



**"People are our most important asset – their safety is our greatest responsibility.
No job is so urgent that it cannot be done safely."**

**i3 ENERGY
03-14-42-05-W5**

SWEETENING SKID

**WPW JOB NUMBER: 21-102
QC PACKAGE NUMBER: P-102-21**

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**CERTIFICATE OF
AUTHORIZATION**

Certificate of Authorization Permit

Quality Management System

Expiry Date: **June 17, 2023**

Reg. No.: **AQP-2307**

WPW INC.

PT SW 25-40-05-W5M

LESLIEVILLE, ALBERTA

having complied with the provisions of the SAFETY CODES ACT, is hereby authorized to perform the activities identified in the following table:

	Construction	Repair	Alter
Pressure Piping			
ASME B31.1 Power Piping	Shop/Field	Shop/Field	Shop/Field
ASME B31.3 Process Piping	Shop/Field	Shop/Field	Shop/Field



As a condition of this permit, the holder is required to participate in interim audits by a safety codes officer to verify that the quality management system is being maintained in a manner acceptable to a safety codes officer.

Dated at Edmonton, this 23rd day of June, 2020

A handwritten signature in blue ink, appearing to read "M. Pothmann".

Chief Inspector and Administrator

Certificate No.: 13984



AB-83 FORM



PRESSURE PIPING CONSTRUCTION AND TEST DATA REPORT

In accordance with the provisions of the PESR Section 31(1)

Shop Construction ☒;

Field Construction ☒;

Final Data Report ☒;

Partial Data Report ☐ (from one ABSA- authorized Contractor to another ABSA- authorized Contractor).

Complete both sides of this Form

1. Constructed By: WPW Inc. Owner's Job No: _____
 (Name of ABSA authorized primary contractor or subcontractor)
Box 61 Leslieville, Alberta. T0M 1H0

(Address)

Certificate of Authorization Permit No. AQP-2307 Expiry Date: May 14, 2020

2. Constructed For: N/A 13 Energy
 (Name of primary contractor if different from above)

N/A

Calgary Ab.

(Address)

Certificate of Authorization Permit No. AQP-NA Expiry Date: NA

(Required when the primary contractor undertakes some/all of the quality functions, e.g., NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

3. Owner: I3 ENERGY 888 3rd ST SW, 46th FLOOR BANKERS HALL WEST TOWER CALGARY, AB T2P 5C5

(Name and address)

03-14-42-05 W5M

(Location of installation)

Certificate of Authorization Permit No. AQP-NA Expiry Date: NA

(Required when the owner undertakes some/all of the quality functions, e.g., NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

4. Piping Design Alberta Registration No.: PP-N/A

(Required if aggregate piping volume is over 0.5m³)

5. Design Responsibility: Owner ☒; Contractor ☐

6. WP No.: WP-3550.2; Company: WPW Inc. Owner's WP No. (If used): WP-N/A
 (Alberta Registration No.) (Alberta Registration No.)

Spec No(s). used: NA WPW 3/REVS; Owner's Spec No(s). (If used): NA

7. Code: ASME B31.1 Non Boiler External Piping ☐; ASME B31.1 Boiler External Piping ☐;
 B31.5 ☐; B31.9 ☐; CSA Z662 Steam Pipelines ☐;
 ASME B31.3 ☒ - Service Category: Normal ☒, D ☐, M ☐, High Pressure ☐; Severe Cyclic Condition ☒
 High Purity ☐

Drawing No. Rev. No. Line No.	Fluid (Air/Stm. Etc.)	Des. Press. kPa	Des. Temp. °C (Max. & Min.)	Pressure Test kPa	Test Medium	Pipe Mat'l Spec. & Grade	C.A. mm	Pipe NPS & Schedule	Flange Material & Rating	PWHT/ Preheat Temp. °C	NDE
CONTROL 1A	GAS	10210	-45 - 260	15315	WATER	A333 GR6	3	2" SCH160	A350 LF2 600#	N/A 10	100%
CONTROL 2A	GAS	10210	-45 to 340	15315	WATER	A333 GR6	1.5	2" SCH160	A350 LF2 600#	N/A 10	10%
CONTROL 2B	GAS	10210	-45 to 340	15315	WATER	A333 GR6	1.5	2" SCH160	A350 LF2 600#	N/A 10	10%

Partial Data Reports certified by sub-contractors are listed below and attached to this Data Report ☐

No.	Line No.	Spool No.	Dwg. No. (with Rev. No.)	Sub-contractor (Name)	AQP No. (if from Alberta)	Expiry (if from Alberta)

Remarks: For partial data report provide information about the code work that was not completed by the subcontractor (e.g., hydrostatic test, PWHT etc.). For final data report provide information about the code work that was not completed by subcontractors and subsequently completed by the primary contractor (e.g., hydrostatic test of entire assembly, PWHT etc.)

Endorse certificate 'A' or 'B'

A. CERTIFICATE OF COMPLIANCE

Signed by the subcontractor when supplying this certificate as a
Partial Data Report

We certify that the statements in this Data Report are correct and that materials, construction and workmanship of the piping fabrication conform to the registered quality system and the applicable Piping code(s).

Date: _____
Contractor

Print Authorized Representative's Name Signature

This certificate is not valid unless it forms part of a Final Data Report signed by Primary Contractor

B. CERTIFICATE OF COMPLIANCE

Signed by the primary contractor when supplying this certificate as a
Final Data Report

We certify that the statements in this Data Report are correct and that piping job no. 21-102 described in this Data Report was constructed in accordance with the Province of Alberta Safety Codes Act and Regulations, and applicable ASME Piping Code(s).

Date: FEB 24/21 WPW Inc.
Contractor

GREG ANDERSEN

Print Authorized Representative's Name Signature

CERTIFICATE OF INSPECTION

I, the undersigned, employed by B3 ENERGY have verified that all required examination and testing has been completed, and inspected the piping described in this construction data report to the extent necessary to be satisfied that it conforms to all applicable examination requirements of the Code and of the engineering design, and state that, to the best of my knowledge and belief, the contractor has constructed this piping in accordance with the Alberta Safety Codes Act and Regulations. By signing this certificate neither the inspector nor his or her employer makes any warranty, expressed or implied, concerning the piping described in this construction data report. Furthermore, neither the inspector nor his or her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date: FEB 24/21 Date: _____

BRIAN KLIMCHUK

Owner's Inspector Name (please print)

Brian Klimchuk
Owner's Inspector Signature:

ABSA Safety Codes Officer (please print)
(BOILER EXTERNAL PIPING ONLY)

ABSA Safety Codes Officer's Signature

Typical Service: Low Temperature Sweet Process (see Note 3) (Code: ASME B31.3-16, A-1: dedicated fuel gas piping to be per a CSA B149.1 line class Material: Low Temperature Carbon Steel)			CL ASME 600
C.A. = 1.5 mm	Max. Pressure = 10,210 kPag @ -45/38°C (see Table RT-16 for temp. derating)	Temp. Range -45 to 340°C	
PWHT: Note 1	NDE: 10% RT Buttwelds, 10% MT Fillets, 10% RT SW for fit-up	Hydrotest @ 15,315 kPag ⁴⁴	

ITEM	SIZE (NPS)	RATING	GENERAL DESCRIPTION	NOTE
Pipe ASME B36.10M	¾ to 1 ½	Sch 80	ASTM A333-6 SMLS, Plain ends	85
	2	Sch 80	ASTM A333-6 SMLS, Bevelled ends	
	3	Sch 40	ASTM A333-6 SMLS, Bevelled ends	
	4 to 24	Sch 80	ASTM A333-6 SMLS, Bevelled ends	
Threaded Pipe ASME B36.10M	¾ to 2	Sch 80	ASTM A333-6 SMLS	5,6,85
Tubing	¼" to ½"	-	Refer to Instrument Tubing Class <u>SSD</u>	
Olets MSS SP-97	¾ to 2 NPT	Class 3000	Thredolet, ASTM A350-LF2 CL.1, FS, Class 6000 for Headers ≥ NPS 10	
	¾ to 1 ½ SW All BW	Class 3000 Per Pipe	Socketlet, ASTM A350-LF2 CL.1, FS, Class 6000 for Headers ≥ NPS 10 Weldolet, ASTM A350-LF2 CL.1, FS Branch connections per Table RT-3a & RT-26	
Fittings ASME B16.11 ASME B16.9 MSS SP-95	¾ to 2 NPT	Class 3000	ASTM A350-LF2 CL.1, FS, Screwed	9
	¾ to 1 ½ SW	Class 3000	ASTM A350-LF2 CL.1, FS, Socketweld	
	1 to 2	Sch 80	ASTM A420-WPL6-S, Buttweld	
	3	Sch 40	ASTM A420-WPL6-S, Buttweld	
Flanges ASME B16.5	4 to 24	Sch 80	ASTM A420-WPL6-S, Buttweld	
	¾ to 2 NPT	ASME 600	ASTM A350-LF2 CL.1, FS, RF Std. Fin., Screwed	
	¾ to 1 ½ SW	ASME 600	ASTM A350-LF2 CL.1, FS, RF Std. Fin., Socketweld	
	1 to 2	ASME 600	ASTM A350-LF2 CL.1, FS, RF Std. Fin., WN, Sch 80 bore	
Orifice Flanges (c/w ½ NPT taps) ASME B16.36	3	ASME 600	ASTM A350-LF2 CL.1, FS, RF Std. Fin., WN, Sch 40 bore	13
	4 to 14	ASME 600	ASTM A350-LF2 CL.1, FS, RF Std. Fin., WN, Sch 80 bore	
	16 and larger	-	Use normal flanges and install pressure taps on pipe	
Blind Flanges ASME B16.5	All	ASME 600	ASTM A350-LF2 CL.1, FS, RF Std. Fin. Tapped blinds per Table RT-5	
Blinds, Blanks & Spacers ASME B16.48	All	ASME 600	ASTM A516-70N, RF Thickness per Table RT-13: Type per Table RT-22	81
Gaskets ASME B16.20	All	ASME 600	Flexitallic "Flexicarb" CGI, 304L or 316L SS windings and inner ring, or approved equal.	14
Bolting	All	-	ASTM A193-B7M Alloy Steel Stud Bolts c/w ASTM A194-2HM Heavy Semi Finished Hex Nuts (2 per stud) Length per Table RT-9	10

Typical Service: Low Temperature Sweet Process (see Note 3) (Code: ASME B31.3-16, A-1: dedicated fuel gas piping to be per a CSA B149.1 line class Material: Low Temperature Carbon Steel)			CL ASME 600
C.A. = 1.5 mm	Max. Pressure = 10,210 kPag @ -45/38°C (see Table RT-16 for temp. derating)	Temp. Range -45 to 340°C	
PWHT: Note 1	NDE: 10% RT Buttwelds, 10% MT Fillets, 10% RT SW for fit-up	Hydrotest @ 15,315 kPag ⁴⁴	

Instr. Valves	TAG #	RATING	GENERAL DESCRIPTION (Typ. Restricted to ≤ 200°C)	NOTE
¾ M x ½ F	N60P3E	413 bar	¾ MSW x ½ FNPT, A350-LF2 CL.1, Ext. Body, SB&B Multiport	26
¾ M x ½ F	N60M3A	413 bar	¾ MNPT x ½ FNPT, 316 SS, SB&B Multiport	
¾ M x ½ F	N60M3B	413 bar	¾ MNPT x ½ FNPT, 316 SS, Ext. Body, SB&B Multiport	
½ M x ½ F	N60M3C	413 bar	½ MNPT x ½ FNPT, 316 SS	
Ball Valves	TAG #	RATING	GENERAL DESCRIPTION (Restricted to ≤ 120°C)	NOTE
¾ to 1 ½	B06S3A (R/F)	Class 600	Socketweld, A350-LF2 CL.1, 316 SS trim, TE	22,29
¾ to 2	B06T3A (R/F)	Class 600	Screwed, A350-LF2 CL.1, Chrome Plated trim	
1 to 3, Reg.	B06R3A	Class 600	RF, A352-LCC, RP, 316 SS trim, Lever Op.	
4 to 24, Reg.	B06R3B	Class 600	RF, A352-LCC, RP, ENP trim, TM, Gear Op. ≥ 6	
1 to 2, Full	B06R3C	Class 600	RF, A352-LCC, FP, 316 SS trim, Lever Op.	
3 to 24, Full	B06R3D	Class 600	RF, A352-LCC, FP, ENP trim, TM, Gear Op. ≥ 6	
Gate Valves	TAG #	RATING	GENERAL DESCRIPTION	NOTE
¾ to 1 ½	G08S3A	Class 800	Socketweld, A350-LF2 CL.1, BB	49
¾ to 2	G08T3A	Class 800	Screwed, A350-LF2 CL.1, BB	
¾ to 1 ½	G08X3A	Class 800	Socketweld x Screwed (female), A350-LF2 CL.1, BB	
1 to 24	G06R3A	Class 600	RF, A352-LCC, BB, Gear Op. ≥ 8	
Check Valves	TAG #	RATING	GENERAL DESCRIPTION	NOTE
¾ to 1 ½	CH08S3A (B/P)	Class 800	Socketweld, A350-LF2 CL.1, Horizontal Lift, BC	23,29, 47
¾ to 2	CH08T3A (B/P)	Class 800	Screwed, A350-LF2 CL.1, Horizontal Lift, BC	
1 to 24	CS06R3A	Class 600	RF, A352-LCC, Swing Type, BC	
2 to 24	CS06R3B	Class 600	RF, A352-LCC, Swing, Piggable, BC, Max 230°C	
2 to 8	CD06R3A	Class 600	RF (Wafer Lug), A352-LCC, Dual Plate Type	
10 to 24	CD06R3B	Class 600	RF (Double Flanged), A352-LCC, Dual Plate Type	
1 to 16	CP06R3A	Class 600	RF, A352-LCC, Piston Type, BC	
Globe Valves	TAG #	RATING	GENERAL DESCRIPTION	NOTE
¾ to 1 ½	L08S3A	Class 800	Socketweld, A350-LF2 CL.1, BB	
¾ to 2	L08T3A	Class 800	Screwed, A350-LF2 CL.1, BB	
1 to 6	L06R3A	Class 600	RF, A352-LCC, BB	
8 and larger	-	-	Use Alternate Valve Type (V-ball or gate)	
Butterfly Valves	TAG #	RATING	GENERAL DESCRIPTION (Typ. Restricted to ≤ 200°C)	NOTE
2 to 12	F06R3A	Class 600	RF, A352-LCC, Flanged, Gear Op. ≥ 6	28,29
2 to 12	F06R3B	Class 600	RF, A352-LCC, Wafer Lug (Tapped) Type, Gear Op. ≥ 6	
3 to 12	F06R3F	Class 600	RF, A352-LCC, Flanged, Triple Offset Type, Gear Op.	

Typical Service: Low Temperature Sour Process (see Notes 3 and 4) (Code: ASME B31.3-16, A-1: Material: Low Temperature Carbon Steel to NACE MR0175/ISO 15156)			CSL ASME 600
C.A. = 3.0 mm	Max. Pressure = 10,210 kPag @ -45/38°C (see Table RT-16 for temp. derating)	Temp. Range -45 to 260°C	
PWHT: Note 1	NDE: 100% RT Buttwelds, 10% MT Fillets, 10% RT SW for fit-up	Hydrotest @ 15,315 kPag ⁴⁴	

ITEM	SIZE (NPS)	RATING	GENERAL DESCRIPTION	NOTE
Pipe ASME B36.10M	¾ to 1 ½ 2 3 to 24	Sch 160 Sch 160 Sch 80	ASTM A333-6 SMLS, Plain ends ASTM A333-6 SMLS, Bevelled ends ASTM A333-6 SMLS, Bevelled ends	7
Threaded Pipe ASME B36.10M	¾ to 1 ½	Sch 160	ASTM A333-6 SMLS NPT joints only D/S of Root Valves, and only for ≤ 1% H₂S	5,6,7
Tubing	¼" to ½"	-	Refer to Instrument Tubing Class SSDS	
Olets MSS SP-97	¾ to 1 ½ NPT ¾ to 1 ½ SW All BW	Class 6000 Class 6000 Per Pipe	Thredolet, ASTM A350-LF2 CL 1, FS Soclolet, ASTM A350-LF2 CL 1, FS Weldolet, ASTM A350-LF2 CL 1, FS Branch connections per Table RT-3a & RT-26	7
Fittings ASME B16.11 ASME B16.9 MSS SP-95	¾ to 1 ½ NPT ¾ to 1 ½ SW 1 to 2 3 to 24	Class 3000 Class 6000 Sch 160 Sch 80	ASTM A350-LF2 CL 1, FS, Screwed ASTM A350-LF2 CL 1, FS, Socketweld ASTM A420-WPL6-S, Buttweld ASTM A420-WPL6-S, Buttweld	7,9
Flanges ASME B16.5	¾ to 1 ½ NPT ¾ to 1 ½ SW 1 to 2 3 to 24	ASME 600 ASME 600 ASME 600 ASME 600	ASTM A350-LF2 CL 1, FS, RF Std. Fin., Screwed ASTM A350-LF2 CL 1, FS, RF Std. Fin., Socketweld *(2 pass WPS or PWHT) ASTM A350-LF2 CL 1, FS, RF Std. Fin., WN, Sch 160 bore ASTM A350-LF2 CL 1, FS, RF Std. Fin., WN, Sch 80 bore	7,48
Orifice Flanges (c/w ½ NPT taps) ASME B16.36	2 3 to 14 16 and larger	ASME 600 ASME 600	ASTM A350-LF2 CL 1, FS, RF Std. Fin., WN, Sch 160 bore ASTM A350-LF2 CL 1, FS, RF Std. Fin., WN, Sch 80 bore Use normal flanges and install pressure taps on pipe	13
Blind Flanges ASME B16.5	All	ASME 600	ASTM A350-LF2 CL 1, FS, RF Std. Fin. Tapped blinds per Table RT-5	
Blinds, Blanks & Spacers ASME B16.48	All	ASME 600	ASTM A516-70N, RF Thickness per Table RT-13: Type per Table RT-22	81
Gaskets ASME B16.20	All	ASME 600	Flexitallic "Flexicarb" CGI, 304L or 316L SS windings and inner ring, or approved equal.	14
Bolting	All	-	ASTM A193-B7M Alloy Steel Stud Bolts c/w ASTM A194-2HM Heavy Semi Finished Hex Nuts (2 per stud) Length per Table RT-9	10

Typical Service: Low Temperature Sour Process (see Notes 3 and 4) (Code: ASME B31.3-16, A-1: Material: Low Temperature Carbon Steel to NACE MR0175/ISO 15156)			CSL ASME 600
C.A. = 3.0 mm	Max. Pressure = 10,210 kPag @ -45/38°C (see Table RT-16 for temp. derating)	Temp. Range -45 to 260°C	
PWHT: Note 1	NDE: 100% RT Buttwelds, 10% MT Fillets, 10% RT SW for fit-up	Hydrotest @ 15,315 kPag ⁴⁴	

Instr. Valves	TAG #	RATING	GENERAL DESCRIPTION (Typ. Restricted to ≤ 200°C)	NOTE
¾ M x ½ F	N60P4E	413 bar	¾ MSW x ½ FNPT, A350-LF2 CL.1, Ext. Body, SB&B Multiport, NACE	26,50
½ M x ½ F	N60M4C	413 bar	½ MNPT x ½ FNPT, 316 SS, NACE	
2 RF x ½ FNPT	SI06U4D	Class 600	2 RF x ½' FNPT, A350-LF2 CL.1, DB&B, NACE	
Ball Valves	TAG #	RATING	GENERAL DESCRIPTION (Restricted to ≤ 150°C)	NOTE
¾ to 1 ½	B06S4A (R/F)	Class 600	Socketweld, A350-LF2 CL.1, 316 SS trim, TE, NACE	22,29
¾ to 1 ½	B06X4A (R/F)	Class 600	Socketweld x Screwed (female), A350-LF2 CL.1, 316 SS trim, TE, NACE	
¾ to 1 ½	B06T4A (R/F)	Class 600	Screwed, A350-LF2 CL.1, 316 SS trim, NACE	
1 to 3, Reg.	B06R4A	Class 600	RF, A352-LCC, RP, 316 SS trim, Lever Op., NACE	
4 to 24, Reg.	B06R4B	Class 600	RF, A352-LCC, RP, ENP trim, TM, Gear Op. ≥ 6, NACE	
1 to 2, Full	B06R4C	Class 600	RF, A352-LCC, FP, 316 SS trim, Lever Op., NACE	
3 to 24, Full	B06R4D	Class 600	RF, A352-LCC, FP, ENP trim, TM, Gear Op. ≥ 6, NACE	
Gate Valves	TAG #	RATING	GENERAL DESCRIPTION	NOTE
¾ to 1 ½	G08S4A	Class 800	Socketweld, A350-LF2 CL.1, BB, NACE	49
¾ to 1 ½	G08T4A	Class 800	Screwed, A350-LF2 CL.1, BB, NACE	
¾ to 1 ½	G08X4A	Class 800	Socketweld x Screwed (female), A350-LF2 CL.1, BB, NACE	
1 to 24	G06R4A	Class 600	RF, A352-LCC, BB, Gear Op. ≥ 8, NACE	
Check Valves	TAG #	RATING	GENERAL DESCRIPTION	NOTE
¾ to 1 ½	CH08S4A (B/P)	Class 800	Socketweld, A350-LF2 CL.1, Horizontal Lift, BC, NACE	23,29 47
¾ to 1 ½	CH08T4A (B/P)	Class 800	Screwed, A350-LF2 CL.1, Horizontal Lift, BC, NACE	
1 to 24	CS06R4A	Class 600	RF, A352-LCC, Swing Type, BC, NACE	
2 to 24	CS06R4B	Class 600	RF, A352-LCC, Swing, Piggable, BC, NACE, Max 230°C	
2 to 8	CD06R4A	Class 600	RF (Wafer Lug), A352-LCC, Dual Plate Type, NACE	
10 to 24	CD06R4B	Class 600	RF (Double Flanged), A352-LCC, Dual Plate Type, NACE	
1 to 16	CP06R4A	Class 600	RF, A352-LCC, Piston Type, BC, NACE	
Globe Valves	TAG #	RATING	GENERAL DESCRIPTION	NOTE
¾ to 1 ½	L08S4A	Class 800	Socketweld, A350-LF2 CL.1, BB, NACE	
¾ to 1 ½	L08T4A	Class 800	Screwed, A350-LF2 CL.1, BB, NACE	
1 to 6	L06R4A	Class 600	RF, A352-LCC, BB, NACE	
8 and larger			Use Alternate Valve Type (V-ball or gate)	
Butterfly Valves	TAG #	RATING	GENERAL DESCRIPTION	NOTE
3 to 12	F06R4F	Class 600	RF, A352-LCC, Flanged, Triple Offset Type, Gear Op.	28



