



SOUTHERN PACIFIC
RESOURCE CORP.

TEMPORARY STEAM SKID

QC REPORT

GMCC
2012



SOUTHERN PACIFIC

RESOURCE CORP.

TEMPORARY STEAM SKID

QC REPORT

**GMCC
2012**

1: Approvals.

C.W.B. Letter of Validation.
ABSA and Sask. Permits.

2: Contract Review.

3: Pressure Test Reports.

Equipment Calibrations.
Data Reports.
Test Charts.

4: Structural Drawings.

5: GMC Isometric Drawings.

As Builts.
Weld, MTR, NDE Mapping.

6: P&ID and Isometric Drawings.

7: GMC Weld Procedures.

8: Welders Log.

Welder Qualifications.

9: NDE.

Certifying Statement.

X-ray Reports.

MPI Reports.

Operator Qualifications.

10: Bolt Torquing Log.

11: Packing Slips and MTRs for Pipe and Fittings.

12: Packing Slips and MTRs for Steel, Shoes and Lifting Lugs.

13: Packing Slips and MTRs for Welding Rod.

14: Packing Slips and MTRs for Valves.

15: Packing Slips for Fasteners and Gaskets.

16: Ship Loose B.O.M.

QUALITY CONTROL PROGRAM CERTIFICATE OF REGISTRATION

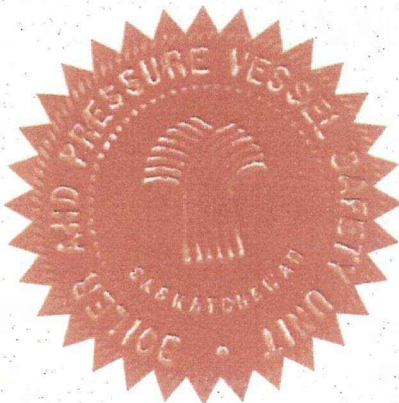
General, Mechanical & Civil Contractors Ltd.
3000 - 84th Avenue
EDMONTON, AB
T6P 1K3

This certificate authorizes the holder listed above to perform the work as shown in the scope below in accordance with *The Boiler & Pressure Vessel Act, 1999*

SCOPE

- ASME Section I Power Boilers - Repair and Alteration (Shop and Field)*
- ASME Section IV Heating Boilers - Repair and Alteration (Shop and Field)*
- ASME Section VIII Div.I Pressure Vessels - Repair and Alteration (Shop and Field)*
- ASME B31.1 Power Piping - Construct, Repair and Alteration (Shop and Field)*
- ASME B31.3 Process Piping - Construct, Repair and Alteration (Shop and Field)*

Within Saskatchewan controlled from the above address.



AUTHORIZED: August 23, 2010
EXPIRES: August 23, 2013
CERTIFICATE NO.: QCP - 0039 - 0001

Brian Hussain

Chief Inspector

Alberta

ABSA

the pressure equipment safety authority

Certificate of Authorization Permit

Quality Management System

Expiry Date: **August 17, 2013**

Reg. No.: **AQP-2613**

This is to certify that:

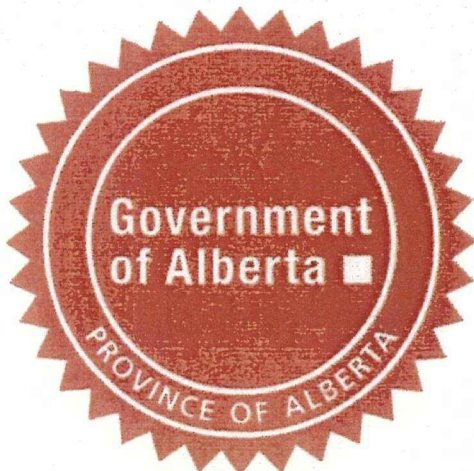
GENERAL, MECHANICAL & CIVIL CONTRACTORS LTD.
3000 - 84 AVENUE
EDMONTON, ALBERTA

having complied with the provisions of the SAFETY CODES ACT, is hereby authorized to:

Construct, Repair/Alter ASME B31.1 Power Piping, Boiler External Piping and ASME B31.3 Process Piping

Repair/Alter ASME Section I Power Boilers, ASME Section IV Heating Boilers and ASME Section VIII-1 Pressure Vessels

at the SHOP and FIELD sites controlled from the above address.

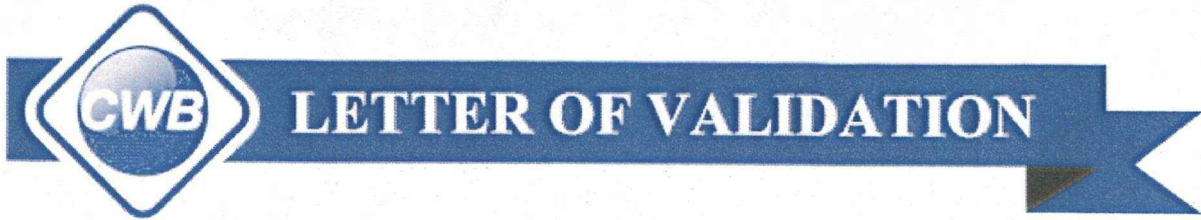


Dated at Edmonton, this 23rd day of August, 2010

A handwritten signature in black ink, appearing to read "Shan".

Chief Inspector and Administrator

Certificate No.: 7564



The CWB acknowledges that

GMC Contractors Ltd.

3000 84 Avenue , Edmonton, AB T6P 1K3

is certified to CSA Standard W47.1

"Certification of Companies for Fusion Welding of Steel"

in **DIVISION 2**

for the period **June 1, 2012 to July 1, 2013**

Company Code: GMCCO1

Scope: Oilfield skids fabrications - pre engineered (ie pumps, skids, separator skids, modules, satellite skids, etc.)

Platforms - pre engineered (ie stiles, walkways, stairs, etc.)

Field installations of the above list, cut/cap piles.

A handwritten signature in black ink, appearing to read 'Jim', written over the Registrar's name.

Registrar



Accredited
Company
CWB Group Inc.

8260 Parkhill Drive, Milton, Ontario L9T 5V7
1-800-844-6790 | Int 905-542-1312 | Fax: 905-542-1318
Email: info@cwbgroup.org | Web: www.cwbgroup.org





General, Mechanical & Civil Contractors Ltd.

3000 - 84th Avenue, Edmonton, Alberta T6P 1K3

Telephone Number (780) - 466 - 7867

Facsimile Number (780) - 440 - 4123

Pressure Test Report

Customer: Southern Pacific

Job No. ZL-27

Date: 19 Nov 2012

Location: GMC SH0A

Test No.: 1

Line No./Drawing No.: Steam SKID CN 1, 2, 3, 4, 5

Line No./Drawing No.: _____

Line No./Drawing No.: _____

Line No./Drawing No.: _____

Line No./Drawing No.: _____

Line No./Drawing No.: _____

Line No./Drawing No.: _____

Line No./Drawing No.: _____

Line No./Drawing No.: _____

Line No./Drawing No.: _____

Unit Tested: Pressure Vessel

Pipe _____ Pipe _____ Pipe _____

Gauge 1 S/N: GMC-26 Calibration No.: C 13754

Gauge 2 S/N: GMC-27 Calibration No.: C 13755

Recorder S/N: BK-128 Calibration No.: 6959

Dead Weight S/N: _____ Calibration No.: _____

Pressure: 3222 / 22,216 Psi/Kpa

Test Medium: WATER Hydrostatic Pneumatic

Duration Time: 1 hour

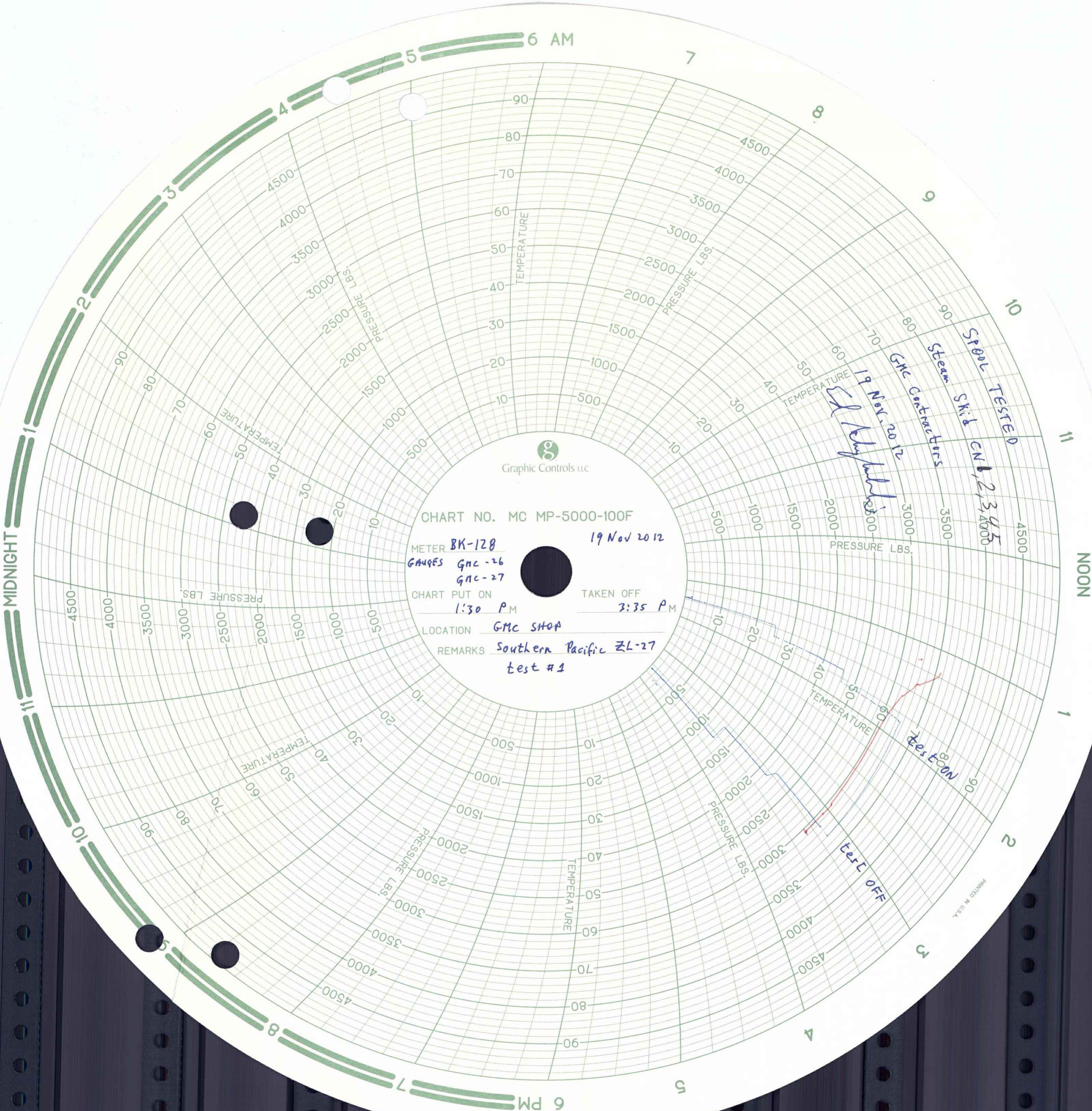
Results: _____

Quality Control Inspector [Signature]

Date: 19 Nov 2012

Owner's Inspector or AI when Applicable _____

Date: Nov 2012



Graphic Controls LLC

CHART NO. MC MP-5000-100F

METER BK-128
 GAUGES GNC-26
 GNC-27

19 Nov 2012

CHART PUT ON
 1:30 PM

TAKEN OFF
 3:35 PM

LOCATION GNC SHOP

REMARKS Southern Pacific ZL-27
 test #1

Handwritten signature
 19 Nov. 2012
 GNC Contractors

Steam Skill
 0 1 2 3 4 5
 1000 2000 3000 4000 4500
 PRESSURE LBS.

test on
 test off

PRINTED IN U.S.A.



BERJA Meter & Controls Ltd.

831-77th Avenue, Edmonton, Alberta, Canada T6P 1S9 ♦ Ph: (780) 440-1234 Fx: (780) 440-4775 email: shop@berjagroup.com

Certificate of Calibration

Report number FASTCAL-C13754

CRYSTAL
engineering corporation

Company	Location	Date of P.O.	P.O. Number
GMC	Edmonton	6/20/2012	

Manufacturer	Model	Serial Number	Calibration Date	Expiration Date
Western Gauge	Western Gauge 0-5000PSI	GMC 26	6/20/2012	6/20/2013

Model Uncertainty
+/- ASME 1A of span (1%)

All instrument calibrations are verified for accuracy before they are shipped. The recommended calibration interval for this instrument is 12 months from the date of verification. Your particular quality assurance requirements may supersede this recommendation.

