-103.27626070	2346.270						
25590	WELD	105,586.7	25590	0.0	41.4	48.26657791	-103.27625679	2346.714						
25600	WELD	105,628.2	25600	0.0	41.4	48.26646520	-103.27624899	2346.353						
25610	WELD	105,669.6	25610	0.0	41.4	48.26635269	-103.27623889	2346.026						
25620	WELD	105,711.0	25620	0.0	41.4	48.26624005	-103.27622881	2346.041						
25630	WELD	105,752.5	25630	0.0	41.4	48.26612726	-103.27621949	2346.170						
25640	WELD	105,793.9	25640	0.0	41.3	48.26601437	-103.27621075	2346.083						
25650	WELD	105,835.2	25650	0.0	41.3	48.26590178	-103.27619995	2345.846						
25660	WELD	105,876.6	25660	0.0	41.3	48.26578918	-103.27618700	2345.013						
25670	WELD	105,917.9	25670	0.0	41.4	48.26567665	-103.27617220	2344.665						
25680	WELD	105,959.3	25680	0.0	41.3	48.26556413	-103.27615942	2343.479						
25690	WELD	106,000.6	25690	0.0	41.3	48.26545144	-103.27614935	2342.871						
25700	WELD	106,041.9	25700	0.0	41.4	48.26533881	-103.27613865	2341.538						
25710	WELD	106,083.2	25710	0.0	41.4	48.26522627	-103.27612859	2340.075						
25720	WELD	106,124.6	25720	0.0	41.4	48.26511370	-103.27612001	2338.974						
25730	WELD	106,166.1	25730	0.0	41.4	48.26500116	-103.27611193	2338.309						
25740	WELD	106,207.4	25740	0.0	41.3	48.26488850	-103.27610292	2337.728						
25750	WELD	106,248.7	25750	0.0	41.4	48.26477596	-103.27609448	2336.650						
25760	WELD	106,290.1	25760	0.0	41.3	48.26466355	-103.27608672	2335.334						
25770	WELD	106,331.4	25770	0.0	41.3	48.26455086	-103.27607885	2333.897						
25780	WELD	106,372.8	25780	0.0	41.3	48.26443810	-103.27607090	2332.684						
25790	WELD	106,414.1	25790	0.0	41.4	48.26432545	-103.27606155	2331.784						
25800	WELD	106,455.5	25800	0.0	41.4	48.26421273	-103.27605268	2331.193						
25810	WELD	106,496.9	25810	0.0	41.3	48.26410003	-103.27604364	2330.939						
25820	WELD	106,538.2	25820	0.0	41.4	48.26398727	-103.27603301	2330.477						
25830	WELD	106,579.5	25830	0.0	41.4	48.26387458	-103.27602292	2329.903						
25840	WELD	106,620.9	25840	0.0	41.3	48.26376175	-103.27601358	2329.296						
25850	WELD	106,662.2	25850	0.0	41.4	48.26364896	-103.27600464	2328.719						
25860	WELD	106,703.6	25860	0.0	41.5	48.26353622	-103.27599472	2327.718						
25870	WELD	106,745.0	25870	0.0	41.4	48.26342345	-103.27598364	2327.527						
25880	WELD	106,786.4	25880	0.0	41.3	48.26331093	-103.27597372	2326.816						
25890	WELD	106,827.7	25890	0.0	41.4	48.26319848	-103.27596538	2326.548						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)	Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
25900 WELD		106,869.1	25900	0.0	41.3	48.26308586	-103.27595877	2327.102						
25910 WELD		106,910.4	25910	0.0	41.4	48.26297305	-103.27595276	2327.162						
25920 WELD		106,951.8	25920	0.0	41.4	48.26286028	-103.27594678	2327.781						
25930 WELD		106,993.2	25930	0.0	41.4	48.26274737	-103.27594248	2328.277						
25940 WELD		107,034.6	25940	0.0	41.3	48.26263443	-103.27593739	2328.980						
25950 WELD		107,075.9	25950	0.0	41.4	48.26252148	-103.27593420	2329.736						
25960 WELD		107,117.3	25960	0.0	41.3	48.26240855	-103.27593370	2329.404						
25970 WELD		107,158.6	25970	0.0	41.3	48.26229568	-103.27593290	2328.860						
25980 WELD		107,200.0	25980	0.0	41.4	48.26218279	-103.27593230	2327.801						
25990 WELD		107,241.4	25990	0.0	41.4	48.26207000	-103.27593264	2326.158						
26000 WELD		107,282.8	26000	0.0	41.3	48.26195720	-103.27593401	2324.546						
26010 WELD		107,324.1	26010	0.0	41.4	48.26184480	-103.27593550	2323.140						
26020 WELD		107,365.5	26020	0.0	41.3	48.26173199	-103.27593670	2323.769						
26030 WELD		107,406.8	26030	0.0	41.4	48.26161927	-103.27593560	2325.466						
26040 WELD		107,448.1	26040	0.0	41.4	48.26150653	-103.27593440	2327.486						
26050 WELD		107,489.5	26050	0.0	41.4	48.26139357	-103.27593400	2328.372						
26060 WELD		107,531.0	26060	0.0	41.3	48.26128075	-103.27593460	2328.856						
26070 WELD		107,572.3	26070	0.0	41.3	48.26116784	-103.27593420	2328.812						
26080 WELD		107,613.6	26080	0.0	41.3	48.26105492	-103.27593300	2328.974						
26090 WELD		107,654.9	26090	0.0	41.4	48.26094181	-103.27593264	2329.292						
26100 WELD		107,696.3	26100	0.0	41.4	48.26082883	-103.27593360	2328.888						
26110 WELD		107,737.7	26110	0.0	41.4	48.26071591	-103.27593470	2328.312						
26120 WELD		107,779.0	26120	0.0	41.4	48.26060290	-103.27593372	2327.194						
26130 WELD		107,820.4	26130	0.0	41.3	48.26048996	-103.27593221	2326.591						
26140 WELD		107,861.7	26140	0.0	41.3	48.26037705	-103.27592995	2325.470						
26150 WELD		107,903.0	26150	0.0	41.3	48.26026409	-103.27592917	2324.783						
26160 WELD		107,944.3	26160	0.0	41.4	48.26015135	-103.27592860	2324.187						
26170 WELD		107,985.7	26170	0.0	41.3	48.26003840	-103.27592810	2323.332						
26180 WELD		108,027.0	26180	0.0	41.3	48.25992548	-103.27592780	2322.612						
26190 WELD		108,068.3	26190	0.0	41.3	48.25981247	-103.27592780	2322.218						
26200 WELD		108,109.6	26200	0.0	49.4	48.25969975	-103.27592850	2321.399						
26210 WELD		108,159.0	26210	0.0	49.8	48.25956476	-103.27592880	2321.495						
26220 WELD		108,208.8	26220	0.0	49.3	48.25942908	-103.27592920	2321.102						
26230 WELD		108,258.1	26230	0.0	49.4	48.25929473	-103.27592840	2320.768						
26240 WELD		108,307.4	26240	0.0	49.6	48.25916007	-103.27592860	2320.243						
26250 WELD		108,357.1	26250	0.0	49.6	48.25902427	-103.27592800	2320.580						
26260 WELD		108,406.7	26260	0.0	49.6	48.25888852	-103.27592830	2320.182						

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
26270	WELD	108,456.3	26270	0.0	48.9	48.25875309	-103.27592890	2319.432							
26280	WELD	108,505.2	26280	0.0	49.2	48.25861963	-103.27592830	2318.220							
26290	WELD	108,554.4	26290	0.0	49.6	48.25848513	-103.27592774	2317.467							
26300	WELD	108,604.0	26300	0.0	49.6	48.25834944	-103.27592830	2316.476							
26310	WELD	108,653.6	26310	0.0	49.5	48.25821389	-103.27592770	2316.549							
26320	WELD	108,703.1	26320	0.0	49.6	48.25807871	-103.27592680	2315.750							
26330	WELD	108,752.7	26330	0.0	45.4	48.25794379	-103.27592580	2314.208							
26340	WELD	108,798.0	26340	0.0	13.0	48.25782011	-103.27592441	2311.308							
26350	WELD	108,811.1	26350	0.0	0.8	48.25778448	-103.27592364	2310.657							
10000062	Bend left - 30 deg., 1.5D	108,811.5	26350	0.0	0.8	48.25778341	-103.27592328	2310.643	0	12:00					
26360	WELD	108,811.9	26360	0.0	6.0	48.25778237	-103.27592267	2310.632							
26370	WELD	108,817.9	26370	0.0	41.4	48.25776712	-103.27591207	2310.546							
26380	WELD	108,859.3	26380	0.0	49.6	48.25766464	-103.27584100	2310.013							
26390	WELD	108,908.9	26390	0.0	49.6	48.25754156	-103.27575555	2308.481							
26400	WELD	108,958.5	26400	0.0	49.4	48.25741841	-103.27567109	2307.560							
26410	WELD	109,008.0	26410	0.0	49.4	48.25729619	-103.27558583	2306.747							
26420	WELD	109,057.3	26420	0.0	44.5	48.25717376	-103.27550089	2305.962							
26430	WELD	109,101.9	26430	0.0	49.6	48.25706286	-103.27542552	2305.121							
26440	WELD	109,151.5	26440	0.0	49.6	48.25693945	-103.27534155	2304.695							
26450	WELD	109,201.1	26450	0.0	49.8	48.25681665	-103.27525671	2305.102							
26460	WELD	109,250.9	26460	0.0	49.8	48.25669411	-103.27517097	2304.082							
26470	WELD	109,300.6	26470	0.0	49.7	48.25657142	-103.27508424	2302.970							
26480	WELD	109,350.3	26480	0.0	49.6	48.25644855	-103.27499823	2300.805							
26490	WELD	109,400.0	26490	0.0	39.5	48.25632563	-103.27491209	2298.673							
26500	WELD	109,439.5	26500	0.0	6.0	48.25622806	-103.27484353	2296.948							
26510	WELD	109,445.5	26510	0.0	0.9	48.25621313	-103.27483317	2296.509							
10000063	Bend left - 30 deg., 1.5D	109,445.9	26510	0.1	0.8	48.25621224	-103.27483193	2296.487	0	12:00					
26520	WELD	109,446.4	26520	0.0	32.2	48.25621135	-103.27483069	2296.465							
26530	WELD	109,478.5	26530	0.0	40.7	48.25615629	-103.27472820	2295.906							
26540	WELD	109,519.2	26540	0.0	48.6	48.25608544	-103.27459996	2296.204							
26550	WELD	109,567.8	26550	0.0	1.5	48.25599890	-103.27444880	2296.608							
10000064	Bend right - 45 deg., 3D	109,568.6	26550	0.1	1.4	48.25599716	-103.27444748	2296.609	0	12:00					
26560	WELD	109,569.3	26560	0.0	20.3	48.25599519	-103.27444678	2296.599							
26570	WELD	109,589.7	26570	0.0	11.9	48.25593979	-103.27444317	2295.994							
10000065	Bend right - 90 deg., 6D	109,595.4	26570	2.4	9.5	48.25592516	-103.27444831	2295.775	0	12:00					
26580	WELD	109,601.5	26580	0.0	6.4	48.25592177	-103.27447188	2295.788							
11000072	WT CHANGE	109,607.8	26580	0.0	0.1	48.25592201	-103.27449732	2295.989				0.322	52000	0.72	