ITP CHECKLIST



ITP CHECKLIST (TRAVEL REPORT) Edition 9 Revision: 0

QC 3.2

Customer:	13 ENERGY			LEGEND: R - Review Documentation SU - Surveillance or Monitoring V - Verification of Test Results W - Witness / Approved H - Mandatory Hold points				WPW Job No:	21-102		
Project:	SWEETNER SKID							Engineering:			
Location:	3-14-42-5 W5M										
Supervisor:	GREG ANDERSEN										
Other:											
				Inspection Types							
				WPW Inc. QA/QC				Owner QA/QC			
Activity No.	ITP Activity Description	Person or Department	Acceptance Criteria	Verifying Documents / Drawings	R/SU/V/W/H	Initials	Date	R/SU/V/W/H	Initials	Date	
0	Pre-Job to review all items	WPW / Owner				<i>Greg Andersen</i>	FEB 24/21		<i>BK</i>	FEB 24/21	
1	Quality Manual current to code	QCM	Cert	AQP#2307	R	<i>Greg Andersen</i>	FEB 24/21	R		FEB 24/21	
2	Approved drawings supplied	Owner	IFC Stamp		R	<i>Greg Andersen</i>	FEB 24/21	R		FEB 24/21	
3	Review of Owners Specifications	Owner	Owner	Specification	R	<i>Greg Andersen</i>	FEB 24/21	R		FEB 24/21	
4	Review hold points assigned to ITP by owners inspector	Owner	Owner	ITP	R	<i>Greg Andersen</i>	FEB 24/21	R		FEB 24/21	
5	Registered welding procedures, QC Manual and forms available at site. Accepted by owner.	QCM	Owner	WPS	R	<i>Greg Andersen</i>	FEB 24/21	R	<i>BK</i>	FEB 24/21	
6	Welders qualified for WPS's & have valid PQ ticket & welders log completed. WPS reviewed with welders.	QCM	QMS	QC 6.1	R	<i>Greg Andersen</i>	FEB 25/21	R	<i>BK</i>	FEB 25/21	
7	Materials received per P.O., drawings & specifications.	QCI	QCM	QC 5.2, 5.3	V	<i>Greg Andersen</i>	FEB 25/21	V	<i>BK</i>	FEB 25/21	
8	Mtr's for pipe, fittings & valves checked & approved.	QCI	QCI	MTR	V/H	<i>Greg Andersen</i>	FEB 25/21	V/H	<i>BK</i>	FEB 25/21	
9	Review & approval of NDE subcontractor procedures.	Owner / QCI	QCM	NDE Certs.	V	<i>Greg Andersen</i>	FEB 25/21	V	<i>BK</i>	FEB 25/21	
10	Monitor each welder for fit-up, preheat, electrode control & track welds.	QCI	Owner	QC 6.3	S	<i>Greg Andersen</i>	FEB 25/21	S		FEB 25/21	
11	Visual examination of all completed welds, welders ID recorded on Dwg's	QCI	QCI	As-Built	S	<i>Greg Andersen</i>	FEB 25/21	S	<i>BK</i>	FEB 25/21	
12	Heat treatment verified and recorded on drawings	Owner Specs.	Owner	QC 9.1			N/A			N/A	
13	NDE completed and recorded on Dwg's. Reports & film reviewed & accepted.	QCI / Owner	Owner	As-Built	V	<i>Greg Andersen</i>	FEB 26/21	V	<i>BK</i>	FEB 26/21	
14	Coating Specifications from owner	Owner	Owner	MQAP	V	<i>Greg Andersen</i>	N/A	V		N/A	
15	Coaters are qualified and competent	QCM	QCM	MQAP	R	<i>Greg Andersen</i>	N/A	R/V		N/A	
16	Piping checked against specifications & Dwg's before test.	QCI	Owner Spec	As-Built	V	<i>Greg Andersen</i>	FEB 26/21	V	<i>BK</i>	FEB 26/21	
17	Pressure test checked, completed & accepted. Gauge calibration verified & recorded.	QCI	QCI	QC 7.3	H	<i>Greg Andersen</i>	FEB 26/21	H	<i>BK</i>	FEB 26/21	
18	Piping drained, pigged & vented after test.	QCI	QCI	QC 7.1	V	<i>Greg Andersen</i>	FEB 26/21	V	<i>BK</i>	FEB 26/21	
19	Tie-in's and lowering in witnessed and approved	QCI / Owner	Owner	Owner	H		N/A	H		N/A	
20	Ditching requirements completed	QCI / Owner	Owner	Owner	H		N/A	H		N/A	
21	As-builts spool Dwg's completed & added to job file.	QCI	QCI	QMS	V	<i>Greg Andersen</i>	FEB 26/21	V	<i>BK</i>	FEB 26/21	
22	Clean up completed and approved	QCI / Owner	Owner	Owner	H		N/A	H		N/A	
23	Turnover documents, as per WPW QC man	QCM	QC Package	QMS	R/V		FEB 26/21	V		FEB 26/21	
24											
INSPECTION TEST PLAN IS APPROVED FOR CONSTRUCTION					CLOSE OUT ITP ON COMPLETION & ACCEPTANCE OF SPECIFIED WORK						
WPW Inc. Representative Acknowledgement:					WPW Inc. Representative Acknowledgement:						
GREG ANDERSEN <i>Greg Andersen</i> FEB 24/21					GREG ANDERSEN <i>Greg Andersen</i> FEB 26/21						
Owner Representative Acknowledgement:					Owner Representative Acknowledgement:						
BIRAN KLIMCHUK <i>Biran Klimchuk</i> FEB 24/21					BIRAN KLIMCHUK <i>Biran Klimchuk</i> FEB 26/21						

4

FACILITY LICENCE



FACILITY LICENCE

Licence No. F52148
Licensee I3 Energy Canada Ltd.
Description Gas battery - single well < 1 t/d sulphur inlet
Location 00/03-14-042-05 W5M
Field Pembina
Field Centre Red Deer
1-800-222-6514 (toll free)

The maximum daily design for Total Inlet Rates (at 101.325 kilopascals and 15 degree Celsius) approved for this facility are:

Raw Gas	14.00	10 ³ m ³ /d
Oil/Bitumen	0.0	m ³ /d
Condensate	0.0	m ³ /d
Water	1.0	m ³ /d
Sulphur	0.01	t/d

The maximum daily design for Total Continuous Emission Rates approved for this facility are:

NO _x	0.01	kg/h
CO ₂	0.12	t/d
Flaring/Incineration	0.00	10 ³ m ³ /d
Venting	0.00	10 ³ m ³ /d
Sulphur	0.00	t/d

This licence permits the Licensee to conduct the activities authorized by it. At all times the Licensee must comply with all applicable legislation and regulatory requirements imposed from time to time by the Alberta Energy Regulator.

This licence expires on the 19th day of February 2022 if construction has not been initiated.

Dated at Calgary, Alberta this

19th day of February 2021.

Application Number 1932232



For Alberta Energy Regulator



FACILITY LICENCE

H₂S Information

Sweetening Processes: **Nonregenerative**

Maximum H₂S Content of Inlet Gas **0.500 mol/kmol**

5

PRESSURE TEST REPORTS



Pressure Test Examination Guide

QC - 7.1

Edition 9 Revision: 0

EXHIBIT 13.1

PRESSURE TEST EXAMINATION GUIDE		Q.C. INSP.
WPW JOB NO.:		
PRESSURE TEST PREPARATION		
1.	All punch list items corrected.	☒
2.	Test blinds correct thickness.	☒
3.	All items which could be damaged by test isolated or removed (control valves, safety valves, instruments, expansion joints, etc.)	☒
4.	Vents and drains correctly installed.	☒
5.	Open and Closed position of all valves verified.	☒
6.	Shipping bars in place - bellows.	☐
7.		☐
8.		☐
9.		☐
PRESSURE TEST COMPLETION		
1.	Piping drained and vented.	☒
2.	All temporary blinds (blanks) removed.	☒
3.	Temporary gaskets changed for correct gaskets.	☒
4.	Temporary supports removed.	☒
5.		☐
6.		☐
7.		☐
8.		☐
9.		☐

Q. C. Inspector Signature: 	Date: FEB 26/21
--	-----------------



FACILITY Hydrostatic Test Procedure

Using B31.3

Edition 9 Revision: 0

QC-7.2A

HYDROSTATIC PRESSURE TESTING

WPW Job # 21-102

The purpose of this procedure is to ensure workers operate equipment, handle tools and work in a manner to prevent injuries and ensure public safety and prevent damage to property and the environment.

Function	Hazards	Controls
1. Ensure all pipe and fitting meet design specification	-Pipe failure may occur if incorrect materials are used	-Ensure all pipe and fittings meet the design specification
2. All welding is complete, NDE inspections are complete and Accepted	-Weld fault may occur causing a leak	-Ensure all welds are visually and / or mechanically inspect all welds and review reports before testing
3. Ensure all openings are properly sealed either temporary or permanent	-Openings in pipe will result in leaks and may cause personnel injury and or environmental damage	-Ensure all closures are properly welded, threaded bolted ETC...
4. Have persons involved in the Hydro test review the procedure. Understand there task and the tasks of others involved.	-Miscommunication may lead to a test failure. -Wrong information given to workers.	-Know the task you are doing, ask questions if not sure.
5. Ensure all required PPE is available prior to starting to test. Standard PPE (May Require Hearing Protection, or Face Shields)	PPE is the last line of Defence	-Know what PPE is required before the testing begins. High Vis Vests, Face shields, Radios, ETC... -Set up testing signs and or Flagging to warn others
6. Set up and inspect all testing devices to ensure they are operational. Check that testing devices are the correct size for the pressure.	Testing devices that are not operational may cause an over pressure and pipe failure	Confirm testing devices are in good working order before putting them into service. 1.5X min.to 4.0X max. of the test pressure
7. Station personnel at all venting stations before filling. Fill from the lowest point where possible.	-If vents are not open may over pressure the piping system.	-Personnel at venting stations to have communication with the filler person. Visually or by radio.
8. When Filling is complete, bleed all unwanted trapped air. Allow fluid to stabilize.	-Fluid from venting may cause eye injury to personnel (Pressure) -Fluid may contaminate soil (methanol)	-Have venting devices that direct the fluid away from personnel into a containment -Have NON-essential personnel out of the area



FACILITY Hydrostatic Test Procedure Using B31.3

Edition 9 Revision: 0

QC-7.2A

9. When all the air is removed from the piping system, Start pressuring up the line to 700 Kpa. (100psi). Stop and check the line for leaks if there is a leak drop the pressure, repair and start over.	- Fluid is under High Pressure. - Leaking Fluid may contaminate soil (methanol)	-Have enough qualified personnel to inspect. -Have NON-essential personnel out of the area
10. When pressure has stabilized increase the pressure to 33% of the maximum test pressure. (Strength Test Pressure Range) Hold for a minimum of 10 minutes, or until the entire line has been checked for leaks.	- Fluid is under High Pressure. - Leaking Fluid may contaminate soil (methanol)	-Have enough qualified personnel to inspect. -Have NON-essential personnel out of the area -Never leave a pipe system under pressure unattended
11. When pressure has stabilized increase the pressure to 66% of the maximum test pressure. (Strength Test Pressure Range) Hold for a minimum of 10 minutes, or until the entire line has been checked for leaks.	- Fluid is under High Pressure. - Leaking Fluid may contaminate soil (methanol)	-Have enough qualified personnel to inspect. -Have NON-essential personnel out of the area--- -Never leave a pipe system under pressure unattended
12. When pressure has stabilized increase the pressure to 100% of the maximum test pressure. Hold for a minimum of 15 minutes. (or client requirements)	- Fluid is under High Pressure. - Leaking Fluid may contaminate soil (methanol)	-Have enough qualified personnel to inspect. -Have NON-essential personnel out of the area -Never leave a pipe system under pressure unattended
13. After leak testing is complete. Start to depressure the piping system remembering to properly vent the system (so not to cause a vacuum.)	- Leaking Fluid may contaminate soil (methanol) - Moving Equipment - High Noise levels	-Have enough qualified personnel to inspect. -Have NON-essential personnel out of the area -Have proper containment available for collecting fluid from pipe system
14. After the piping system is completely depressurized, dewatering can start.	- Leaking Fluid may contaminate soil (methanol) - Moving Equipment - High Noise levels	-Have enough qualified personnel to inspect. -Have NON-essential personnel out of the area -Have proper containment available for collecting fluid from pipe system
15. Ensure that all paperwork has been filled out and signed by the Client representative		- Signed copies of the Hydro test reports are a must to show the client hydro test was accepted by the Client Representative

QC-7.2A

-This procedure is to be followed by all persons involved with a hydro test being conducted by WPW Inc. Unless otherwise requested by a client. This request must come in writing and adheres to our level of Quality and Safety standards

-Refer to the latest version of the ASME B31.3 Standard testing procedures.

-By signing this document you understand the WPW Pipeline Hydrostatic Test Procedure and agree to follow the steps as prescribed.

[illegible]



ACCUTECH

Quality is measurable.

9730-32 Avenue NW
Edmonton, AB, Canada T6N 1L9
T: 1-780-434-0501 • F: 1-780-434-9118
TF: 1-800-667-7368 • W: accutech.ca

CHECKED

FEB 25 2021

CERTIFICATE OF CALIBRATION

S-49957:1607413670

Certification Number

CUSTOMER:

WPW Pipeline & Facility Construction
Highway 12 & Highway 761, Box 61
Leslieville, AB T0M 1H0

FILE No.: S-49957

Calibrated at: Accutech Rentals Ltd.

DG-004

CALIBRATION INFORMATION

UNIT UNDER TEST: Crystal XP2i
Pressure Gauge, Digital, 10KPSI
ASSET NUMBER: 824786
SERIAL NUMBER: 824786
CLIENT ID/TAG:

DATA TYPE: FOUND-LEFT
TEST RESULT: PASS
CAL DATE: 08 Dec 2020
CAL DUE: 08 Dec 2021
TEMPERATURE: 22.50 °C
HUMIDITY: 26 %RH

PROCEDURE NAME: Crystal XP2i XP2 DTG: (1Y) CAL VER /P3125
PROCEDURE REV.: 1.6

ISSUE DATE: 08 Dec 2020

REMARKS:

Calibration performed by:

Jason Magee

Technician

(digitally signed)

Calibration authorized by:

Luc Claeys

Lab Manager

(digitally signed)

Accutech Rentals Ltd. Quality System is Accredited to ISO/IEC 17025:2017 and this calibration complies with our Quality system.

Tolerance is based on manufacturer specification or the technical requirements of the customer. Calibration results relate to items calibrated only.

Test Uncertainty Ratio (TUR) that is less than four to one will appear under the "TUR" heading on the data record.

If the TUR meets or exceeds four to one, the field is left blank.

Measurements are traceable to the International System of Units (SI) via national metrology institutes (NIST, NRC or to other recognized national or international standard bodies).

Complete records of work performed are available for inspection.

Laboratory assets used in performance of this calibration are listed on the next page.

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Standards Used

<u>Asset #</u>	<u>Description</u>	<u>Cal Date</u>	<u>Due Date</u>
I-2190	Fluke P3125-PSI Deadweight Tester, Pneumatic	18/Oct/2018	18/Oct/2021

Test Results

<u>Test Description</u>	<u>True Value</u>	<u>Test Result</u>	<u>Lower limit</u>	<u>Upper limit</u>	<u>Units</u>	<u>TUR</u>	<u>Pass / Fail</u>
CRYSTAL X221 10000 psi							
Functional Test							
Battery Verification							P
PC Communication							P
Keypad							P
Pressure Test							
0.0 psi	0.0	0	-2	2	psi		P
500.0 psi	500.0	500	498	502	psi		P
1500.0 psi	1500.0	1500	1498	1502	psi		P
2000.0 psi	2000.0	2000	1998	2002	psi		P
4000.0 psi	4000.0	4000	3996	4004	psi		P
6000.0 psi	6000.0	6000	5994	6006	psi		P
8000.0 psi	8000.0	8000	7992	8008	psi		P
10000.0 psi	10000.0	10000	9990	10010	psi		P
8000.0 psi	8000.0	8000	7992	8008	psi		P
6000.0 psi	6000.0	6000	5994	6006	psi		P
4000.0 psi	4000.0	4000	3996	4004	psi		P
2000.0 psi	2000.0	2000	1998	2002	psi		P
1500.0 psi	1500.0	1500	1498	1502	psi		P
500.0 psi	500.0	500	498	502	psi		P
0.0 psi	0.0	0	-2	2	psi		P

***** End of Certificate *****



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FEB 25 2021

CERTIFICATE OF CALIBRATION

S-49958:1607684192

Certification Number

CUSTOMER:

WPW Pipeline & Facility Construction
Highway 12 & Highway 761, Box 61
Leslieville, AB T0M 1H0

FILE No.: S-49958

Calibrated at: Accutech Rentals Ltd.

DRG-004

CALIBRATION INFORMATION

UNIT UNDER TEST: Crystal nVision NV-10KPSI

Pressure Module, 10KPSI

ASSET NUMBER: 560510

SERIAL NUMBER: 560510

CLIENT ID/TAG:

DATA TYPE: FOUND-LEFT

TEST RESULT: PASS

CAL DATE: 11 Dec 2020

CAL DUE: 11 Dec 2021

TEMPERATURE: 23.20 °C

HUMIDITY: 17 %RH

PROCEDURE NAME: Crystal nVision PM module: (1Y) CAL VER /P3125

PROCEDURE REV.: 1.1

ISSUE DATE: 11 Dec 2020

REMARKS:

Calibration performed by:

Jordan Wilson

Technician

(digitally signed)

Calibration authorized by:

Luc Claeys

Lab Manager

(digitally signed)

Accutech Rentals Ltd. Quality System is Accredited to ISO/IEC 17025:2017 and this calibration complies with our Quality system.

Tolerance is based on manufacturer specification or the technical requirements of the customer. Calibration results relate to items calibrated only.

Test Uncertainty Ratio (TUR) that is less than four to one will appear under the "TUR" heading on the data record.

If the TUR meets or exceeds four to one, the field is left blank.

Measurements are traceable to the International System of Units (SI) via national metrology institutes (NIST, NRC or to other recognized national or international standard bodies).

Complete records of work performed are available for inspection.

Laboratory assets used in performance of this calibration are listed on the next page.

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Standards Used

<u>Asset #</u>	<u>Description</u>	<u>Cal Date</u>	<u>Due Date</u>
I-2190	Fluke P3125-PSI Deadweight Tester, Pneumatic	18/Oct/2018	18/Oct/2021

Test Results

<u>Test Description</u>	<u>True Value</u>	<u>Test Result</u>	<u>Lower limit</u>	<u>Upper limit</u>	<u>Units</u>	<u>TUR</u>	<u>Pass / Fail</u>
Crystal nVision Module PM 10000 PSI							
PRESSURE TEST							
0.0 psi	0.0	0	-3	3	psi		P
2000.0 psi	2000.0	1999	1997	2003	psi		P
4000.0 psi	4000.0	3999	3996	4004	psi		P
6000.0 psi	6000.0	5998	5994	6006	psi		P
8000.0 psi	8000.0	7999	7992	8008	psi		P
10000.0 psi	10000.0	9998	9990	10010	psi		P
8000.0 psi	8000.0	7998	7992	8008	psi		P
6000.0 psi	6000.0	5999	5994	6006	psi		P
4000.0 psi	4000.0	4000	3996	4004	psi		P
2000.0 psi	2000.0	2000	1997	2003	psi		P
0.0 psi	0.0	0	-3	3	psi		P

***** End of Certificate *****



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TF: 1-800-667-7368 • W: accutech.ca

CHECKED

FEB 25 2021

JR

CERTIFICATE OF CALIBRATION

S-49959:1607682902

Certification Number

CUSTOMER:

WPW Pipeline & Facility Construction
Highway 12 & Highway 761, Box 61
Leslieville, AB T0M 1H0

FILE No.: S-49959

Calibrated at: Accutech Rentals Ltd.

RTD-004

CALIBRATION INFORMATION

UNIT UNDER TEST: Crystal nVision NV-RTD100

RTD Module

ASSET NUMBER: 567175

SERIAL NUMBER: 567175

CLIENT ID/TAG: DRG-004

DATA TYPE: FOUND-LEFT

TEST RESULT: PASS

CAL DATE: 11 Dec 2020

CAL DUE: 11 Dec 2021

TEMPERATURE: 23.20 °C

HUMIDITY: 16 %RH

PROCEDURE NAME: Crystal nVision RTD module: (1Y) CAL VER

PROCEDURE REV.: 1.4

ISSUE DATE: 11 Dec 2020

REMARKS:

Calibration performed by:

Jordan Wilson

Technician

(digitally signed)

Calibration authorized by:

Luc Claeys

Lab Manager

(digitally signed)

Accutech Rentals Ltd. Quality System is Accredited to ISO/IEC 17025:2017 and this calibration complies with our Quality system.

Tolerance is based on manufacturer specification or the technical requirements of the customer. Calibration results relate to items calibrated only.

Test Uncertainty Ratio (TUR) that is less than four to one will appear under the "TUR" heading on the data record.

If the TUR meets or exceeds four to one, the field is left blank.

Measurements are traceable to the International System of Units (SI) via national metrology institutes (NIST, NRC or to other recognized national or international standard bodies).

Complete records of work performed are available for inspection.

Laboratory assets used in performance of this calibration are listed on the next page.

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Standards Used

<u>Asset #</u>	<u>Description</u>	<u>Cal Date</u>	<u>Due Date</u>
I-2040	Fluke/Hart Scientific 1523 Temperature Indicator	11/May/2020	11/May/2021
I-2172	Burster 1282-0.001 Precision High Capacity Resistor	26/Oct/2020	26/Apr/2021
I-2308	Rhopoint 8G16A DC Resistance Standard	26/Aug/2020	26/Feb/2021
I-2376	Fluke 5626-12-P Thermometer, Platinum Resistance	27/May/2020	27/May/2021

Test Results

<u>Test Description</u>	<u>True Value</u>	<u>Test Result</u>	<u>Lower limit</u>	<u>Upper limit</u>	<u>Units</u>	<u>TIER</u>	<u>Pass / Fail</u>
Crystal nVision Module RTD100							
RTD TEST							
0.001 Ohm	0.0010	0.000	-0.019	0.021	Ω		P
100.00 Ohm	100.000	100.00	99.97	100.04	Ω	3.50	P
200.00 Ohm	200.000	200.02	199.95	200.05	Ω	2.50	P
400.00 Ohm	400.000	400.04	399.92	400.09	Ω	2.00	P
Probe Id# N/A							
Temperature Test							
-20.043 °C	-20.043	-20.06	-20.45	-19.63	°C		P
50.056 °C	50.056	49.72	49.50	50.62	°C		P
99.978 °C	99.978	99.88	99.17	100.79	°C		P

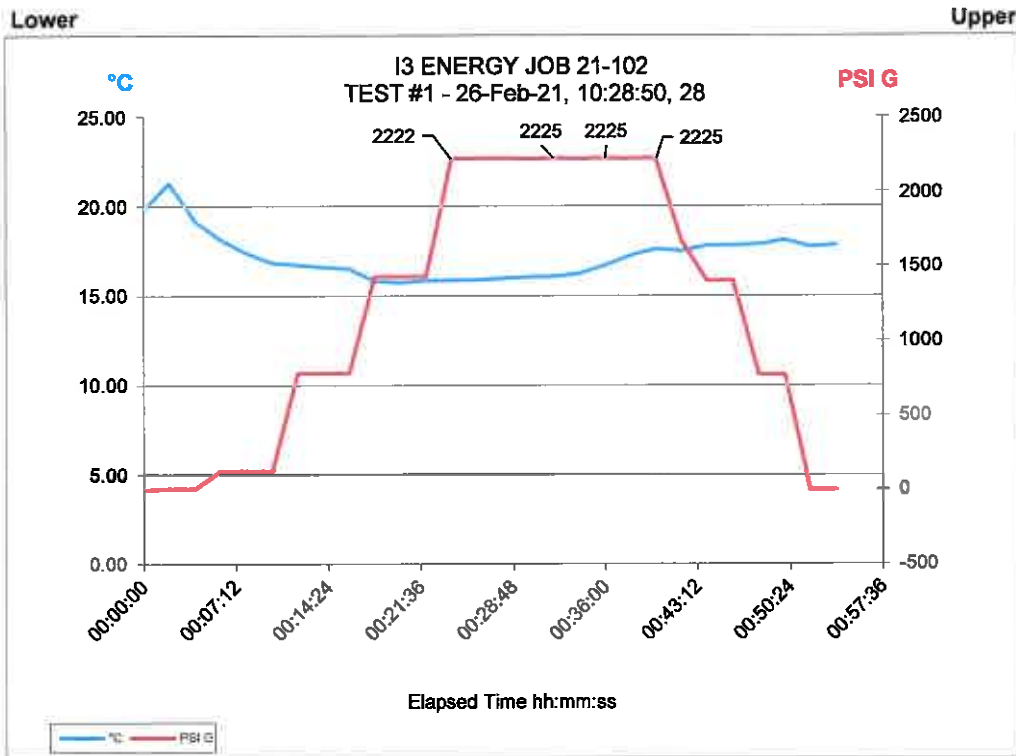
***** End of Certificate *****

WPW Hydro Test Chart

Exhibit 16.4



	Chassis	Left Scale	Right Scale
Serial Number	569677	567175	560510
Datatype		Lower	Upper
Units		°C	PSI G