As Received Condition: In tolerance **As Left Condition:** In tolerance

All calibrations are performed in a controlled environment by qualified personnel using instrumentation and methods which guarantee that specifications claimed are reliable. Calibrations conform to ANSI/NCSL Z540-1-1994, MIL-STD 45662A, 10CFR21 and 10CFR50 when specified by customer documentation.

Definitions:	Temperature	Measured temperature of test during data collection.
	Reference Reading	True value according to our reference standards.
	Gauge Reading	Displayed reading from test unit.
	Condition	Pass or Fail.
	Difference	Indicated reading minus reference reading.
	Relative Difference	(Difference / reference reading) x 100
	Allowable Tolerance	± according to manufacturer's specifications.
	Water column	Referenced at 20° C and 1 atmosphere.
	Test Accuracy Ratio	At least 4:1 unless otherwise stated.


Laboratory ambient conditions throughout this calibration were:

Temperature 20 to 24° C
Humidity 30 to 55% RH
Pressure 100 to 103 kPa

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology of the United States, through the following report numbers:

Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
Crystal Engineering	10KPSIXP2I	649269	J3615	30-Jun-12	0-20% of FS: +/- 0.02% FS, 20%-100% of FS: +/- 0.1% reading

This certificate shall not be reproduced except in full, without written approval.



Laboratory Representative

Quality Representative

Test Results

Report number FASTCAL-C13754

CRYSTAL
engineering corporation

As Received Test Results

5000 PSI

Reference Reading	Gauge Reading	Allowable Tolerance	Difference	Difference (% of FS)	Condition
533	500	50	-33	-0.66%	Pass
1518	1500	50	-18	-0.36%	Pass
2515	2500	50	-15	-0.30%	Pass
3513	3500	50	-13	-0.26%	Pass
5005	5000	50	-5	-0.10%	Pass

As Left Test Results

5000 PSI

Reference Reading	Gauge Reading	Allowable Tolerance	Difference	Difference (% of FS)	Condition
533	500	50	-33	-0.66%	Pass
1518	1500	50	-18	-0.36%	Pass
2515	2500	50	-15	-0.30%	Pass
3513	3500	50	-13	-0.26%	Pass
5005	5000	50	-5	-0.10%	Pass

AR Head correction:
AL Head correction:

0 PSI
0 PSI

GMC -27



BERJA Meter & Controls Ltd.

831-77th Avenue, Edmonton, Alberta, Canada T6P 1S9 ♦ Ph: (780) 440-1234 Fx: (780) 440-4775 email: shop@berjagroup.com

Certificate of Calibration

Report number FASTCAL-C13755

CRYSTAL
engineering corporation

Company	Location	Date of P.O.	P.O. Number
GMC	Edmonton	6/20/2012	

Manufacturer	Model	Serial Number	Calibration Date	Expiration Date
Western Gauge	Western Gauge 0-5000PSI	GMC 27	6/20/2012	6/20/2013

Model Uncertainty
+/- ASME 1A of span (1%)

All instrument calibrations are verified for accuracy before they are shipped. The recommended calibration interval for this instrument is 12 months from the date of verification. Your particular quality assurance requirements may supersede this recommendation.

As Received Condition: In tolerance

As Left Condition: In tolerance

All calibrations are performed in a controlled environment by qualified personnel using instrumentation and methods which guarantee that specifications claimed are reliable. Calibrations conform to ANSI/NCSL Z540-1-1994, MIL-STD 45662A, 10CFR21 and 10CFR50 when specified by customer documentation.

Definitions:	Temperature	Measured temperature of test during data collection.
	Reference Reading	True value according to our reference standards.
	Gauge Reading	Displayed reading from test unit.
	Condition	Pass or Fail.
	Difference	Indicated reading minus reference reading.
	Relative Difference	(Difference / reference reading) x 100
	Allowable Tolerance	± according to manufacturer's specifications.
	Water column	Referenced at 20° C and 1 atmosphere.
	Test Accuracy Ratio	At least 4:1 unless otherwise stated.

Laboratory ambient conditions throughout this calibration were:

Temperature 20 to 24° C
Humidity 30 to 55% RH
Pressure 100 to 103 kPa

Reference Standards used in this calibration are traceable to the National Institute of Standards and Technology of the United States, through the following report numbers:

Manufacturer	Model	Serial Number	Report Number	Due Date	Reference Uncertainty
Crystal Engineering	10KPSIXP2I	649269	J3615	30-Jun-12	0-20% of FS: +/- 0.02% FS, 20%-100% of FS: +/- 0.1% reading

This certificate shall not be reproduced except in full, without written approval.


Laboratory Representative

Quality Representative

76-27 test #1



BERJA Meter & Controls Ltd.

831 - 77 Ave. N.W., Edmonton, AB T6P 1S9

Tel: (780) 440-1234 • Fax (780) 440-4775

www.berjagroup.com • e-mail: shop@berjagroup.com

RECORDER SERVICE & CALIBRATION CERTIFICATE

6959

Company GML

Meter Manufacture Barton Serial No. BK-128

Location Edmonton

Calibrate Differential Calibrate Static Set Time Arc

Set Pen Tension Adjust Dampener Check Orifice Plate

Check Temperature 0-100°F Range 0-500psi

Technician Kirk Bellinger Date Nov 19, 2012

FLOW <input type="checkbox"/> " WC <input type="checkbox"/> " Hg			PRESSURE <input checked="" type="checkbox"/> PSI <input type="checkbox"/> KPa			TEMP <input type="checkbox"/> °C <input checked="" type="checkbox"/> °F		
TEST PT.	FOUND	LEFT	TEST PT.	FOUND	LEFT	TEST PT.	FOUND	LEFT
			0	—	0	58	—	58
			1500	—	1500			
			2500	—	2500	78	—	78
			3500	—	3500			
			500	—	500	48	—	48

Remarks _____

This test instrument is calibrated

In compliance with

Canadian Standards Association

CAN3-Z299-3-85, A.N.S.I.

B40-1 and/or API 6D, 7.2.C

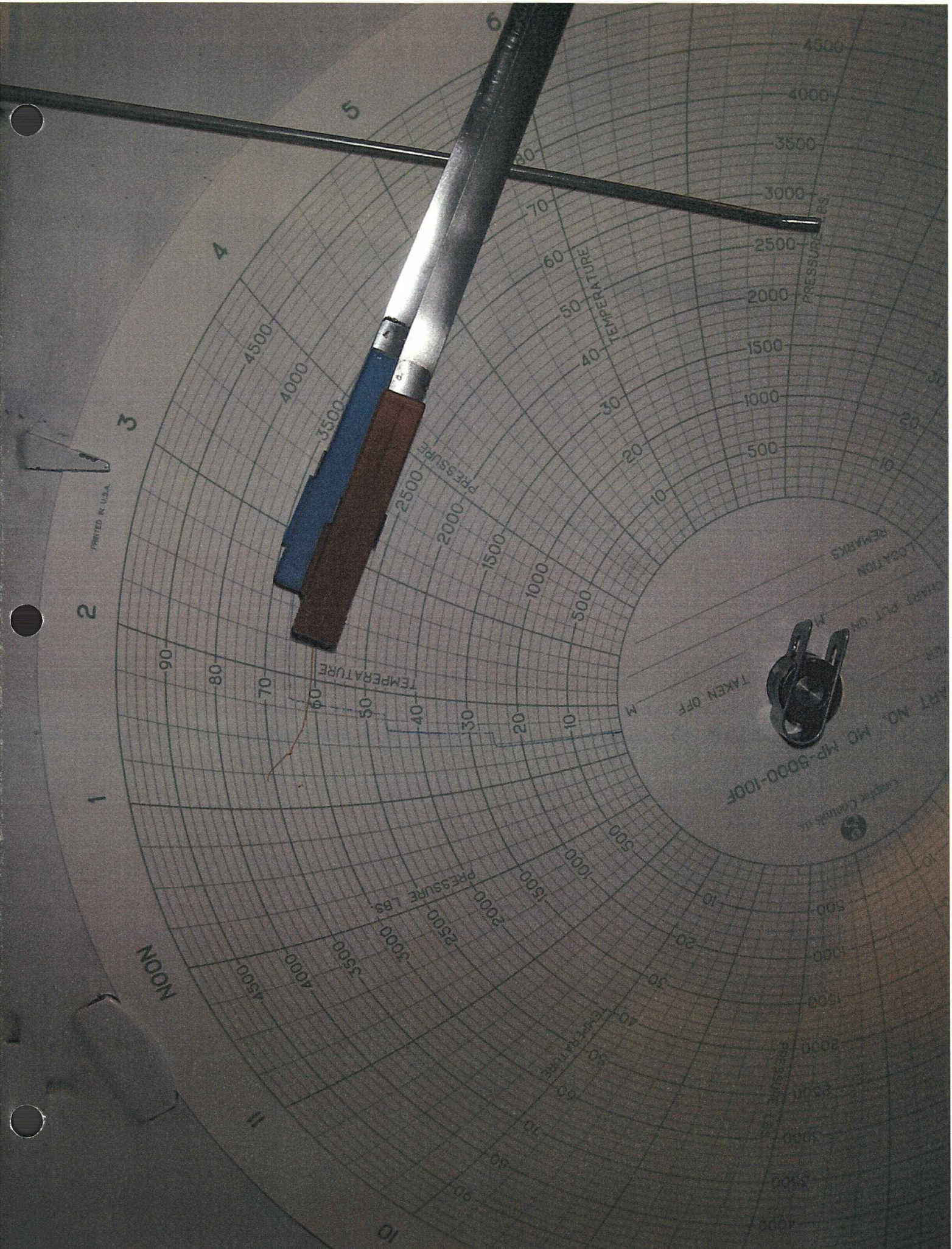
Berja Meter & Controls Ltd.

Ametek Deadweight Tester Serial #91363

Pressman Deadweight Tester Serial #4571-86

Fluke 51 II Serial #12390198

ZL-27 test # 1



PRINTED IN U.S.A.