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
26590	WELD	109,607.9	26590	0.0	1.5	48.25592202	-103.27449762	2296.009							
10000066	Bend up - 45 deg., 3D	109,608.6	26590	0.0	1.4	48.25592207	-103.27450039	2296.227	0	12:00					
26600	WELD	109,609.3	26600	0.0	3.0	48.25592210	-103.27450283	2296.699							
26610	WELD	109,612.4	26610	0.0	7.5	48.25592214	-103.27451164	2298.806							
10000092	Pipe Exiting Ground -- Survey Point	109,617.9	26610	5.5	2.0	48.25592197	-103.27452782	2302.750							
26620	WELD	109,619.9	26620	0.0	1.6	48.25592195	-103.27453390	2304.157							
10000067	Bend down - 45 deg., 3D	109,620.8	26620	0.2	1.5	48.25592193	-103.27453710	2304.461	0	12:00					
26630	WELD	109,621.6	26630	0.0	0.9	48.25592192	-103.27454026	2304.616							
10000068	Flange	109,622.0	26630	0.5	0.5	48.25592192	-103.27454222	2304.627	0	12:00					
26640	WELD	109,622.5	26640	0.0	1.2	48.25592192	-103.27454413	2304.634							
10000069	Tee at 90 deg.	109,623.1	26640	0.1	1.1	48.25592192	-103.27454659	2304.637	75	2:30					
26650	WELD	109,623.7	26650	0.0	1.2	48.25592192	-103.27454900	2304.640							
10000070	Pipe Support	109,624.6	26650	0.9	0.4	48.25592191	-103.27455274	2304.650							
26660	WELD	109,624.9	26660	0.0	3.1	48.25592191	-103.27455424	2304.654							
10000071	Flange	109,625.4	26660	0.5	2.7	48.25592191	-103.27455624	2304.658	0	12:00					
10000072	Valve	109,626.4	26660	1.5	1.6	48.25592192	-103.27456086	2304.670							
10000073	Flange	109,627.5	26660	2.6	0.5	48.25592192	-103.27456542	2304.681	0	12:00					
11000073	WT CHANGE	109,627.9	26660	0.0	0.1	48.25592192	-103.27456715	2304.686				0.365	52000	0.72	
26670	WELD	109,628.0	26670	0.0	4.3	48.25592192	-103.27456744	2304.687							
10000074	Pipe Support	109,630.2	26670	2.0	2.3	48.25592193	-103.27457676	2304.705							
26680	WELD	109,632.4	26680	0.0	1.2	48.25592196	-103.27458567	2304.728							
10000075	Tee on bottom of pipe	109,632.9	26680	0.2	1.0	48.25592197	-103.27458802	2304.735	169	5:30					
26690	WELD	109,633.5	26690	0.0	11.5	48.25592198	-103.27459053	2304.743							
10000076	Fitting on top of pipe	109,637.9	26690	4.3	7.2	48.25592205	-103.27460907	2304.795	352	11:30					
10000077	Pipe Support	109,643.2	26690	9.6	1.9	48.25592213	-103.27463125	2304.887							
26700	WELD	109,645.0	26700	0.0	3.1	48.25592217	-103.27463876	2304.918							
10000078	Flange	109,645.5	26700	0.5	2.7	48.25592219	-103.27464072	2304.926	0	12:00					
10000079	Valve	109,646.6	26700	1.6	1.6	48.25592222	-103.27464529	2304.950							
10000080	Flange	109,647.7	26700	2.7	0.5	48.25592225	-103.27464987	2304.977	0	12:00					
26710	WELD	109,648.2	26710	0.0	1.3	48.25592226	-103.27465176	2304.989							
10000081	Pipe Support	109,648.5	26710	0.2	1.1	48.25592226	-103.27465304	2304.997							
26720	WELD	109,649.4	26720	0.0	1.2	48.25592229	-103.27465703	2305.024							
10000082	Tee at 90 deg.	109,650.0	26720	0.2	1.0	48.25592230	-103.27465968	2305.040	65	2:00					
26730	WELD	109,650.6	26730	0.0	5.0	48.25592231	-103.27466199	2305.054							
10000083	Pipe Support	109,653.0	26730	2.2	2.8	48.25592239	-103.27467187	2305.106							
26740	WELD	109,655.6	26740	0.0	0.9	48.25592250	-103.27468298	2305.178							

Pipeline Listing

TDW Services, Inc.

Hiland Crude, LLC

Tioga Station to Epping Injection

ID#	Description	Distance (ft)	Joint #	U/S Weld	D/S Weld	Latitude	Longitude	Altitude	Orientation (Deg / O'Clock)		Depth (%)	Length or WT	Width or YS	P' or SF	(P'/P)
10000084	Flange	109,656.1	26740	0.5	0.4	48.25592252	-103.27468514	2305.193	0	12:00					
26750	WELD	109,656.5	26750	0.0	2.5	48.25592254	-103.27468701	2305.205							
10000085	Pipe Support	109,657.4	26750	0.7	1.8	48.25592258	-103.27469072	2305.231							
26760	WELD	109,659.0	26760	0.0	1.2	48.25592265	-103.27469750	2305.284							
10000086	Tee at 90 deg.	109,659.6	26760	0.2	1.0	48.25592268	-103.27469989	2305.301	79	2:30					
26770	WELD	109,660.2	26770	0.0	3.8	48.25592270	-103.27470247	2305.317							
10000087	Pipe Support	109,662.1	26770	1.7	2.1	48.25592278	-103.27471038	2305.366							
26780	WELD	109,664.1	26780	0.0	3.2	48.25592287	-103.27471850	2305.426							
10000088	Flange	109,664.6	26780	0.5	2.7	48.25592289	-103.27472062	2305.442	0	12:00					
10000089	Valve (Receiver), Sta. 1079+37, Epping Injection	109,665.6	26780	1.6	1.6	48.25592295	-103.27472510	2305.469							
10000090	Flange	109,666.7	26780	2.7	0.5	48.25592299	-103.27472515	2305.480	0	12:00					
26790	WELD	109,667.2	26790	0.0	-	48.25592299	-103.27472515	2305.480							
12000002	End Run Tickle	109,712.6	26790	45.4	-	48.25592299	-103.27472515	2305.480							

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General Inline Inspection Terms

AGM (Aboveground Marker)	A portable device placed at an above ground reference point that both detects and records the passage of an in-line inspection tool. AGMs are typically reported using a marker number followed by the aboveground reference point description of the location device (box) placement.
ABOVE-GROUND REFERENCE POINTS	The above ground reference point is a permanent reference on or above the pipeline, which can be used to locate features in the pipeline. Reference points can be valves, fences, test stations, markers posts, or other permanent features.
ACCELEROMETERS	Part of the INS package of the in-line inspection tool. Each TDW tool contains 3 axis-aligned accelerometers measuring orientation and shock.
ANCHOR, WEIGHT OR HANGAR	Non-welded full encirclement pipeline features typically evenly spaced across water crossings. These are usually not detrimental unless associated metal loss is detected.
ANOMALY	Any kind of imperfection or defect that may be present in the wall of the pipe. This includes coating or welding.
APPURTENANCE	A component that is attached to the pipeline; e.g., valve, tee, casing, instrument connection.
ASME B31G, MODIFIED ASME B31G, or DNV RP-F101	Commonly used analysis criterion for metal loss anomalies in a pipeline. TDW software may use ASME B31G, MODIFIED ASME B31G, or DNV RP-F101 to calculate the safe maximum allowable operating pressure or failure pressure at an area of metal loss. These formulas utilize only length and depth - they do not take into consideration the width of the anomaly. The MODIFIED ASME B31G more closely approximates the values obtained via the RSTRENG calculations, which is less conservative than the standard ASME B31G calculation. See also DNV RP-F101.
BEND	A physical pipe configuration that changes pipeline direction.
BEND RADIUS	The radius of the bend in the pipe as related to the pipe diameter (D). Example: A 3-D bend would have a radius of 3 times the diameter of the pipe measured to the centerline of the pipe.
BORE RESTRICTION	Any reduction of the cross-section of the pipe that may restrict the passage of an ILI pig.
BUCKLE	A condition where the pipeline has undergone sufficient plastic deformation to cause permanent wrinkling or deformation of the pipe wall or the pipe's cross section.
BURST PRESSURE	The pressure at which the nominal hoop stress in the wall of a pipe equals the specified minimum yield stress of the pipe grade. It is calculated by 2st/D where s = SMYS, t = nominal wall thickness, D = nominal outside diameter of pipe.
CALIBRATION DIG	An exploratory excavation to compare findings of an in-line inspection system to actual conditions with the purpose of improving data analysis.
CASING ANOMALY	When the casing is not welded, or when a gap occurs in the weld, this signature is detected by the tool, and identified with a miscellaneous remark.
CHARACTERIZATION	The process of quantifying the size, shape, orientation, and location of an anomaly, defect, or critical defect after it has been detected.
CHECK VALVE	A valve that prevents reverse flow.
CLAMP	Non-welded full encirclement pipeline feature not located at a bridge or water crossing, in some cases a type of temporary repair.
COMPONENT	Any physical part of the pipeline , other than line pipe, including but not limited to valves, welds, tees, flanges, fitting, taps, branch connections, outlets, supports and anchors.