Company I3 ENERGY

Location 3-14-42-5 W5M

Test Pressure 15315 KPA

Test Report # 1

M.O.P. 10210 KPA

WPW job # 21-102

Test Medium WATER

Pipe size & grade 2" 600# A333-6

CSL & CL SPEC

Line Number(s) 1 CONTROL NO. 1A
2 CONTROL NO. 2A
3 CONTROL NO. 2B
4
5

6
7
8
9
10

Test Gauge # DRG-004

Range 0-10000 PSI

Test Gauge # DG-004

Range 0-10000 PSI

Test Gauge #

Range

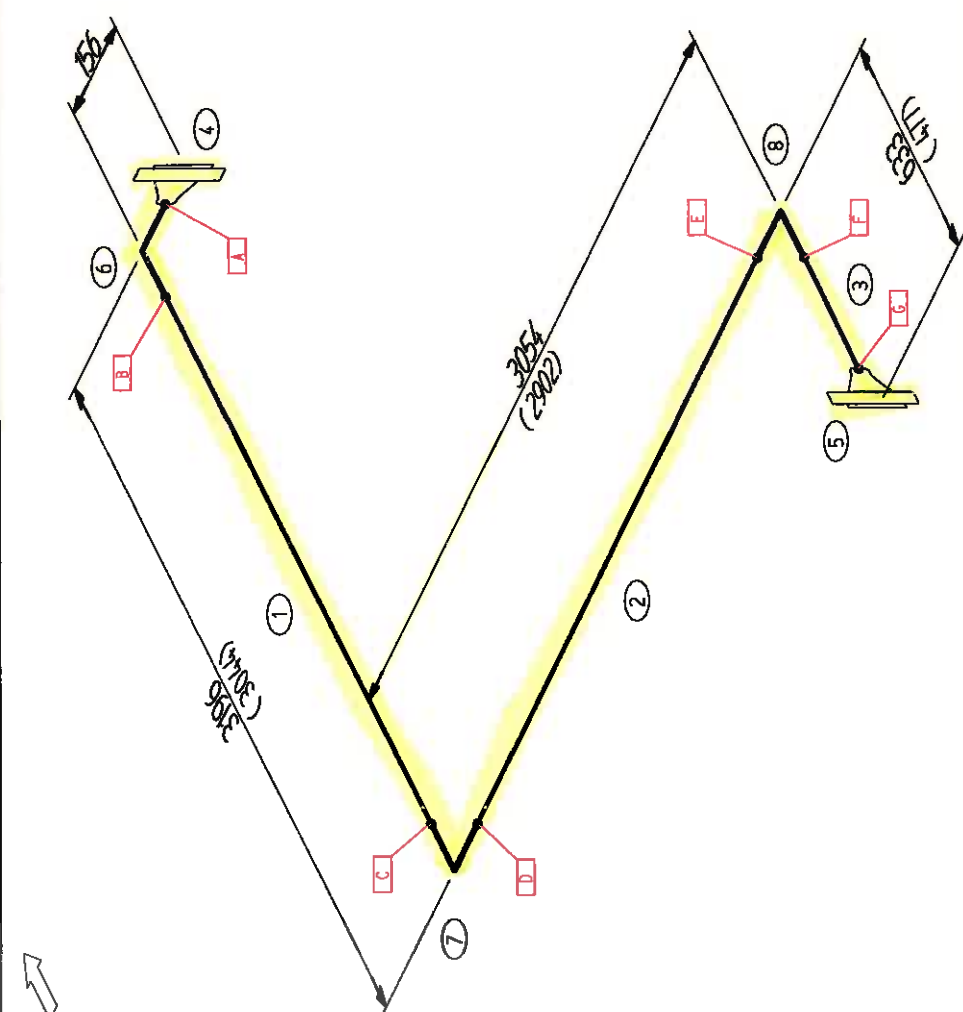
WPW Rep GREG ANDERSEN

WPW Rep (sign) *Greg Andersen*

Inspector Name BRIAN KLIMCHUK

Inspector Sign *Brian Klimchuk*

QTY	FIT	FAB	QIM	VISUAL	NOE	HYDRO	SHIP	INSUL	WELD	ITEM	QTY	DESCRIPTION	WELDS	WELDER	X-RAY	WEIGHT
1										1	1	2" Sch 160(344) BE x BE	3044			
1										2	1	2" Sch 160(344) BE x BE	2902			
1										3	1	2" Sch 160(344) BE x BE	477			
1										4	1	2" 600# RF Weld Neck	Sch 160			
1										5	1	2" 600# RF Weld Neck	Sch 160			
1										6	1	2" 90 LR Elbow	Sch 160			
1										7	1	2" 90 LR Elbow	Sch 160			
1										8	1	2" 90 LR Elbow	Sch 160			
AS-BUILT																
7 butt welds																
CLIENT I3 ENERGY																
PROJECT 3-14-42-5 W5M																
SPOOL INLET																
REV. 0																
1 of 1																
21-102																
1A																



RT 1002	MT 1002	PAINT NONE	PIPE SPEC NONE	CSL NONE	SURF AREA 15.3 sq ft	JOB CODE	PAINT PRIME	REV.
WELD PROC.	WELD 1002	HYDRO 15315 KPA	FAB CODE B313	INSUL NONE	REF DRG			
DATE 2021-02-25	DATE 2021-02-25	CHK	APP	BY	CHK	DATE	2021-02-25	
 WPPW Pipeline and Facility Construction								

[illegible]

6

RADIOGRAPHY REPORTS



NDE Instructions

QC - 6.5

Edition 9 Revision: 0

EXHIBIT 13.2

NDE INSTRUCTIONS

WPW JOB NO. 21-102 CUSTOMER: I3 ENERGY LSD: 3-14-42-5 W5M

Contact Person: BRIAN KLIMCHUK

AFE:

Phone Number: 403-894-5606

Lot Size: 16 RT & 1MT

Date: FEB 26/21

COMPONENT DESCRIPTION

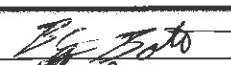
RT DRAWING NO.	DIA / WALL THICKNESS	CODE B31.3 / Z662	SERVICE Normal / Severe Cyclic / Cat D/M	% of X-RAY, MT / PT	No. of X-RAYS, MT / PT
CONTROL NO. 1A	2" SCH160	B31.3	SEVERE CYCLIC	100%	7RT
CONTROL NO. 2A	2" SCH80	B31.3	NORMAL	100%	5RT
CONTROL NO. 2B	2" SCH80	B31.3	NORMAL	100%	4RT & 1MT

WELD FLAGGING SYSTEM: 100%

BLUE RIBBON = REPAIR / RED RIBBON = CUT OUT

INSTRUCTIONS: NDE REQUIREMENTS

1. Must meet requirements of the current regulations, ASME Section V, applicable ASME B31.3 Code of Construction and CSA Z662 Standards. **ALL CSA Z662 FABRICATION WELDS SHALL BE SHOT TO ASME B31.3 (CSA Z662; 7.2.5)**
2. Minimum qualifications of NDE personnel doing interpretations are CGSB Level II. All personnel performing NDE shall be qualified and certified in accordance with SNT-TC-1A or CGSB. There shall be a Level III on staff to resolve interpretations issues, provide training and be responsible for NDE procedures.
3. If there is a weld defect discovered by RT. Shoot two tracers of the same kind of weld, by the same welder, examined by the same RT method and from the same lot. If examination is acceptable, repair and re-examine the defect by the same method. If one or more of the tracers has a weld defect, shoot two more tracers of the same kind of weld, by the same welder, examined by the same RT method and from the same lot. If examination is acceptable, repairs the welds and re-examine by the same method. If there are weld defects in the last two tracers, you must shoot all welds done by the welder in question in the same lot. Repair all defects and re-examine by same RT method.
4. **All NDE REPORTS** are to have the welder ID, Line # & or drawing # attached to the film/joint number assigned.

	PRINT	SIGNATURE
NDE TECHNICIAN:	BJ BOTT (BUFFALO)	
C INSPECTOR:	GREG ANDERSEN	
CLIENT INSPECTOR:	BRIAN KLIMCHUK	

CERTIFYING STATEMENT

ACCEPTANCE OF PROCEDURES MANUAL

I Paul Burns have reviewed the written practices, procedures, records and certification of

Buffalo Inspection Services
8403 Davies Rd. NW
Edmonton Alberta
T6E 4N3

In my opinion, they comply in all respects with the requirements of

ASME SECTION V
ALSO SEE SECTION 13.2 (a) (i)

ASNT-TC-1A or CGSB
Buffalo Inspection Services

Are hereby appointed to perform

RT Procedure # GP RT-01 Rev 11
MT Procedure # GP-MT-01 Rev 10
PT Procedure # GP-PT-01 Rev 7
UT Procedure # GP-UT-01 Rev 8
UT Procedure # GP-UT-02 Rev 7

For: WPW INC.

APPOINTMENT of LEVEL III EXAMINER of all of the above

Andrew Crawford



Signature

Is by this statement appointed to act as the level III operator for:

WPW INC.

To conduct RT, MT, PT, UT

Jan 7 2020

Paul Burns


Paul Burns

Signature of QC Manager

NDTCB • OCEND

**NRCAN NATIONAL NON-DESTRUCTIVE TESTING CERTIFICATION BODY
ORGANISME DE CERTIFICATION NATIONAL EN ESSAIS NON DESTRUCTIFS DE RNCAN**



Name / Nom **Brady Joe Bott**

Reg. Number / No. matricule **9297**

Issue Date / Date d'émission **2018/03/13**

Corrective lenses for vision required
Verres correctifs pour la vision sont nécessaires **No / Non**

Colour vision limitation
Limitation de la vision des couleurs **No / Non**

This certification card does not identify that the stated individual
is an employee or representative of Natural Resources Canada,
Government of Canada

Cette carte de certification n'indique pas l'individu d'être un
employé ou un représentant de Ressources naturelles Canada,
Gouvernement du Canada

Canada

**NRCAN NATIONAL NON-DESTRUCTIVE TESTING CERTIFICATION BODY
ORGANISME DE CERTIFICATION NATIONAL EN ESSAIS NON DESTRUCTIFS DE RNCAN**

Name / Nom **Brady Joe Bott**

Reg. Number / No. matricule **9297**

Certified to CAN/CGSB-48.9712-2014 / Certifié selon CAN/CGSB-48.9712-2014

METHOD MÉTHODE	LEVEL NIVEAU	SECTOR SECTEUR	EFFECTIVE DATE DATE EFFECTIVE	EXPIRY DATE EXPIRATION
RT	2	EMC	2018/03/13	2022/02/15

For verification of certification status, policies and definitions visit the Natural Resources Canada (NRCAN)
NRCAN National Non-Destructive Testing Certification Body (NDTCB) website

Pour la vérification de la certification, les politiques et les définitions, visitez le site web
de l'Organisme de certification national en essais non destructifs (OCEND) et Ressources naturelles Canada (RNCAN)

This card is issued by and is the property of Natural Resources Canada and may be withdrawn or revoked in part or in total at any time.
Cette carte est la propriété de Ressources naturelles Canada et peut être retirée ou révoquée en partie ou en totalité à tout moment.

P.K.

P.K. Yuen / Director, NDTCB / Directeur, OCEND

Canada

**VISION TEST REPORT FORM FOR NON-DESTRUCTIVE TESTING PERSONNEL**

This form must be completed and submitted to the Natural Resources Canada (NRCAN) National Non-Destructive Testing Certification Body (NDTCB) when applying for initial certification, certification renewal and recertification in any NDT method. Completed Vision Test Report Forms are valid for a period of one year (12 months). Incomplete documentation may lead to longer processing times.

Three visual acuity tests may be required:

1. Near Vision Acuity
2. Distance Vision Acuity (required for Visual Testing method applications only)
3. Colour Vision

Please note: If you are applying for initial certification, certification renewal or recertification in the Visual Testing (VT) method the Distance Vision Acuity Test must be completed; if it is not completed the application for Visual Testing (VT) will not be accepted.

Candidate's Name: Bradly Joe BattRegistration #: 9297Candidate's Signature: [Signature]Date: 2020 / 09 / 09
YYYY MM DD**Near Vision Acuity and Distance Vision Acuity:**

Both near and distance visual acuity tests must be completed, signed for, and dated by medically recognized personnel (E.g., ophthalmologist, optometrist, physician, registered nurse, etc.).

1. Near Vision Acuity:

Near vision acuity shall permit reading a minimum of Jaeger number 1 or Times Roman N 4.5 or equivalent letters (having a height of 1.6 mm) at not less than 30 cm with one or both eyes, either corrected or uncorrected.

I confirm that the candidate (Please check one box only):

- ☒ Meets the requirement without correction
☐ Meets the requirement with correction
☐ Does not meet the requirement

2. Distance Vision Acuity (required for VT method):

Distance vision acuity shall equal Snellen Fraction 20/30 or better with one or both eyes, either corrected or uncorrected.

☐ Not applicable: candidate is not applying for VT

I confirm that the candidate (Please check one box only):

- ☒ Meets the requirement without correction
☐ Meets the requirement with correction
☐ Does not meet the requirement

G.R. LEINWEBER

Examiner's Name (Please print)

OPTOMETRIST

Examiner's Appointment/Title (Please print)

[Signature]

Examiner's Signature

Date of Vision Test: 2020 / 09 / 09
YYYY MM DD**3. Colour Vision:**

Colour vision tests must be completed, signed for, and dated by medically recognized personnel (E.g., ophthalmologist, optometrist, physician, registered nurse, etc.), the candidate's employer, or an NRCAN/CGSB-certified Level 3 NDT personnel.

Colour vision shall be sufficient that the candidate can distinguish and differentiate contrast between the colours or shades of grey used in the NDT method concerned, as specified by the employer.

Please note: A candidate who passes an Ishihara Test is acceptable. As an alternative to or in case of a failure of an Ishihara Test, the employer or an NRCAN/CGSB-certified Level 3 NDT personnel may administer a performance test to confirm if the candidate can see flaw indications that are typical of the method. For example: in liquid penetrant, confirm that the candidate can see red indications on a white background and fluorescent-green indications on a variety of backgrounds.

I confirm that the candidate (Please check one box only):

- ☒ Meets the requirement
☐ Does not meet the requirement

G.R. LEINWEBER

Examiner's Name (Please print)

OPTOMETRIST

Examiner's Appointment/Title (Please print)

[Signature]

Examiner's Signature

Date of Vision Test: 2020 / 09 / 09
YYYY MM DD

Bradly Joe Bott

9297

Registration Number
Numéro de matricule



is certified by the Canadian
Nuclear Safety Commission
as an Exposure Device
Operator.

est accrédité par la Commission
canadienne de sûreté nucléaire
à titre d'opérateur d'appareil
d'exposition.

2018/12/01

Issue Date

Date d'émission

2023/12/01

Expiry Date

Date d'expiration

Designated Officer

Fonctionnaire désigné



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Canada

BUFFALO INSPECTION SERVICES INC.

3867 Roper Road NW

Edmonton, AB T6B 3S5

Phone: (780) 486-7344

www.buffaloinspection.com

Buffalo Inspection Services Inc. has tested by examination and hereby certifies that

BOTT, BJ

Has successfully completed the testing by the Buffalo Inspection Services Certifying Level 3 and has passed the testing requirements by the BIS SNT-TC-1A written practice and is hereby provided the privileges and responsibilities of the Certification Level as indicated on the reverse of this card.

Initial Issue Date: 2018-08-29

Current Issue Date: 2020-07-02

SNT-TC-1A

Certificate of Completion

Certificate No.

BIS-SNT – 9297



This card and all certifications bearing the certification number on the front of this card shall expire or be revoked upon the termination of employment of the person named on the front of this card. This card can be revoked at any time without notice. The bearer of this card must return this card to BIS upon request.

CERTIFICATION AND RESTRICTIONS

RECERTIFICATION DATE

☒	Radiography	☐	1	☒	2	☐	3
☐	Ultrasonic	☐	1	☐	2	☐	3
☒	MPI/MT	☐	1	☒	2	☐	3
☐	Visual/VI	☐	1	☐	2	☐	3
☐	LPI/PT	☐	1	☐	2	☐	3
☐	Phased Array/PAUT			☐	2	☐	3
☐	ToFD			☐	2	☐	3
☒	Hardness/HT	No Expiry					
☒	Ferrite/FT	No Expiry					
☐	PMI						

August 29, 2023

July 2, 2021

Restrictions: NONE



Signature of Certified Technician



Signature of Certifying Level 3 or Designate



Natural Resources
Canada

Ressources naturelles
Canada



Name/
Nom

Raymond Cory Wuth

Reg. No. /

6517

No. matricule

Issue Date/

2016/10/14

Date d'émission

This card does not identify the stated individual to be an employee or representative of Natural Resources Canada, Government of Canada.

Cette carte n'identifie pas l'individu d'être un employé ou un représentant de Ressources naturelles Canada, Gouvernement du Canada

Corrective lenses for [X] near [X] far vision.

Verres correctifs pour la vision de [X] près [X] distance.

Signature ↓

Canada





Natural Resources
Canada

Ressources naturelles
Canada

Certified to / Certifié selon : CAN / CGSB-48.9712

6517

Method Methode	Level Niveau	Sector Secteur	Cert. Date Date cert.	Date recert. Date recert.	Expires Expiration
MT	2	EMC	2005/05/02		2021/03/15
RT	2	EMC	1996/12/10		2021/03/15

For verification of certification status, policies and definitions, visit website:
<http://ndt.nrcan.gc.ca/> Pour la vérification de la certification, les politiques, et les définitions,
visitez le site web: <http://ndt.nrcan.gc.ca/>

Manager, Certifying Agency
Gestionnaire, Organisme de certification



Natural Resources
Canada

Ressources naturelles
Canada

Canada

NRCAN EYE EXAMINATION REPORT - NDT PERSONNEL

Three vision assessments may be required: Near Vision, Distance Vision (visual testing method only) and Colour Vision (initial certification only). This form must be completed and returned to the NDT Certifying Agency when applying for examination in any NDT method, renewal of certification or recertification.

CANDIDATE'S NAME: CORY WURTH REGISTRATION NUMBER: _____

Near Vision and Distance Vision – to be completed by medically recognized personnel (ophthalmologist, optometrist, physician, nurse, etc.)

Near vision acuity: shall permit reading Times Roman N4.5 (Jaeger number 2) or equivalent letters at not less than 30 cm with one or both eyes, either corrected or uncorrected.

I CONFIRM THAT THE CANDIDATE:

(Please check ☒ one)

- ☐ Meets the requirement without correction
☒ Meets the requirement with correction
☐ Does not meet the requirement

Distance vision acuity: (required only for the visual testing method) shall equal Snellen Fraction 20/30 or better in at least one eye, either corrected or uncorrected.

I CONFIRM THAT THE CANDIDATE:

(Please check ☒ one)

- ☐ Meets the requirement without correction
☒ Meets the requirement with correction
☐ Does not meet the requirement

JULIE BOIVIN

Examiner's Name (Please Print/Type)

Examiner's Signature

OPTOMETRIST

Appointment/Title

2020/06/02
Date of Eye Examination yyyy/mm/dd

Colour Vision (required only for initial certification, not for renewal or recertification)
– to be completed by medically recognized personnel or the employer or certified level 3 NDT personnel.

NOTE: A candidate who passes an Ishihara test (short or long) is acceptable. As an alternative or in case of a failure of an Ishihara test, the employer or Level 3 NDT personnel may administer a performance test to confirm if the candidate can see flaw indications that are typical of the method. Example: In liquid penetrant, confirm that the candidate can see red indications on a white background and fluorescent-green indications on a variety of backgrounds.

I CONFIRM THAT THE CANDIDATE CAN DISTINGUISH CONTRAST BETWEEN THE COLOURS USED IN THE NDT METHOD(S) CONCERNED AS SPECIFIED BY THE EMPLOYER (OR PASSED AN ISHIHARA TEST).

JULIE BOIVIN

Examiner's Name (Please Print/Type)

Examiner's Signature

OPTOMETRIST

Appointment/Title

2020/06/02
Date of Eye Examination yyyy/mm/dd

NOTE: PROVINCIAL HEALTH CARE PROGRAMS MAY NOT COVER THE COST FOR AN EYE EXAMINATION

Raymond Cory Wuth

6517

Registration Number
Numéro de matricule



**is certified by the Canadian
Nuclear Safety Commission
as an Exposure Device
Operator.**

**est accrédité par la Commission
canadienne de sûreté nucléaire
à titre d'opérateur d'appareil
d'exposition.**

2018/03/01
Effective Date
Date d'émission

2023/03/01
Expiry Date
Date d'expiration


Designated Officer
Fonctionnaire désigné



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Canada

BUFFALO INSPECTION SERVICES INC.
 3857 Raper Road NW
 Marietta, GA 30067
 Phone: (770) 489-7300
 www.bisinc.com

Buffalo Inspection Services Inc. has tested by examination and hereby certifies that

Raymond Cory With

Has fully completed the testing by the Buffalo Inc. written Certification level 3 and has passed the testing requirements by the BIS-SNT-TC-1A written practice and is hereby provided the privileges and responsibilities of the Certification Level as indicated on the reverse of this card
 Issued Date: 2012-05-30 Expiry Date: 2015-05-30

SNT-TC-1A
Certificate of Completion
 Certificate No.
BIS-SNT - 8075



This card and all certificates bearing the verification number on the front of this card shall remain in the custody of the person receiving this card. This card may be voided at any time without notice. The holder of this card must never allow it to be lost or damaged.

CERTIFICATION AND RESTRICTIONS

☒ Radiography	☐ 1	☒ 2	☐ 3
☐ Ultrasonic	☐ 1	☐ 2	☐ 3
☒ NDT/RT	☐ 1	☒ 2	☐ 3
☐ Visual/VT	☐ 1	☐ 2	☐ 3
☒ EPR/PT	☐ 1	☒ 2	☐ 3
☒ Hardness/HT	No Expiry		
☐ Penetration/PT	No Expiry		
☐ Threaded Array/PAUT			

Technician: Raymond Cory With Certification Date: 2012-05-30

Signature of Certified Technician

Signature of Company Level 3 or 3 Equivalent

Report No. 21-BHX620R001 RT

Radiographic Report | Feb 26, 2021

3857 Roger Road NW Edmonton Alberta T6B 3S5
Phone: (780) 488-7244 Fax: (780) 488-4685
www.buffaloinspection.com

Client Name: 13 Energy Canada Ltd.	Project Name: GP-RT-01/R11
Client Address: 4800, 888 - 3 St SW, Calgary, Alberta, T2P 5C5	Acceptance Standard: ASME B31.3 (2018) severe
Contact Name: Brian Klimchuk	Technique: RT-49
Contact Phone: 403-894-5656	Work Location: 03-14-42-09N5M
Contractor: WPM Inc.	
Comments:	



Examination Details:	Examination Reference: Bulletin 992 (Current)	Gamma Ray Unit: 0.020 Inch
Media/Brand: AGFA	Screen Type: Lead	Effective Focal Spot: 0.155
Exposure: 1	Precedence: Manual	Rate: 0.010
Time: 2	Time: 4	Time: 0.010

Expansion Results															
Control No.	Welder ID	Alt./Technician	Material	Code Ref.	Tech.	Distance		Exposure	ISO No./ f.s.	U/G	Comments +	Summary +	Accept	Reject	Technique Reference
						Source to Object	Object to Film								
XF-1	IA	P-034	2" x 160	CS	101	RT-48	1.90"	0.408"	4	2	0.038		✓		 ET-48 Classified Weld for a 2 in. dia. Teeing to a 1/2 in. dia. Teeing to a 1/2 in. dia. Teeing
XF-2	IA	P-034	2" x 160	CS	101	RT-48	1.90"	0.408"	4	2	0.038		✓		
XF-3	IA	P-034	2" x 160	CS	101	RT-48	1.90"	0.408"	4	2	0.038		✓		
XF-4	IA	P-034	2" x 160	CS	101	RT-48	1.90"	0.408"	4	2	0.038		✓		
XF-5	IA	P-034	2" x 160	CS	101	RT-48	1.90"	0.408"	4	2	0.038		✓		
XF-6	IA	P-034	2" x 160	CS	101	RT-48	1.90"	0.408"	4	2	0.038		✓		
XF-7	IA	P-034	2" x 160	CS	101	RT-48	1.90"	0.408"	4	2	0.038		✓		

Exposure Reference: 101	Exposure Reference: 101	Exposure Reference: 101
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Exposure Reference: 101	Exposure Reference: 101	Exposure Reference: 101

Report No. 21-BHX620R002 RT

Radiographic Report | Feb 26, 2021

3857 Roger Road NW Edmonton Alberta T5B 3S5
Phone: (780) 486-7344 Fax: (780) 486-4885
www.buffaloinspection.com

Client Name: 13 Energy Canada Ltd.	Project Name:	Procedure: GP-RT-01/R11
Client Address: 4600, 88B - 3 St SW, Calgary, Alberta, T2P 5C5	Client Job No.: WPH Job#21-102	Acceptance Standard: ASME B31.3 (2018) NYS
Contact Name: Brian Minkuk	Purchase Order No.:	Technique: RT-4A
Contact Phone: 403-894-5606	AFE No.:	Work Location: 03-14-42-09W5M
Contractor: WPH Inc.		