2

3

4

5

1

NOON

11

10

TAKEN OFF

M

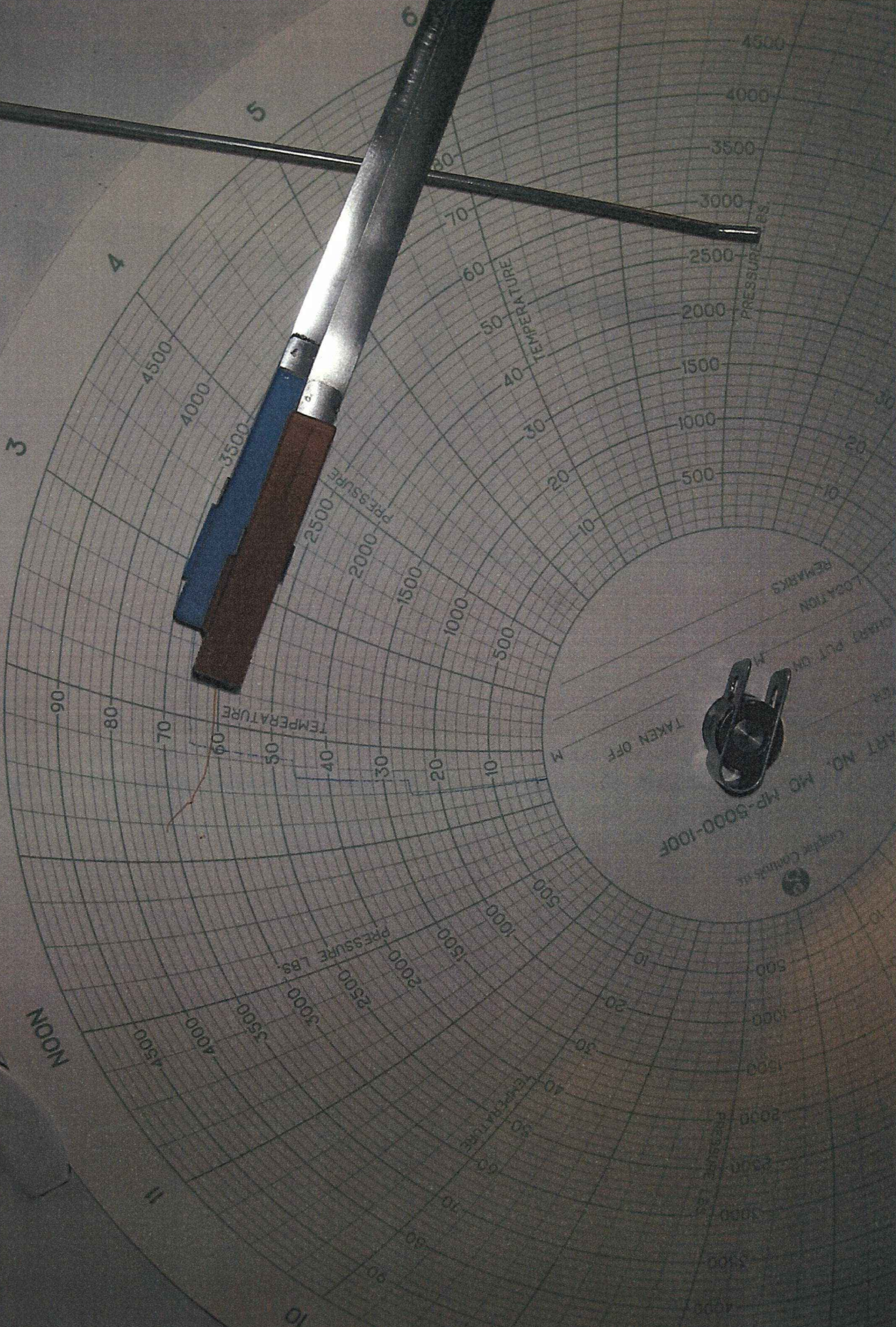
PART NO. MC MP-5000-100F

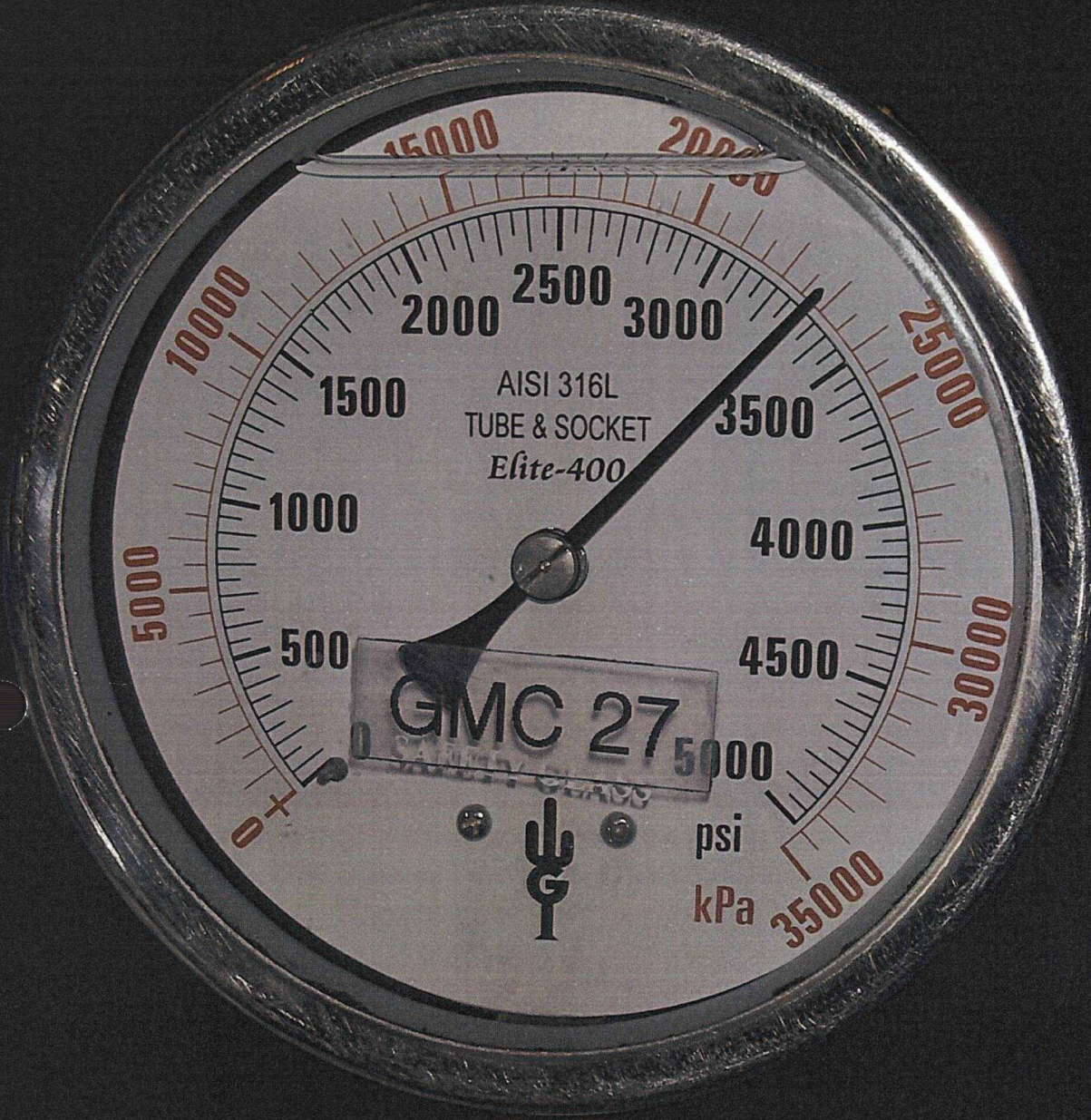
Casper Controls, Inc.

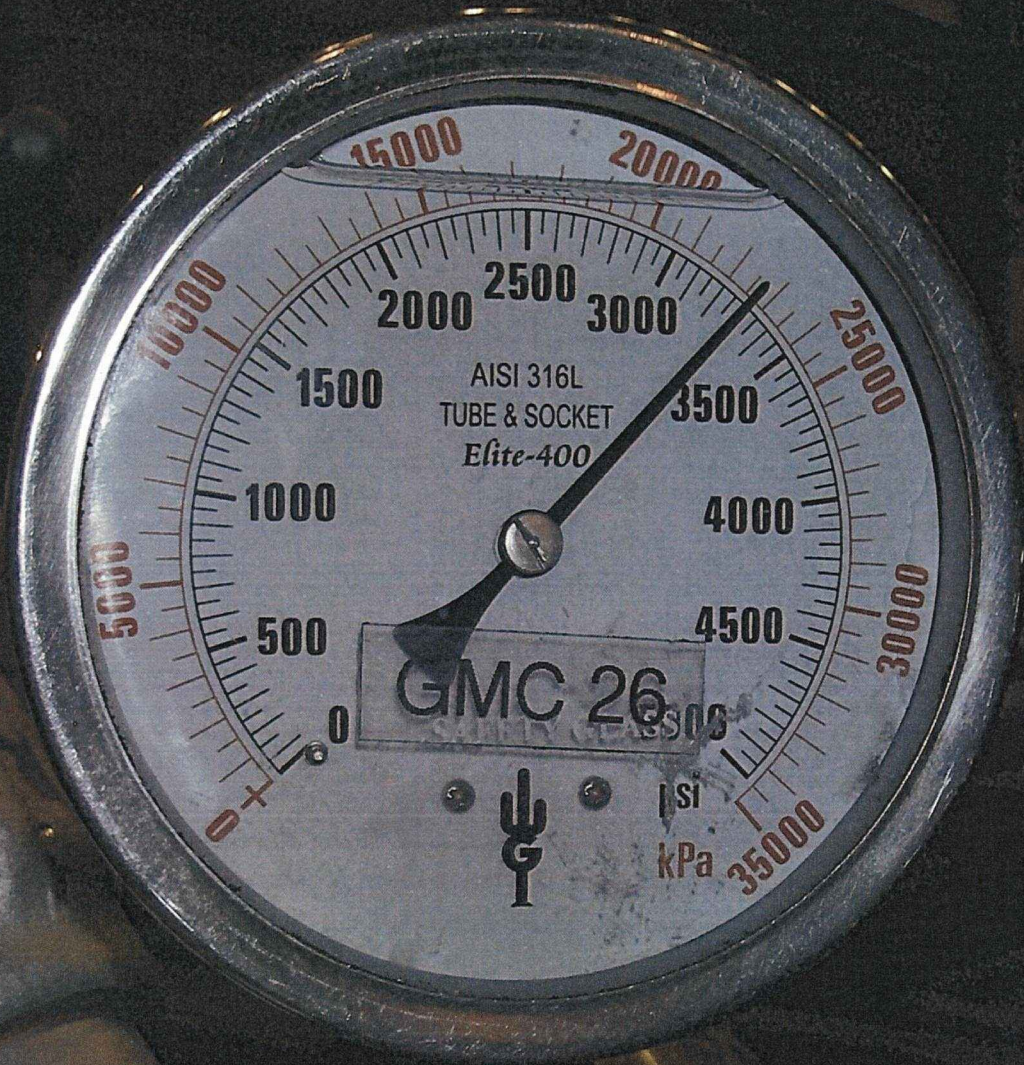
LOCATION

REMARKS

CHART PUT ON









71-27
604 4

LINE DESCRIPTION				INSULATION		TRACING DESIGN			LINE ROUTING		OPERATING		DESIGN		TEST		EXP (1)	UPSET (2)		MDMT (3)	CORR ALLOW	X-RAY %	STRESS REL.	OTHER INSP / TESTING	PAINT'G SYSTEM (4)	INT. COATING, LINER	CODE (5)	CLEANING/NOTES	REV		
COMM CODE	CLASS SERVICE MATERIAL	SIZE NPS	LINE NO.	THK in	TYPE & MAT'L	TYPE	HOLD TEMP °C	NUMBER TRACERS	FROM	TO	P&ID NO.	SCH OR WALL THK (mm)	PRESS kPa (g)	TEMP °C	PRESS kPa (g)	TEMP °C	PRESS kPa (g)	MEDIUM	TEMP °C	PRESS kPa (g)	TEMP °C	TEMP °C	mm	%	REL.	TESTING	(4)	LINER	(5)		
IS	EV	8	3668	3	HM	ET1	10	1	IS-EV-10-3668-3HM-ET1	IS-EV-8-3600-3HC	SNL-42-PID-00-019-01 3368-F-101	100	8,500	295	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200C-3	N/A	B31.3	PHASE J (100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT)	7Z
IS	EV	4	3669	2 1/2	HM	ET1	10	1	IS-EV-4-3601-2 1/2 HC	INJECTION WELL J3-I	3368-F-101 SNL-42-PID-00-023-01	80	4,500	260	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200C-3	N/A	B31.3	PHASE J (100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT)	7Z
IS	EV	4	3670	2 1/2	HM	ET1	10	1	IS-EV-4-3603-2 1/2 HC	INJECTION WELL J2-I	3368-F-101 SNL-42-PID-00-023-01	80	4,500	260	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200C-3	N/A	B31.3	PHASE J (100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT)	7Z
IS	EV	4	3671	2 1/2	HM	ET1	10	1	IS-EV-4-3605-2 1/2 HC	INJECTION WELL J1-I	3368-F-101 SNL-42-PID-00-023-01	80	4,500	260	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200C-3	N/A	B31.3	PHASE J (100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT)	7Z
IS	EV	8	3672	3	HM	ET1	10	1	IS-EV-3667-3HM-ET1	IS-EV-8-3673-3HM	SNL-42-PID-00-019-01 SNL-42-PID-00-029-01	100	8,500	295	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200C-3	N/A	B31.3	100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT	9Z
IS	EV	8	3673	3	HM				IS-EV-8-3672-3HM-ET1	STEAM INJECTION LEGS	SNL-42-PID-00-029-01	100	8,500	295	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200C-3	N/A	B31.3	100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT	9Z
IS	EV	3	3674	2 1/2	HM				IS-EV-8-3673-3-HM	IS-EV-3675-2 1/2 HM-ET1	SNL-42-PID-00-029-01	80	8,500	295	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200 C-3	N/A	B31.3	100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT	9Z
IS	EV	3	3675	2 1/2	HM	ET1	10	1	IS-EV-3-3674-2 1/2 HM	INJECTION WELL K1-I	SNL-42-PID-00-029-01 SNL-42-PID-00-033-01	80	4,500	260	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200 C-3	N/A	B31.3	100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT	9Z
IS	EV	3	3676	2 1/2	HM				IS-EV-3674-2 1/2 HM	PE-EV-4-3175-2 1/2 HM-ET1	SNL-42-PID-00-029-01 SNL-42-PID-00-031-01	80	4,500	260	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200 C-3	N/A	B31.3	100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT	9Z
IS	EV	3	3677	2 1/2	HM				IS-EV-8-3673-3HM	IS-EV-3-3678-2 1/2 HM-ET1	SNL-42-PID-00-029-01	80	8,500	295	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200 C-3	N/A	B31.3	100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT	9Z
IS	EV	3	3678	2 1/2	HM	ET1	10	1	IS-EV-3-3677-2 1/2 HM	INJECTION WELL K2-I	SNL-42-PID-00-029-01 SNL-42-PID-00-033-01	80	4,500	260	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200 C-3	N/A	B31.3	100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT	9Z
IS	EV	3	3679	2 1/2	HM				IS-EV-3-3677-2 1/2 HM	PE-EV-4-3178-2 1/2 HM-ET1	SNL-42-PID-00-029-01 SNL-42-PID-00-031-01	80	4,500	260	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200 C-3	N/A	B31.3	100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT	9Z
IS	EV	3	3680	2 1/2	HM				IS-EV-8-3673-3HM	IS-EV-4-3681-2 1/2 HM-ET1	SNL-42-PID-00-029-01	80	8,500	295	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200 C-3	N/A	B31.3	100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT	9Z
IS	EV	3	3681	2 1/2	HM	ET1	10	1	IS-EV-3-3680-2 1/2 HM	INJECTION WELL K3-I	SNL-42-PID-00-029-01 SNL-42-PID-00-033-01	80	4,500	260	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200 C-3	N/A	B31.3	100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT	9Z
IS	EV	3	3682	2 1/2	HM				IS-EV-3-3680-2 1/2 HM	PE-EV-4-3181-2 1/2 HM-ET1	SNL-42-PID-00-029-01 SNL-42-PID-00-032-01	80	4,500	260	11,480	323	22,216	WATER	323	11,480	323	-28	1.6	100% BW 5%SW	N/A	SEE NOTE	200 C-3	N/A	B31.3	100% OF ALL SOCKET WELDS AND FILLET WELDS TO BE MAGNETIC PARTICLE OR DYE PENETRANT	9Z



Association of Professional Engineers & Geoscientists
of Saskatchewan
CERTIFICATE OF AUTHORIZATION
Bar Engineering Co. Ltd.
Number C1033
Permission to Consult held by:
Discipline: Mech. Eng. Sk. Reg. No. 11505
Signature: [Signature]

TYPICAL

GENERAL NOTES
1. Normal font indicates previous revision
2. Bold font indicates latest revision.