General Inline Inspection Terms

CONTROL POINT	Control points are know locations used to provide coordinate updates to aid the final processing of the inertial data gathered from the instruments onboard the inspection vehicle.
CORROSION (External)	Metal loss due to electrochemical, galvanic, microbiological, or other attack on the pipe due to environmental conditions surrounding the pipe.
CORROSION (Internal)	Metal loss due to chemical or other attack on the steel from liquids on the inside of the pipe. Electrochemical attack can also occur in local cells, but this is less frequent.
DATA ANALYSIS	The process through which indications are evaluated to classify, characterize and size them as non-relevant conditions, pipeline components, anomalies, imperfections, or defects.
DATUM	A datum is a set of reference points on the earth's surface against which position measurements are made. Horizontal datums are used for describing a point on the earth's surface, in latitude and longitude or another coordinate system. While hundreds of reference datums exists some examples of horizontal datums include, NAD27, NAD83, and WGS84. Vertical datums are tidal, based on sea levels referencing geodetic datums such as NAVD88, or geodetic, based on the same ellipsoid models of the earth used for computing horizontal datums.
DNV RP-F101	An analysis procedure that differs from the commonly used ASME B31G criterion. Developed by the Norwegian company Det Norske Veritas, this method is employed for European and Asian pipelines. The DNV algorithm is generally considered to be more conservative than ASME B31G.
DEFECT	An anomaly for which an analysis, such as ASME B31G, would indicate that the pipe is approaching failure as the nominal hoop stress approaches the specified minimum yield stress (SMYS).
DEFORMATION PIG	A pig designed to record conditions such as dents, wrinkles, ovalities, bend radius and angle by making measurements of the inside surface of the pipeline.
DENTS	Dents are depressions in the pipeline that may be detected by the inline inspection tool. MFL tools may be able to detect dents, but may not be able to accurately size them.
DETECTION THRESHOLD	A characteristic dimension or dimensions of an anomaly that must be exceeded to achieve a stated probability of detection.
DOT192	Part 192 of the Code for Federal Regulations (CFR) Title 49 that addresses Gas Transmission Pipelines.
DOT195	Part 195 of the Code for Federal Regulations (CFR) Title 49 that addresses Transportation of Hazardous Liquids by Pipeline.
ECCENTRIC CASINGS	TDW tools detect when a casing is not centered on the pipeline. These casings are referred to as being eccentric. The closer the casing is to the pipeline, the stronger the signal seen by the inspection tool. The tool may not detect if the casing is shorted to the pipe wall. The tool might see evidence of a short, such as metal loss.
ESTIMATED REPAIR FACTOR (ERF)	The ratio of pipeline design pressure or in some cases MOP to the safe maximum operating pressure (P').
ERW (Electric Resistance Weld)	Describes a process used to form steel from a sheet into tubular form (pipe). Welds are formed by resistance heating of two edges of a metal sheet and then forcing them together to create a solid-state weld.
EXPANSION	Local increase of pipe diameter during service which indicates the yield stress of the pipe at that location has been surpassed.

General Inline Inspection Terms

FAILURE PRESSURE RATIO (FPR)	The ratio of the predicted failure pressure calculated by an analysis criterion (e.g. ASME B31G, RSTRENG, etc.) to the MAOP
FEATURE	Any physical object detected by an in-line inspection system. Features may be anomalies, components, or some other item.
FITTING	A branch connection attached to the pipeline which is smaller than the nominal pipe size that alters flow or diverts product (e.g. tap, offtake, split-tee, weld-o-let, thread-o-let).
GAIN (Metal in Close Proximity)	The inspection tool may detect ferrous metal objects located close to or touching the pipeline. They appear as additional metal added to the pipe and are referred to as gains. Clamps or anchors are considered gains as well as features such as puddle welds or CP connections. Generally, repairs such as patches or sleeves are called out as repairs even though they show appear in the data as gains.
GIRTH WELD	A circumferential weld joining two joints of pipe.
GIS	Geographic Information System is any system that captures, stores, analyzes, manages, and presents data that are linked to location. GIS is the merging of cartography and database technology.
GOUGE	Elongated grooves or cavities caused by mechanical removal of metal.
GPS (Global Positioning System)	The navigational system utilizing satellite technology to provide a user an exact position on the earth's surface. When coupled with known surface locations such as valves and AGMs, an ILI tool's INS or IMU can approximate or calculate the centerline of a pipeline.
GYROSCOPES (Gyros)	Electronic sensors used to measure change in direction of in-line inspection tool during inspection process. Displayed as pitch and yaw in PIGTRAP.
GROUP	A group is several pits that are grouped together using specific interaction rules. If a pit is a mountain peak, then a group is a mountain range. The reason for groups is so that the overall extent of the metal loss area can be evaluated. Most formulas for calculating the strength of the pipe wall around metal loss look at the overall length of metal loss after interaction rules have been applied to pits.
HALF SOLE	A device used to repair a pipeline by welding a small section over half the circumference of the pipe over the defect, literally half of a sleeve.
HALL SENSORS	A sensor that directly measures the remaining magnetic field strength not absorbed by the pipe.
HCA (High Consequence Area)	A criterion for pipelines designed by the Code of Federal Regulations which define what program and practices operators must use to manage pipeline integrity if the pipeline is located near a commercially navigable waterway, a high population area, or an unusually sensitive area.
HEAT AFFECTED ZONE (HAZ)	The region around a weld which has been metallurgically affected during the welding process.
HEAVY WELD	A girth weld in which the root pass or a portion of the root pass intrudes further than normal into the ID of the pipe. Not usually considered detrimental.
HIGH RESOLUTION	A term used to describe the function of TDW tools for use in MFL or Deformation analysis schemes. Both MFL and Deformation tools are considered high resolution.
IMPERFECTION	An anomaly with dimension and characteristics that do not exceed acceptable limits.

General Inline Inspection Terms

IMU (Inertial Measurement Unit)	Inertial measurement unit, or IMU, is the main component of inertial guidance systems. An IMU works by sensing motion including the type, rate, and direction of that motion using a combination of accelerometers and gyroscopes.
INCLUSION	An anomaly in the cross section of the pipeline caused by manufacturing processes. Inclusions may be detrimental if they protrude through the pipe wall. Refer to mill anomaly.
INDICATION	Any measured signal or response from an inspection of a pipe different than the normal baseline signal.
INS (Inertial Navigation System)	Refers to a system of accelerometers and gyroscopes to track the movement and orientation of the inspection tool through bends, turns, etc.
INTERACTION RULES	Specifications that establish spacing criteria between anomalies or defects (pits). If the indications or defects are proximate to one another within the criteria , the anomaly or defect is treated as a single larger unit or group for engineering analysis purposes.
INSPECTION	The use of a non-destructive inspection technique.
JOINT	A single section of pipe that is welded to others to make up a pipeline.
LACK OF FUSION (LOF)	In a weld, any area or zone that lacks complete melting and coalescence of a portion of the weld.
LAUNCHER	Refers to the beginning of the inspection; an oversize section of pipe equipped with sealing door through which the inspection tool is loaded into the pipeline.
LOCATION	A location is a feature in the pipeline that can be used to correlate the inspection tool data to above ground references. Common location features include valves, fitting, flanges, tees, casings, repairs and AGMs. For example, a metal loss area could be referenced as being 200 feet downstream from a valve. Not all locations can be easily found from aboveground.
LATITUDE & LONGITUDE	Latitude is the angular distance north or south from the earth's equator measured through 90 degrees. Longitude is the arc or portion of the earth's equator intersected between the meridian of a given place and the prime meridian and is expressed either in degrees or in time. Latitude and longitude are reported as GPS coordinates. Predicted GPS for features are provided in the Pipeline Listing section.
MAOP (Maximum Allowable Operating Pressure)	(or Design Pressure) The maximum internal pressure permitted in the operation of a pipeline as defined by the Code of Federal Regulations.
MAPPING PIG	An ILI tool that uses an IMU to collect data that can be analyzed to produce an elevation and plan view of the pipeline route.
MEASUREMENT THRESHOLD	A characteristic's dimension or dimensions above which anomaly measurements can be made.
MECHANICAL DAMAGE	A generic term used to describe combinations of dents gouges, and/or cold work caused by the application of external force. Damage includes coating, movement of metal and high residual stress.
METAL LOSS	Any of a number of types of anomalies in pipe in which metal has been removed from the pipe surface, usually due to corrosion or gouging.
MFL (Magnetic Flux Leakage)	An inspection technique in which a magnetic field is applied to a pipe section and measurements are taken of a magnetic flux density at the pipe surface. Changes in measured flux density indicate the presence of a possible defect.