Exposure Information		Screen Information		Image Reference - Film #2 (Report)	
Major Weld ID: AGFA	Class: D4	No. Film/Exposure: 1	Processing: Manual	Min: 2	Max: 4
Exposure Reference: B31.3	Exposure Type: Lead	Exposure: 0.010	Exposure: 0.010	Exposure: 0.010	Exposure: 0.010

Control No.	Welder	Dist. Thickness	Dist. to Object	Dist. to Film	U/G	Comments	Security	Accept	Reject	Technique Reference
XF-8	28	P-054	2" 60	2.032"	0.343"	3 7	0.026			
XF-9	28	P-054	2" 60	2.032"	0.343"	3 7	0.026			
XF-10	28	P-054	2" 60	2.032"	0.343"	3 7	0.026			
XF-11	28	P-054	2" 60	2.032"	0.343"	3 7	0.026			
XF-12	2A	P-054	2" 60	2.032"	0.343"	3 7	0.026			
XF-13	2A	P-054	2" 60	2.032"	0.343"	3 7	0.026			
XF-14	2A	P-054	2" 60	2.032"	0.343"	3 7	0.026			
XF-15	2A	P-054	2" 60	2.032"	0.343"	3 7	0.026			
XF-16	2A	P-054	2" 60	2.032"	0.343"	3 7	0.026			

Code Reference		Penetration/Defect Reference	
ASME B31.3 (2018) NYS	API 1104 9th Ed 10-16	API 1104 9th Ed 10-16	API 1104 9th Ed 10-16
Technician: Dan Mallouk		Inspector: Dan Mallouk	
Assistant 1: Dan Mallouk		Assistant 2: Dan Mallouk	
Inspector: Dan Mallouk		Inspector: Dan Mallouk	
Inspector: Dan Mallouk		Inspector: Dan Mallouk	

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Signature
Signature

Report No. 21-BHX620R003 MT

Magnetic Particle Inspection | Feb 26, 2021

3857 Rogar Road NW Edmonton Alberta T6B 3S5
Phone: (780) 486-7344 Fax: (780) 486-4685
www.buffaloinspection.com

Client Name:	LI Energy Canada Ltd.	Project Name:	GP-MT-01/R10
Client Address:	4600, 888 - 3 St SW, Calgary, Alberta, T2P 5C5	Acceptance Standard:	ASME B31.3 (2018) N/S
Contact Name:	Brian Klimchuk	Technique:	MT-2/RI
Contact Phone:	403-894-5005	Work Location:	03-14-42-05W5M
Contract:	WPM Inc.		

Comments:	No Relevant Indications Noted At Time Of Inspection.
------------------	--

Preparation:	As Yielded	Contaminants:	None (Clean & Dry)
Equipment:	As Yielded	Preparation Comments:	

Method:	Wet - Visible (Contrast)	Suspensions:	Oil	AC - Continuous:	
Particle Brand:	Magnalux	Particle No.:	7HF	Particle Colour:	Black
Equipment Make/Model:	Patric Research Corporation/B300	Serial Number:	8880	Calibration Due Date:	Feb 26, 2021 / Feb 27, 2021
Visible Light Equipment:	Ambient Light (White Light Meter Serial: R03302)	Is > 100% (1.000 Lux) @ 8 inches?	Yes	Particles Batch #:	

Control:	Welder ID	Material:	
1 MT-1:	17701	28 P-034:	Q3

Technician:	Cory Wuth	Reg No.:	6517	SNT Level:	2	SNT No.:	8075	Inspection Date:	Feb 26, 2021	Evaluation Date:	Feb 26, 2021
Assistant 1:	Don Milloux	Reg No.:		SNT Level:		SNT No.:					
Assistant 2:	BJ Butt	Reg No.:		SNT Level:		SNT No.:	9297				

Contract No.:	WCB-2	Contract Faint Brand:	Magnalux	Mag Time:	15 sec.	Demagnetisation Req.?	No Yoke Lift Test Done? Yes
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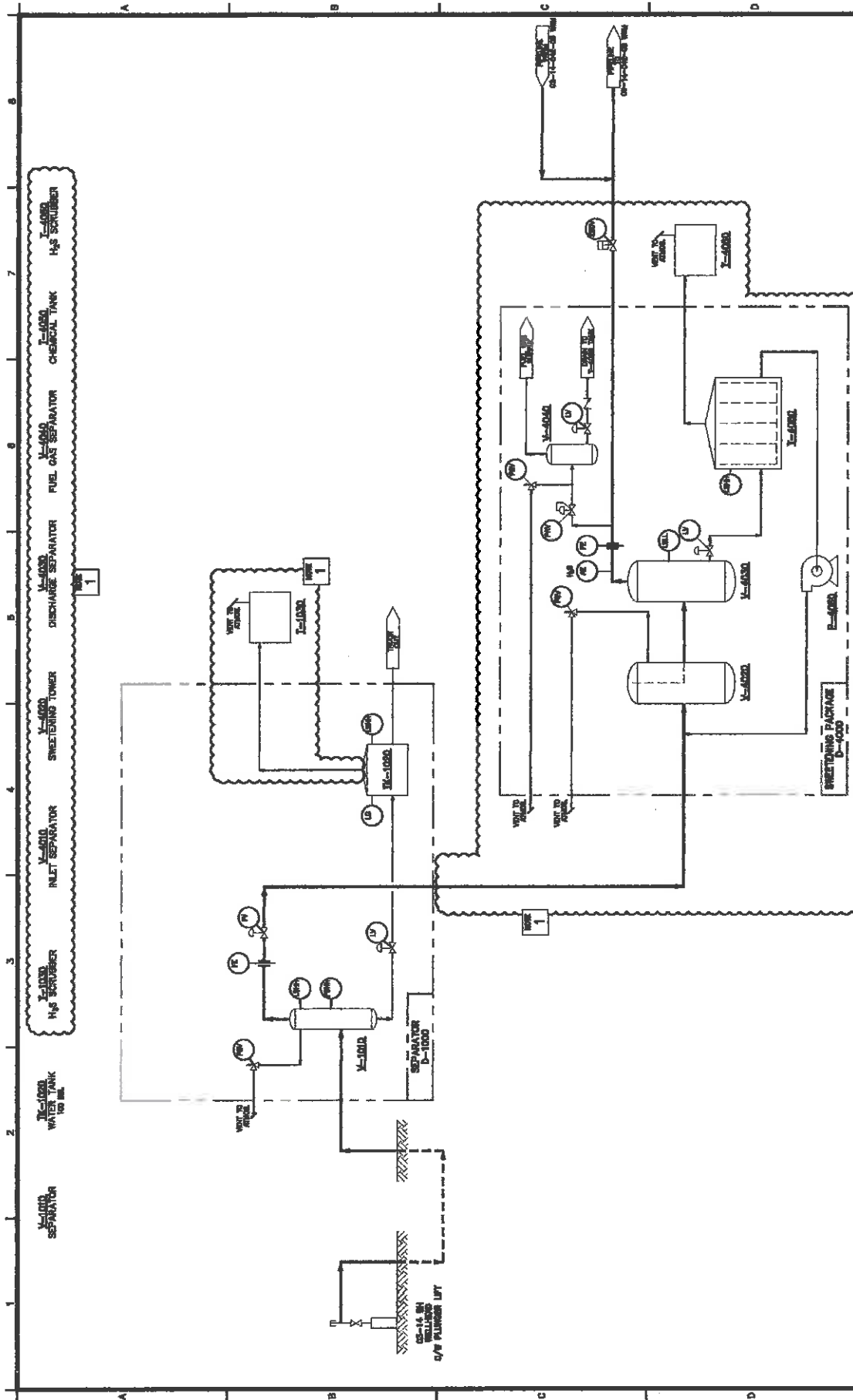
Background Batch #:		See Client Signature On Approval:	
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Accept:	☒	Reject:	☐
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**AS-BUILTS, WELD MAPS &
CONSTRUCTION DRAWINGS**

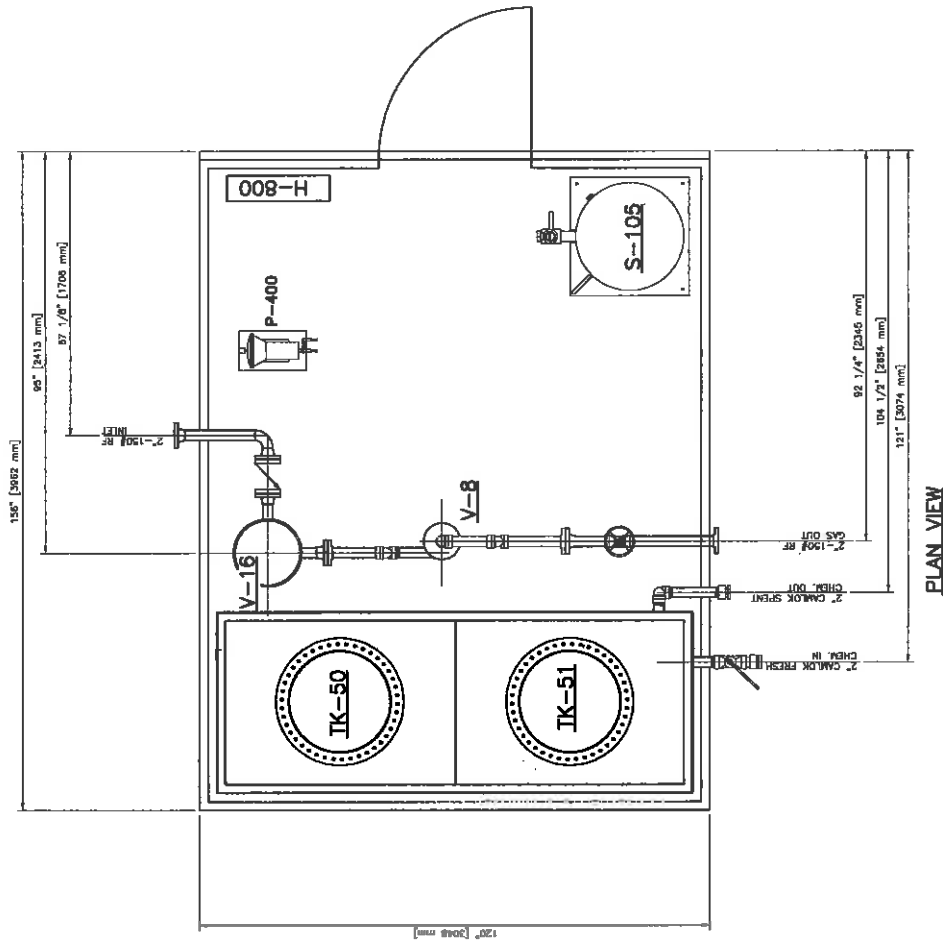
CUT	PT	FAB	DIM	VISUAL	NDE	HYDRO	SHIP	WWW.ABARNPIPE.COM	ITEM	QTY	DESCRIPTION	WELDS	WELDERS	SIZE
									1	1	A333-Gr 6 SMLS Pipe			
									2	1	2" Sch 160(344) BE x BE			
									3	1	2" Sch 160(344) BE x BE			
									4	1	2" Sch 160(344) BE x BE			
									5	1	A350-LF2 Flanges			
									6	1	2" 600# RF Weld Neck			
									7	1	2" 600# RF Weld Neck			
									8	1	A420-WPL6 Fittings			
									9	1	2" 90 LR Elbow			
									10	1	2" 90 LR Elbow			
									11	1	2" 90 LR Elbow			
									12	1	2" 90 LR Elbow			
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									122	1	2" 90 LR Elbow			
									123	1	2" 90 LR Elbow			
									124	1	2" 90 LR Elbow			
									125	1	2" 90 LR Elbow			
									126	1	2" 90 LR Elbow			
									127	1	2" 90 LR Elbow			
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									130	1	2" 90 LR Elbow			
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									150	1	2" 90 LR Elbow			
									151	1	2" 90 LR Elbow			
									152	1	2" 90 LR Elbow			



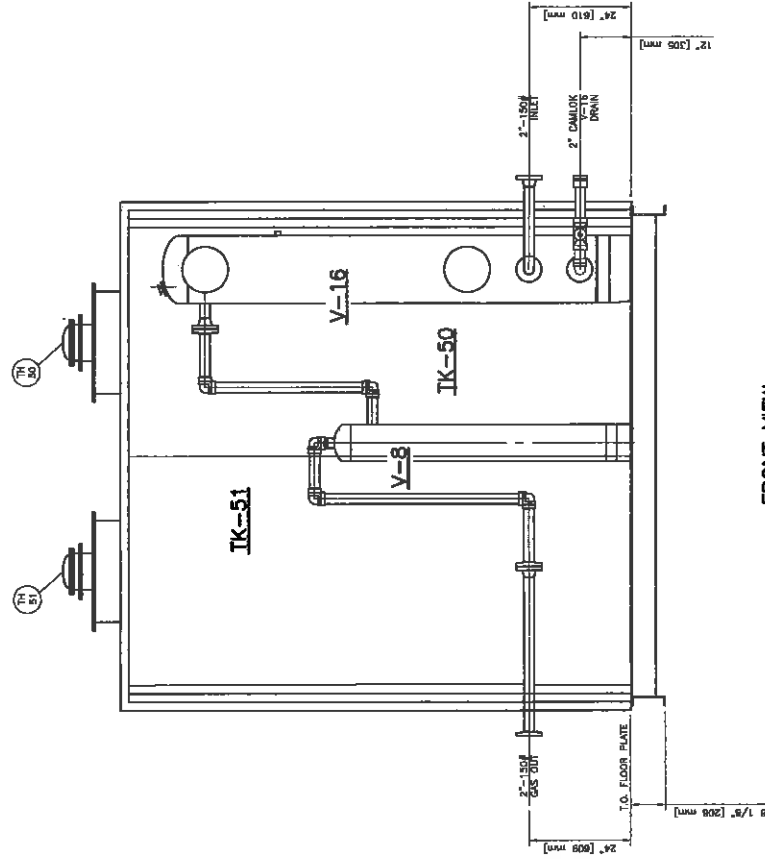
McINTOSH PERRY 13 ENERGY 2000 W. 10th St. Tulsa, OK 74103 Tel: 918-438-1000 Fax: 918-438-1001		PROJECT NO. 11775-0300	SHEET NO. 11775-0300	DATE 08-14-08	DRAWN BY J. L. PERRY	CHECKED BY J. L. PERRY	DESIGNED BY J. L. PERRY	PROJECT NAME SINGLE WELL BOOR GAS BATTERY	PROJECT NO. 11775-0300	SHEET NO. 11775-0300	DATE 08-14-08	DRAWN BY J. L. PERRY	CHECKED BY J. L. PERRY	DESIGNED BY J. L. PERRY	PROJECT NAME SINGLE WELL BOOR GAS BATTERY
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1. LICENSE REQUIRED FOR CONSTRUCTION
 2. 100% DESIGN REQUIRED FOR CONSTRUCTION
 3. 100% DESIGN REQUIRED FOR CONSTRUCTION
 4. 100% DESIGN REQUIRED FOR CONSTRUCTION
 5. 100% DESIGN REQUIRED FOR CONSTRUCTION
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 8. 100% DESIGN REQUIRED FOR CONSTRUCTION
 9. 100% DESIGN REQUIRED FOR CONSTRUCTION
 10. 100% DESIGN REQUIRED FOR CONSTRUCTION

[illegible]



PLAN VIEW



FRONT VIEW

NOTES:
1.) INNER/OUTER SHELL WALLS, ROOF, & FLOOR CONSTRUCTED OF 3/16" THK. PLATE SA-36/44W.

ULTRAFAB INDUSTRIES LTD.

REV.	DATE	DESCRIPTION	DRAWN	CHECK	DESIGN	APPR.
A	11-MAY-10	ISSUED FOR INFORMATION	CB		LM	

QUANTITY	ULTRAFAB STANDARD
TITLE	50 BBL DOUBLE WALLED SPLIT TANK c/w
	16" SWEETENING CONTACTOR - GENERAL ARRANGEMENT
SCALE	1:50
DESIGNED BY	LA9-500
DRAWN BY	LA9-500
CHECKED BY	
DATE REV.	10-05-11
	1/21/12

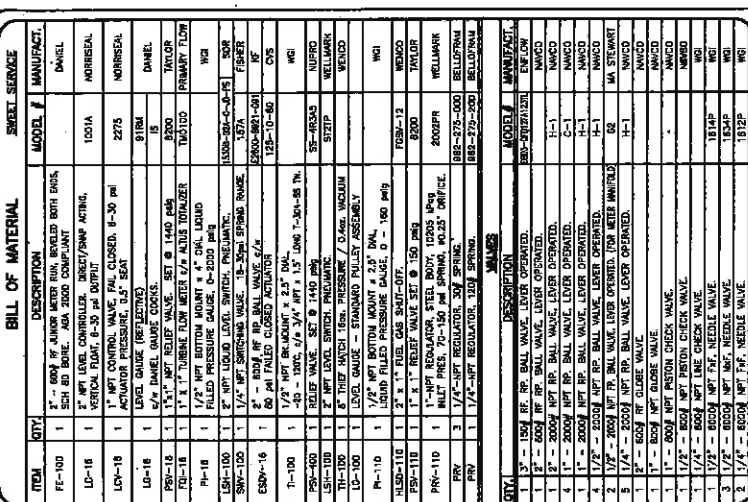
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CLIENT	ULTRAFAB STANDARD			
TITLE	100 BEL DOUBLE WALL TANK C/W 818" x 7'-6" s/s 3 PHASE SEPARATOR - GENERAL ARRANGEMENT			
SCALE	1:16	DRAWING No. Complete	DATE 65-12-15	MS 1-59
DATE DES.		DESIGNED BY L263-SID		FILED 65-12-15

REV.	DATE	ISSUED FOR INFORMATION	DRAWN	CHECK	DESIGN	APPR
A	22-JUN-06		CS			LM

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H-800
ANALYTIC HEATER

TK-425
METHANOL TANK
125 GALLONS

[illegible]

ULTRAFAB INDUSTRIES LTD.

PRIMARY PETROLEUM

100 BBL DOUBLE WALL TANK c/w 16" x 7'-6"
3 PHASE SEPARATOR - P&ID

SOURCE	N.T.B.	DRAWING No. Computer File #	QPD7-3065	DATE	TIME
				07-12-10	08:45
QUOTE REF: -			FILE: - Products/Media Products Business/19907-3065		

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8

**WELD PROCEDURE,
WEDLERS LOG & TICKETS**



Approved Welding Procedures Log

QC - 6.1

Edition 9 Revision: 0

WPW Job # 21-102

Welding Procedure No.	WPS Summary or Project Application	Owner's Representative Approval	
		Signature	Date
WPW 3 (Rev.5)	Pipe – All Diameters PWHT – No ASME B31.3 Weld Process -SMAW		FEB 24/21
WPW 4 (Rev.5)	Pipe – All Diameters PWHT – Yes ASME B31.3 Weld Process – SMAW		
WPW PL-3 Fab (Rev.1)	WT Range .125 – 1.0” Approved CSA Z662.15 Pipe – All Diameters		
WPW PL-1 (Rev.6)	WT Range 1.5 to 12.9mm Pipe 60.3-323.9mm CSA Z662.15 Approved 386mpa or less		
WPW PL-6 (Rev.2)	WT Range 1.5 - 7.2mm Pipe: 60.3 - 323.9mm CSA Z662.15 Approved 386mpa or less		
WPW PL-8 (Rev.1)	WT Range 1.5 - 9.6mm Pipe: 60.3 - 323.9mm CSA Z662.15 Approved 386mpa or less		

WELDING PROCEDURE SPECIFICATION NO.: WPW-3 (Rev.5)

WELDING PROCEDURE QUALIFICATION RECORD NO.(S): WPW-3-3, WPW-3-4
WPW-3-5 (Rev.0).
WPW-3-6 (Rev.0).
WPW-3-7 (Rev.0)

QUALIFIED IN ACCORDANCE WITH ASME SECTION IX FOR

Base Metal (Typical): P1 Groups 1 & 2 to P1 Groups 1 & 2
(SA 333 Gr. 6, SA 350 Gr. LF2, SA 420 Gr. WPL6, SA 516 Gr. 70 etc.)
Process(es): SMAW Weld Types: GROOVE & FILLET
Position: ALL POSITIONS Diameter: ALL DIAMETERS
Filler Metal: E6010, E7018-1

BASE METAL CONDITIONS & GROOVE THICKNESS RANGE QUALIFIED:

NOTCH TOUGHNESS APPLICATIONS TO -50 °F AS WELDED

BASE METAL THICKNESS RANGE 0.116 to 1.000 in. inclusive

COMBINED DEPOSITED WELD METAL THICKNESS

ASME B31.1 1.000 in. maximum
ASME B31.3 1.000 in. maximum
ASME SECTION VIII, DIVISION 1 1.000 in. maximum

ABSA
SAFETY CODES ACT - PROVINCE OF ALBERTA
WELDING PROCEDURE

Reg. No. WP 3550.2
Spec No. WPW-3 (Rev.5)
Weld Process SMAW
Matl. Gr. P No. 16r 1+2 to P No. 16r 1+2
Elect Gr. F No. 3+4 A No. 1
Th. Qual For 25.4mm P.W.H.T. NO
MIN TH QUAL 29mm, CUN-46C
Yr. 18 Mo. 9 Day 19 Signed J.R.
JASON REINHART, P.E.N.G.
WELDING SPECIALIST

PROVINCIAL REGISTRATION

This WPS was prepared to the requirements of ASME Section IX 2017 and includes some of the additional requirements of the construction codes listed. The application of this WPS is outside the work scope of SGS Canada Inc.

Prepared By: Jessie Springett, T.T.
Signed: Jessie Springett
Date: September 14, 2018

Reviewed By: Keelan Wolfe, C.E.T.
Signed: Keelan Wolfe
Date: September 14, 2018

(File E18-456)

QW-482 WELDING PROCEDURE SPECIFICATION (WPS)

Company Name WPW Inc.
Welding Procedure Specification No. WPW-3 (Rev.5) Date September 14, 2018
Revision(s) Rev. 5 – Essential – Addition of PQR No.s WPW-3-5 (Rev.0), WPW-3-6 (Rev.0), and WPW-3-7 (Rev.0). Updated to current code requirements. Update to maximum heat input. WPS No. formerly WPW-3 (Rev.4). Company name change from W. Pidhirnev Welding Ltd. to WPW Inc.
Supporting PQR No.(s) WPW-3-3, WPW-3-4, WPW-3-5 (Rev.0), WPW-3-6 (Rev.0), WPW-3-7 (Rev.0)
Welding Process(es) Shielded Metal Arc Welding (SMAW)

JOINTS (QW-402)

Joint Design All ASME groove & fillet, reference construction drawing for joint details.
Where joint details are not specified, refer to figures 1 to 15 attached
Root Opening As per attached typical groove designs, see figures 1 to 15 attached
Backing With or without Retainers With or without

BASE METALS (QW-403)

P-Number P1 Groups 1 & 2 To P-Number P1 Groups 1 & 2
Thickness Range: Groove 0.116 to 1.000 in. inclusive (1)
Fillet 0.116 to 8.000 in. inclusive
Pipe Diameter Ranges: Groove All diameters
Fillet All diameters
Deposited Weld Metal (Per Pass) E6010: 0.188 in. maximum
E7018-1: 0.188 in. maximum

- (1) Reference thickness limitations for tests on welds in fabrication or assembly in ASME B31.3 Table 323.3.1 - Impact Testing Requirements for metals.

FILLER METALS (QW-404)

	SMAW	SMAW
Specification No. (SFA)	<u>SFA 5.1</u>	<u>SFA 5.1</u>
AWS No. (Class)	<u>E6010</u>	<u>E7018-1</u>
F-No.	<u>F3</u>	<u>F4</u>
A-No.	<u>A1</u>	<u>A1</u>
Diameter	<u>3/32 to 3/16 in. inclusive</u>	<u>3/32 to 1/4 in. inclusive</u>
Deposited Weld Metal Thickness Range:		
Groove	<u>0.188 in. max. (2) (3)</u>	<u>0.812 in. max. (2)</u>
Fillet	<u>All fillet sizes (4)</u>	<u>All fillet sizes</u>

- (2) Combined deposited weld metal thickness shall not exceed 1.000 in. for ASME B31.1 and ASME B31.3 and 1.000 in. for ASME Section VIII, Div. 1.

- (3) E6010 is restricted to a 0.099 in. for ASME VIII applications

- (4) E6010 is restricted to a single pass for fillet weld applications requiring an MDMT less than -20 °F.

POSITION (QW-405)

Position of Groove All positions Position of Fillet All positions
Weld Progression E6010: Vertical up or down E7018-1: Vertical up

WPS NO. WPW-3 (Rev.5)

PREHEAT (QW-406)

Preheat Temperature (Minimum) See attached preheat sheet prior to welding.
 Interpass Temperature (Maximum) 500 °F
 Preheat Maintenance See attached preheat sheet prior to welding. Preheat maintenance is not required if welding is interrupted or after the completion of welding unless required by the code of construction.