REV	DESCRIPTION	DATE	PREPARED	PROCESS	MECH.	APP'D
8Z	AS-BUILT FOR GW2/GW3 & H-PAD TIE-INS	5-Jan-12	BAR	KK	KK	KK
9Z	PHASE K EXPANSION - IFC	2-Apr-12	BAR	KK	KK	KK
2Z	GW2 AND GW3 WEDGE WELL ADDITION - IFC	23-Mar-10	RBG	KK	KK	KK
3Z	H PAD WELLPAIR TIE-IN - IFC	10-Aug-10	BAR			
4Z	H PAD WELLPAIR TIE-IN REISSUED - IFC	15-Sep-10	BAR			
5Z	ADDITION OF ABOVEGROUND STEAM & EMULSION LINE	6-Jan-11	BAR			
6Z	ISSUED FOR PRESSURE PIPING APPLICATION	4-Apr-10	BAR	AA	AA	AA
7Z	PHASE J EXPANSION - IFC	1-Sep-11	BAR	KK	KK	KK

BAR Engineering	SOUTHERN PACIFIC RESOURCE CORP.
PROJECT NAME K PAD TIE-IN	SENLAC THERMAL PROJECT LINE LIST COMMODITY - STEAM
PROJECT NUMBER ENC08050	DOCUMENT SNL-42-LDT-00-003-05
	REV 9Z

21-27 test #1

Construction Data Report for Piping Systems

LIB-1002

Field Construction Shop Construction

Our Reference Number _____

1. Constructed by: General, Mechanical + Civil Contractors Ltd
 Address: 3000 84 Ave. Edmonton, AB T6P 1K3
2. Constructed for: Southern Pacific Resource Corp. Job No.: _____
3. Owner and Location of Installation: _____
4. Provincial Q.C. Program Reg. No.: QCP-0039-0001 Expiry Date: 23 Aug 2013
5. Provincial Reg. WPS. Nos. and Company WPS Nos. Used: GMCC-2-1
6. Code ANSI/ASME B31.1 B31.3 B31.5 Other _____

Dwg. No. and Line No.	Process (Air/Stm, etc.)	Des. Press. kPa	Des. Temp. °C	Test Pressure KPA	Test Medium	Mat'l Spec & Grade	Pipe Dia. & Sch.	Flange Rating	H.T. / Preheat Temp	R.T. %	Other NDE
STEAM SKID	STEAM	11,480	323	22,216	WATER	A106-B	6" S120 3" S80	1500#	10°C	100%	MT 100%

Shop Constructed Data Reports are available on file for all items which form part of above piping system(s)

CERTIFICATE OF COMPLIANCE

We certify the statements in this Data Report to be correct and that piping described in this Data Report was constructed in accordance with the Provincial *Boiler and Pressure Vessel Act* and Regulations, and applicable ANSI/ASME Piping Code(s)

Date 15 Nov 2012 GMC Contractors Ltd by Ed Polyanski
 (Contractor) (Authorized Representative)

CERTIFICATE OF INSPECTION

I, the undersigned, employed by _____ have inspected the piping described in this Construction Data Report and state that, to the best of my knowledge and belief, the Contractor has constructed this piping in accordance with the applicable Sections of the ANSI/ASME Piping Codes and Provincial *Boiler and Pressure Vessel Act* and Regulations.

Date _____ Date _____

(Owner's/Client's Inspector)

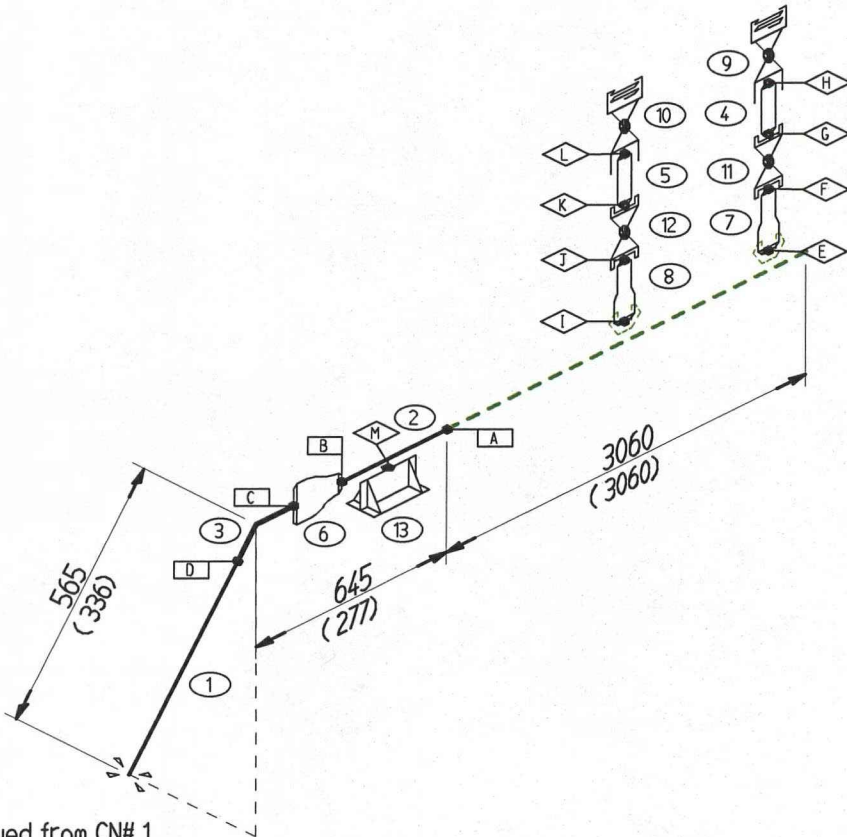
AUTHORITY INSPECTOR (Boiler External Piping Only)

AS-BUILT

ISSUED FOR CONSTRUCTION

WELD, M.T.R., N.D.E. MAPPING

CUT	FIT	FAB	DIM	VISUAL	NDE	HYDRO	SHIP	WWW.Acornpipe.com	ITM	QTY	A106-B SMLS Pipe	WELDS	WELDERS	X-Ray	NPI
									400988	1	6" Sch 160(.718) BE x PE	336			
									820162	2	3" Sch 80(.300) BE x BE	277			
									A234-WPB SMLS Fittings						
									1D4167	3	6" 90 LR Elbow	Sch 160	A-3" BW	0	32
									A106-B SMLS Fittings						
									W13357	4	1/2"-150 Lg PBE Pipe Nipple	Sch 80	B-3" BW	0	20
									W13357	5	1/2"-150 Lg PBE Pipe Nipple	Sch 80	C-6" BW	0	19
									A234-WPB SMLS Fittings						
									5203	6	6" x 3" Conc Reducer	Sch 160/Sch 80	D-6" BW	0	18
									MY9	7	3/4" x 1/2" PBE Conc Swage	Sch 80	E-3/4" SW	0	21
									MY9	8	3/4" x 1/2" PBE Conc Swage	Sch 80	F-1/2" SW	0	34
									Valves						
									1690	9	1/2 inch SW X TH Globe Valve		G-1/2" SW	0	19
									1690	10	1/2 inch SW X TH Globe Valve		H-1/2" SW	0	18
									1690	11	1/2 inch SW Globe Valve		I-3/4" SW	0	17
									1690	12	1/2 inch SW Globe Valve		J-1/2" SW	0	16
									Miscellaneous						
									13	1	Shoe		K-1/2" SW	0	15
													L-1/2" SW	0	33
													M-1/4" Acc	0	14



Continued from CN# 1

RT 1002 (+52 GAP)	MT 1002	PAHT NONE	PIPE SPEC EV	SURF AREA 6.6 sq ft	JOB CODE	PAINT
PT VISUAL 1002	HYDRO 3222 psi	FAB CODE B31.3	INSUL	REF DRG	REV.	
WELD PROC. GMCC2-1			DRN VOL			
			DATE 2012-11-06			
			CHK			
			APP			
REVISIONS	BY	CHK	DATE	2012-11-21		

CLIENT	Southern Pacific	P.O.No.	DIA-INS	28.3	WEIGHT	198 lb
PROJECT	Steam Skid		JOB No.	ZL27	CONTROL No.	2
SPOOL		REV. 0	SHEET	1 of 1		

AS-BUILT

ISSUED FOR CONSTRUCTION

WELD, M.T.R., N.D.E. MAPPING

CUT	FIT	FAB	DIM	VISUAL	NDE	HYDRO	SHIP	www.Acorpipe.com	ITEM	QTY	DESCRIPTION	WEIGHT	WELDS	WELDERS	X-Ray	MPI
												A106-B SMLS Pipe 820162 1 1 3" Sch 80(.300) BE x BE 350 820162 2 1 3" Sch 80(.300) BE x BE 300 820162 3 1 3" Sch 80(.300) BE x BE 168 820162 4 1 3" Sch 80(.300) BE x BE 510 615538 5 1 2" Sch 80(.218) BE x BE 38 A105N SMLS Flanges 60T2 6 1 2" 1500# RTJ Weld Neck Sch 80 A105N SMLS Fittings 58883 7 1 1/2" x 3" 3,000# Socket Sch 80 30J27 8 1 3" Grayloc Hub Sch 80 A106-B SMLS Fittings Q6S 9 1 1/2"-100 Lg PBE Pipe Nipple Sch 80 A234-WPB SMLS Fittings 11P10837 10 1 3"x 2" Red Tee Sch 80 Valves 1690 11 1 1/2 inch SW X TH Globe Valve 12 1 3 inch BW Check Valve 13 1 3 inch BW Gate Valve 14 1 3 inch BW Globe Valve Miscellaneous 15 1 Shoe	WELDS A-3"BW 0 10 B-3"BW 0 9 C-3"BW 0 8 D-3"BW 0 7 E-3"BW 0 6 F-3"BW 0 11 G-3"BW 0 12 H-3"BW 0 15 I-3"BW 0 16 J-2"BW 0 13 K-2"BW 0 14 L-1/4"Acc 0 M-1/2"Olet 0 24 N-1/2"SW 0 23 O-1/2"SW 0 22			
RT 100± (-5± GAP) MT 100± PWHT NONE PIPE SPEC EV SURF AREA 8.7 sq.ft JOB CODE PAINT PT VISUAL 100± HYDRO 3222 psi FAB CODE B31.3 INSUL REF DRG REV. WELD PROC. GMCC2-1									11 butt welds		CLIENT Southern Pacific P.O.No.		DIA-INS 36.8		WEIGHT 132 lb	
DRN VDL DATE 2012-11-01 CHK APP REVISIONS BY CHK DATE 2012-11-21									PROJECT Steam Skid		JOB No. ZL27		CONTROL No. 3		REV. 0 SHEET 1 of 1	

AS-BUILT

ISSUED FOR CONSTRUCTION

WELD, M.T.R., N.D.E. MAPPING

CUT	FIT	FAB	DIM	VISUAL	NDE	HYDRO	SHIP	WWW.Acorpipe.com	ITEM	QTY	A106-B SMLS Pipe		WELDS	WELDERS	X-Ray	MP1
									820162	1	3" Sch 80(.300) BE x BE	350				
									820162	2	3" Sch 80(.300) BE x BE	300				
									820162	3	3" Sch 80(.300) BE x BE	168	A-3"BW	0	25	
									820162	4	3" Sch 80(.300) BE x BE	510				
									615538	5	2" Sch 80(.218) BE x BE	38	B-3"BW	0	24	
									730T1	6	2" 1500# RTJ Weld Neck	Sch 80	C-3"BW	0	23	
									58883	7	1/2" x 3" 3,000# Socket		D-3"BW	0	22	
									30J27	8	3" GrayLoc Hub	Sch 80	E-3"BW	0	21	
									Q6S	9	A106-B SMLS Fittings		F-3"BW	0	26	
											1/2" -100 Lq PBE Pipe Nipple	Sch 80	G-3"BW	0	27	
									11P10837	10	A234-WPB SMLS Fittings		H-3"BW	0	30	
											3" x 2" Red Tee	Sch 80	I-3"BW	0	31	
											Valves		J-2"BW	0	28	
									1690	11	1/2 inch SW X TH Globe Valve		K-2"BW	0	29	
										12	3 inch BW Check Valve		L-1/4" Acc	0		
										13	3 inch BW Gate Valve		M-1/2" Olet	0	31	
										14	3 inch BW Globe Valve		N-1/2" SW	0	30	
										15	Miscellaneous		O-1/2" SW	0	29	
											Shoe					

RT 1002 (+5% GAP) MT 1002 PWHT NONE PIPE SPEC EV SURF AREA 8.7 sq ft JOB CODE PAINT

PT VISUAL 1002 HYDRO 3222 psi FAB CODE B31.3 INSUL REF DRG REV.