General Inline Inspection Terms

MILL ANOMALY	The process of manufacturing pipe can often leave indications in the pipe wall. Typically these anomalies are not detrimental, and are identified for the benefit of the client.
MINIMUM BORE	The minimum measured Internal Diameter of the pipe at any particular point. Also referred to as minimum cross-section.
MISALIGNMENT	A girth weld anomaly where the two joints of pipe were not aligned properly prior to welding. Sometimes referred to as a hi-lo.
MOP (Maximum Operating Pressure)	The established maximum internal pressure expected during the operation of a pipeline, which cannot normally exceed the maximum allowable operating pressure (MAOP).
ODOMETER	Wheels on in-line inspection tool, which rotate along the pipe to measure the distance the tool has traveled.
ORIENTATION	The location of the reference around the circumference of the pipe, as viewed in the direction of flow (downstream). The value is represented in degrees 0-360° rotating clockwise around pipe. (0° = top of pipe, 90° = 3:00)
OVALITY	A condition in which a circular pipe forms into an ellipse, usually as the result of external forces.
P	Calculated pressure rating for the pipe. Per ASME B31G, it is the greater of either the established MOP for liquid lines (MAOP for gas lines), or 2stFT/D, where S = SMYS, F = appropriate design factor from ASME B31G, T = Temperature derating factor, D = nominal outside diameter of pipe, and t = nominal wall thickness. See ASME B31G. In application, this variable is identical per DNV RP-F101, however it is calculated using different formulas and factors.
P' (Calculated safe maximum operating pressure)	Calculated safe maximum operating pressure for the pipeline segment as calculated based on information provided by the Customer. TDW software uses ASME B31G, MODIFIED ASME B31G, or DNV RP-F101 to calculate the safe maximum allowable operating pressure (P') of the pipeline at a metal loss area for liquid lines. The calculation also takes into consideration a temperature factor, for use when the line is at elevated temperature, and a safety factor. The default values used in calculations are a temperature factor of 1, and a safety factor of 72% (80% for Canada).
Pfail (Calculated failure pressure)	Calculated maximum operating pressure for the pipeline segment as calculated based on information provided by the Customer. TDW software uses ASME B31G, MODIFIED ASME B31G, or DNV RP-F101 to calculate the failure pressure (Pfail) of the pipeline at a metal loss area for gas lines. The calculation also takes into consideration a temperature factor, for use when the line is at elevated temperature, and a safety factor. The default values used in calculations are a temperature factor of 1, and a safety factor of 100%.
P'/P	Percent of maximum established pressure, this is calculated by dividing the calculated safe pressure of the defect (P') by the current established maximum operating pressure of the pipeline (P). For TDW reporting, P is either established MOP provided by the customer or the calculated pressure rating for the pipe (P). Percentages less than 100% are considered pressure-reducing.
Pfail/MAOP	Percent of MAOP, this is calculated by dividing the calculated failure pressure of the defect (Pfail) by the current MAOP of the pipeline (P). For TDW reporting, P is either established MAOP provided by the customer or the calculated pressure rating for the pipe (P).
PATCH	A device used to repair a pipeline by welding a small section of pipe on top of the defect.
PIG	A generic term signifying any independent, self-contained device, tool or vehicle that moves through the interior of the pipeline for purposes of inspecting, batching, dimensioning, or cleaning.

General Inline Inspection Terms

PIGTRAP	Pipeline Inspection Graphical Test Reporting and Analysis Program (PIGTRAP). Proprietary software developed by TDW Inc. for viewing data collected by the inspection tool.
PIPE SUPPORT	Any device used to support an aboveground pipeline.
PIT	Localized concentrated-cell corrosion on the external or internal surfaces that results from generation of a potential (voltage) difference set up by variations in oxygen concentrations within and outside the pit. The oxygen-starved pit acts as anode and the pipe surface acts as the cathode. If several pits are in close proximity to each other, they may be grouped together using interaction rules as one group.
PLANAR	An NDT term indicating a feature has two-dimensional characteristics like a fissure. Sometimes referred to as crack-like.
RSTRENG	A computer program designed to calculate the calculated safe maximum operating pressure (P') of corroded pipe. RSTRENG results are approximated when Modified B31G criteria is used.
REBOUNDING	The process of changing the dent depth and shape by internal pressure in the pipe. Generally, dents due to third-party contact will re-round, while dents due to rocks will not unless the rock causing the dent is removed.
RECEIVER	Refers to the ending of the inspection; an oversize section of pipe equipped with sealing door through which the inspection tool is retrieved from the pipeline.
REPORTING THRESHOLD	A parameter that defines whether or not an anomaly will be reported. The parameter may be a limiting value on the depth, width, or length of the anomaly or feature.
RESIDUAL DENT DEPTH	The dent depth measured under a particular set of conditions, e.g., in pressurized or un-pressurized pipeline. While maximum dent depth does not change, the residual or measured dent depth changes with pressure and loading. Also referred to as the measured dent depth.
RUPTURE PRESSURE RATIO (RPR)	The ratio of the predicted failure pressure calculated by an analysis criterion (e.g. ASME B31G, RSTRENG, etc.) to the pressure at specified minimum yield strength (SMYS)
SAFETY FACTOR	(or Design Factor) Typically 0.72 for liquid lines per ASME B31G (0.80 in Canada) . In setting the safety factor, due consideration has been given to and allowances made for the manufacturing tolerance and maximum allowable depth of imperfections provided for in the specifications. DNV RP-F101 uses a slightly different Total Usage Factor, which is entered as the Safety Factor in PIGTRAP. The typical 0.72 factor becomes 0.648 when applying the DNV modeling factor of 0.9.
SEAMLESS	Pipe that is manufactured by means of extrusion. This process typically creates significantly more variation in pipe wall thickness than ERW pipe.
SEAM VARIATION	Non-detrimental irregularity due to the manufacturing of the seam weld. An example is excess or variance in trim.
SEAM WELD (or SEAM)	The longitudinal or spirally-oriented weld in pipe connecting two edges of a formed plate which was created at the pipe mill.
SLEEVE	A device used to repair a pipeline by welding a small section of pipe over the full circumference of the pipe over the top of the defect.
SpirALL™ Magnetic Flux Leakage	A tool system that unites a conventional axial MFL and a unique spiral MFL tool section into one tool combining the benefits of each for enhanced defect characterization and sizing.

General Inline Inspection Terms

Spiral MFL (SMFL)	A unique type of MFL tool section that creates an oblique, near-45 degree magnetic field within the pipe wall. This allows detection and characterization of long and narrow metal loss or seam features on par with circumferential or transverse MFL tools.
SPACER	A device used to maintain space between a casing and a pipeline.
SMYS (Specified Minimum Yield Strength)	A required strength level that measured yield stress of a pipe material must exceed, which is reported as pipe grade. The measured yield stress is the tensile stress required to produce a total elongation of 0.5 percent of a gage length as determined by an extensometer during a tensile test.
STITCHING	Intermittent or repeating lack of fusion in a seam weld.
TEMPERATURE FACTOR	Typically 1.0 unless the metal temperature is expected to exceed a normal temperature range of -20°F (-30°C) to 250°F (120°C).
THIRD PARTY DAMAGE	Damage to a pipeline system by an outside party. See mechanical damage.
TRACKING	The process used to monitor the progress of the inspection tool through the pipeline. AGM boxes are placed at aboveground marker reference locations to record the passage of the inspection tool.
TRAP	Pipeline facility for launching and receiving tools and pigs.
VOLUMETRIC	A term indicating a feature has three-dimensional characteristic similar to a typical corrosion pit.
WELD ANOMALY	Any area or zone in a weld that lacks complete melting and fusion of a portion of the weld which could have occurred during the welding process or caused by corrosion.
WRINKLE	A smooth and localized bulge visible on the outside wall of the pipe.
WRINKLE BEND	A field bend that contains smooth and localized bulges on the inner radius of the bend, sometimes formed when pipe is cold bent.

Appendix A

1. The Graphs, Dig Sheets, and Tables used in this report were generated using a standalone reporting engine from data contained in a Microsoft Access™ database.

2. If the end user has Microsoft™Access on their computer, they have complete access to the inspection database. The database file which has an extension of *.mdb (Microsoft™ database) is stored in the same directory as the tool data. Although the printed reports and report spreadsheet were generated by a standalone reporting engine, using Access the user can customize some basic graphs or tables contained in the database. Alternatively, the data can be exported to a spreadsheet if preferred.

3. The PigTrap™ software, included with this report, provides the user with an easy way to view the data collected by the TDW in-line inspection tool and can also be helpful when trying to locate certain features or specific sections of pipe. The software can be run off various media or installed onto a network or hard drive. Please refer to Appendix B for installation requirements and instructions.

4. For dig sheet creation, please refer to Appendix C.

5. TDW inspection tools are designed to detect various features and anomalies within a pipeline. These various features and anomalies are added to the database using PigTrap™ software by qualified Data Analysts.

6. Database Numbering System: All entries in the database have a unique number assigned to them. The table below lists the number range of each category of database records.

7. All records are numbered sequentially from the beginning of the pipeline section to the end of the pipeline section. By default Welds begin at 110 and are incremented by 10 from one weld to the next. This can be altered to match customer weld or joint numbering by request.