POSTWELD HEAT TREATMENT (QW-407)

With or Without Without
 Temperature Range N/A Time Range N/A

ELECTRICAL CHARACTERISTICS (QW-409)

Current Direct Polarity Reverse, electrode positive
 Amps See Table 1 Volts See Table 1

Maximum Heat Input

Base Metal Thickness Range	E6010 Electrode	E7018-1 Electrode
0.116 to 0.499 in.	27,273 J/in.	54,096 J/in.
0.500 in. and greater	37,768 J/in.	72,000 J/in.

TECHNIQUE (QW-410)

Manual or Automatic Manual
 Multiple or Single Pass Per Side (4) Multiple
 String or Weave E6010: String E7018-1: String or Weave
 Travel Speed See Table 1
 Initial & Interpass Cleaning Brushing, chipping or grinding as required
 Method of Back Gouging Air carbon arc, back-grind as required
 Peening Not permitted
 Use of Thermal Process N/A
 (4) Multiple layers shall be used for ASME B31.1 and ASME B31.3 when the nominal material thickness is greater than 0.188 in.

TABLE 1 - WELDING PARAMETERS

Process	Filler Metal	Diameter in.	Current Type & Polarity	Amperage Range	Voltage Range	Travel Speed i.p.m.
SMAW	E6010	3/32	DCRP	50 - 100	18 - 32	1.1 - 12
SMAW	E6010	1/8	DCRP	60 - 140	19 - 32	1.8 - 14
SMAW	E6010	5/32	DCRP	115 - 250	21 - 32	3.3 - 16
SMAW	E6010	3/16	DCRP	120 - 300	21 - 32	4.0 - 18
SMAW	E7018-1	3/32	DCRP	60 - 110	18 - 26	0.9 - 12
SMAW	E7018-1	1/8	DCRP	90 - 170	19 - 28	1.4 - 14
SMAW	E7018-1	5/32	DCRP	110 - 220	20 - 30	1.8 - 16
SMAW	E7018-1	3/16	DCRP	160 - 320	20 - 30	2.7 - 20
SMAW	E7018-1	7/32	DCRP	240 - 340	20 - 32	4.0 - 22
SMAW	E7018-1	1/4	DCRP	275 - 360	21 - 32	4.8 - 22

Note: Welding parameters shall be adjusted to insure that the maximum heat input value specified in QW-409 above is not exceeded.

$$\text{Heat Input (joules per inch)} = (\text{Amperage} \times \text{Voltage} \times 60) / \text{Travel Speed (i.p.m.)}$$

TYPICAL JOINT DESIGNS

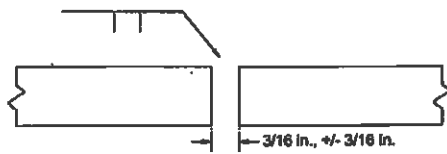


Figure 1
Single Square Butt

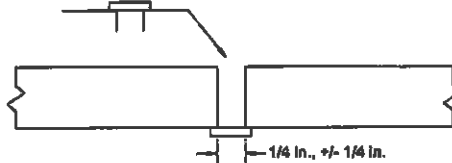


Figure 2
Single Square Butt with Backing Strip

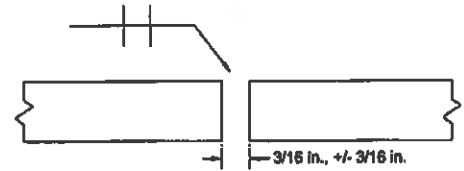


Figure 3
Double Square Butt

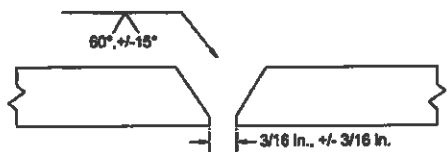


Figure 4
Single Vee Butt

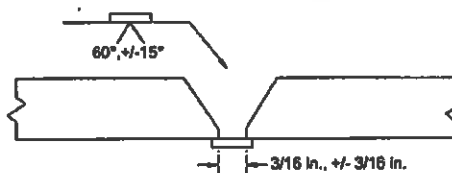


Figure 5
Single Vee Butt with Backing Strip

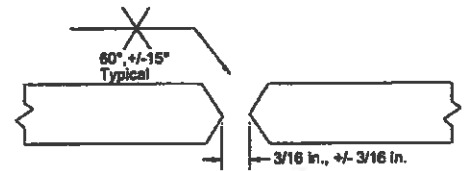


Figure 6
Double Vee Butt

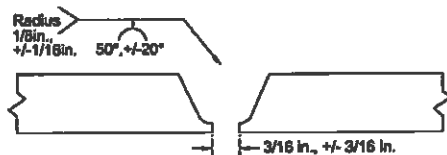


Figure 7
Single U Butt

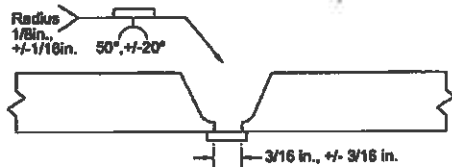


Figure 8
Single U Butt with Backing Strip

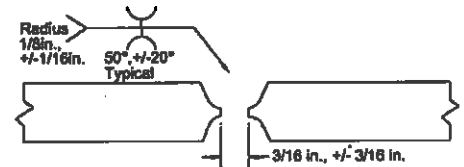


Figure 9
Double U Butt

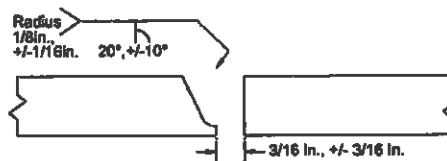


Figure 10
Single J Butt

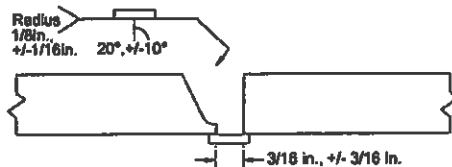


Figure 11
Single J Butt with Backing Strip



Figure 12
Double J Butt

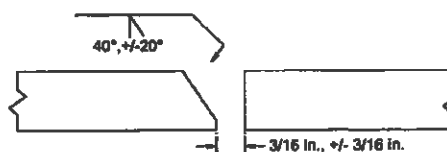


Figure 13
Single Bevel Butt

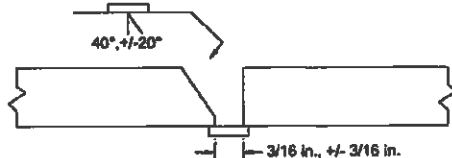


Figure 14
Single Bevel Butt with Backing Strip

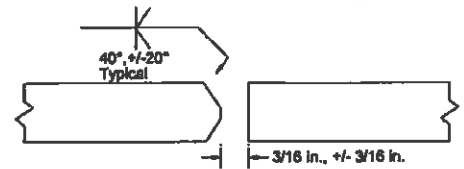


Figure 15
Double Bevel Butt

Additional joint designs and internal misalignment on circumferential welds shall be within the dimensional limits stated on the approved construction drawing and/or the engineering design.

PREHEAT
P-No. 1 (Without PWHT)

1. Welds joining pressure parts or attachments shall be preheated to not less than the minimum preheat temperatures stated in paragraph 3. If welding is interrupted, the weld joint and adjacent areas shall be reheated to the minimum preheat temperature stated in paragraph 3 prior to the start of welding.
2. Preheat temperatures shall be checked by the welder or inspector, using temperature indicating crayons or other reputable methods.
3. Minimum preheating temperatures shall be as follows:

POWER PIPING IN ACCORDANCE WITH ASME B31.1 - 2016

GREATER MATERIAL THICKNESS	SPECIFIED MAXIMUM CARBON CONTENT	MINIMUM PREHEAT TEMPERATURE
Less than or equal to 1.0 in.	All	50 °F
Greater than 1.0 in.	All	200 °F

- The base metal temperature for the parts to be welded shall be at or above the specified minimum temperature in all directions from the point of welding for a distance of the larger of 3.0 in. or 1.5 times the greater nominal thickness (as defined in paragraph 132.4.3). The base metal temperature for tack welds shall be at or above the specified minimum temperature for a distance not less than 1.0 in. in all directions from the point of welding.
- Greater material thickness is the thicker of the pressure-retaining materials being joined at the weld.

PROCESS PIPING IN ACCORDANCE WITH ASME B31.3 - 2016

GREATER MATERIAL THICKNESS	SPECIFIED MAXIMUM CARBON CONTENT	MINIMUM PREHEAT TEMPERATURE
Less than or equal to 1.0 in.	All	50 °F
Greater than 1.0 in.	All	200 °F

- The preheat zone shall be at or above the specified minimum temperature in all directions from the point of welding for a distance of the larger of 3.0 in. or 1.5 times the greater nominal thickness (as defined in paragraph 331.1.3(c)). The base metal temperature for tack welds shall be at or above the specified minimum temperature for a distance not less than 1.0 in. in all directions from the point of welding.
- Greater material thickness is that of the nominal material thickness of the thicker of the materials being joined at the weld.

PRESSURE VESSELS IN ACCORDANCE WITH ASME SECTION VIII, DIV. 1 - 2017

NOMINAL MATERIAL THICKNESS (THICKER OF THE MATERIALS AT THE JOINT)	SPECIFIED MAXIMUM CARBON CONTENT	NOMINAL THICKNESS (PER UW-40(f))	MINIMUM PREHEAT TEMPERATURE
Less than or equal to 1.0 in.	All	Less than or equal to 1.25 in.	50 °F
Greater than 1.0 in.	Less than or equal to 0.30%	Less than or equal to 1.25 in.	50 °F
Greater than 1.0 in.	Greater than 0.30%	Less than or equal to 1.25 in.	175 °F
All	All	Greater than 1.25 in. to 1.50 in.	200 °F

- The conditions of UW-30 shall apply for base metal temperatures below 32 °F.
- The preheat zone shall extend at least 3.0 in. beyond each edge of the weld.

Qualimet APP No. 7136
WELDER PERFORMANCE QUALIFICATION CARD

Name: **Jeffrey Reiser** File No: **W-27299**

This card is issued pursuant to the Alberta Safety Codes Act and the Pressure Equipment Regulations. This performance qualification card is issued pursuant to the Pressure Equipment Regulations. Code and subject of the qualification is the reverse side.

May 22, 2021
 Date of Test

EJ Yoon
 Welder Examiner

16321
 Qualimet Card No.

PERFORMANCE QUALIFICATION Qualimet Card No. **16321**

Process	SMAW	SAW	Material P-No.	P1 thru P15/P43
File No. (P-No.)	F-3	F-4	in Pipe Diameter	1" O.D.
Max. Specified Weld Size	0.250"	Maximum	Position Qualified	All
Baking	With or Without	With	Baking Gas	Not Applicable
Progression	Uphand	Uphand		

May 22, 2021
 Date of Test

E-00197
 File No.

WPW WELD STAMP "P-054"

012876792 01282A

JOURNEYMAN CERTIFICATE

THIS IS TO CERTIFY THAT
JEFFREY THOMAS REISER
 HAS COMPLETED AN ALBERTA APPRENTICESHIP PROGRAM AND HAVING ACHIEVED THE STANDARDS ESTABLISHED UNDER THE ALBERTA APPRENTICESHIP AND INDUSTRY TRAINING ACT, IS HEREBY AUTHORIZED TO WORK IN THE TRADE AS A JOURNEYMAN AND TO USE THE TITLE CERTIFIED JOURNEYMAN

WELDER

EFFECTIVE DATE: July 26th, 2008
 ISSUE DATE: July 26th, 2008

Alberta
 Government

HONOURABLE GREG KORMER
 MINISTER OF ADVANCED EDUCATION AND TECHNOLOGY

SHIRLEY OUL, EXECUTIVE
 DIRECTOR OF APPRENTICESHIP & INDUSTRY TRAINING



Alberta Municipal Affairs and Housing 23444

ABSA the pressure equipment safety authority

Grade "B" Pressure Welder's Certificate of Competency

This is to certify that **Jeffrey Reiser** having complied with provisions of the Safety Codes Act, is authorized to engage in pressure welding in accordance with the prescribed Regulations.

Dated at Edmonton December 04, 2008

W-27299
 File no.

Chief Inspector and Administrator

CWB **Welder Qualification**
 This card is valid only while employed by a CWB certified company

Test Centre Welder Test Record
Transferable Welder

Name: **JEFF T. REISER** Exp. Date: **Oct 02, 2022**
 Test Facility: **CWB Group Industry Solutions - Welder Test Centre**
 Thickness Range: **3mm & above** Material: **Carbon Steel**
 Process: **SMAW**
 Standard: **CSA W47.1**
 Electrode: **F4**

Mode: **MANUAL**
 Class: **FLAT/HORIZONTAL/VERTICAL UPOVERHEAD**
 Classification: **S**

CWB **Welder Qualification**
 This card is valid only while employed by a CWB certified company

Test Centre Welder Test Record
Transferable Welder

Name: **JEFF T. REISER** Exp. Date: **Sep 25, 2022**
 Test Facility: **CWB Group Industry Solutions - Welder Test Centre**
 Thickness Range: **3mm & above** Material: **Carbon Steel**
 Process: **FCAW/MCAW**
 Standard: **CSA W47.1**

Mode: **SEMI-AUTO**
 Single Electrode Mechanized
 Single Electrode Automatic
 Class: **FLAT/HORIZONTAL/VERTICAL UPOVERHEAD**
 Classification: **S**

9

**MATERIAL REQ'S / REC'V,
PACKING SLIPS & MTR'S**



Material Requisition/Receiving

QC - 5.2

Edition 9 Revision: 0

Customer: I3 ENERGY	WPW Job No.: 21-102
Location: 3-14-42-5 W5M	Date Ordered: FEB 24/21
P.O. No.:	Date Required: FEB 25/21
Vendor: DNOW	Date Received: FEB 25/21
Packing Slip #:	Delivered To:

QTY	Size	Sch.	Description	Heat No.\ Color Code	B/O	Received
20'	2"	160	PIPE A333	A11121	☐	☒
20'	2"	80	PIPE A333	25915K	☐	☒
2	2"	160	600# RFWN A350 LF2	18/37717	☐	☒
4	2"	80	600# RFWN A350 LF2	LH7082	☐	☒
3	2"	160	90 DEG ELBOW WPL6	235B	☐	☒
3	2"	80	90 DEG ELBOW WPL6	62D01015	☐	☒
2	1"	3M	TOL A350 LF2	50733	☐	☒
					☐	☐
					☐	☐
1	1"	3M	BALL VALVE A350 LF2 CHROMED PLATED TRIM		☐	☒
					☐	☐
1	1"	80	4" NIPPLES A333	87SR	☐	☒
					☐	☐
	2"		600# INSUL KIT		☐	☒
1	2"		600# SPEC BLIND A516 70N	PZN	☐	☒
1	2"		600# BOLT UP FOR SPEC BLIND B7M/2HM CGI GASKETS		☐	☒
1	2"		600# THRD FLANGE A350	TL10030685	☐	☒
5	2"		600# BOLT UP S/N/G B7M/2HM CGI GASKETS		☐	☒
4	2"		600# CGI GASKETS		☐	☒
2	2"	80	1500# RTJWN A350	H0AV8	☐	☒
2	2"		1500# RTJ BOLT UP S/N/G B7M/2HM		☐	☒
					☐	☐
					☐	☐
					☐	☐

All fittings must be registered with ABSA and have a valid CRN number with expiry date.
MTR's and CRN documentation are required for all pipe and fittings.

	Print	Signature	Date	Comments
Ordered By	GREG ANDERSEN		FEB 24/21	
Received By	GREG ANDERSEN		FEB 25/21	
Owner App.	BRIAN KLIMCHUK		FEB 24/21	

Condition of Materials Received

Satisfactory ☒	Unsatisfactory ☐	Damaged ☐	Surplus ☐	Shortage ☐
--	---	----------------------------------	----------------------------------	-----------------------------------

Remarks _____

Packing Slip 312306020



Customer PO	Sales Order 100554929	Shipment Refer to Item	Packing Slip	**** THIS IS NOT AN INVOICE DO NOT PAY FROM THIS DOCUMENT	Date: 02/25/2021
Bill to I3 ENERGY CANADA LTD. AFP - OPEN INVOICE 4600, 888 - 3RD STREET SW CALGARY AB T2P 5C5		Ship To I3 ENERGY CANADA LTD. AFP - OPEN INVOICE 4600, 888 - 3RD STREET SW CALGARY AB T2P 5C5		Interim Ship To	
Cust Num: 161326					

Item	Mat#	Description	Qty	ShipQty	BO Qty	UM	ExpDel
10	1075429	FLANGE WELDNECK I 2 IN S160 CLASS 600 RAISED FACE A/SA350 LF2 CLASS 1 LOW TEMPERATURE CARBON STEEL ASME B16.5 NACE /Sales Order 100554929 / Shipment 823396101 / Heat Code: 18/37717	2.000	2.000	0	EA	02/24/2021
20	1016530	ELBOW I 3 IN 90 DEGREE LONG RADIUS XS BUTTWELD SEAMLESS WPL6 A/SA420 ASME B16.9 LOW TEMPERATURE CARBON STEEL /Sales Order 100554929 / Shipment 823396101 / Heat Code: 18A2980	3.000	3.000	0	EA	02/24/2021
30	1016530	ELBOW I 3 IN 90 DEGREE LONG RADIUS XS BUTTWELD SEAMLESS WPL6 A/SA420 ASME B16.9 LOW TEMPERATURE CARBON STEEL /Sales Order 100554929 / Shipment 823396101 / Heat Code: 18A2980	3.000	3.000	0	EA	02/24/2021
40	1075411	FLANGE WELDNECK I 2 IN XS CLASS 1500 RING TYPE JOINT A/SA350 LF2 CLASS 1 LOW TEMPERATURE CARBON STEEL ASME B16.5 NACE /Sales Order 100554929 / Shipment 823396101 / Heat Code: H0AV8	2.000	2.000	0	EA	02/24/2021
50	1079617	ELBOW I 2 IN 45 DEGREE LONG RADIUS S160 BUTTWELD SEAMLESS WPL6 A/SA420 ASME B16.9 LOW TEMPERATURE CARBON STEEL	1.000	1.000	0	EA	02/24/2021

Questions: DNOW Canada ULC ROCKY MOUNTAIN HOUSE AB Phone: (403)845-2445

** HAZARDOUS MATERIAL D.O.T. 24 HOUR EMERGENCY RESPONSE NUMBER: 1-888-298-2344 (ACCESS CODE # 333386)**

EGGENRC NOP
Page 1 of 5
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21-102



Item	Mat#	Description	Qty	ShipQty	BO Qty	UM	ExpDel
/Sales Order 100554929 / Shipment 823396101 /							
Heat Code: 16A5556							
60	7463	FLANGE WELDNCK I 2 IN XS CLASS 600 RAISED FACE A/SA350 LF2 CLASS 1 LOW TEMPERATURE CARBON STEEL ASME B16.5 NACE	4.000	4.000	0	EA	02/24/2021
/Sales Order 100554929 / Shipment 823396821 /							
Heat Code: LH7082							
70	6256	STUD 5/8 IN X 4-1/2 IN \ 4-1/4 IN FTF B7M BLACK ALLOY STEEL STUD ONLY ASTM A193 11 TPI UNC	40.000	40.000	0	EA	02/24/2021
/Sales Order 100554929 / Shipment 823396821 /							
80	9595	STUD 5/8 IN X 5-1/4 IN \ 5 IN FTF B7M BLACK ALLOY STEEL STUD ONLY ASTM A193 11 TPI UNC	8.000	8.000	0	EA	02/24/2021
/Sales Order 100554929 / Shipment 823396821 /							
90	1096175	PIPE I 2 50 MM .344 IN 8.74 MM S160 SEAMLESS A/SA333 GR359 CSA CATEGORY II SINGLE RANDOM LENGTH BEVELED ENDS 2.375 IN 60.3 MM OD 7.47 LB/FT 11.11 KG/M CARBON STEEL HT# A11121	21.000	21.000	0	FT	02/24/2021
/Sales Order 100554929 / Shipment 823396826 /							
100	746890	PIPE G 2 50 MM .218 IN 5.54 MM S80 XS SEAMLESS SA333 GRI/6 CSA 290 CATEGORY II SINGLE RANDOM LENGTH BEVELED ENDS 2.375 IN 60.3 MM OD 5.03 LB/FT 7.48 KG/M CARBON STEEL HT# 25915K	21.000	21.000	0	FT	02/24/2021
/Sales Order 100554929 / Shipment 823396826 /							
110	11710	THREADOLET U 1 IN X 4 IN - 5 IN CLASS 3000 A/SA350 LF2 CLASS 1 FORGED LOW TEMP CARBON STEEL BLACK MSS SP-97 HT# 50733	2.000	2.000	0	EA	02/24/2021
/Sales Order 100554929 / Shipment 823396826 /							
120	1103559	ELBOW I 1 IN 90 DEGREE CLASS 3000 THREADED LF2 CLASS 1 A/SA350 ASME B16.11 FORGED CARBON STEEL FOR LOW TEMPERATURE SERVICE NACE HT# 4800 34	2.000	2.000	0	EA	02/24/2021

Questions: DNOW Canada ULC ROCKY MOUNTAIN HOUSE AB Phone: (403)845-2445

** HAZARDOUS MATERIAL D.O.T. 24 HOUR EMERGENCY RESPONSE NUMBER: 1-888-298-2344 (ACCESS CODE # 333386)**

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21-102

Item	Mat#	Description	Qty	ShipQty	BO Qty	UM	ExpDel
/Sales Order 100554929 / Shipment 823396826 /							
130	1103698	UNION I 1 IN CLASS 3000 THREADED LF2 CLASS 1 A/SA150 MSS SP-83 FORGED STEEL FOR LOW TEMPERATURE SERVICE NACE	1.000	1.000	0	EA	02/24/2021
/Sales Order 100554929 / Shipment 823396826 /							
140	9130	VLV BL FLTG 1 IN THD 3000 RP 3 PC LF2 / NUTRON 5AT3R10S30IZ	1.000	1.000	0	EA	02/24/2021
/Sales Order 100554929 / Shipment 823396826 /							
150	8941	NIPPLE 1 IN X 6 IN XS THREADED BOTH ENDS SEAMLESS 6 A333 LOW TEMPERATURE CARBON STEEL NACE	2.000	2.000	0	EA	02/24/2021
/Sales Order 100554929 / Shipment 823396826 /							
160	8939	NIPPLE 1 IN X 4 IN XS THREADED BOTH ENDS SEAMLESS 6 A333 LOW TEMPERATURE CARBON STEEL NACE	2.000	2.000	0	EA	02/24/2021
/Sales Order 100554929 / Shipment 823396826 /							
170	1096154	PIPE I 1 25 MM .179 IN 4.55 MM S80 XS SEAMLESS A333 CSA 290 CATEGORY II SINGLE RANDOM LENGTH PLAIN ENDS 1.315 IN 33.4 MM OD 2.17 LB/FT 3.24 KG/M CARBON STEEL	21.000	21.000	0	FT	02/24/2021
/Sales Order 100554929 / Shipment 823396826 /							
180	136772	KIT FLANGE ISOLATION 2 IN TYPE F RAISED FACE CLASS 600 G10 RETAINER PTFE SEAL G10 SLEEVES DOUBLE G10 WASHERS ZINC PLATED STEEL WASHERS PSI LINEBACKER	1.000	1.000	0	EA	02/24/2021
/Sales Order 100554929 / Shipment 823396826 /							
190	763704	FLANGE SPECTACLE BLIND 2 IN CLASS 600 RAISED FACE A516 70N CARBON STEEL ASME B16.48 FIGURE 8	1.000	1.000	0	EA	02/24/2021
/Sales Order 100554929 / Shipment 823396826 /							