WELD PROC. GMCC2-1

DRN	VOL
DATE	2012-11-06
CHK	
APP	

REVISIONS

BY	CHK	DATE	2012-11-21
----	-----	------	------------

CLIENT	Southern Pacific	P.O.No.		DIA-INS	36.8	WEIGHT	132 lb
PROJECT	Steam Skid			JOB No.	ZL27	CONTROL No.	4
SPOOL		REV.	0	SHEET	1 of 1		

GMC GENERAL, MECHANICAL & CIVIL CONTRACTORS LTD.

Welding Procedure Specification

in accordance with

ASME Section VIII, Section IX, B31.1 & B31.3

Welding Procedure Specification No.: _____ GMCC-2 Revision 1¹

Supporting PQR No. (s): _____ GMCC-2-1, GMCC-2-2

Qualified for

Process(es):	<u>SMAW / SMAW</u>	Position(s):	<u>All / All</u>
Filler Metal F-No.:	<u>F-3 / F-4</u>	A-No.:	<u>A-1 / A-1</u>
AWS Classification:	<u>E6010 / E7018-1</u>	Weld Type(s):	<u>Groove, Fillet, Weld Buildup</u>
Base Metal:	<u>P-1 Group 1 or 2</u>	To:	<u>P-1 Group 1 or 2</u>
Typical Materials:	<u>This procedure is qualified for all P-1 (S-1) materials as specified in Table QW-422 of ASME Section IX for normal & sour service applications, and only P-1 (S-1) Group 1 or 2 materials for applications where proven notch toughness is required.</u>		
Diameter Range:	<u>All diameters</u>	Condition(s):	<u>As Welded</u>
Thickness Range:	<u>ASME Section IX</u>	<u>Normal & Sour Service</u>	<u>Impact Tested to -50°F</u>
	<u>ASME Section VIII</u>	<u>0.062" to 1.500"</u>	<u>0.125" to 1.500"</u>
	<u>ASME B31.1 / B31.3</u>	<u>0.062" to 0.750"</u>	<u>0.125" to 0.750"</u>

¹ Revision 1 – Requalification of WPS

Provincial Registration

Corrections and Public Safety
Boiler & P.V. Safety Unit
Province of Saskatchewan
Welding Procedure & Qualification

Reg. No. WP ~~1022.3~~ 1022.3

Spec. No. GMCC-2 Rev. 1

Weld Process SMAW / SMAW

Matl. Gr. P No. Gr. 1+2 to P No. Gr. 1+2

Elec. Gr. F No. 3+4 A No. 1

Th Qual. 1.6-38.1mm PWHT NO

CVN Th. Qual. Min. 3.2mm at -46°C

Remarks _____

Date May 19, 2009

Approved [Signature]

Provincial Registration

ALBERTA BOILERS SAFETY ASSOCIATION
PROVINCE OF ALBERTA
SAFETY CODES ACT
WELDING PROCEDURE

Reg. No. WP 1838.2

Spec No. GMCC-2 (REV 1)

Weld Process SMAW / SMAW

Matl. Gr. P No. Gr. 1+2 to P No. Gr. 1+2

Elec. Gr. F No. 3+4 A No. 1

Th. Qual. For 38.1mm PWHT NO

MIN TH. QUAL. 3.2mm, CVN -46°C

Yr. 09 Mo. 03 Day 28 Signed [Signature]

R. ROSEBERG, P.ENG.
WELDING SPECIALIST

GMC GENERAL, MECHANICAL & CIVIL CONTRACTORS LTD.

Welding Procedure Specification

in accordance with

ASME Section VIII, Section IX, B31.1 & B31.3

Welding Procedure Specification No.: GMCC-2 Revision 1¹

Supporting PQR No. (s): GMCC-2-1, GMCC-2-2

Qualified for

Process(es):	<u>SMAW / SMAW</u>	Position(s):	<u>All / All</u>
Filler Metal F-No.:	<u>F-3 / F-4</u>	A-No.:	<u>A-1 / A-1</u>
AWS Classification:	<u>E6010 / E7018-1</u>	Weld Type(s):	<u>Groove, Fillet, Weld Buildup</u>
Base Metal:	<u>P-1 Group 1 or 2</u>	To:	<u>P-1 Group 1 or 2</u>
Typical Materials:	This procedure is qualified for all P-1 (S-1) materials as specified in Table QW-422 of ASME Section IX for normal & sour service applications, and only P-1 (S-1) Group 1 or 2 materials for applications where proven notch toughness is required.		
Diameter Range:	<u>All diameters</u>	Condition(s):	<u>As Welded</u>
Thickness Range:		Normal & Sour Service	Impact Tested to -50°F
	<u>ASME Section IX</u>	<u>0.062" to 1.500"</u>	<u>0.125" to 1.500"</u>
	<u>ASME Section VIII</u>	<u>0.062" to 1.500"</u>	<u>0.125" to 1.500"</u>
	<u>ASME B31.1 / B31.3</u>	<u>0.062" to 0.750"</u>	<u>0.125" to 0.750"</u>

¹ Revision 1 – Requalification of WPS

Provincial Registration

Welding Procedure Specifications
ACCEPTED

Reg. No. W.P. GMCC-2 (REV-1)

Weld Process SMAW

P No. 1 GR 142 to P No. 1 GR 142

P No. 3/4 A No. 1

Th. Qual. Min. 0.125" Max. 1.500" -60c

yr. 09 mo. 06 day 11 Signed [Signature]

**BRITISH COLUMBIA SAFETY AUTHORITY
OPERATIONS SAFETY SERVICES**

Provincial Registration

ALBERTA BOILERS SAFETY ASSOCIATION
PROVINCE OF ALBERTA
SAFETY CODES ACT
WELDING PROCEDURE

Reg. No. WP 1838.2

Spec No. GMCC-2 (REV 1)

Weld Process SMAW/SMAW

Matl. Gr. P No. 1 GR 142 to P No. 1 GR 142

Elec. Gr. F No. 3+4 A No. 1

Th. Qual. For 3.8.1mm PWHT NO

MIN TH. QUAL 3.2mm, CVN-46°C

Yr. 09 Mo. 03 Day 28 Signed [Signature]

**R. ROSEBERG, P. ENG.
WELDING SPECIALIST**

GMC GENERAL, MECHANICAL & CIVIL CONTRACTORS LTD.

Welding Procedure Specification

in accordance with

ASME Section VIII, Section IX, B31.1 & B31.3

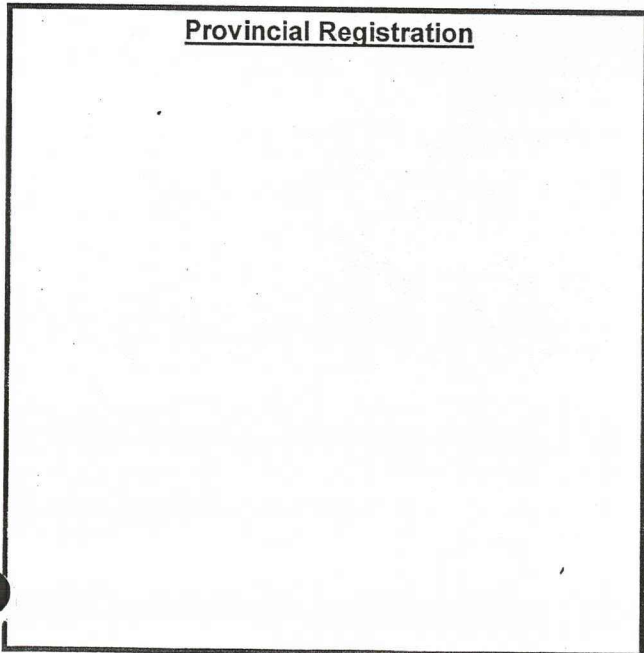
Welding Procedure Specification No.: GMCC-2 Revision 1¹
 Supporting PQR No. (s): GMCC-2-1, GMCC-2-2

Qualified for

Process(es):	<u>SMAW / SMAW</u>	Position(s):	<u>All / All</u>
Filler Metal F-No.:	<u>F-3 / F-4</u>	A-No.:	<u>A-1 / A-1</u>
AWS Classification:	<u>E6010 / E7018-1</u>	Weld Type(s):	<u>Groove, Fillet, Weld Buildup</u>
Base Metal:	<u>P-1 Group 1 or 2</u>	To:	<u>P-1 Group 1 or 2</u>
Typical Materials:	<u>This procedure is qualified for all P-1 (S-1) materials as specified in Table QW-422 of ASME Section IX for normal & sour service applications, and only P-1 (S-1) Group 1 or 2 materials for applications where proven notch toughness is required.</u>		
Diameter Range:	<u>All diameters</u>	Condition(s):	<u>As Welded</u>
Thickness Range:	<u>ASME Section IX</u>	<u>Normal & Sour Service</u>	<u>Impact Tested to -50°F</u>
	<u>ASME Section VIII</u>	<u>0.062" to 1.500"</u>	<u>0.125" to 1.500"</u>
	<u>ASME B31.1 / B31.3</u>	<u>0.062" to 0.750"</u>	<u>0.125" to 0.750"</u>

¹Revision 1 – Requalification of WPS

Provincial Registration



Provincial Registration

ALBERTA BOILERS SAFETY ASSOCIATION
PROVINCE OF ALBERTA
SAFETY CODES ACT
WELDING PROCEDURE

Reg. No. WP..... 1838.2
 Spec No. GMCC-2 (REV 1)
 Weld Process SMAW/SMAW
 Matl. Gr. P No. 1 Gr. 1 & 2 to P No. 1 Gr. 1 & 2
 Elec. Gr. F No. 3+4 A No. 1
 Th. Qual. For. 3.8.1mm PWHT NO
MIN. TH. QUAL. 3.2mm, CVN-46°C

Yr 09 Mo 03 Day 28 Signed [Signature]
 R. ROSEBERG P. ENG.
 WELDING SPECIALIST

WELDING PROCEDURE SPECIFICATION (WPS) QW-482
(Section IX, ASME Boiler and Pressure Vessel Code)

Company Name: GMC General, Mechanical & Civil Contractors Ltd.
 WPS No.: GMCC-2
 Revision No.: 1
 Supporting PQR's: GMCC-2-1, GMCC-2-2
 Welding Process(es): SMAW / SMAW

Certified By: Vern Hrabec
 Date: August 10, 1995
 Revision Date: February 24, 2009
 Type(s): Manual / Manual

JOINTS QW-402		Joint Details
Joint Design:	Butt, Tee, Lap, Corner, etc.	All ASME joint designs. Reference construction drawings for joint details. Where joint details are not specified, refer to typical joint detail sheet provided.
Backing:	F-3 with or without backing F-4 with backing only	
Backing Material (Type):	Similar base or weld metal or backwelding as required. No Retainers.	

BASE METALS QW-403							
P-No.:	P-1	Group No.:	1 or 2	to P-No.:	P-1	Group No.:	1 or 2
OR							
Spec. type & grade:	N/A			to Spec. type & grade:	N/A		
OR							
Chem. Analysis & Mech. Prop.:	N/A			to Chem. Analysis & Mech. Prop.:	N/A		
Thickness Range							
Base Metal: Groove:	Normal & Sour Service		Impact Tested to -50°F		Fillet: All		
	Section IX	0.062" to 1.500"	0.125" to 1.500"				
	Section VIII	0.062" to 1.500"	0.125" to 1.500"				
	B31.1 / B31.3	0.062" to 0.750"	0.125" to 0.750"		Fillet: All		
Pipe Dia Range: Groove:	Unlimited						Fillet: All
Other:	Maximum thickness of any weld layer shall not exceed 0.500". Limited to Group 1 or 2 only when proven notch toughness is required.						