Welds	110	to	9,999,999
Locations	10,000,000	to	10,999,999
Pipe	11,000,000	to	11,999,999
Misc	12,000,000	to	12,999,999
Gains	13,000,000	to	13,999,999
Deformations	14,000,000	to	14,999,999
Bore Restrictions	15,000,000	to	15,999,999
Pits or Other Defects	20,000,000	to	39,999,999
Groups (of Pits)	40,000,000	to	49,999,999
Seam Welds	51,000,000	to	51,999,999

8. All other records are incremented by 1 from one record to the next. For example, the first Location record would be numbered 10,000,000, the second record would be 10,000,001, and the third record would be 10,000,002, etc. Depending on information sent out previous to the final report, numbering may change during analysis of the run.

Appendix B

The PigTrap™ software allows the user to view all of the data collected during the Magpie/TDW inline inspection survey. Installation requires the disk(s) or external drive that accompany the inspection report.

System Requirements

Before you install and run PigTrap™ please verify that the computer you are installing to meets the minimum requirements needed to successfully open and operate PigTrap™.

Windows OS

- Microsoft® Windows 7, Vista®; Windows® XP Professional, Home Edition
  - Administrator rights required
- 2.0 GHz Intel® Core™ 2 Duo Processor or higher
- 2 GB RAM or more
- 1 GB available hard drive space plus additional necessary for the run size.
- Qualified hardware-accelerated OpenGL graphics card, 32-bit color, and 256MB of VRAM (latest manufacturer drivers strongly recommended also).
- Microsoft® Access 2003 or higher
- Microsoft® .NET Framework 3.5 Service pack 1
- Microsoft® Visual C++ 2008 SP1 Redistributable Package (x86)
- Microsoft® Report Viewer 2008 SP1

What electronic data accompanied the inspection report

The CD, DVD, or external drive supplied by T.D. Williamson, Inc. for this PigTrap™ inspection of your pipeline contains the following types of files. For CD or DVDs the first disk will contain these files while accompanying disks (if any) contain raw tool data only. External drives will contain this information in the Final Report folder on the external drive under the run name folder.

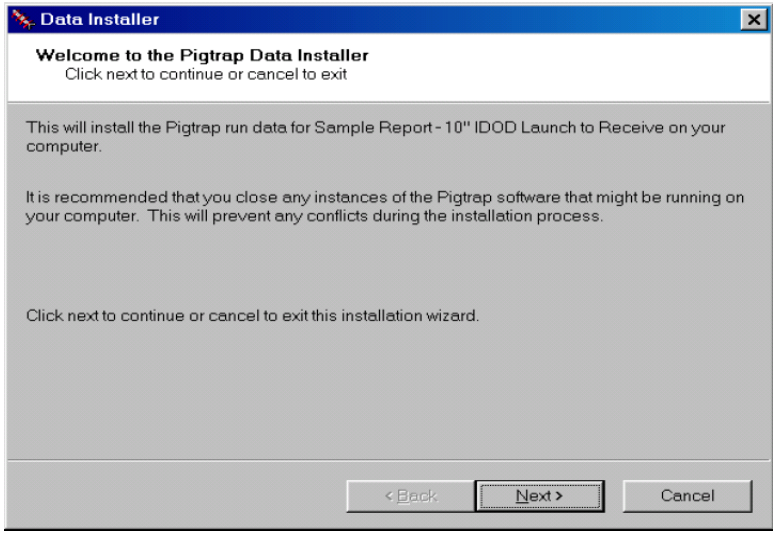
- Database – .MBD (Microsoft Data Base) Files of this type may be viewed through Microsoft Access. This file contains the analysis of the inspection.
- .rsf – This is a PigTrap™ reference file which holds specific settings for the run to be viewed.
- Spreadsheet – .XLS (Microsoft Excel) A Pipeline Listing is generated for your run in an Excel spreadsheet format. Each event at a particular location is identified and described. You may use Copy and Paste techniques to build your own custom formatted report.
- Setup.exe file – This file executes the installation of the data for the specific run contained on the disk(s) or external drive.
- h*.nnn, c*.nnn, i*.nnn, p*.nnn, t*.nnn, l*.nnn & o*.nnn – The raw tool data created on-board the inspection tool. These files are necessary for PigTrap™ to function properly. CD and DVDs have the option to install these files onto your computer, if chosen not to install them to your computer the disks must be used to view the run.

Run Data and PigTrap™ Installation

The inspection report will be accompanied by either CDs, DVDs, or an external drive containing all files necessary for installation. Installation for CDs and DVDs differs from external drives, if an external drive accompanied your final report please skip to PigTrap™ Installation.

CDs and DVDs

1. Insert Disk 1 from the report binder into your computer's CD/DVD drive.
2. Access the Setup.exe program located on the CD or DVD. This can be done by browsing to your computer's CD/DVD drive and double clicking Setup.exe. This will launch the Data Installer program.

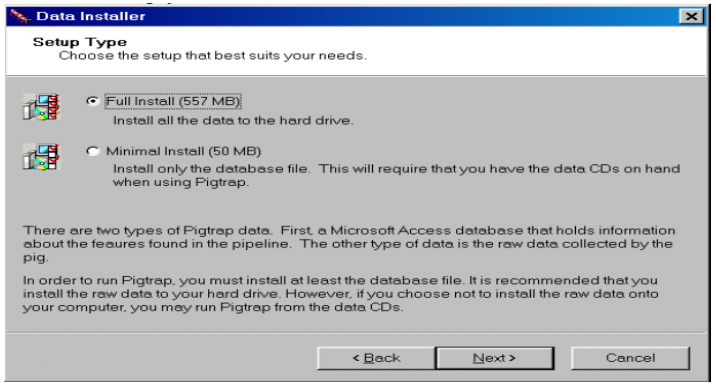


Note: If you want to install only the Pigtrap™ software and not the run data (advanced users only), choose Cancel and go to the Pigtrap™ Installation steps on page 3.

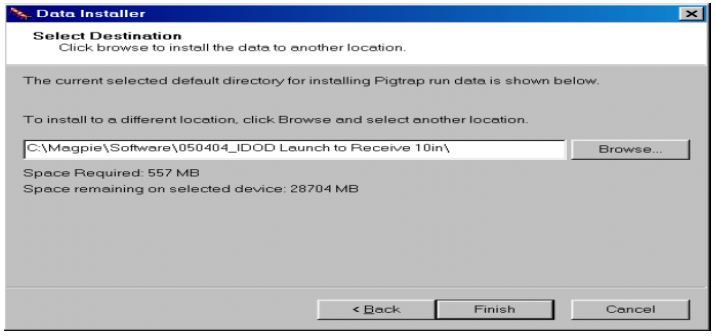
3. Click Next to continue installing the run data.

Appendix B

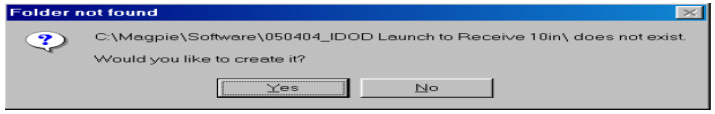
4. Choose the type of install you would like to perform: Full Install (recommended) or Minimal Install. The size of the installation is shown next to each type of installation. The database file must be installed for PigTrap™ to operate properly, but you may choose to not install the raw data. If you choose to not install all the data, you may need to change disks while viewing the data in PigTrap™. Click Next to continue after making your choice.



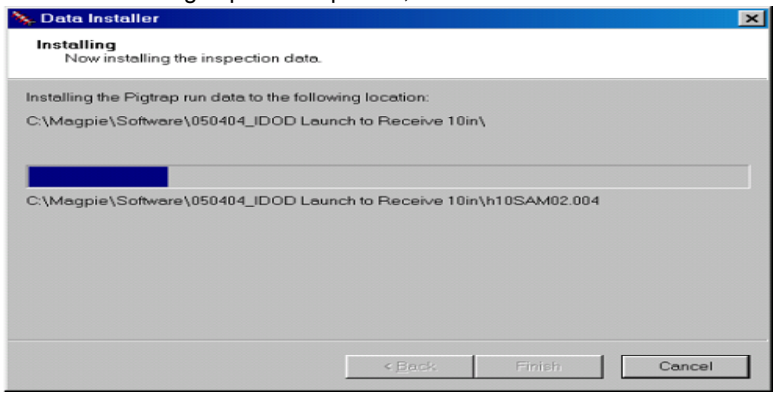
5. Choose the installation location on your computer for the data files. The default and recommended location is C:\Magpie\Software. The location inside this folder is based on the trap date, name, and size of the run. If you would like to specify another location, click the Browse... button. Click Finish to continue.



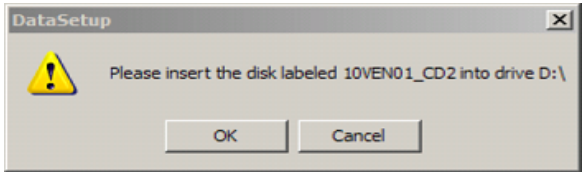
6. If the installation folder does not already exist, then you will be prompted to create it. Click Yes to create the new folder.



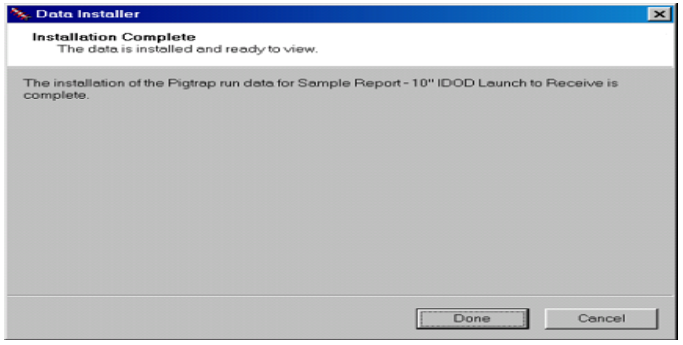
7. The following progress bar will appear. There may be a short delay while the database is being copied. Be patient, this is normal.