Questions: DNOW Canada ULC ROCKY MOUNTAIN HOUSE AB Phone: (403)845-2445

** HAZARDOUS MATERIAL D.O.T. 24 HOUR EMERGENCY RESPONSE NUMBER: 1-888-298-2344 (ACCESS CODE # 333386)**

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Item	Mat#	Description	Qty	ShipQty	BO Qty	UM	ExpDel
200	781535	GASKET SPIRAL WOUND CGI/WRI 2 IN CLASS 300-600 316L STAINLESS STEEL WINDING FLEXIBLE GRAPHITE FILLER 316L STAINLESS STEEL INNER RING CARBON STEEL OUTER RING ASME B16.20 /Sales Order 100554929 / Shipment 823396826 /	2.000	2.000	0	EA	02/24/2021
210	1075340	FLANGE THREADED I 2 IN CLASS 600 RAISED FACE A/SA350 LF2 CLASS 1 LOW TEMPERATURE CARBON STEEL ASME B16.5 NACE /Sales Order 100554929 / Shipment 823396826 /	1.000	1.000	0	EA	02/24/2021
220	781535	GASKET SPIRAL WOUND CGI/WRI 2 IN CLASS 300-600 316L STAINLESS STEEL WINDING FLEXIBLE GRAPHITE FILLER 316L STAINLESS STEEL INNER RING CARBON STEEL OUTER RING ASME B16.20 /Sales Order 100554929 / Shipment 823396826 /	5.000	5.000	0	EA	02/24/2021
230	781535	GASKET SPIRAL WOUND CGI/WRI 2 IN CLASS 300-600 316L STAINLESS STEEL WINDING FLEXIBLE GRAPHITE FILLER 316L STAINLESS STEEL INNER RING CARBON STEEL OUTER RING ASME B16.20 /Sales Order 100554929 / Shipment 823396826 /	4.000	4.000	0	EA	02/24/2021
240	728223	GASKET RING TYPE JOINT R24 316 STAINLESS STEEL OVAL API6A B16.5 MSS SP44 /Sales Order 100554929 / Shipment 823396826 /	1.000	1.000	0	EA	02/24/2021
250	46020	NUT HEX 5/8 IN 2HM ASTM A194 /Sales Order 100554929 / Shipment 823396826 /	80.000	80.000	0	EA	02/24/2021
260	5357	NUT HEX 7/8 IN GRADE 2HM CARBON STEEL /Sales Order 100554929 / Shipment 823396826 /	16.000	16.000	0	EA	02/24/2021
270	46020	NUT HEX 5/8 IN 2HM ASTM A194 /Sales Order 100554929 / Shipment 823396826 /	16.000	16.000	0	EA	02/24/2021
280	5383	STUD 7/8 IN X 6-1/4 IN \ 6 IN FTF B7M BLACK ALLOY STEEL STUD ONLY ASTM	8.000	8.000	0	EA	02/24/2021

Questions: DNOW Canada ULC ROCKY MOUNTAIN HOUSE AB Phone: (403)845-2445

** HAZARDOUS MATERIAL D.O.T. 24 HOUR EMERGENCY RESPONSE NUMBER: 1-888-298-2344 (ACCESS CODE # 333386)**

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Item	Mat#	Description	Qty	ShipQty	BO	Qty	UM	ExpDel
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K193-9-TPI-UNC

/Sales Order 100554929 / Shipment 823396826 /

Subject to Terms on Back Payment Terms: Net 30 days Delivery Terms: EXW FROM PLANI Currency: CAD

DELIVERY ON TIME? YES ☐ NO ☐ / DELIVERY ACCURATE? YES ☐ NO ☐

X

Signature

Print Name Here

Date

GST Registration# R121684302

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21 - 102

Questions: DNOW Canada ULC ROCKY MOUNTAIN HOUSE AB Phone: (403)845-2445

** HAZARDOUS MATERIAL D.O.T. 24 HOUR EMERGENCY RESPONSE NUMBER: 1-888-298-2344 (ACCESS CODE # 333386)**

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Packing Slip 312308990



21-102

Customer PO	Sales Order 100554929	Shipment Refer to Item	Packing Slip	**** THIS IS NOT AN INVOICE DO NOT PAY FROM THIS DOCUMENT	Date: 02/26/2021
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Bill to I3 ENERGY CANADA LTD. AFP - OPEN INVOICE 4600, 888 - 3RD STREET SW CALGARY AB T2P 5C5	Ship To I3 ENERGY CANADA LTD. AFP - OPEN INVOICE 4600, 888 - 3RD STREET SW CALGARY AB T2P 5C5	Interim Ship To
--	--	------------------------

Item	Mat#	Description	Qty	ShipQty	BO Qty	UM	ExpDel
10	1217415	ELBOW I 3 IN 90 DEGREE CLASS 3000 THREADED LF2 CLASS 1 A/SA350 ASME B16.11 LOW TEMPERATURE FORGED CARBON STEEL NACE /Sales Order 100554929 / Shipment 823401978 / Heat Code: B30A7	2.000	2.000	0	EA	02/25/2021
20	14126	NIPPLE 3 IN X 4 IN XS THREADED BOTH ENDS SEAMLESS 6 A333 LOW TEMPERATURE CARBON STEEL NACE /Sales Order 100554929 / Shipment 823401978 / Heat Code: 87ZE	4.000	4.000	0	EA	02/25/2021
30	900780	GASKET SPIRAL WOUND CGI/WRI 6 IN CLASS 150 316L STAINLESS STEEL WINDING FLEXIBLE GRAPHITE FILLER 316L STAINLESS STEEL INNER RING CARBON STEEL OUTER RING /Sales Order 100554929 / Shipment 823401978 /	1.000	1.000	0	EA	02/25/2021
40	94270	THREADED U 1 IN X 4 IN - 5 IN CLASS 3000 A/SA350 LF2 CLASS 1 FORGED LOW TEMP CARBON STEEL BLACK MSS SP-97 /Sales Order 100554929 / Shipment 823402044 /	1.000	1.000	0	EA	02/25/2021
50	89326	NIPPLE 1 IN X 4 IN - 5 IN THREADED BOTH ENDS SEAMLESS 6 A333 LOW TEMPERATURE CARBON STEEL NACE /Sales Order 100554929 / Shipment 823402044 /	1.000	1.000	0	EA	02/25/2021
60	3410726	ELBOW I 3 IN 90 DEGREE CLASS 3000 THREADED LF2 CLASS 1 A/SA350 ASME B16.11 LOW TEMPERATURE FORGED CARBON STEEL NACE /Sales Order 100554929 / Shipment 823401978 / Heat Code: B30A7	3.000	3.000	0	EA	02/25/2021

Questions: DNOW Canada ULC ROCKY MOUNTAIN HOUSE AB Phone: (403)845-2445

** HAZARDOUS MATERIAL D.O.T. 24 HOUR EMERGENCY RESPONSE NUMBER: 1-888-298-2344 (ACCESS CODE # 333386)**

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Item	Mat#	Description	Qty	ShipQty	BO Qty	UM	ExpDel
70	5383	BUTTWELD SEAMLESS WPL6 A/SA420 ASME B16.9 LOW TEMPERATURE CARBON STEEL /Sales Order 100554929 / Shipment 823402044 / 823402044 IN 2 IN 90 DEGREE LONG RADIUS BLACK ALLOY STEEL STUD ONLY ASTM A193 9 TPI UNC /Sales Order 100554929 / Shipment 823402044 /	8.000	8.000	0	EA	02/25/2021
80	5357	WPL6 A/SA420 WPL6 A/SA420 IN 2 IN 90 DEGREE LONG RADIUS /Sales Order 100554929 / Shipment 823402044 /	16.000	16.000	0	EA	02/25/2021
90	728223	GASKET RING W/PT JOINT R24 316 STAINLESS STEEL OVAL API6A B16.5 MSS SP44 /Sales Order 100554929 / Shipment 823402044 /	1.000	1.000	0	EA	02/25/2021
100	11208	BOLT V 1 X 3/8 RD W/4 NUTS BLK / CCTF E1475 /Sales Order 100554929 / Shipment 823402044 /	1.000	1.000	0	EA	02/25/2021
110	10394	CLAMP PIPE 2 IN CARBON STEEL 60/212/31 BLACK 2 BOLT 2-PIECE /Sales Order 100554929 / Shipment 823402044 /	2.000	2.000	0	EA	02/25/2021
120	5726	STUD 3/4 IN X 4-1/4 IN \ 4 IN FTF B7M BLACK ALLOY STEEL STUD ONLY ASTM A193 10 TPI UNC /Sales Order 100554929 / Shipment 823402044 /	8.000	8.000	0	EA	02/25/2021
130	5241	NUT HEX 3/4 IN 2HM ASTM A194 /Sales Order 100554929 / Shipment 823402044 /	16.000	16.000	0	EA	02/25/2021
140	5883	COUPLER QUICK CONNECT 3 IN SAE FEMALE NPT ALUMINUM PART D 30D-ALUM-B /Sales Order 100554929 / Shipment 823402044 /	2.000	2.000	0	EA	02/25/2021
150	1016550	EBON 1 2 IN 90 DEGREE LONG RADIUS S160 BUTTWELD SEAMLESS WPL6 A/SA420	3.000	3.000	0	EA	02/25/2021

Questions: DNOW Canada ULC ROCKY MOUNTAIN HOUSE AB Phone: (403)845-2445

RHINED NOP
Page 2 of 3

** HAZARDOUS MATERIAL D.O.T. 24 HOUR EMERGENCY RESPONSE NUMBER: 1-888-298-2344 (ACCESS CODE # 333386)**

02/26/2021 08:07:46

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Packing Slip 312308990



Item	Mat#	Description	Qty	ShipQty	BO	Qty	UM	ExpDel
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ASME B16.9 LOW TEMPERATURE CARBON STEEL

/Sales Order 100554929 / Shipment 823402045 /

160	ZMIL	HOSE 3 IN X 14 FT M X M CAMLOK ENDS	1.000	1.000	0	EA	02/25/2021
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GRN

/Sales Order 100554929 / Shipment 823402045 /

170	ZFLG	FLG 6 IN 150 RF HUB BLD FLG TAP 3 IN	1.000	1.000	0	EA	02/25/2021
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NPT

LF2

/Sales Order 100554929 / Shipment 823402686 /

Subject to Terms on Back Payment Terms: Net 30 days Delivery Terms: EXW FROM PLANT Currency: CAD

DELIVERY ON TIME? YES ☒ NO ☐ / DELIVERY ACCURATE? YES ☐ NO ☐

X

Signature

Print Name Here

Date

GST Registration# R121684302

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Questions: DNOW Canada ULC ROCKY MOUNTAIN HOUSE AB Phone: (403) 845-2445

** HAZARDOUS MATERIAL D.O.T. 24 HOUR EMERGENCY RESPONSE NUMBER: 1-888-298-2344 (ACCESS CODE # 333386)**

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Page 3 of 3

02/26/2021 08:07:46

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Friedrich Geldbach GmbH
Bergmannstr. 170
45886 Gelsenkirchen - Deutschland
Telefon: +49 (0)209 170990 - Telefax: +49 (0)209 1709955
E-Mail: info@geldbach.de

A01

COMPANY WITH
MANAGEMENT SYSTEM
CERTIFIED BY TÜV NORD
= DIN EN ISO 9001 : 2015 =

ABNAHMEPRÜFZEUGNIS - INSPECTION CERTIFICATE EN 10204:2004 / 3.1 A02 Nr^{A03} 2019-C_FG-00487 Datum / Dated 16.04.2019 Z02

Distribution NOW CANADA ULC P.O. BOX 4395 STATION C T2T 5N2 CALGARY, ALBERTA CA	Kd.-Auftr. / PO 25974007 Pos. 0350 Lieferschein / Delivery note 2019-18E31-1930365 Packliste / Delivery note 2019-18E41-1940352 Rechnung / Invoice 2019-18E41-1940352 Unser Auftrag / Our ref. 2018-18E21-1820288-0031
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Kunde UMB CA AB EDMONTON DC
DNOVA CANADA ULC - 2603 76 AVE NW
T6P 1P6 EDMONTON (AB)
CA

Chargen code ^{B07} Heat Code	Charge ^{B07} Heat Nr	Menge ^{B08} Quantity	Artikelbezeichnung ^{B01 - (B09 - B11)} Description
	18/37717	441,00	W/N 600 RF 2" S-160 LF2 CL1

Material gemäß / Mat. In acc. to^{B02} ASTM A 350M -18, ASME SA 350 M - 17, ASME CODE SECT. II, PART A, ED. 2017
ASTM A350 LF2 CL1
NACE MR-0175/2015 ISO 15156
NACE MR0103 / ISO17945-1:2015
Q.A.S. IN ACCORD. WITH PRESS. EQUIPM. DIRECT. 2014/68/EU (PED) ANNEX I, PARAGRAPH 4.3

Elemente / Elements ^(C71 - C92)	C	Si	Mn	S	P	Cr	Ni	Mo	Ti	Cu	V	Nb	N
LADLE ANALYSIS	0,195	0,250	1,050	0,008	0,015	0,110	0,050	0,010	0,016	0,120	0,004	0,001	0,009
	Al								CE LF	CE SF	F1	F2	PREN
LADLE ANALYSIS	0,026								0,406	0,370	0,294	0,120	-

CE LF = C + Mn / 6 + (Cr + Mo + V) / 5 + (Ni + Cu) / 15 CE SF = C + (Mn / 6) F1 = Cu + Ni + Cr + Mo + V F2 = Cr + Mo

Probe ^{C10}	Form ^{C10}	°C ^{C03}	Streckgrenze > 0,2% ^{C11}	Streckgrenze > 1,0% ^{C11}	Zugfestigkeit ^{C12}	Dehnung ^{C13}	Einschnürung ^{C15}
Test specimen	Shape		Yield Strength > 0,2%	Yield Strength > 1,0%	Tensile	Elongation	Reduction of area
Sez/Sect mm ²	L mm	1=O - 2=□	MPa	MPa	MPa	%	%
126,60	50,80	1	333,0	-	541,0	29,5	69,0

HÄRTE / HARDNESS C22		KERBSCHLAG / IMPACT TEST					
HBW	Typ/Type C40	Probe / Test Specimen	°C C03	1-Joule C42	2-Joule C42	3-Joule C42	Mittelw. / Average C43
155,0 - 161,0	KV	10x10 mm	-50	71	89	66	75,3

Wärmebeh. / Heat treatment ^{C70}	NORMALIZED AT 910 °C - COOLED IN STILL AIR	ELECTRIC FURNACE
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Abm. gem. / Dim. acc. to ^{B14}	ASME/ANSI B16.5-2017, ASME/ANSI B36.10M-2015, ASME/ANSI B16.25-2017
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Ausführung / Roughness	125/250 MICROINCH AARH
------------------------	------------------------

Stempelung gem. ^{B06} Marking in acc. to	MSS SP25 Ed. 2013	Maß & Sichk Vis. & Dim.	SATISFACTORY	Herkunft Origin of Steel	EUROPEAN UNION
--	-------------------	----------------------------	--------------	-----------------------------	----------------

Bemerkung / Notes 100% MANUFACTURED IN GERMANY
MANUFACTURING IN ACCORDANCE WITH ORDER AND SPECIFICATION

QUALITÄTSKONTROLLE
QUALITY CONTROL DEPARTMENT A05

Tim Scheideler

WERKSACHVERSTÄNDIGER (ZEICHEN TS)
INSPECTION AUTHORITY Z03

TS

HERSTELLERZEICHEN
MANUFACTURER'S SYMBOL A04

F

CLIENTE / Customer
nt
DNOV CANADA ULC
P.O. BOX 4395 STATION C
CALGARY, ALBERTA
CANADA T2T 5N2
CAN

CERTIFICADO DE INSPECCION

Inspection Certificate - Certificat de Réception

UNE EN 10204-06 / 3.1
ISO 10474:15 / 3.1

FECHA: 18/09/2019
Date: 18/09/2019
N.º 205607
No. 205607
HOJA: 4
Page: 4

FLANGES

SU PEDIDO N.º
Your Order No. 26070607
Votre Cde. N.º

DE 02/07/2019
of - de 02/07/2019

ASME B16.5-17

NORMAS APLICABLES
Requirements - Normes Applicables

MATERIAL CORRESPONDIENTE **ASME SA350LF2CL1-2-17, ASTM A350LF2CL1-2-18**

NACE MR0175/ISO15156-02/03-15 & NACE MR0103/ISO17495-15
Clause 7.2.1.4, Annex A.2 and SSC Region 3.
CSA-Z245.12-17 GR290 CAT II-SS (WN & BLIND FLANGES ONLY)

QUALITY ASSURANCE

DEPARTAMENTO
Section
Département

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	LOTE	OBSERVACIONES Remarks Observations (*)	COLADA N.º Heat No N.º Coulée	RESISTENCIA T. Strength Resist Rupt N/mm2	LIMITE ELAST. Y. Strength 0.2 % N/mm2	ALARGAM. Elongation Allongement Lo-50mm/4d %	ESTRICCION Red. Area Striction %	RESILIENCIA Impact test Résilience		CHАРPY V 10x10mm	PROBETA - SPECIAL MEDIA Average Moyenne	
										Joules	°C		°C	
60 1076111	46	WN 2 1500LB XS/80 RTJ A350LF2	01G922	NE	H0AV8	507	331	34,14	70,78	115	43	38	65	-50

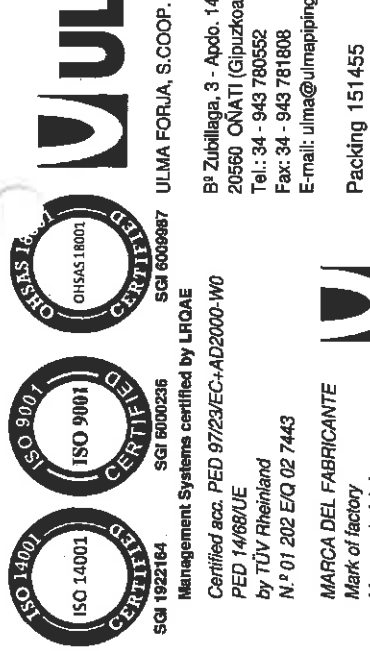
COMPOSICION QUIMICA - STEEL MAKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE

COLADA N.º Heat No Ladle: L Product: P	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	Al %	Ti %	B %	CEq %
H0AV8 L	0,200	0,230	1,130	0,004	0,005	0,071	0,065	0,014	0,002	0,004	0,130	0,024	0,001	0,0004	0,42
H0AV8 P	0,199	0,232	1,120	0,003	0,004	0,069	0,066	0,015	0,001	0,003	0,140	0,025	0,002	0,0003	0,42

(*) OBSERVACIONES:

Remarks
Observations

N_NORMALIZED ABOVE 900°C AND COOLED UNIFORMLY IN STILL AIR



21-102

EL INSPECTOR
Works Inspector - L'inspecteur
ULMA
ULMA FORJA S.COOP.
Dpto. de Garantía de calidad
Quality Assurance Dept.

- Las dimensiones y la condición superficial se hallaron satisfactorias.
- Dimension and surface condition were found acceptable.
- Les dimensions et états de surface sont satisfaisants.
- Los materiales citados cumplen las normas aplicables.
- Manufacturing requirements are satisfied.
- Les normes applicables sont respectées.



R.N.GUPTA & COMPANY LIMITED

C-55, FOCAL POINT, LUDHIANA-141010 (INDIA)

METALLURGICAL TEST REPORT

AS PER DIN EN10204-3.1

F-MTR-02-00



INV. No. & DATE:- RNG/EXP/19-2422 DT.13/02/2020

P.O. No. :- 103119ARG

MTR No. & DATE:- 6740 DT.13/02/2020

SPECIFICATION:- ASTM A350, LF2 CL1 /

ASME SA350, LF2 CL1 /

ASTM A105-18/ASME SA105-17 /

CSA Z245.12-17 CATII M46C Grade 248

CUSTOMER:- ALLIED FITTING L.P.

ITEM No.	ITEM DESCRIPTION	MILL HEAT NO.	RNG HEAT CODE	QUANTITY (Nos.)	DIMENSIONAL STD.
1	2 300# WNRF XH LF2 Q6WRX2-RG	914065	LH7082	3000	ASME B 16.5
2	3 600# WNRF XH LF2 Q6WRX3-RG	4923556	LH7085	800	ASME B 16.5

1) CHEMICAL COMPOSITION

ELEMENTS		%C	%Mn	%S	%P	%SI	%Cr	%Ni	%V	%Mo	%Cu	%Nb	%B	%Pb	%CE (IIV)	%CE (CSA)
SPECIFIED (LADLE ANALYSIS)	MINIMUM	0.23	1.35	0.040	0.035	0.30	0.30	0.40	0.08	0.12	0.40	0.02	0.001	0.010	0.43	0.41
	MAXIMUM	0.23	1.35	0.040	0.035	0.30	0.30	0.40	0.08	0.12	0.40	0.02	0.001	0.010	0.43	0.41
OBSERVED (LADLE ANALYSIS)	Item 1	0.20	1.17	0.009	0.021	0.21	0.031	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.402	0.411
	Item 2	0.19	1.23	0.011	0.018	0.25	0.010	0.01	0.001	0.002	0.008	0.0013	0.0004	0.001	0.399	0.405
SPECIFIED (PRODUCT ANALYSIS)	MINIMUM	0.23	1.35	0.040	0.035	0.30	0.30	0.40	0.08	0.12	0.40	0.02	0.001	0.010	0.43	0.41
	MAXIMUM	0.23	1.35	0.040	0.035	0.30	0.30	0.40	0.08	0.12	0.40	0.02	0.001	0.010	0.43	0.41
OBSERVED (PRODUCT ANALYSIS)	Item 1	0.20	1.09	0.006	0.021	0.25	0.006	0.002	0.003	0.002	0.004	0.006	0.0004	0.0060	0.388	0.398
	Item 2	0.20	1.20	0.005	0.016	0.26	0.008	0.004	0.003	0.003	0.006	0.005	0.0002	0.0060	0.403	0.412

2) MECHANICAL PROPERTIES

SPECIFIED		YIELD STRENGTH MIN (Mpa.) (0.2% offset)	TENSILE STRENGTH (Mpa.)	PERCENTAGE ELONGATION MIN (2 inch)	PERCENTAGE REDUCTION AREA MIN	HARDNESS (HBW)
		250 Mpa	485-655	22%	30%	137 - 197 (HBW)
OBSERVED	Item 1	346.315	523.435	34.5	68.753	148-148
	Item 2	346.263	534.104	31.1	62.438	148-180

3) IMPACT TEST CHARPY 'V' NOTCH

SPECIFIED		SPECIMEN SIZE	TEST TEMP.	LATERAL EXPANSION	PERCENT SHEAR	ABSORBED ENERGY	AVERAGE
		(10X10X55) MM	- 46°C	(3 SPECIMENS)	(3 SPECIMENS)	(3 SPECIMENS)	27 (J) MIN (INDIVIDUAL 20 J MIN)
OBSERVED	Item 1	(10X10X55) MM	- 46°C		63% 62% 59%	60J 62J 58J	60.0J
	Item 2	(10X10X55) MM	- 46°C		51% 60% 55%	68J 60J 74J	67.33J

4) HEAT TREATMENT DETAILS

PROCESSES	SPECIFIED TEMP°F	PROCESS TEMP°C		SOAKING TIME (Minutes)		HEAT TREATMENT		
		Item 1	Item 2	Item 1	Item 2	Item 1	Item 2	
NORMALISING	1680-1725	1700+/-15	1700+/-15	60	75	NORMALIZED		
QUENCHING	1600-1700							
TEMPERING	1100 MIN.							

REMARKS :-

1. Certified that the Material is accordance with NACE MR0175/ISO15156-2 and NACE MR 0103.
2. Certified that the Material is free from Mercury contamination & No Mercury bearing equipment used during manufacturing.
3. Certified that a piece is tested from actual heat treated and production lot.

PREPARED BY

 CHEMIST

APPROVED BY

 METALLURGIST



CapProducts, Ltd.
25 Winnipeg St
Vancouver, ON N0M 1L0

Phoenix * Capitol * Camco
CapProducts

Certified Material Test Report

Commanding a Higher Standard

Printed: 10/13/2020

Certified: 03/06/2020

Customer

P.O. 26214872

Heat No 617308

DistributionNOW (DNOV)

Tag 8939

Heat Code 87SR

(formerly CE Franklin)

Phoenix Order # 1572169

ACCOUNTS PAYABLE

Material ASTM A333 GR6 2015/ASME SA333 GR6 2015 Edition

PO BOX 4395 STATION C

Part Number

Description

15111008CSA

1 X 4" XHSML BLK NIPL A333-GR6 CSA

Chemical Properties

C	Mn	P	S	Si	Cu	Ni	Cr	C Eq. Long	
0.1400	0.7500	0.0080	0.0010	0.2030	0.1100	0.0900	0.1500	0.3145	

Mo	V	Co	Al	Nb	N	Pb	Sn	Ta	Ti
0.0300	0.0010			0.0150					0.0020

Additional Chemical Properties

B				
0.00010				

Cr + Cu + Ni
0.3500

Mechanical Properties

Tensile (PSI)	Yield (PSI)	Elong. % in 2 in. or 4D	R of A	HBW	HBW2
73,824	56,565	46.0%	0.0%	150	0

Charpy Minimum Impact - ft/lbs

Test 1	Test 2	Test 3	Average	Test Temp.
99	99	99	99.00	-62

* Hydro test passed. at 3000 psi.

* Bend test passed.

We hereby certify that these parts were manufactured, sampled, tested, and inspected in accordance with the product specifications stated and were found to meet the requirements.