Reference to relevant construction code is mandatory prior to production welding to determine any supplementary restrictions

FILLER METALS QW-404		
Process:	SMAW	SMAW
Specification No. (SFA):	5.1	5.1
AWS Classification No.:	E6010	E7018-1
F-No.:	F-3	F-4
A-No.:	A-1	A-1
Size of Filler Metals:	3/32", 1/8", 5/32"	3/32", 1/8", 5/32", 3/16", 1/4"
Weld Metal Thickness - Groove:	0.250" max.	1.500" max.
- Fillet:	Unlimited	Unlimited
Electrode-Flux (Class):	Not Applicable	Not Applicable
Flux Trade Name:	Not Applicable	Not Applicable
Alloy Flux:	Not Applicable	Not Applicable
Consumable Insert:	Not Applicable	Not Applicable
Supplemental Filler Metals:	Not Applicable	Not Applicable
Product Form:	Covered Electrode	Covered Electrode
Other:	Additional filler metal diameters may be available subject to manufacturer's inventory. E6010 limited to root pass only when proven notch toughness is required.	

WELDING PROCEDURE SPECIFICATION (WPS) QW-482
(Section IX, ASME Boiler and Pressure Vessel Code)

WPS # GMCC-2 Revision 1

POSITIONS QW-405		POSTWELD HEAT TREATMENT QW-407	
Position(s) of Groove:	All	Temp. Range:	
Welding Progression:	F-3 SMAW Vertical Up or Down	Time Range:	(Not Applicable)
	F-4 SMAW Vertical Up	Heating:	
Position(s) of Fillet:	All	Cooling:	

PREHEAT QW-406		GAS QW-408	
Temperature Min.:		Shielding Gas(es):	
Interpass Min.:	(See Next Page)	Composition:	
Interpass Temp. Max.:		Flow Rate:	(Not Applicable)
Preheat Maintenance:	Monitor using tempilstiks, pyrometer or other suitable methods.	Gas Backing:	
		Backing Rate:	

ELECTRICAL CHARACTERISTICS QW-409			
Current:	F-3 SMAW: Direct - DC	F-4 SMAW: Direct - DC	
Polarity:	F-3 SMAW: Reverse - EP	F-4 SMAW: Reverse - EP	
Amps (Range):	F-3 SMAW: 50 - 180	F-4 SMAW: 50 - 360	
Volts (Range):	F-3 SMAW: 18 - 34	F-4 SMAW: 18 - 34	
Travel Speed (Range) - ipm:	F-3 SMAW: 1 - 16	F-4 SMAW: 1 - 20	
Maximum Heat Input 0.125" to 0.625":	F-3 SMAW: 28 336 J/ in	F-4 SMAW: 42 900 J/ in	
0.625" to 1.500":	F-3 SMAW: 41 400 J/ in	F-4 SMAW: 87 584 J/ in	
Tungsten Electrode Type & Size:	Not Applicable		
Mode of Metal Transfer for GMAW:	Not Applicable		
Electrode Wire feed speed range:	Not Applicable		
Other:	Maximum heat input is mandatory only when proven notch toughness is required.		

TECHNIQUE QW-410	
String or Weave Bead:	String and weave. Weave size shall be controlled to prevent exceeding maximum heat input.
Orifice or Gas Cup Size:	Not Applicable
Initial Cleaning:	Base material must be thoroughly cleaned of all foreign material (scale, rust, oil, grease, paint, tar, etc.) at least 1" back on each side of the joint prior to welding. All surfaces to be welded shall be smooth, uniform and free from notches, slag, fins and burrs.
Interpass Cleaning:	Perform by wire brush, chipping hammer, power brushing, grinding, etc. after each weld layer.
Method of Back Gouging:	Arc air, gouge, grind, etc., if required. Grind to clean metal where thermal processes are used.
Oscillation:	Not Applicable
Contact Tube to Work Distance:	Not Applicable
Multiple or Single Pass (per side):	Single or multiple passes per side. Multiple only when proven notch toughness is required.
Multiple or Single Electrodes:	Single electrodes only
Peening:	Peening is not allowed

TYPICAL WELDING PARAMETERS						
Process	Filler Metal		Type & Polarity	Current		Travel Speed (IPM)
	AWS Classification	Diameter (in)		Amp. Range	Volt Range	
SMAW	E6010	3/32	DC-EP	50 - 100	18 - 30	1 - 12
SMAW	E6010	1/8	DC-EP	60 - 150	20 - 32	2 - 14
SMAW	E6010	5/32	DC-EP	70 - 180	22 - 34	4 - 16
SMAW	E7018-1	3/32	DC-EP	50 - 130	18 - 28	1 - 14
SMAW	E7018-1	1/8	DC-EP	70 - 180	19 - 30	2 - 16
SMAW	E7018-1	5/32	DC-EP	90 - 230	20 - 32	3 - 18
SMAW	E7018-1	3/16	DC-EP	130 - 290	20 - 34	4 - 19
SMAW	E7018-1	1/4	DC-EP	180 - 360	22 - 34	4 - 20

Notes: Number of weld layers and size of filler metal may vary with thickness of base material and position of weld.
1/4" E7018-1 electrodes are limited to flat (1G) position only.

WELDING PROCEDURE SPECIFICATION (WPS) QW-482.
(Section IX, ASME Boiler and Pressure Vessel Code)

WPS # GMCC-2 Revision 1

PREHEAT & INTERPASS TEMPERATURE MINIMUM AND MAXIMUM	
Section VIII :	50°F minimum for all P-1 materials except as listed below : 175°F if the joint thickness exceeds 1.000" and the specified carbon content exceeds 0.30% 200°F if the joint thickness is 1.250" to 1.500"
B31.1 :	50°F minimum for all P-1 materials except as listed below : 200°F if the nominal thickness of either of the base metals exceeds 1.000"
B31.3 :	50°F minimum for all P-1 materials except as listed below: 175°F if the specified minimum tensile strength of the base material exceeds 71 ksi
Max. Interpass Temp.:	650°F for normal service, 550°F when proven notch toughness is required

Reference to relevant construction codes is mandatory prior to production welding to determine any supplementary restrictions.

GMC CONTRACTORS LTD.

WELDING PROCEDURE SPECIFICATION FOR SHIELDED METAL ARC WELDING (SMAW)

SPECIFICATION No.: GMC-CWB-01

Scope:


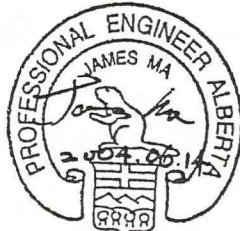
This Welding Procedure Specification covers welding and related operations of steel structures which are fabricated in accordance with the terms outlined in CSA Standards W47.1-03-03 and W59-03, latest revisions. The attached Data Sheets form an essential part of this specification.

A change in any of the essential variables contained in succeeding paragraphs or detailed on applicable Welding Procedure Data Sheet(s) shall require a new Welding Procedure Specification and/or a new Welding Procedure Data Sheet(s).

Welding Procedure:

The welding shall be done manually using the SMAW (Shielded Metal Arc Welding) process.

Joints shall be made following the procedural stipulations indicated in CSA W59-03, and may consist of single or multiple passes in accordance with the accepted Welding Procedure Data Sheets to which this specification refers.

<p>Welding Procedure Specification CWB Accepted to CSA W47.1</p> <p> JUN 23 2004 ✓</p>	
CWB	ENGINEER

Base Metal:

The base metal shall conform to the specifications of steel groups 1, 2, 3 as per Table 11-1 or Table 12-1 (CSA W59-03). Other groups may be welded providing Welding Procedure Data Sheets are accepted by the Canadian Welding Bureau.

Base Metal Thickness:

Base metal thicknesses from 3 mm (1/8") to UNLIMITED THICKNESS inclusive may be welded under this specification providing the respective Welding Procedure Data Sheets have been supplied and accepted for the appropriate weld size.

Filler Metal:

The filler metal shall be certified by the Canadian Welding Bureau as conforming to CSA Standard W48-01..

Storage and Conditioning of Electrodes:

Basic Electrodes

All basic electrodes shall be delivered in hermetically sealed containers that do not show evidence of damage. However, if such containers show evidence of damage, the following shall apply:

- (a) Basic electrodes conforming to CSA Standard W48.1 shall be dried for at least 1 hour at a temperature between 370°C (700°F) and 430°C (800°F) before being used or otherwise treated as non-basic electrodes.
- (b) Basic electrodes conforming to CSA Standard W48.3 shall be dried for at least 1 hour at a temperature between 370°C (700°F) and 430°C (800°F) before being used.

Immediately after being removed from hermetically sealed containers or from drying ovens, electrodes shall be stored in ovens held at a temperature of at least 120°C (250°F).

Basic electrodes of E49XX (E70XX) classification that are not used within 4 hours after removal from ovens shall be reconditioned in accordance with the requirements of Clause 5.2.2.4.1 of CSA W59-03.

Basic electrodes with strength levels above the E480XX (E70XX) classifications that are not used within 3 hours after removal from ovens shall be redried between 370°C (700°F) and 430°C (800°F) for 1 hour before being used.

* *Shorter periods of exposure time shall be considered at high atmospheric humidity and temperature conditions.*

Basic electrodes shall be redried no more than once.

Other Than Basic Electrodes

All other than basic electrodes shall be stored in warm and dry conditions and kept free from oil, grease, and other deleterious matter once they have been removed from their containers and packages.

Electrodes that have been wet shall be discarded.

Position:

The welding shall be done preferably in the flat position, but other positions such as horizontal, vertical and overhead are permissible providing the proper Data sheets are supplied and approved.

Preheat:

The minimum preheat before welding will comply with Table 5-3, CSA W59-03. Minimum preheat to be maintained or exceeded during welding.

If welding is interrupted for some time so that the temperature of the base metal falls below the minimum preheat temperature, then arrangements will be made to preheat again prior to recommencing welding.

The weldment shall be allowed to cool to the ambient temperature without external quench media being supplied. In other words, do not cool using water or by immediate placement in frigid conditions which will cause a quick temperature change.

Heat Treatment and Stress Relieving:

This will not be applicable to structures welded under this specification, unless a specific Data Sheet showing all the parameters is submitted to the Canadian Welding Bureau and acceptance is obtained.

Electrical Characteristics:

Welding equipment will be used having a dropping voltage characteristic. The welding current specified will be direct current (straight or reverse polarity) or alternating current. The current range will be as per electrode manufacturer's instructions and will be shown on the Welding Procedure Data Sheet.

Welding Technique:

The correct amperage and voltage, speed of travel, thickness of layers, number of passes, position, material electrodes and any special instructions will be as per the Data Sheet.

Arc strikes outside of the area of welds should be avoided on any material.

The arc shall be initiated and maintained as follows:

EXX10-EXX11 Electrodes

Flat → Hold an arc of 3.2 mm (1/8") or less or touch the work lightly with the electrode tip. Move fast enough to stay ahead of the molten pool using a slight whipping technique.

Vertical → Vertical-down techniques are used by pipeliners and for single-pass welds on thin steel. Vertical up is used for most plate welding. Make the first vertical up pass with either a whipping technique for fillet welds, or with a circular motion for V-butt joints. Apply succeeding passes with a weave, pausing slightly at the edges to ensure penetration and proper wash-in.

Overhead and Horizontal Butt Welds → These welds are best made with a series of stringer beads, using a technique similar to those described for first-pass vertical-up welds.

EXX12-EXX13-EXX14 Electrodes

Flat → Use stringer beads for the first pass except when poor fit-up requires a slight weave. Touch the tip of the electrode to the work or hold an arc length of 3.2 mm (1/8") or less. Move as fast as possible consistent with desired bead size.

Vertical-Up → Use a triangular weave. Weld a shelf at the bottom of the joint and add layer upon layer. Do not whip or take the electrode out of the molten pool. Point the electrode slightly upward so that the arc force helps control the puddle. Travel slow enough to maintain the shelf without spilling.

Overhead → Make stringer beads using a whipping technique with a slight circular motion in the crater. Do not weave. Travel fast enough to avoid spilling.

EXX15, EXX16, EXX18 "Basic" Electrodes

Flat → Use low current on the first pass or whenever it is desirable to reduce admixture with a base metal of poor weldability. On succeeding passes, use currents that provide best operating characteristics. Drag the electrodes lightly or hold an arc of 3.2 mm (1/8") or less.

Do not use a long arc at any time, since EXX18 electrodes rely principally on molten slag for shielding. Stringer beads or small weave passes are preferred to wide weave passes. When starting a new electrode, strike the arc ahead of the crater, move back into the crater, and then proceed in the normal direction. On AC, use currents about 10% higher than those used with DC. Govern travel speed by the desired head size.

Vertical → Weld vertical-up. Use a triangular weave for heavy single-pass welds. For multiple welds, first deposit a stringer bead by using a slight weave. Deposit additional layers with a side-to-side weave, hesitating at the sides long enough to fuse out any small slag pockets and to minimize undercut. Weaving may be used up to 2-1/2 times the diameter of the electrode. Do not use a whip technique or take the electrode out of the molten pool as porosity results. Travel slowly enough to maintain the shelf without causing metal to spill.