8. You may be prompted to insert other disks from the run distribution if data was supplied on more than one disk. Insert the required disk and click OK to continue. Repeat until all disks have been copied.



9. Click Done to complete the run data installation.



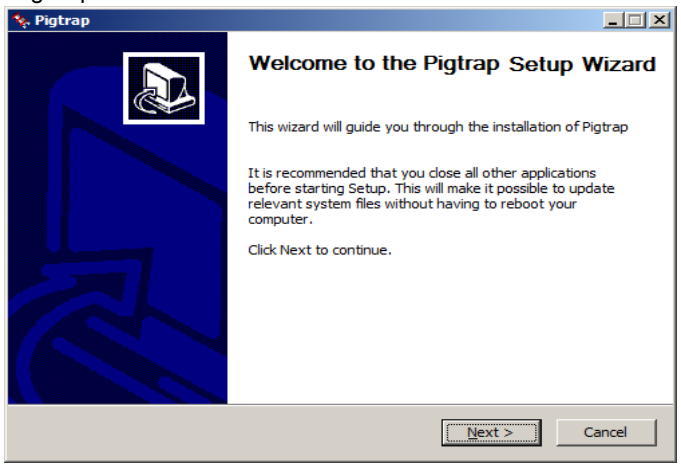
10. After clicking Done in the Data Installer PigTrap™ Installation will automatically launch.

Appendix B

PigTrap™ Installation

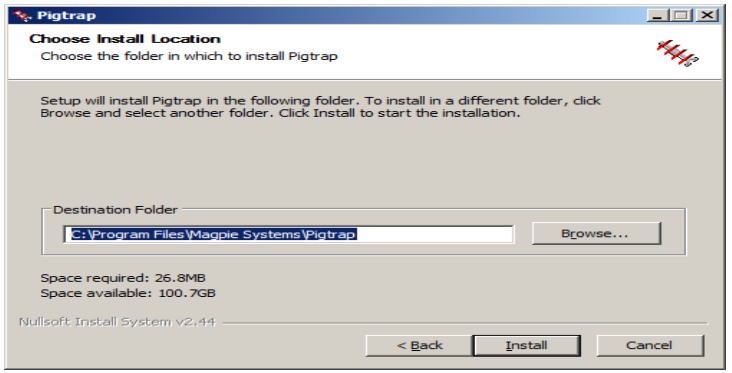
Note: CD and DVDs follow a slightly different installation process. Steps 1 and 2 are for external drives, if you are installing from CDs or DVDs please skip to step 3.

1. Plug the external drive into your computer.
2. Access the PigTrap™ setup.exe located on the external drive. This can be done by browsing to external drive and double clicking PigTrap™ setup.exe.
3. PigTrap™ Setup Wizard will launch. This will guide you through the installation of PigTrap™. Click Next to continue.

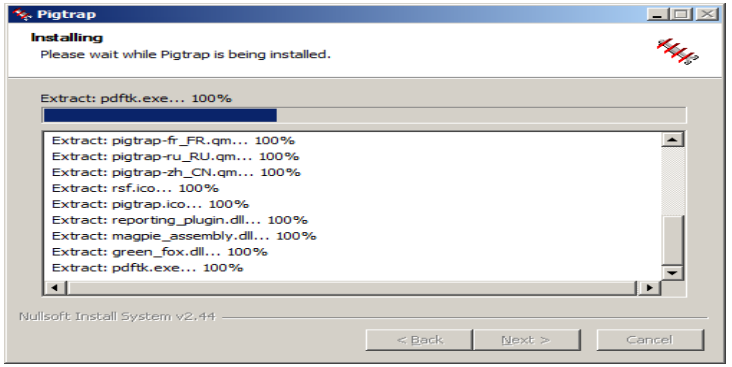


4. The Software License Agreement will appear. Read the agreement select I Agree to continue. You must accept the agreement to install PigTrap™.

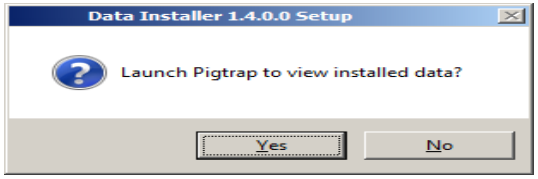
5. Choose the installation location on your computer for the PigTrap™ software. The default and recommended location is C:\Magpie\Software. Click Install to continue.



6. The following progress bar will appear while PigTrap™ installs all the necessary files. Once the installation has completed click Finish to close the wizard.



7. When prompted whether you would like to view the run data, click Yes to launch PigTrap™. Shortcuts are now on the desktop to the run and to PigTrap™. Once PigTrap™ opens with the data, choose save in the upper left of the data view.



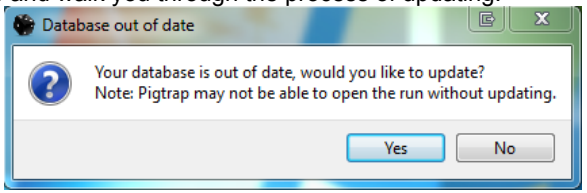
Appendix B

Opening and Viewing the Inspection Data

Viewing the inspection data in PigTrap™ can be done by using one of three different methods.

1. Double click on PigTrap™ .exe icon. Click on the Open Folder icon , then browse to the installed inspection data folder and select the desired .rsf or .mrsf file.
2. Double click on a run settings file (.rsf or .mrsf) that is associated with PigTrap™.
3. Drag and drop a run settings file (.rsf or .mrsf) on top of the PigTrap™ .exe file.

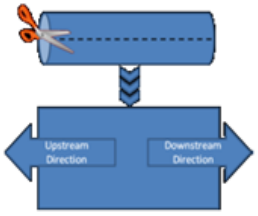
PigTrap™ was designed so you would have the ability to review previous TDW/Magpie inspection data when needed. However, you may need to acquire an updated Microsoft Access Data-base from one of our TDW representatives. When opening previous data in PigTrap™ you may encounter the message, "Your database is very old. You may need to update it." If this happens, don't panic. Chances are you will be able to view the data without any problems. If you can't, just contact your TDW representative and we can send you a newer database and walk you through the process of updating.

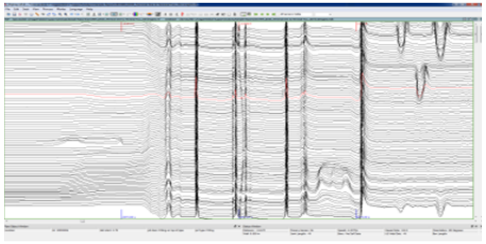


We packed so much into the new PigTrap™ the older reference files just couldn't hold it all so a new one may need to be created. Once the new reference file finishes, you will be able to freely navigate around in PigTrap™.

What am I looking at?

The data viewed in PigTrap™ is a 360 degree snapshot of the inside of the inspected pipe. This captured data is sliced down the middle and laid flat in the PigTrap™ main display. The horizontal lines represent sensor data collected from the pigging tool. Each line is one sensor. The left side of the screen is "upstream" while the right side of the screen is "downstream". So, as you scroll from left to right you are moving downstream from the launch valve.





Basic Navigation

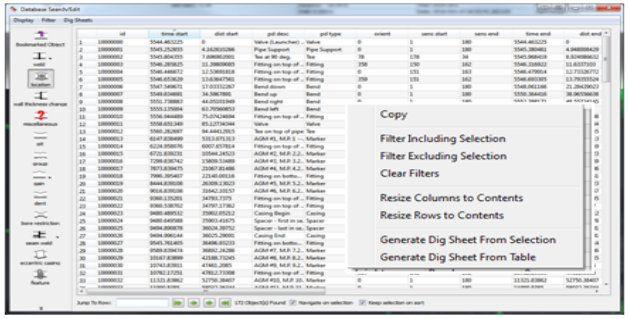
The horizontal scrollbar at the bottom of the main view moves the view upstream or downstream. Clicking on the left arrow moves upstream while clicking on the right arrow moves downstream.

The vertical scrollbar at the right side of the main view rolls the data vertically to a desired orientation of the view.

Zooming IN/OUT on the data is easily performed by clicking on the Zoom buttons.

Select the "Jump to Distance" icon from the run toolbar to enter a desired distance point to navigate in the inspection data. The option "View Width" sets how much viewable area to display (time based).

Click on the binoculars to open the Database/Search Edit (DSE). This displays a table of the pipe objects marked by the Data Analysis personnel. The buttons in the DSE allow for a high level filtering of specific types of marked pipe objects in the table. Right click on any pipe object to display a context menu of filtering, resize columns/rows and generate dig/feature sheets.



For example: Launch and Receive Valves can be found under "location" button, you'll also find Bends, Tees, Markers, etc.

For additional information regarding dig/feature sheet creation, see Appendix C.

Training

For detailed Pigtrap training, contact your TDW representative.