We further certify that this material was inspected using independent inspectors conforming to the requirements of EN 10204 3.1. These products meet the requirements of the latest editions of NACE MR0175, NACE MR0103, and ISO 15156. No weld repair has been performed on these products. This material was not exposed to mercury or any other metal alloy that is liquid at ambient temperatures during processing or while in our possession.

Comments:

Flattening test passed.

Charpy V Impact Tested at -62° C. Specimen size - 10 x 2.5 mm.

Normalized



21-102

763904

Material Test Report

GENERAL INFORMATION

REPORT NUMBER	38,203	DATE	November 20, 2020 15:31
DESCRIPTION	2" 600# SPECS PADDLES SPACERS	HEAT TREATMENT	NORM
LONG DESCRIPTION		TEMPERATURE / TIME	
MATERIAL SPECIFICATION	A/SA 516-70N	MATERIAL	A/SA 516-70N
DESIGN	B16.48 2015	CRN	087771.5CR1
YEAR OF REVISION		COMMENT	
NACE	NACE MR0103-15/ MR0175 ISO 15156-2-17	ADDITIONAL COMMENT	

CHEMICAL ANALYSIS

Heat Code	PZN	Heat Number	6453G5-BS3581B											
C	MN	P	S	SI	CU	NI	CR	MO	V	AL	TI	CB/NB	N	B
0.1900	1.1000	0.0120	0.0050	0.3210	0.0300	0.0200	0.0300	0.0000	0.0000	0.0290	0.0040	0.0000	0.0000	0.0001

CARBON EQUIVALENCY FORMULA USED

$$C + (Mn/6) + (Cr + Mo + V)/5 + (Ni + Cu)/15$$

CE = 0.3827

MECHANICAL TESTS

YIELD PSI	49000	TENSILE PSI	73000
ELONGATION	51.0% @ 2	REDUCTION OF AREA	
SIZE	1/2" THK	BRINELL HARDNESS (AVG. RANGE)	146

CHARPY IMPACT TEST

INDIVIDUAL VALUES	(V1) ft/lbs	(V2) ft/lbs	(V3) ft/lbs
-50 F	90	91	105

TEST SPECIMEN SIZE

This Material Test Report meets DIN 50 049/EN 10 204 3.1.8 Standard 2004

Revised: 1, 2020-11-20

We hereby Certify that the material described has been tested in accordance with the specifications, and the results are correct as contained in the records of the Company.

Lisa Blidnes
Q.A. Manager

SARNIA, ONTARIO
645 Kedco St. Sarnia, ON, N7T 7H5
TOLL FREE 1-866-511-1381

EDMONTON, ALBERTA
3911 - 76th Ave. Edmonton, AB, T6B 2S8
TOLL FREE 1-877-465-0303

HOUSTON, TEXAS
12107-2 Old Huffmeister Rd. Cypress, TX, 77429
TOLL FREE 1-855-539-7016



ISO 9001:2015

TRILAD Flanges and Fittings, Inc.

172 Turbo Drive
 Sherwood Park, AB, CANADA T8H 2J6
 (PHONE) 780-464-7774
 (FAX) 780-464-0044
www.tri-lad.com

CERTIFIED MATERIAL TEST REPORTCertificate No. **20362418**

EN 10204 3.1

Date of Report **9/02/2020**

Customer
ALLIED EDMONTON - CAD\$
172 TURBO DRIVE
SHERWOOD PARK

AB T8H 2J6

Customer Order No.
742066-2Quantity **72**

Tri-Lad Order No. Line No.
267478 6

Specification A350-18/SA350 2019 ED LF2 CL1 <16 IPS-FL-A350 RO		Heat Treatment NORMALISED	
Item Description 2 600 THD RF (875709) Q6TR2-TL		Temperature Init 1706 F 930 C	
Shop Order/Trace No.		Time N=1.15HRS	Lot Definition
Lot No.			
Heat Code TL10030685			
C.E. .42	Melt Practice EF		

Chemical Composition										
Heat Product	C .19	Mn 1.18	P .026	S .017	Si .23	Cu .11	Ni .03	Cr .12	Mo .01	V .00
Heat Product	Nb .00									
Heat Product										

Mechanical Properties										Shear Fracture
Yield	Tensile	Elongation	Reduction of Area	Hardness	Impact Test Temperature	Impact Values				
Ksi 52	Ksi 74	37 %	68 %	HBW 143	M50 F	Ft-lbs 111	103	111		
Mpa 359	Mpa 513			HBW 153	M46 C	Joules 150	140	150		
Tensile Specimen		STD RD								
Lateral Expansion		Impact Type	Impact Orientation		Starting Material		Impact Specimen			
		VNOTCH	TANGENTIAL				FULL SIZE			

Notes

Cu+Ni+Cr+Mo < 1.00% 0.27
 Cr+Mo < 0.32% 0.13
 Cu+Ni+Cr+Mo+V < 1.00% 0.27
 C/Mn ratio > 3.0 6.38
 CE(HEAT) C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15 0.42
 CSA Z245.12-17 Gr 248 Cat II SS
 A105-18/SA105-17 A105N
 Visual & dimensional inspection: ACCEPTABLE
 Fully killed, fine grain practice
 NACE MR0103/ISO17945:2015
 NACE MR0175/ISO15156:2015

Material is in accordance with the latest edition of the applicable Standard to which it is ordered including:
 ASME Sect II, ASME B16.5, B16.9, B16.36, B16.47, CSA, MSS, AWWA C-207.

NO WELD REPAIR

Material conforms to both ASTM (A) and ASME (SA) applicable specifications.

We hereby certify that all information presented on this CMTR conforms to the above specification.

We hereby certify the results to be a true copy of the records of the company.

Troy Gorrell
 Troy Gorrell
 Q.C. Inspector


Inspection certificate "3.1" (EN 10 204)
Document No.: 51811/20
Page: 1/1

A07	Customer's Order (P.O.) No./Item No.: 10116177/26163113								A08	Manufacturer's Works Order No.: 73430/0/20																
A11	Supplier's Order No.: 3151012878								A10	Advice - Note No.: 8150060188																
B06, B12/13	Quantity delivered: B13 Actual mass <table border="1" style="width: 100%;"> <tr> <td>pcs</td> <td>mtrs</td> <td>kgs</td> </tr> <tr> <td>bcls</td> <td>feet</td> <td>lbs</td> </tr> <tr> <td>76</td> <td>2971.608</td> <td>4930</td> </tr> </table>								pcs	mtrs	kgs	bcls	feet	lbs	76	2971.608	4930	A06	Customer / Consignee: ArcelorMittal Projects Americas LLC 19500 State Highway 249, Suite 650 77070 Houston, TX USA							
pcs	mtrs	kgs																								
bcls	feet	lbs																								
76	2971.608	4930																								
B09-11	Dimensions: 2.375 x 0.154"																									
B02	Steel designation: Grade B Grade 290Cat.I																									
B01, B03, B04	Product, conditions and terms of delivery: Seamless steel pipes acc. to ASME B36.10M-18, / ASTM A106/A106M-19 / ASME SA106/SA106M-19 / CSA Z245.1-2018 / ANSI/NACE MR0175/ISO 15156-15 / ANSI/NACE MR0103/ISO 17945-15, with beveled ends acc. to API 5L, protected with plastic caps, surface lacquered. Hot finished as rolled. Certified acc. to EN 10204/3.1-2004.																									
A04, B06	Marking: Manufacturer's mark, mill inspector's stamp 1 3																									
C71-92	Heat (H) and product (P) chemical analyses (%)																									
B07	Heat No.:	C	MN	SI	P	S	CU	NI	CR	MO	V	TI	NB	B	CEQ	CE										
	25915K H	0.14	1.23	0.304	0.008	0.002	0.08	0.03	0.04	0.005	0.063	0.002	0.003	0.0002	0.37	0.35										
	P	0.14	1.23	0.297	0.008	0.002	0.08	0.03	0.03	0.006	0.062	0.002	0.002	<0.0000	0.37	0.35										
	25944K H	0.14	1.23	0.296	0.008	0.002	0.08	0.03	0.03	0.005	0.062	0.002	0.002	<0.0000	0.37	0.35										
	P	0.16	1.15	0.208	0.015	0.008	0.10	0.04	0.05	0.008	0.001	0.001	0.003	0.0001	0.38	0.36										
Z99																										
B07, C04	Test results:		psi		psi		% (2")		Y/T		C40-43 Impact test		HRB													
	Heat No.	Specimen No.	C11 Yield Point	C12 Tensile Strength	C13 Elongation	YP/TS	C40-43 Impact test		C30-32 Hardness																	
	Requirements:	Grade B Grade 290	min. 35000 min. 42100	min. 60000 min. 60100	min. 20.5 min. 21.0	max. 0.93	C40-43 Impact test		C30-32 Hardness																	
			Longitudinal strip specimen - 3/4"																							
	25915K	259	59901	78175	28.2	0.77									81.4											
	25944K	440	45107	70198	32.5	0.64									74.9											
Z99																										
D01	Visual and dimensional inspection with satisfactory results								X	D01 Hydrostatic test - min. test pressure psi / sec 3000 / 5																
C50	Flattening test - satisfactory									D02 The pipes tested on tightness by NDT																
C51	Expanding test - satisfactory									in acc. to																
C52	Bending test - satisfactory								X	D03 Nondestructive Testing Ultrasonic examination																
C53	Ring expanding test - satisfactory									notch 10% acc. to ASTM E213 - longitudinal +																
C54	Ring tensile test - satisfactory									transversal Imperfections - satisfactory																
The manufacturer has an established and certified management system according to ISO 9001:2015, ISO 14001:2015, ISO 50001:2011, ISO 45001:2018. MANUFACTURES OF BILLETS: LIBERTY OSTRAVA, Czech Republic PRESENTED DATA WAS CONVERTED FROM SI UNIT SYSTEM. Residual magnetic field [mT] max.3 - satisfactory Mn:C ≥ 3:1 STEEL IS FULLY KILLED 22 HRC = 99 HRB max.																										
Z01	All pipes conform to the above mentioned standards and ordering requirements and agreements.																									

Z02 Date of issue 21.7.2020/2R

Tel. ++420 595683644

 A01 Liberty Ostrava a.s.
 A05 QA Department
 Vratimovská 689/117
 719 00 Ostrava-Kunčice
 Czech Republic

 Liberty Ostrava a.s.
 Vratimovská 689/117, 719 00 Ostrava - Kunčice
 Rourvny

03:

Bc. Petr Pastucha

 Work's Inspector
 Z02 Validation

E.x. 2574/16/15/P

**MAHARASHTRA SEAMLESS LIMITED
WORKS (MILL) TEST CERTIFICATE**

EN 10234-1.1

Customer

P.O. No. **118802 DL 13-DEC-19**

W.O. No.

Specification

Processes/Types of Pipes

118982 DL 13-DEC-19

8180077

ASTM A 333 GR 6 (15) ASME SA 333 GR 6 (17) API 5L
GR X52N (12) CSA Z245.1 GR 354 CAT-II SS 18

Hot Finished Seamless Carbon Steel Pipes

11-11-68

Laurel Ridge (Fiber)

U.S. DEPARTMENT OF JUSTICE

Material Code

2.375 X 0.394

Part 12

2520 (13)

1000

Test Certificate No.

●

MSL-7/DC/2071K/2018

14-MAR-2020

A) CHEMICAL COMPOSITION (%) - Reference standard ASTM A-751 & ASTM E-415																					
Sl. No.	Heat No.	Test Unit	Analyst	C	Mn	Si	P	S	Cr	Mo	Ni	Cu	V	Nb	Ti	Nb+V+Ti	INb+V+Ti	CE (10W)	CE Pcm	CE Pcm	B) Special Supply, Remarks
Req.				0.242	0.22	0.103	0.025	0.016	0.304	0.127	0.402	0.060	0.020	0.0045	0.0016	0.156					
1	A11121	H		0.110	1.28	0.28	0.017	0.005	0.016	0.002	0.007	0.005	0.002	0.0045	0.0030	0.0085	0.0085	0.0002	0.0002	0.0002	
		P1		0.106	1.262	0.277	0.016	0.004	0.011	0.002	0.012	0.005	0.002	0.0045	0.0030	0.0085	0.0085	0.0002	0.0002	0.0002	
		P2		0.103	1.26	0.26	0.015	0.005	0.013	0.002	0.004	0.005	0.002	0.0045	0.0030	0.0085	0.0085	0.0002	0.0002	0.0002	

C) MECHANICAL PROPERTIES (%)																	
Sl. No.	Heat No.	Test Unit	Quantity	Name of the Steel Maker and address / Supplier Heat No.	YST (Psi)	UTS (Psi)	YSTRS EL(%)	Charpy (J)	CVN Impact (J)	Reference standard ASTM E-53	Through Wall Hardness (Pipe Body)	Hardness (HVN)	Transverse Fracture				
Req.					52200	66700	30		27 Joule								
1	A11121		120	JSP, Chattergarh / 3917996	57781	75787	0.78	32	270								
			2500		57772	75754	0.78	33	270								

Reference standard ASTM E-370 & E-4																	
Sl. No.	Heat No.	Test Unit	Quantity	Name of the Steel Maker and address / Supplier Heat No.	YST (Psi)	UTS (Psi)	YSTRS EL(%)	Charpy (J)	CVN Impact (J)	Reference standard ASTM E-53	Through Wall Hardness (Pipe Body)	Hardness (HVN)	Transverse Fracture				
Req.					52200	66700	30		27 Joule								
1	A11121		120	JSP, Chattergarh / 3917996	57781	75787	0.78	32	270								
			2500		57772	75754	0.78	33	270								

Reference standard ASTM E-578																	
Sl. No.	Heat No.	Test Unit	Quantity	Name of the Steel Maker and address / Supplier Heat No.	YST (Psi)	UTS (Psi)	YSTRS EL(%)	Charpy (J)	CVN Impact (J)	Reference standard ASTM E-53	Through Wall Hardness (Pipe Body)	Hardness (HVN)	Transverse Fracture				
Req.					52200	66700	30		27 Joule								
1	A11121		120	JSP, Chattergarh / 3917996	57781	75787	0.78	32	270								
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Reference standard ASTM E-578																	
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Sl. No.	Heat No.	Test Unit	Quantity	Name of the Steel Maker and address / Supplier Heat No.	YST (Psi)	UTS (Psi)	YSTRS EL(%)	Charpy (J)	CVN Impact (J)	Reference standard ASTM E-53	Through Wall Hardness (Pipe Body)	Hardness (HVN)	Transverse Fracture				
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Reference standard ASTM E-578																	
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1	A11121		120	JSP, Chattergarh / 3917996	57781	75787	0.78	32	270								
			2500		57772	75754	0.78	33	270								

Reference standard ASTM E-578																	
Sl. No.	Heat No.	Test Unit	Quantity	Name of the Steel Maker and address / Supplier Heat No.	YST (Psi)	UTS (Psi)	YSTRS EL(%)	Charpy (J)	CVN Impact (J)	Reference standard ASTM E-53	Through Wall Hardness (Pipe Body)	Hardness (HVN)	Transverse Fracture				
Req.					52200	66700	30		27 Joule								
1	A11121		120	JSP, Chattergarh / 3917996	57781	75787	0.78	32	270								
			2500		57772	75754	0.78	33	270								

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Req.					52200	66700	30		27								

2) Marking/Stamping: MARKING: MSL ASME (B31.10M) ASTM ASME A 53 A 333 GR. B1, CSA Z445.1 GR. 359 CAT-II SS M46C MIN., API 5L GR. X52N PSL-2 BE SMLS OD 2.375 INCH X WT 0.344 INCH X LENGTH (IN FEET) HFS HEAT NO. 3000 PSI INDE+WEIGHT=747 PPF-NORM+LT -46 DEG C+MADE IN INDIA+BHD FOR 11862+PIPE INO.

5) Remarks : Material conforms to NACE MR-0175/ISO 15156 NACE MR-0103 restricted to Sulphur contents 0.01% & Hardness 22 HRC max.

specimens : T-Transverse, L-Longitudinal, YST- Yield Strength, UTS- Ultimate Tensile Strength, EL- Elongation, CL- Gauge Length, H- Heat, P1- Product 1, P2- Product 2, R- As Rolled, Q- Quenched & Tempered, N- Normalized, NBT- Normalized & Tempered, NA- Not Applicable.

FOR MAHARASTRA SEAFISH LIMITED
R.K. SRIVASTAVA
Asst. ENGINEER (QC)

W.S.R.O.: Pipewar, Vill Sukal, N.H.17, S.K.G. Road, Rajgadh, Maharashtra-422128, phone-02194238511, 222810, Fax-238513
Warning: Modification or unauthorized use of this certification is strictly prohibited. Violation calls for criminal prosecution. For authenticity verification, you can contact

Rev 09 Date: 01/01/2020

HEAT: 50733 CCTF Sku: 7690201 1X4-5 3000 TOL A350LF2 Invoice: 2362979-00 PO: 26245339-AB39 1/13/21 11:10:49 AM



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LOG NO. F00000000139606

Page 2 of 4

BONNEY FORGE CORPORATION

P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17056-0330

(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906

www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

DATE 11/05/2020

CUSTOMER

BONNEY ORDER NO. B000281478

ORDER NO.: 4902339-00

SHIP TO: CCTF CORPORATION (EDMONTON)

5407 - 53RD AVE

EDMONTON AB T6B 3G2

Canada

950 11710

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO.	CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
5	250	50668	21/2-11/4 X 1 3M LF2 FLEX T	SA/A350 LF2 CL1
7690009			Al 0.024 C 0.200 Co 0.003 Cr 0.040 Cu 0.060 Mn 1.060 Mo 0.005 Nb 0.014 Ni 0.020 P 0.004 S 0.022 Si 0.230 V 0.004 CE(Long Formula) = 0.39 T/S(PSI) 72,915 Y/S(PSI) 49,908 EL(%) 35.00 RA(%) 59.53 Brinell Hardness 139 BHN 139 BHN Charpy -50 F 23/36/32 (Ft-Lbs) Average 30.30	
6	500	50733	5-4 X 1 3000 LF2 THRD T	SA/A350 LF2 CL1
7690201			Al 0.029 C 0.200 Co 0.003 Cr 0.010 Cu 0.140 Mn 0.950 Mo 0.023 Ni 0.080 P 0.010 S 0.024 Si 0.250 V 0.023 CE(Long Formula) = 0.42 T/S(PSI) 75,833 Y/S(PSI) 49,049 EL(%) 33.25 RA(%) 60.53 Brinell Hardness 147 BHN 147 BHN Charpy -50 F 36/38/35 (Ft-Lbs) Average 36.30	
7	127	50668	36-11/2 X 3/4 6000 LF2 FLEX T	SA/A350 LF2 CL1
7690114			Al 0.024 C 0.200 Co 0.003 Cr 0.040 Cu 0.060 Mn 1.060 Mo 0.005 Nb 0.014 Ni 0.020 P 0.004 S 0.022 Si 0.230 V 0.004 CE(Long Formula) = 0.39 T/S(PSI) 72,915 Y/S(PSI) 49,908 EL(%) 35.00 RA(%) 59.53 Brinell Hardness 139 BHN 139 BHN Charpy -50 F 23/36/32 (Ft-Lbs) Average 30.30	

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

by

Kylee Ruiz

Kylee Ruiz

QUALITY PROCESS MANAGER

CMTR: REV2

HEAT: 50733 CCTF Sku: 7690201 1X4-5 3000 TOL A350LF2 Invoice: 2362979-00 PO: 26245339-AB39 1/13/21 11:10:49 AM



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LOG NO. F00000000139606 Page 4 of 4

BONNEY FORGE CORPORATION

P O BOX 330 • 14495 CROGHAN PIKE • MOUNT UNION PA 17066 0233

(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4905

www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

DATE 11/05/2020

CUSTOMER

BONNEY ORDER NO. B000281478

ORDER NO.: 4902339-00

SHIP TO: CCTF CORPORATION(EDMONTON)

5407 - 53RD AVE

EDMONTON AB T6B 3G2

Canada

ITEM QUANTITY LOT NO.

GRADE OR SPECIFICATION NO
CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:

1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
2. CERTIFYING TO ASTM A350 LF2 18 REVISION / ASME SA350 LF2 2017 EDITION.
3. THE MATERIAL OF THE FITTINGS SUPPLIED IS ASTM A350-LF2 BUT MEETS THE REQUIREMENTS OF ASME SA350-LF2.
4. THE CHARPY V-NOTCH IMPACT TEST WAS PERFORMED AT -50 DEGREES FAHRENHEIT IN ACCORDANCE WITH A350-LF2.
5. THE MATERIAL SUPPLIED AS A350 LF2 CLI MEETS THE REQUIREMENTS OF BOTH NACE MRO103/ISO 17945 - 2015 & NACE MRO175/ISO 15156-2 - 2015 EDITION.
6. THE MATERIAL SUPPLIED WAS NORMALIZED IN ACCORDANCE WITH ASTM A350 HEAT TREATING REQUIREMENTS.
7. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204:2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
8. THE UNIT OF MEASURE FOR TENSILE AND YIELD (0.2%) STRENGTH ARE REPORTED IN PSI.
9. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

by

Kylee Ruiz
QUALITY PROCESS MANAGER

CMTR: REV2



Certificate of Conformance / Test Reports

For: DNOW LPDate: November 25, 2020Purchase Order: 661266984Sales Order: 3814454

Compliance: This is to certify that the items furnished against the above references are manufactured in accordance with Cameron Valves and Process Systems standard procedures and practices. Additionally, these items meet the requirements of NACE- MR-0175.

INCLUDED IN THIS CERTIFICATION:

10	EACH P/N	5A-T3R10S30LZ	BV R10 FNPT NUTRON T3 3000 WOG SOUR LT
----	----------	---------------	--

Work Order# 121590792 (10)

<u>Body Heat #</u>	<u>Cap Heat #</u>	<u>Stem Heat #</u>	<u>Ball Heat #</u>
371168	HR42	R9792	S14042

This certifies that the statement and values specified are true, correct and conform to the original data on file at Cameron Valves and Process Systems.

Karina Casas
Karina Casas
Quality Assurance



Teamco Industries Corporation

No.198, Shihhe Rd. Hsin Feng Hsiang, Hsinchu, Taiwan, R. O. C.
Tel No:886-3-568-7246 (3Lines)
Fax No(Line1):886-3-568-8586 Fax No(Line2):886-3-568-6250
E-mail: teamco@ms19.hinet.net

Report No: 22325-103-000708-4512704529-10

MILL TEST CERTIFICATE REPORT

Client	Cameron, a Schlumberger company, Oklahoma City	Shipping Date	Jul.15.2020
Product	BODY, 7/8" 4000 WOG, ASTM A350 (LATEST EDI	Material	ASTM A350 LF2
Order No	4512704529-10	Condition	forge
Part No	5A-10001032400 REV 02		
Order Qty	1000 pcs	Shipping Qty	1000 pcs

CHEMICAL PROPERTIES

Material Spec.	Chemical Composition %														
		C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Nb	Residue	C.E.	Cr+Mo
	Max.	0.210	0.300	1.350	0.030	0.030	0.400	0.300	0.120	0.400	0.050	0.020	1.000	0.430	0.320
	Min.		0.150	0.600											
Heat No: 371168		0.200	0.220	0.850	0.011	0.009	0.030	0.100	0.020	0.070	0.002	0.002	0.222	0.370	0.120
Heat No: 371170		0.190	0.230	0.840	0.022	0.007	0.040	0.150	0.020	0.080	0.003	0.001	0.293	0.370	0.170

MECHANICAL PROPERTIES

Material Spec.		Tensile Strength	Yield Strength	Elong.%	R.A.%	Hardness1	Hardness2		
	Max.	95000 psi				197 HB	197 HB		
	Min.	70000 psi	36000 psi	22 %	30 %	143 HB	143 HB		
Heat No: 371168		78042 psi	53734 psi	36.9 %	73.7 %	162 HB	162 HB		
Heat No: 371170		76378 psi	50705 psi	37.8 %	72.7 %	143 HB	143 HB		

Charpy V-Notch Impact Test for Standard Size 10x10mm Specimen

Material Spec.	-46°C V-Notch Impact	Impact No.1	Impact No.2	Impact No.3		
Heat No: 371168	59.67 ft-lbs	52 ft-lbs	58 ft-lbs	69 ft-lbs		
Heat No: 371170	46.67 ft-lbs	46 ft-lbs	46 ft-lbs	48 ft-lbs		

Heat Treatment Procedure as follows:

1. Austenitize at 1550-1700°F(843-930°C). Cycle time shall be one hour minimum.(Actual:920°C,80minutes)
2. Oil quench.
3. Temper at 1100-1300°F(590-704°C),holding at temperature a minimum of 30 min/in.(30min/25mm) of maximum thickness but in no case less than 30 min.(Actual:620°C,2Hours)
4. Air cool.