Overhead → Deposit stringer beads by using a slight circular motion in the crater. Maintain a short arc. Motions should be slow and deliberate. Move fast enough to avoid spilling weld metal, but do not be alarmed if some slag spills.

EXX24 Electrodes

Flat → Use a drag technique: Tip the electrode 10 to 30 degrees in the direction of travel and make stringer beads. Weld with the electrode tip lightly dragging on the work so that molten metal is forced out from under the tip, thereby promoting penetration. Travel rapidly, but slow enough to maintain good slag coverage. Stay about 6 mm - 10 mm (1/4" - 3/8") ahead of the molten slag. If travel speed is too slow, a small ball of molten slag may form and roll ahead of the arc, causing spatter, poor penetration, and erratic bead shape.

Horizontal Fillets and Laps → Point the electrode into the joint at an angle of 45 degrees from the horizontal and use the "flat" technique described above. The tip of the electrode must touch both horizontal and vertical members of the joint. If the 45 degree angle between plates is not maintained, the fillet legs will be of different sizes. When two passes are needed, deposit the first bead mostly on the bottom plate. To weld the second pass, hold the electrode at about 45 degrees fusing into the vertical plate and the first bead. To make multiple-pass horizontal fillets, put the first bead in the corner with a fairly high current, disregarding undercut. Deposit the second bead on the horizontal plate, fusing into the first bead. Put the final bead against the vertical plate.

Deep-Groove Butt Welds → To hold the large pool of molten weld metal, either a backup plate, or a stringer bead made with a deeper-penetration electrode is required. Deposit beads with a stringer technique until a slight weave is required to obtain fusion of both plates. Split-weave welds are better than a wide weave near the top of the deep grooves. When welding the second last pass, leave enough room so that the last pass will not exceed a 1.6 mm (1/16") build-up. A slight undercut on all but the past pass creates no problems, because it is burned out with each succeeding pass.

EXX28 "Basic" Electrodes

Techniques for the EXX28 are the same as those for EXX24. Special care should be taken to clean the slag from every bead on multiple-pass welds to avoid slag inclusions.

Preparation of Base Material:

The edges or surfaces of parts to be joined by welding shall be prepared by oxy-acetylene machine cutting. Where hand cutting is involved, the edge will be ground to a smooth surface. All surfaces and edges shall be free from fins, tears, cracks, or any other defects which would adversely affect the quality of the weld.

All loose or thick scale, rust, moisture, grease or other foreign material that would prevent proper welding or produce objectionable fumes shall be removed.

Quality:

Cracks or blow holes that appear on the surface of any pass shall be removed before depositing the next covering pass.

The procedure and technique shall be such that undercutting of base metal or adjacent passes is minimized.

Fillet and butt welds shall meet the desirable or acceptable fillet weld profiles shown in Figure 5.2, CSA W59-03.

The reinforcement in groove welds shall not exceed 3 mm (1/8") and shall have a gradual transition to the plane of the base metal surface. Undercut shall be limited to that described in Clauses 11.5.4.1(f) or 12.5.4.1(h) of CSA W59-03. All welds shall be free from overlap.

In general, the weld quality will be such as to meet the requirements of Clause 11.5.4. or 12.5.4. of CSA W59-03.

Weld Metal Cleaning:

Slag or flux remaining after a pass shall be removed before applying the next covering pass. Prior to painting, etc., all slag shall be removed and the parts shall be free of loose scale, oil and dirt.

Treatment of Underside of Welding Groove:

Prior to depositing weld metal on the underside of a welding groove, the root shall be gouged or chipped to sound metal, unless otherwise specified on the applicable Data Sheet.

Data Sheet:

The attached data sheets form part of this specification.

WELDING PROCEDURE DATA SHEET

No. GMC-CWB-01-01F DATE
June 14, 2004

Name of Company: **GMC Contractors Ltd.** Welding Procedure: **GMC-CWB-01**

Complete Address: **3000-84 Avenue Edmonton AB** Applicable Standards: **W47.1 & W59**

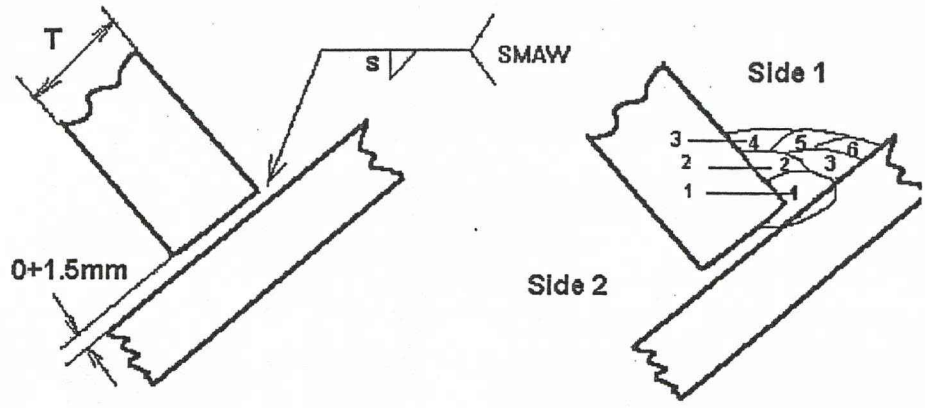
CHECK TYPE OF WELDING PROCESS

Manual (SMAW) Submerged-Arc (SAW)
 Flux-Cored (FCAW) Solid Wire (GMAW)

Welding Position: Flat Electrode (wire) Classification: E4918-1 (E7018-1 or E48018-1)

Material Designations: **CSA W59 Table 11-1 Steel Group 1, 2, 3.**

Preheat Minimum as per CSA W-59: **Yes** Minimum Interpass Temp.: **Same as preheat.** Maximum Interpass Temp.: **550 °F**



COMPLETE JOINT PENETRATION GROOVE <input type="checkbox"/> Back gouged to sound metal <input type="checkbox"/> Welded onto steel backing <input type="checkbox"/> Welded from one side without backing <input type="checkbox"/> welded from both sides without back gouging <input type="checkbox"/> Welded onto other than steel backing	GROOVE WELD PARTIAL JOINT PENETRATION <input type="checkbox"/> Minimum as per CSA W-59 <input type="checkbox"/> Others (Specify)	JOINT TYPE as per CSA W-59 <input type="checkbox"/> BUTT <input checked="" type="checkbox"/> TEE <input checked="" type="checkbox"/> CORNER <input checked="" type="checkbox"/> LAP <input type="checkbox"/> EDGE	Automatic or Semi-Automatic Electrical Stickout: N/A Shielding Gas: N/A cu. ft./hr. N/A Flux: N/A
FILLET WELD <input checked="" type="checkbox"/> Minimum as per CSA W-59			

Material Thickness	BUTT or FILLET size	SIDE No.	LAYER NUMBER	PASS NUMBER	ELECTRODE SIZE	CURRENT POLARITY	AMPERES	Volts	Travel Speed (ipm)	Wire Feed Speed
≤ 1/2"	3/16"	1	1	1	1/8"	DC+/AC	120-160	22-28		
≤ 3/4"	1/4"	1	1	1	1/8"	DC+/AC	120-160	22-28		
≤ 2"	5/16"	1	1-2	1-3	5/32"	DC+/AC	150-220	22-30		
≤ 2"	3/8"	1	1-2	1-3	5/32"	DC+/AC	150-220	22-30		
≤ 2"	1/2"	1	1-3	1-3	5/32"	DC+/AC	150-220	22-30		
≤ 2"	3/4"	1	1-3	1-3	5/32"	DC+/AC	150-220	22-30		

Revision Date	Explanation	CWB Approval	Engineer's Stamp
		Welding Procedure Data Sheet CWB Accepted to CSA W47.1 JUN 23 2004 Acceptance valid only when Welding Consumables certified by C.W.B. (C11.8.1, CSA W47.1)	

WELDING PROCEDURE DATA SHEET

No. GMC-CWB-01-01H

DATE
June 14, 2004

Name of Company: GMC Contractors Ltd.

Welding Procedure GMC-CWB-01

Complete Address: 3000-84 Avenue Edmonton AB

Applicable Standards: W47.1 & W59.1

CHECK TYPE OF
WELDING PROCESS

- Manual (SMAW) Submerged-Arc (SAW)
 Flux-Cored (FCAW) Solid Wire (GMAW)

Welding
Position: Horizontal

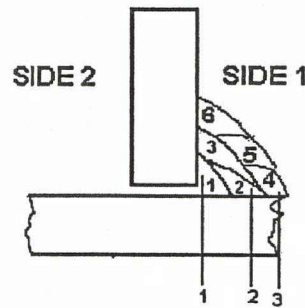
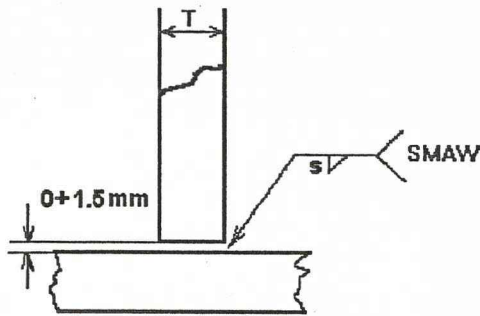
Electrode (wire) Classification:
E4918-1(E7018-1or E48018-1)

Material Designations:
CSA W59 Table 11-1 Steel Group 1, 2, 3.

Preheat Minimum as per
CSA W-59
Yes

Minimum Interpass Temp.
Same as preheat.

Maximum Interpass Temp.
550 °F



COMPLETE JOINT PENETRATION GROOVE

- Back gouged to sound metal
 Welded onto steel backing
 Welded from one side without backing
 Welded from both sides without back gouging
 Welded onto other than steel backing

GROOVE WELD

- PARTIAL JOINT PENETRATION**
 Minimum as per CSA W-59
 Others (Specify)

FILLET WELD

- Minimum as per CSA W-59

JOINT TYPE

as per CSA W-59

- BUTT TEE
 CORNER
 LAP EDGE

Automatic or Semi-Automatic

Electrical

Stickout: N/A

Shielding Gas: cu. ft./hr.

N/A N/A

Flux: N/A

Material Thickness	BUTT or FILLET size	SIDE No.	LAYER NUMBER	PASS NUMBER	ELECTRODE SIZE	CURRENT POLARITY	AMPERES	Volts	Travel Speed (ipm)	Wire Feed Speed
≤ 1/2"	3/16"	1	1	1	1/8"	DC+/AC	120-160	22-28		
≤ 3/4"	1/4"	1	1	1	1/8"	DC+/AC	120-160	22-28		
≤ 2"	5/16"	1	1 - 2	1 - 3	1/8"	DC+/AC	120-160	22-28		
≤ 2"	3/8"	1	1 - 2	1 - 3	5/32"	DC+/AC	150-220	22-30		
≤ 2"	1/2"	1	1 - 2	1 - 3	5/32"	DC+/AC	150-220	22-30		
≤ 2"	3/4"	1	1 - 3	1 - 3	5/32"	DC+/AC	150-220	22-30		

Revision Date	Explanation	CWB Approval	Engineer's Stamp
		<p>Welding Procedure Data Sheet CWB Accepted to CSA W47.1</p> <p>JUN 23 2004</p> <p>Acceptance valid only when Welding Consumables certified by C.W.B. (CL 11.8.1, CSA W47.1)</p>	

WELDING PROCEDURE DATA SHEET

No.GMC-CWB-01-010 DATE
June 14, 2004

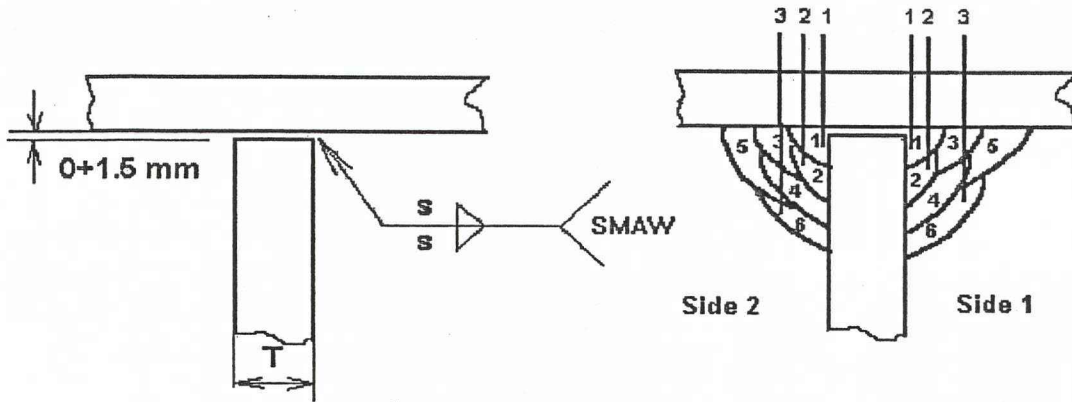
Name of Company: **GMC Contractors Ltd.** Welding Procedure: **GMC-CWB-01**
 Complete Address: **3000-84 Avenue Edmonton AB** Applicable Standards: **W47.1 & W59.1**