Appendix B

Trouble Shooting

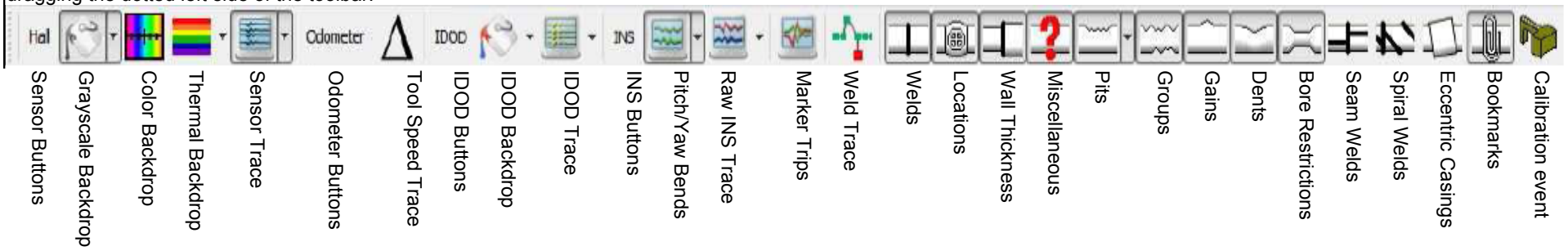
Issue	Possible Cause	Possible Solution
"Data files missing" message displayed on the Main view.	PigTrap™ is not able to load the necessary data file(s) because they are missing, not installed correctly, media/hardware damage (Dirty or scratched CD/DVD, drive failure).	Please reinstall the inspection data, check the run setting has the correct path to the files (Run Settings>Files>Data File Directory), clean the CD/DVD.
"Generate Dig Sheet" is not available from the DSE.	PigTrap™ is not installed correctly.	Please reinstall PigTrap™.
Main window title bar is not visible.	Full screen is enabled.	Press "F11" on the keyboard.
Not able to highlight pipe objects.	The color bit depth is not set correctly.	PigTrap™ requires a 32 bit color depth, please contact IT to assist in changing to the correct setting.
	One of the task specific modes is enabled.	Press the "Done" or "Cancel" buttons from the bottom left.
REF error message.	If this is the first time opening a run with PigTrap™ , it may attempt to create a reference file (.ref2). This message appears because a .ref2 file does not exist or it is corrupt.	Select OK to create a new ref2 file.
Can't see the sensor data.	Zoomed in very close.	Click on the Zoom OUT button.
	Sensors are not enabled.	Turn on the sensors from the Run Toolbar.
Can't find the Status/Database Window.	The Status/Database windows are not enabled	Go to View>Status Window and toggle the option ON
Crashes while opening.	The video card drivers are out of date.	Update the graphic card drivers. Note: Before installing the latest driver, you may need to uninstall the current drivers while in Windows safe mode. Can also turn off shaders.
	The .rsf is corrupt and needs replacing.	Reinstall the inspection data.
	Microsoft Visual C++2010 redistributable is corrupt or not installed.	This is typically installed the TDW Inspection data. It is possible to have a corrupt install and additional help may be required to correct the issue. Please contact your local IT department to assist with the prerequisite install.

Appendix B

Tool Bar Layouts and Functions

Run Toolbar

The run toolbar will contain button that will toggle different views, traces and features on and off. Some of the features will be technology specific, such as IDOD as proximity sensors are only present on MFL tools. The arrows next to some buttons will provide additional options related to the specific button. Each window can be undocked by clicking and dragging the dotted left side of the toolbar.



Main

The main toolbar contains navigation buttons that will aid in viewing run data and seeking to specific distances or locations.

Database Navigation

These buttons navigate to features listed in the DSE.

Sensor Visibility

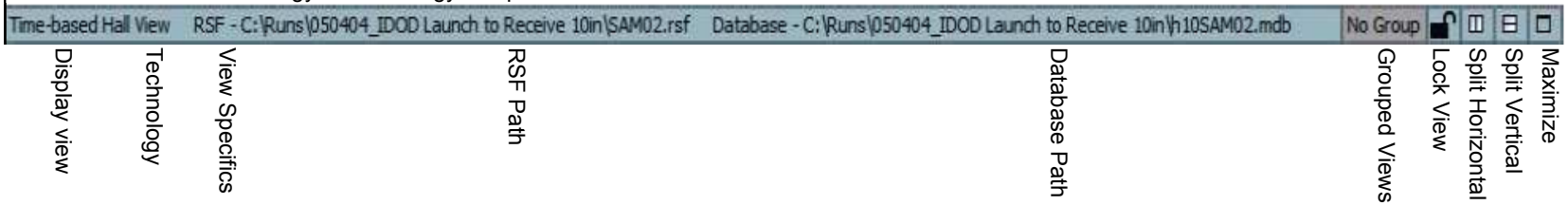
PigTrap™ allows user to zoom in on specific set of sensors, this dialog will display what sensors are currently being viewed. To return to viewing all sensors simply zoom out (-).

Quick Search

The quick search allows users to quickly search for features by typing in a certain criteria, such as '+valve' this will jump to the next downstream valve.

Run Details Status Bar

The run details status bar displays information regarding the view-type (time or distance), the location of the RSF and database and allows for the splitting of multiple views. Additional views can be split vertically or horizontally and even un-docked into a separate window using the button that appears after a view has been split. Locking a view will keep the current view in place. This feature will allow for multiple runs to be open in the same PigTrap™ for easier run to run or technology to technology comparison.



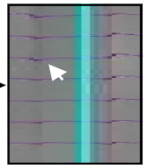
Appendix B

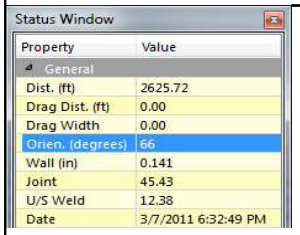
Displayed Information and Shortcuts

Pipe Object and Status Windows

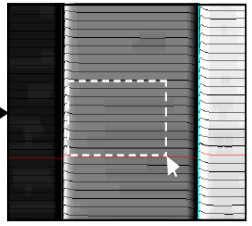
The Pipe Object and Status Windows will be defaulted to the right side of PigTrap™. Both windows can be docked and undocked by double clicking the title bar, left clicking and dragging or clicking the undock button located in the top right corner. As PigTrap™ has the ability to display multiple datasets the Status Window will update each section depending on which tool technology is selected (refer to the Run Details Status Bar on the Tool Bar Layout and Functions page). The information contained in each section of the Status Window can also be customized by right clicking on the desired section and selecting what data to display.

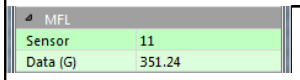
The pipe object window will display information about a highlighted feature, such as a weld, providing the weld ID and Distance. Features are highlighted when the cursor is placed upstream of an object and the object becomes highlighted with a teal color.



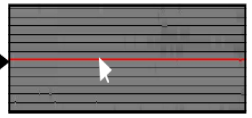


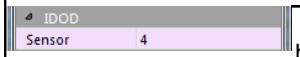
The General section of the Status Window will display information pertaining to all datasets. The information is dependent on the cursor location, displaying the current distance, orientation, wall thickness, joint length, up stream weld and date and time. The drag distance and drag width is populated when a box is drawn and can be useful when manually measuring lengths and widths.



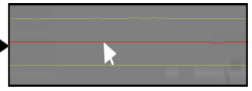


The MFL window will display information for the current highlighted sensor. The highlighted sensor will be a red line over the entire sensor. These sensors can be turned on and off using the Esc key.

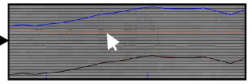




The IDOD window will display information for the current highlighted IDOD sensor. The IDOD sensors can be turned on by pressing the tilde (~) key.



The odometer section displays information about the speed for the current cursor location.



Status Bar

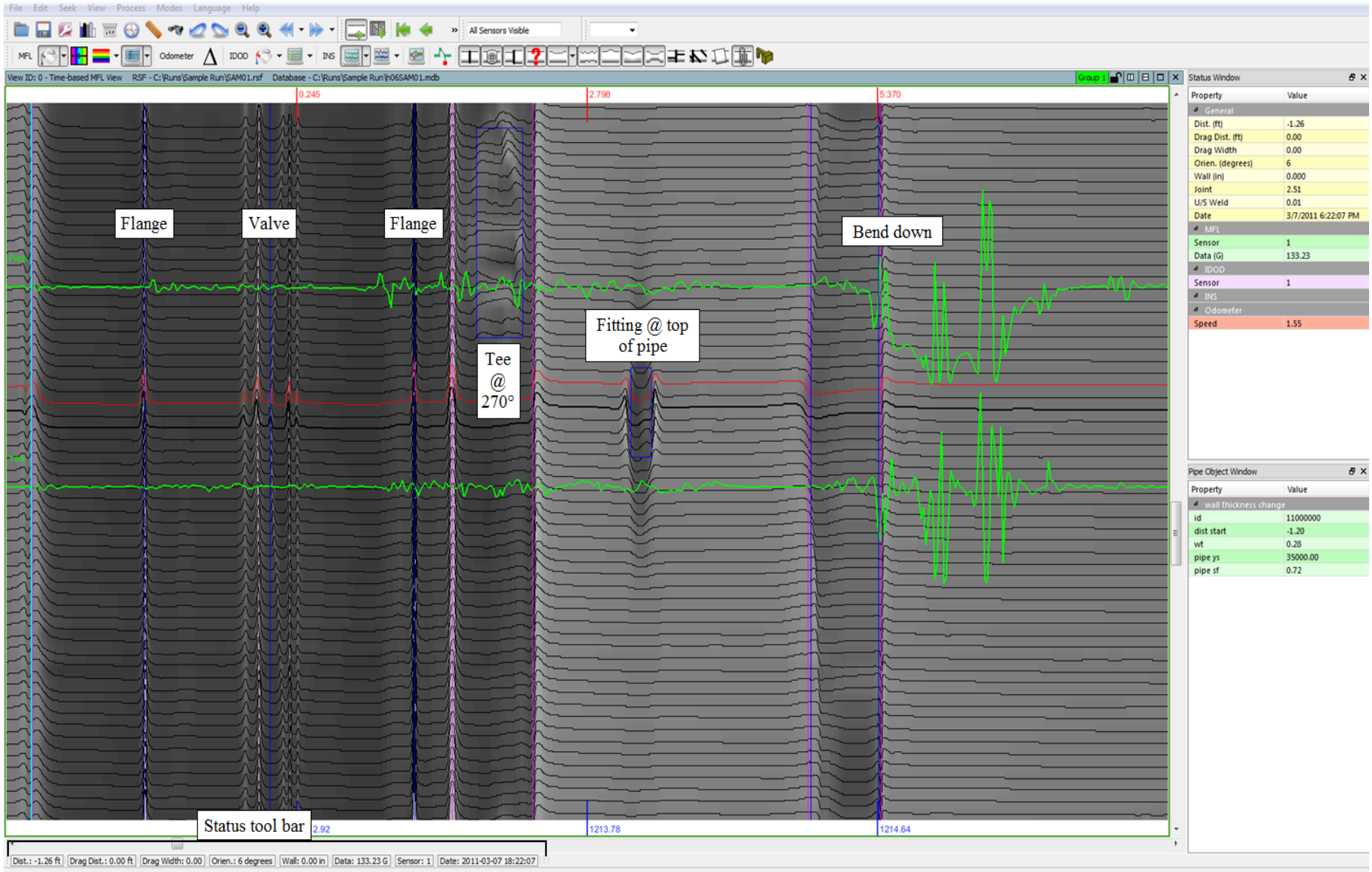
The Status Bar is located at the bottom left of PigTrap™ and contains much of the same information as the General section of the Status Window. It can also be customized by right clicking and selecting what information to display. The order can also be adjusted by clicking and dragging a section above or below other rows.