- 1.The material specification followed the new version of MS-021009-01-03.
- 2.C.E.= %C+%Mn/6 + (%Cr+%Mo + %V)/5 + (%Ni+%Cu)/15
- 3.The Charpy V-notch impact test was implemented as below:
(1)Specimen Size :ASTM E23 10 mm x 10 mm x 55 mm V-Notch
(2)The test specimen orientation: longitudinal.

We hereby certify that the material provided complies with all CVM requirements as stated in the applicable purchase order and that inspections were performed and certificates issued in accordance with EN 10204, 3.1, 2004.

Mill of Origin: FENG HSIN IRON & STEEL CO., LTD.

APPROVED BY: *Jack Chen*
QA Manager: Jack Chen





Teamco Industries Corporation

No.198, Sinhe Rd. Hsin Feng Hsiang, Hsinchu, Taiwan, R. O. C.
Tel No: 886-3-568-7246 (3Lines)
Fax No (Line1): 886-3-568-8586 Fax No (Line2): 886-3-568-6250
E-mail: teamco@ms19.hinet.net

Report No: 22549-103-010000-4512671293-10

MILL TEST CERTIFICATE REPORT

Client	Cameron, a Schlumberger company, Oklahoma City	Shipping Date	May.27.2020
Product	CAP. 1" RP 4000 WOG FNPT ASTM A350 (LATEST EDITION) G LF2	Material	ASTM A350 LF2
Order No	4512671293-10	Condition	forge
Part No	5A-1010101032400 REV. 04		
Order Q'ty	1500 pcs	Shipping Q'ty	1500 pcs

CHEMICAL PROPERTIES

Material Spec.	Chemical Composition %														
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Nb	Residue	C.E.	Cr+Mo	
	Max.	0.210	0.300	1.350	0.030	0.030	0.400	0.300	0.120	0.400	0.050	0.020	1.000	0.430	0.320
Heat No: HR42	Min.	0.190	0.210	0.850	0.011	0.009	0.050	0.100	0.020	0.090	0.002	0.002	0.262	0.370	0.120

MECHANICAL PROPERTIES

Material Spec.	Tensile Strength	Yield Strength	Elong.%	R.A.%	Hardness1	Hardness2		
Max.	95000 psi				197 HB	197 HB		
Min.	70000 psi	36000 psi	22 %	30 %	143 HB	143 HB		
Heat No: HR42	77373 psi	50648 psi	35.2 %	76.7 %	152 HB	152 HB		

Charpy V-Notch Impact Test for Standard Size 10x10mm Specimen

Material Spec.	-46°C V-Notch Impact	Impact No.1	Impact No.2	Impact No.3		
Heat No: HR42	51.67 ft-lbs	46 ft-lbs	46 ft-lbs	63 ft-lbs		

Heat Treatment Procedure as follows:

1. Austenitize at 1550-1700°F(843-930°C). Cycle time shall be one hour minimum.(Actual:920°C,80minutes)
2. Oil quench.
3. Temper at 1100-1300°F(590-704°C),holding at temperature a minimum of 30 min/in.(30min/25mm) of maximum thickness but in no case less than 30 min.(Actual:620°C,2Hours)
4. Air cool.

1.The material specification followed the new version of MS-021009-01-03.

2.C.E.= %C+%Mn/6 + (%Cr+%Mo + %V)/5 +(%Ni+%Cu)/15

3.The Charpy V-notch impact test was implemented as below:

(1)Specimen Size :ASTM E23 10 mm x 10 mm x 55 mm V-Notch

(2)The test specimen orientation: longitudinal.

We hereby certify that the material provided complies with all CVM requirements as stated in the applicable purchase order and that inspections were performed and certificates issued in accordance with EN 10204, 3.1, 2004.

Mill of Origin: FENG HSIN IRON & STEEL CO., LTD.

APPROVED BY :
QA Manager : Jack Chen

REVIEWED by
KJaima, 7/21/2020, 2:21:58 pm



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WON ZONE CORPORATION

3F No. 135, Sec. 1 Qingxi Rd., Zhongli Dist., Taoyuan City 32056, Taiwan

32056 桃園市中壢區青溪路一段135號3樓 統一編號: 16879927

Tel: +886-3-4341 325 Fax: +886-3-4341 525 E-mail: wz@wonzon.com.tw

CERTIFICATE OF CHEMICAL ANALYSIS AND MECHANICAL PROPERTIES				CERTIFICATE NO. 200715- 1 DATE: 15-Jul-20					
To: CAMERON INTL CORP 845 SE 29TH ST. OKLAHOMA CITY OK 73129-4829 USA									
INVOICE NO. WZ-200715A			Your Order No. 4512760486/4512760487/4512769093/4512786916						
MATERIAL SPECIFICATION: ASTM A564 TYPE 630 H1150D per MS-021111-02 Rev.05									
Q'TY	Part No. and Name	DRAWING No.	Heat Code	Mechanical Properties					
				Y.S.(KSI)	T.S.(KSI)	ELC.(%)	RA (%)	HRC	ft-lbf (-75°F)
				105 min	125 min	16 min	35 min	26-33	30ave/20min
500	5A-11300513617001 Stem 1/2"	5A-02039	R10081	123	137	22	69	33	71/58/61
→ 1,000	5A-11301013617001 Stem 1/2"	5A-02040	R9792	117	135	21	68	30	106/99/92
20	5A-11303013100001 Stem 3"	5A-02043	HA	122	136	20	71	32	90/90/105
2	5A-11303013370001 Stem 3"	5A-02044	FW	133	141	19	71	33	79/83/81
200	5A-11500513617015 Ball 1/2"	5A-06076	S12281	115	137	24	75	30	130/132/134
Heat Code	Chemical Composition (%)								
	C	Si	Mn	P	S	Ni	Cr	Cu	Nb+Ta
	0.07max	1.0max	1.0max	0.040max	0.030max	3.0-5.0	15-17.5	3.0-5.0	0.15-0.45
R10081	0.01	0.46	0.63	0.029	0.022	4.30	15.24	3.39	0.22
R9792	0.01	0.43	0.66	0.026	0.027	4.12	15.32	3.37	0.22
HA	0.03	0.47	0.64	0.030	0.018	4.27	15.40	3.46	0.23
FW	0.02	0.49	0.64	0.029	0.023	4.36	15.04	3.40	0.23
S12281	0.01	0.36	0.66	0.020	0.001	4.72	15.31	3.32	0.27
Solution Treatment: 1900°F for 30 Min/Inch (Minimum of 1 Hour), Fast Air Cooling to below 90°F Double Aged at 1150°F for 4 hours minimum and cooled to below 90°F in air Re Orig Heat #SJ2872-GE0 for R10081; #SJ2273-G30 for R9792; #SD2215-G11 for HA; #SE0302-G10 for FW; #9SJ0107-GH0 for S12281 Charpy Impact Test Specimens: 10*10*55mm(Longitudinal) NOTE: CERTIFICATE ACCORDING TO EN 10204/3.1									
QUALITY CONTROL INSPECTOR					MANAGER				
Sandy Yeh					Grant Hou				

REVIEWED by
Waimo, 8/25/2020, 12:30:12 pm



ISO 9001:2015
No. 01 100 022 029106

原 綠 實 業 有 限 公 司

WON ZONE CORPORATION

3F No. 135, Sec. 1 Qingxi Rd., Zhongli Dist., Taoyuan City 32056, Taiwan

32056 桃園市中壢區青溪路一段135號3樓 統一編號: 16879927

Tel: +886-3-4341 325 Fax: +886-3-4341 525 E-mail: wz@wonzon.com.tw

CERTIFICATE OF CHEMICAL ANALYSIS AND MECHANICAL PROPERTIES					CERTIFICATE NO. 200715- 2 DATE: 15-Jul-20				
To. CAMERON INTL CORP 845 SE 29TH ST. OKLAHOMA CITY OK 73129-4829 USA									
INVOICE NO. WZ-200715A					Your Order No. 4512760487/4512786916				
Material Specification: ASTM A351 CF8M per MS-021100-01 Rev.06					Heat Treatment: Solution Annealed (1050°C min./2hrs/water)				
Q'TY	Part No. and Name	DRAWING No.	Heat Code	Mechanical Properties					
				T.S.(MPa)	Y.S.(MPa)	ELO.(%)	HB		
800	5A-11501041617026 Ball ½"	5A-06082	S14042	<u>485 min</u> 548	<u>205 min</u> 246	<u>30 min</u> 49	<u>140-237</u> 150		
Heat Code	Chemical Composition (%)								
	C	Si	Mn	P	S	Cr	Mo	Ni	
S14042	<u>0.08max</u> 0.058	<u>1.5max</u> 0.777	<u>1.5max</u> 0.71	<u>.040max</u> 0.032	<u>.040max</u> 0.0080	<u>18-21</u> 18.61	<u>2.0-3.0</u> 2.14	<u>9-12</u> 9.34	
Re: Orig Heat #200618-19 for S14042					REVIEWED by KJaime , 8/25/2020, 11:17:59 am				
NOTE: CERTIFICATE ACCORDING TO EN 10204/3.1									
QUALITY CONTROL INSPECTOR					MANAGER				
Sandy Yeh					Grant Hsu				



Valve Test Report

Serial # _____ Assy Part # 5A-T3R10S30LZ
 Work Order # 121590792 Description BV R10 FNPT NUTRON T3 3000 WOG SOUR LT
 Revision 17

Spec SP-026076-01 HYD Rev 07 Type HYDROSTATIC & AIR
 SHELL/AIR SEAT
 CWP Industry ANSI B16.34

	Test Duration (Minutes)		Test Pressure (PSI)	
	ACTUAL	MINIMUM	ACTUAL	MIN/MAX
Shell	<u>.25</u>	SEE SPEC	<u>4600</u>	SEE SPEC
Seat, Top, Right	<u>.25</u>	SEE SPEC	<u>88</u>	SEE SPEC
Seat, Btm, Left	<u>.25</u>	SEE SPEC	<u>86</u>	SEE SPEC

Spec NA Rev NA

	Test Duration (Minutes)		Test Pressure (PSI)	
	ACTUAL	MINIMUM	ACTUAL	MIN/MAX
Seat, Top, Right	_____	NA	_____	NA
Seat, Btm, Left	_____	NA	_____	NA

Test Performed By R. PAPA
 Review By Harold J. [Signature]
 Witnessed By _____

Date 8-27-20
 Date 8/28/2020
 Date _____

Purchaser : DNOW CANADA ULC

INSPECTION CERTIFICATE

TO EN10204 3.1

BENKAN.

Thai Benkan Co., Ltd.
58 Soi Watkrumai, Bangkok, Prapadaeng
Samutprakarn, 10130 Thailand.

Purchase Order No. 4810801-00
Job No. PO 26042460-AB01

D M Y Certificate No.
26/10/2019 T - 2019030707

E-No.	Specification for Material Made from Seamless Pipe	Specification for Inspection	Visual Examination	Dimensional Inspection																
ME-838	ASTM A420/A420M-19/ASME SA420/SA420M-19 Gr.WPL6 CSA Z346.11-17 Gr.280 CAT II IM5C Sour Service	ASME B16.9-2018,B16.25-2017	Good	Good																
MFG. No.	Product & Size (T.*1)		Quantity	Hardness Actual Data																
62D01015	90 EL WPL6 2 XS		239/1,310	HBW: 135-150																
Base Material Manufacturer		Base Material Heat No.	Item No.																	
		3-25985	7560883 1016528																	
Specifi- cation	Chemical Composition %																*2 Tension Test longitudinal		Hardness Max 197 HBW : GOOD	
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Al	V	Nb	Ti	B	Ca	C.E.	Y S	T S	E	Impact Test (J) longitudinal 10 X 2.5 X 2V AT -46 °C
X 100	X 100	X 100	X 1000	X 1000	X 1000	X 100	X 100	X 100	X 100	X 1000	X 1000	X 1000	X 100	X 10000	X 10000	X 100	MPa.		%	
Min.		15	50														290	415	30	
Max.	30	40	135	35	40	40	40	30	12		30	30				42		585		
*3 H	12	18	123	11	4	1	1	1	<1		23	1				33				
*3 P	12	17	123	11	4	1	1	11	1		2	2				35	392	501	33	37

NORMALIZING 910 C X 40 MINUTES. COOLED IN STILL AIR

The material meet ANSIN/AE MR0175/ISO15156-2 (Region 3) :2015 & MR0103-2015

The product was manufactured,sampled,tested, and inspected as specified in this Standard and the purchase order, and was found to have

C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

* 1 : "T" symbolized wall thickness in mm. * 2 : YS Yield strength TS = Tensile strength E = Elongation *3 : P=Product Analysis H=Ladle Analysis


Rungroop Kampharoon

Quality Assurance Manager
Thai Benkan Co., Ltd.

21-102



INSPECTION CERTIFICATE

Customer : CCTF CORPORATION
 Product : SEAMLESS LOW TEMPERATURE CARBON
 STEEL BUTT WELD FITTINGS
 Spec : ASTM A420-14/ASME SA420-14 WPL6,
 CSA Z245.11-13 Gr 241 Cat II -45C SS
 NACE MRO175/ISO 15156-2 Region 3-09
 & NACE MRO103-12

(MILL TEST)
 ACCORDANCE WITH EN 10204-3.1
CHUP HSIN ENTERPRISE CO., LTD.
 17, TUNG LI ROAD HSIAO KANG,
 KAOHSIUNG, TAIWAN, R.O.C.
 TEL:(07)831-9157 FAX:(07)821-7500, 831-2942

Certificate No : O0600022-0202
 Order No : 4810602-00
 Date : 2017/06/05

Starting Material		Specification for Inspection				Visual Inspection				Dimensional Inspection						
ASTM A333 GR-6		ASME B16.9-2012				GOOD				GOOD						
Item	Description	Quantity	Heat ID	Heat No	Raw Certificate No.	NDE MT	Impact Test			Ave.						
							Test Temp	Size of specimen	Charpy V-Notch Impact Value J							
3	90 E L/R WPL6 S160	2	235B	16312235	BAOSTEEL BGSAG1603150004000		-45	10 X 10 X 55	68	86	81	78.33				
4	90 E L/R WPL6 XS	2	506D	16312506	BAOSTEEL BGSAG1603100013500		-45	10 X 10 X 55	78	82	75	78.33				
7	90 E L/R WPL6 XS	4	A908	15309908	BAOSTEEL 1601180007000		-45	10 X 7.5 X 55	20	215	254	163				
11	TEE WPL6 XS	2	7880	15307880	BAOSTEEL 1511050008400	PASS	-45	10 X 5 X 55	66	57	59	60.67				
14	TEE WPL6 XS	3	8908	15309908	BAOSTEEL 1601180007100	PASS	-45	10 X 7.5 X 55	199	202	191	197.33				
Specifi- cation	Chemical Composition%										Heat Treatment	REMARK				
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V			Nb	C.E	T.S	Y.S
X100	X100	X100	X1000	X1000	X1000	X100	X100	X100	X100	X1000	X1000	X100	P.S.I	P.S.I	%	HB
Min.		15	50										35000	60000	30	
Max.	30	40	135	35	40	40	40	30	12	80	20	50		95000		197
3	12	25	125	8	4	5	2	4	2	<1	3	34	48899	69900	34.6	136
4	13	24	126	7	3	5	2	5	1	<1	<1	35	48463	71200	35.2	136
7	12	24	124	9	1	4	2	5	1	<1	2	34	50060	71000	39.5	132
11	13	25	125	8	2	3	2	5	2	<1	<1	35	49044	77300	34.9	138
14	12	24	124	9	1	4	2	5	1	<1	2	34	49624	69900	36.1	136

C.E. = C+Mn / 6 + (Cr+Mo+V)/5 + (Ni+Cu)/15

We hereby certify that the material herein described has been manufactured, sampled, tested and inspected in accordance with, and was found to meet, the requirements of above specifications and purchaser's order.

L.S. Tsai

Chief of Quality Assurance Section

21-102

NEW CENTURY MACHINERY CO.,LTD XIZHUANGTOU, JIZHUANGXIANG, DINGXIANG COUNTY, SHANXI, CHINA
MATERIAL TEST CERTIFICATE

Certificate No. NC422-2019

DESCRIPTION: CARBON STEEL FLANGES	Works No. NC422
Order No.102419-NC	Material/Werkstoff: ASTM SA/A350-LF2 CL1/A105N
Article: Hot Forged Flange	AND CSA Z245.12 GR 248 CAT II
State of delivery/Lieferzustand: Normalized at 910°for 2h ,cool in still air	AND NACE MR0103/75
Marking: Material,Size,PN,DN,Heat-No./	ISO 15156-2
Stamp of Manufacturer/Herstellerzeichen:	Melting process/Erschmelzungsart: ESR
Content of the Delivery	



Description/Bezeichnung:	Pieces/Stueckzahl	Heat No/Schemlze-Nr.	Description/Bezeichnung:	Pieces/Stueckzahl	Heat No/Schemlze-Nr.
B16.5 CL150 WNRF STD	10"	80	B16.5 CL300 WNRF STD	25	2127
B16.5 CL150 BLRF HUB	6"	10	B16.5 CL600 WNRF XH	150	2127

Chemical analysis /Chemische Analyse:

Heat No/Schemlze-Nr.	% C	% Si	% Mn	% P	% S	% Cr	% Mo	% Ni	% V	% Cu	% Nb	CE
2127	0.18	0.28	1.03	0.018	0.016	0.02	0.01	0.01	0.01	0.01	0.01	0.36

Mechanical tests/Mechanische Pruefungen: Position of specimen/Probenlage: Tangential

Heat No	Tensile test / Zugversuch			Hardness	AK(J)Test Temperature -46 °C
Schemlze-Nr.	Rm	Rp0.2	EL	Haerte	Σ/N
	Mpa	Mpa	%	HBW	%
2127	505	303	36	153	56
			53	60	54.00

Visual and dimensional inspection without complaint we hereby certify the flanges conformity with standard request

Place/Ort:DingXiang

Date/Datum: 2019-12-03

6" 150 RF HUB BLIND A350- LF2 MACHINED TO C/W 3" CENTER NPT

NEW CENTURY MACHINERY CO., LTD
新 世 纪 机 械 有 限 公 司

CLIENTE / Customer / Client

W.F.F. Filings & Filings (Canada) Ltd.

UNIT 110, 5423-61 AVENUE SE

CALGARY, AB T2C 5N7

CANADA

CAN

CERTIFICADO DE INSPECCION

Inspection Certificate - Certificat de Réception

UNE EN 10204:36/3.1

ISO 10474:15/3.1

FECHA: 03/11/2020

Nº: 211972

Page: 2

PRODUCTO

Article - Produit

FITTING

SU PEDIDO N.º

Your Order No.

C000672

NORMAS APLICABLES

Requirements - Normes Applicables

ASME B16.11-2015

MATERIAL CORRESPONDIENTE

Material Correspondent - Matière

ASME SA350LF2CL1-3-19, ASTM A350LF2CL1-2-18

MODO DE FUSION (*)

Sheet Making - Elaboration de l'acier

E = Elec. Y = Oxygène brûlé

DEPARTAMENTO

Section

QUALITY ASSURANCE

EL INSPECTOR

Works Inspector - L'inspecteur

ULMA EXB S.A.S. COOP.

Dpto. de Garantía de calidad

Quality Assurance Dept.

ULMA

Advanced Forged Solutions

ISO 9001

ISO 9001

ISO 9001

ULMA FORJA, S.COOP.

Bº Zúñiga, 3 - Apdo. 14

20560 ONATI (Gipuzkoa) SPAIN

Tel.: 34 - 943 780552

Fax: 34 - 943 781808

E-mail: ulma@ulmaforge.com

Packing List: 159178

Expedition: 333977

PARTIDA	CANTIDAD	DESCRIPCION	OBSERVACIONES	COLADA N	RESISTENCIA	T. Strength	Yield	0.2 %	Weld	ALARGAM	Elongation	Red. Area	Striction	RESILIENCIA	Impact test	MEQUA	Arreque	Mayoria	DUREZA	Hardness	Dureté	HBW
Item	Quantity	Description	Observations	Heat No	N.º	N.º	N.º	N.º	N.º	%	%	%	%	Joules	Joules	%	%	%				
12 730100214	240	UNION 1 3000LB NPT A350LF2 - Nut	NE	B45A8	503	314	32,40	70,20	64	55	60	60	60	60	60	60	60	60	146	152	146	152
12 730100214	240	UNION 1 3000LB NPT A350LF2 - Male	NE	B97A3	521	327	33,60	54,70	60	68	58	62	62	62	62	62	62	62	157	163	157	163
12 730100214	240	UNION 1 3000LB NPT A350LF2 - Female	NE	B45A8	503	314	32,40	70,20	64	55	60	60	60	60	60	60	60	60	146	152	146	152
16 730300212	23	ELBOW 90 3 3000LB NPT A350LF2	NE	B30A7	509	331	23,18	41,58	47	74	78	66	66	66	66	66	66	66	141	147	141	147

COMPOSICION QUIMICA - STEEL MAKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE

COLADA N	Heat No	Leads: L	Product: P	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	Al %	Ti %	B %	CEq %	Origin of Steel
B45A8	L	0,180	0,210	1,050	0,011	0,005	0,120	0,070	0,010	0,001	0,005	0,170	0,027	0,021	0,0000	0,40	0,40	Italy	
B97A3	L	0,180	0,260	1,180	0,014	0,005	0,120	0,050	0,013	0,004	0,017	0,060	0,027	0,000	0,0000	0,41	0,41	Czech Republic	
B30A7	L	0,182	0,220	1,010	0,010	0,002	0,096	0,101	0,027	0,002	0,000	0,234	0,037	0,002	0,0001	0,40	0,40	Spain	

(*) OBSERVACIONES:

Remarks

Observations

N NORMALIZED ABOVE 900°C AND COOLED UNIFORMLY IN STILL AIR

EL INSPECTOR

Works Inspector - L'inspecteur

ULMA EXB S.A.S. COOP.

Dpto. de Garantía de calidad

Quality Assurance Dept.

ULMA

Advanced Forged Solutions

ISO 9001

ISO 9001

ISO 9001

ULMA FORJA, S.COOP.

Bº Zúñiga, 3 - Apdo. 14

20560 ONATI (Gipuzkoa) SPAIN

Tel.: 34 - 943 780552

Fax: 34 - 943 781808

E-mail: ulma@ulmaforge.com

Packing List: 159178

Expedition: 333977



CapProducts, Ltd.
25 Winnipeg St
Vancouver, ON N0M 1L0

Phoenix * Capitol * Camco
CapProducts

Certified Material Test Report

Commanding a Higher Standard™

Printed: 10/2/2020

Certified: 06/24/2020

Customer

P.O. 26212124

Heat No 176433

DistributionNOW (DNOW)

Tag 14126

Heat Code 87ZB

(formerly CE Franklin)

Phoenix Order # 1570153

ACCOUNTS PAYABLE

Material ASTM A333 GR6 2018/ASME SA333 GR6 2017 Edition

PO BOX 4395 STATION C

Part Number

Description

15113008CSA

3 X 4" XH BLK SMLS A333-GR6 CSA

Chemical Properties

C	Mn	P	S	Si	Cu	Ni	Cr	C Eq. Long
0.0900	1.2700	0.0120	0.0030	0.2600	0.0680	0.0300	0.0600	0.3226

Mo	V	Co	Al	Nb	N	Pb	Sn	Ta	Ti
0.0100	0.0020			0.0170					0.0020

Additional Chemical Properties

B	Cr + Cu + Ni
0.00020	0.1580

Mechanical Properties

Tensile (PSI)	Yield (PSI)	Elong. % in 2 in. or 4D	R of A	HBW	HBW2
70,198	50,618	39.0%	0.0%	146	0

Charpy Minimum Impact - ft/lbs

Test 1	Test 2	Test 3	Average	Test Temp.
172	170	168	170.00	-46

* Hydro test passed. at 3000 psi.

We hereby certify that these parts were manufactured, sampled, tested, and inspected in accordance with the product specifications stated and were found to meet the requirements.

We further certify that this material was inspected using independent inspectors conforming to the requirements of EN 10204 3.1. These products meet the requirements of the latest editions of NACE MR0175, NACE MR0103, and ISO 15156. No weld repair has been performed on these products. This material was not exposed to mercury or any other metal alloy that is liquid at ambient temperatures during processing or while in our possession.

Comments:

Flattening test passed.

Charpy V Impact Tested at -46° C. Specimen size - 10 x 6.67 mm.
Normalized

Meets requirements of CSA Z245.1 Category II - 2018

MTR revised by - Name: Sylvia Neeb

Title: QA/MTR Specialist

Signature: *Sylvia Neeb*