Keyboard Shortcuts

Ctrl + ŷ	Jump to Launch Valve
Ctrl + Ź	Jump to Receive Valve
Ÿ	Move Half Screen Downstream
Ŷ	Move Half Screen Upstream
Page Down	Move Full Screen Downstream
Page Up	Move Full Screen Upstream
ŷ	Rotate Orientation Up
Ź	Rotate Orientation Down
Mouse Wheel	Rotate Orientation
Ctrl + F	Open Database Search Edit (DSE)
Spacebar	Repeat Last DSE Find
Ctrl + Z	Undo Last View
Ctrl + Shift + Z	Redo Last View
Ctrl + D	Jump to Distance
Ctrl + T	Jump to Time
Ctrl + H	Open Deformation Cross Section
Ctrl + Ÿ	Jump to Downstream Marker Trip
Ctrl + Ŷ	Jump to Upstream Marker Trip
Alt + Double Click	Hide Status Windows
Esc	Turn Hall sensors on/off
Tilde (~)	Turn IDOD sensors on/off
M	Measure dragged box

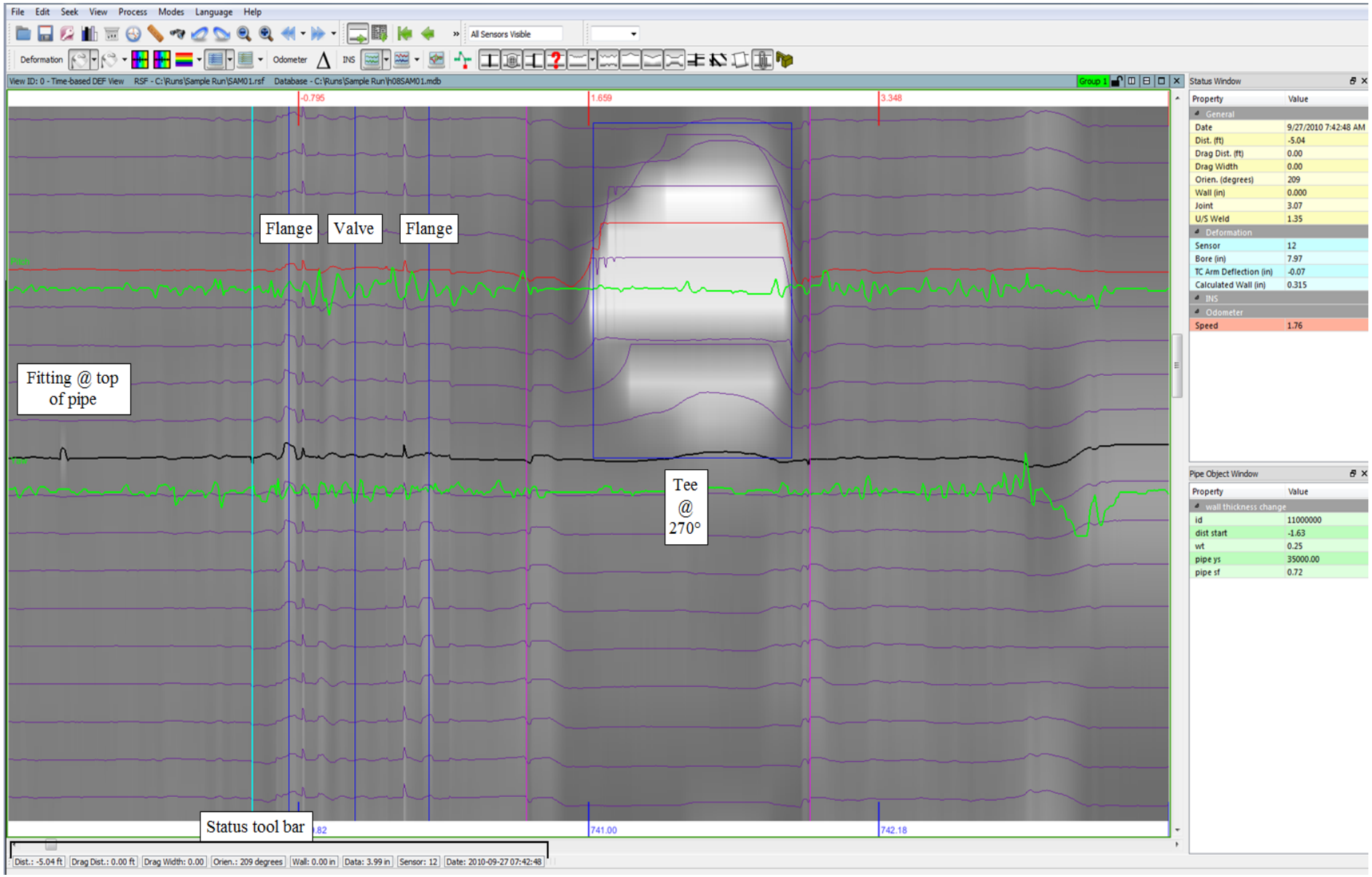
Appendix B

PigTrap™ MFL Runs



Appendix B

PigTrap™ DEF Runs

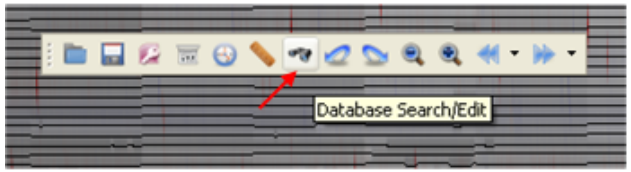


Appendix C

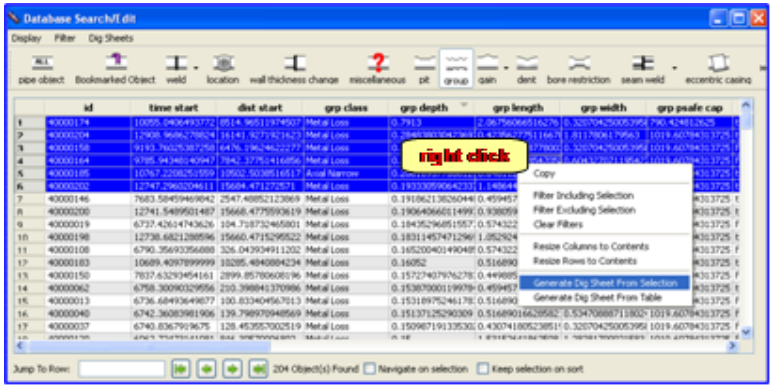
The user can view and print dig sheets for any anomaly or feature detected in the pipeline including Metal Loss (Groups or Pits), Dents, Locations, Gains, Wall Thickness changes, Welds, Miscellaneous notes, etc.

1. Open PigTrap™ to view the inspection data for the run. Please consult Appendix B if you need instructions on installing and viewing the raw data.

2. Click on the Database Search/Edit option either by clicking on the small binoculars icon in the toolbar or choosing the option under the Seek toolbar.



   a. This will bring up the Database Search/Edit (DSE) window.



3. You can choose what type of feature you want to list in the window by clicking on the icon in the margin.

4. Once the list populates with that type of object, you can filter or sort the data to find the object(s) for which you want to create dig sheets.

   a. Clicking on the header of the column will sort either ascending or descending. Click again to reverse the order.

   b. You may also use or create various filters by clicking on one of the two Filters buttons.

   c. There is also a Displayed Columns button which allows you to hide or show the various columns of data.

5. Right clicking in the table or choosing the Dig Sheets option in the top toolbar will allow you to create dig sheets one of two ways:

   a. Generate Dig Sheet From Selection – This will create a separate dig sheet for each of the highlighted rows in the list. Using the Ctrl key or the Shift key and clicking rows will allow for multiple row selection.

   b. Generate Dig Sheet From Table – This will create a separate dig sheet for every item in the list whether highlighted or not. Note that if the list contains a lot of features, this could lead to numerous dig sheets being created and may impact the short term performance of your computer while they are being generated.

6. The dig sheets you requested will automatically be previewed for easier printing as well as saved to a directory as a pdf file for printing later.

   a. To choose which directory the dig sheets are saved into, choose Report Creation Settings under the Dig Sheets option in the top toolbar.

7. Also under the Dig Sheets toolbar in the DSE window, you may change various dig sheet formatting preferences by clicking on Dig Sheet Settings option.