CHECK TYPE OF WELDING PROCESS

<input checked="" type="checkbox"/> Manual (SMAW)	<input type="checkbox"/> Submerged-Arc (SAW)	Welding Position: Overhead	Electrode (wire) Classification: E4918-1(E7018-1or E48018 -1)
<input type="checkbox"/> Flux-Cored (FCAW)	<input type="checkbox"/> Solid Wire (GMAW)		

Material Designations: **CSA W59 Table 11-1 Steel Group 1, 2, 3.**

Preheat Minimum as per CSA W-59 Yes	Minimum Interpass Temp. Same as preheat.	Maximum Interpass Temp. 550 °F
---	---	---------------------------------------



COMPLETE JOINT PENETRATION GROOVE <input type="checkbox"/> Back gouged to sound metal <input type="checkbox"/> Welded onto steel backing <input type="checkbox"/> Welded from one side without backing <input type="checkbox"/> Welded from both sides without back gouging <input type="checkbox"/> Welded onto other than steel backing	GROOVE WELD PARTIAL JOINT PENETRATION <input type="checkbox"/> Minimum as per CSA W-59 <input type="checkbox"/> Others (Specify) FILLET WELD <input checked="" type="checkbox"/> Minimum as per CSA W-59	JOINT TYPE as per CSA W-59 <input type="checkbox"/> BUTT <input checked="" type="checkbox"/> TEE <input checked="" type="checkbox"/> CORNER <input type="checkbox"/> LAP <input type="checkbox"/> EDGE	Automatic or Semi-Automatic Electrical Stickout: N/A Shielding Gas: N/A cu. ft./hr. N/A Flux: N/A
---	--	--	--

Material Thickness	BUTT or FILLET size	SIDE No.	LAYER NUMBER	PASS NUMBER	ELECTRODE SIZE	CURRENT POLARITY	AMPERES	Volts	Travel Speed (ipm)	Wire Feed Speed
≤ 1/2"	3/16"	1	1	1	1/8"	DC+/AC	120 - 150	20 - 26		
≤ 3/4"	1/4"	1	1	1	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	5/16"	1	1-2	1-3	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	3/8"	1	1-2	1-3	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	1/2"	1	1-3	1-6	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	3/4"	1	1-3	1-6	5/32"	DC+/AC	150 - 190	22 - 28		

Revision Date	Explanation	CWB Approval	Engineer's Stamp

Welding Procedure Data Sheet
CWB Accepted to CSA W47.1

JUN 23 2004 ✓

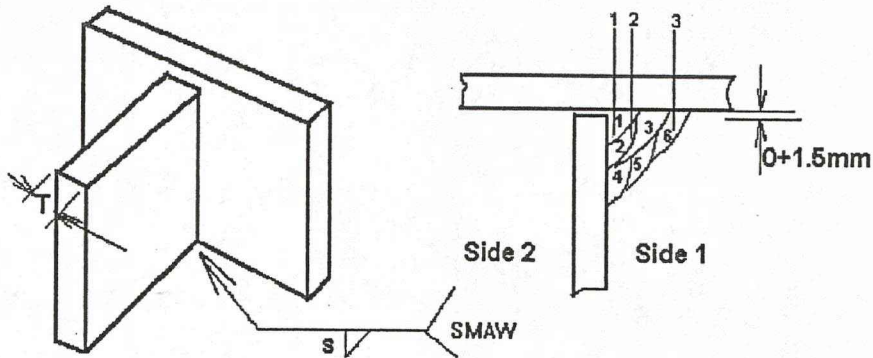
Acceptance valid only when Welding Consumables certified by C.W.B. (C 11.8.1, CSA W47.1)

WELDING PROCEDURE DATA SHEET

No.GMC-CWB-01-01V

DATE
June 14, 2004

Name of Company: GMC Contractors Ltd.		Welding Procedure: GMC-CWB-01	
Complete Address: 3000-84 Avenue Edmonton AB		Applicable Standards: W47.1 & W59.1	
CHECK TYPE OF WELDING PROCESS	<input checked="" type="checkbox"/> Manual (SMAW)	<input type="checkbox"/> Submerged-Arc (SAW)	Welding Position: Vertical
	<input type="checkbox"/> Flux-Cored (FCAW)	<input type="checkbox"/> Solid Wire (GMAW)	
Material Designations: CSA W59 Table 11-1 Steel Group 1, 2, 3.		Preheat Minimum as per CSA W-59: Yes	Electrode (wire) Classification: E4918-1(E7018-1or E48018-1)
		Minimum Interpass Temp.: Same as preheat.	Maximum Interpass Temp.: 550 °F



COMPLETE JOINT PENETRATION GROOVE <input type="checkbox"/> Back gouged to sound metal <input type="checkbox"/> Welded onto steel backing <input type="checkbox"/> Welded from one side without backing <input type="checkbox"/> welded from both sides without back gouging <input type="checkbox"/> Welded onto other than steel backing	GROOVE WELD PARTIAL JOINT PENETRATION <input type="checkbox"/> Minimum as per CSA W-59 <input type="checkbox"/> Others (Specify) FILLET WELD <input checked="" type="checkbox"/> Minimum as per CSA W-59	JOINT TYPE as per CSA W-59 <input type="checkbox"/> BUTT <input checked="" type="checkbox"/> TEE <input checked="" type="checkbox"/> CORNER <input checked="" type="checkbox"/> LAP <input type="checkbox"/> EDGE	Automatic or Semi-Automatic	
			Electrical	
			Stickout:	
			Shielding Gas:	cu. ft./hr.
Flux:				

Material Thickness	BUTT or FILLET size	SIDE No.	LAYER NUMBER	PASS NUMBER	ELECTRODE SIZE	CURRENT POLARITY	AMPERES	Volts	Travel Speed (ipm)	Wire Feed Speed
≤ 1/2"	3/16"	1	1	1	1/8"	DC+/AC	120 - 150	20 - 26		
≤ 3/4"	1/4"	1	1	1	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	5/16"	1	1-2	1-3	1/8"	DC+/AC	120 - 150	20 - 26		
≤ 2"	3/8"	1	1-2	1-3	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	1/2"	1	1-2	1-3	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	3/4"	1	1-3	1-6	5/32"	DC+/AC	150 - 190	22 - 28		

Revision Date	Explanation	CWB Approval	Engineer's Stamp

Welding Procedure Data Sheet
CWB Accepted to CSA W47.1

JUN 23 2004 ✓

Acceptance valid only when Welding
Consumables certified by C.W.B.
(Cl. 11.8.1, CSA W47.1)

WELDING PROCEDURE DATA SHEET

No. GMC-CWB-01-02F

DATE
October 8, 2004

Name of Company: **GMC Contractors Ltd.**

Welding Procedure: **GMC-CWB-01**

Complete Address: **3000- 84 Avenue, Edmonton AB**

Applicable Standards: **W47.1 & W59**

CHECK TYPE OF WELDING PROCESS

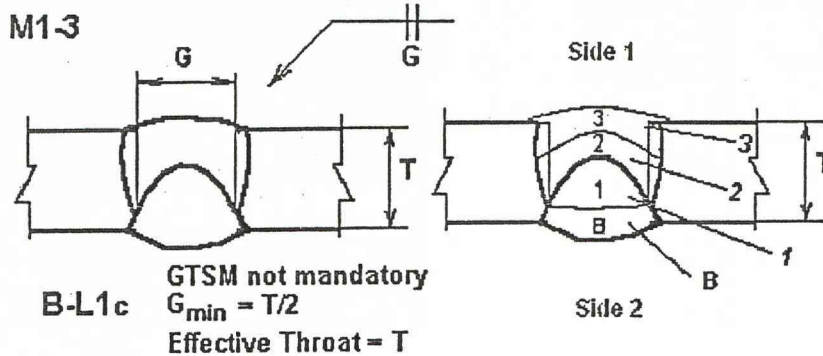
- Manual (SMAW) Submerged-Arc (SAW)
 Flux-Cored (FCAW) Solid Wire (GMAW)

Welding Position: Flat

Electrode (wire) **E4918-(1)**
 Classification: (E48018-(1), E7018-(1))

Material Designations: **CSA W59 Table 11-1 Steel Group 1, 2, 3.**

Preheat Minimum as per CSA W-59 Yes Minimum Interpass 50°F Temperature Maximum Interpass 400°F Temperature



COMPLETE JOINT PENETRATION GROOVE

- Back gouged to sound metal if required
 Welded onto steel backing
 Welded from one side without backing
 Welded from both sides without backing
 Welded onto other than steel backing

GROOVE WELD PARTIAL JOINT PENETRATION

- Minimum as per CSA W-59
 Others (Specify)

FILLET WELD

- Minimum as per CSA W-59

JOINT TYPE as per CSA W-59


- BUTT TEE
 CORNER
 LAP EDGE

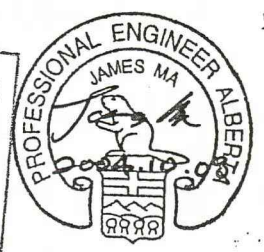
Automatic or Semi-Automatic

Electrical Stickout: **N/A**
 Shielding Gas: **N/A** cu. ft./hr. **N/A**
 Flux: **N/A**

Material Thickness	Effective Throat	SIDE No.	LAYER NUMBER	Pass Number	ELECTRODE SIZE	CURRENT POLARITY	AMPS	Volts	Arc Travel Speed	Remarks
1/8"	1/8"	1	1	1	3/32"	AC or DC RP	75 - 110	18 - 24	2 - 8 ipm	
		1	2	2	1/8"	AC or DC RP	110 - 160	20 - 26	3 - 10 ipm	
3/16"	3/16"	1	1	1	3/32"	AC or DC RP	75 - 110	18 - 24	2 - 8 ipm	
		1	2-3	2-3	1/8"	AC or DC RP	110 - 160	20 - 26	3 - 10 ipm	after GTSM if req'd
		2	B	B	1/8"	AC or DC RP	110 - 160	20 - 26	3 - 10 ipm	
1/4"	1/4"	1	1	1	3/32"	AC or DC RP	75 - 110	18 - 24	2 - 8 ipm	
		1	2	2	1/8"	AC or DC RP	110 - 160	20 - 26	3 - 10 ipm	
		1	3	3	5/32"	AC or DC RP	150 - 220	22 - 28	4 - 12 ipm	
		2	B	B	5/32"	AC or DC RP	150 - 220	22 - 28	4 - 12 ipm	after GTSM if req'd

Revision Date	Explanation	CWB Approval	Engineer's Stamp

Welding Procedure Data Sheet
 CWB Accepted to CSA W47.1

OCT 21 2004 ✓
 Acceptance valid only when Welding Consumables certified by C.W.B. (CI. 11.8.1, CSA W47.1)



WELDING PROCEDURE DATA SHEET

No. GMC-CWB-01-02H

DATE
October 8, 2004

Name of Company: GMC Contractors Ltd.

Welding Procedure: GMC-CWB-01

Complete Address: 3000- 84 Avenue, Edmonton AB

Applicable Standards: W47.1 & W59

**CHECK TYPE OF
WELDING PROCESS**

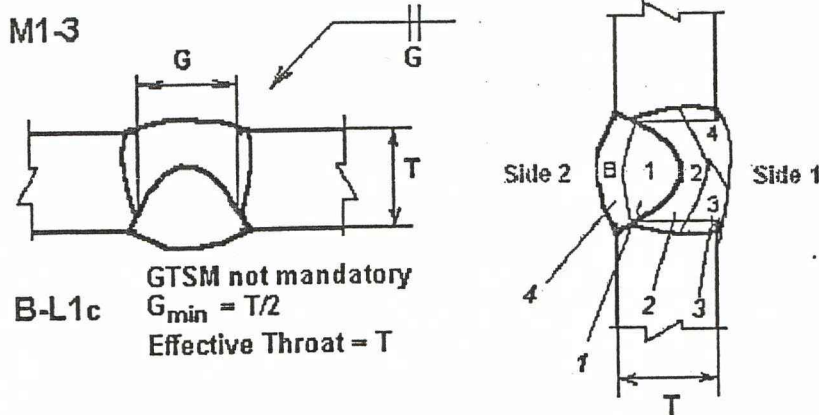
- Manual (SMAW) Submerged-Arc (SAW)
 Flux-Cored (FCAW) Solid Wire (GMAW)

Welding Position: Horizontal

Electrode (wire) E4918-(1)
Classification: (E48018-(1), E7018-(1))

Material Designations: CSA W59 Table 11-1 Steel Group 1, 2, 3.

Preheat Minimum as per CSA W-59 Yes Minimum Interpass Temperature 50°F Maximum Interpass Temperature 400°F



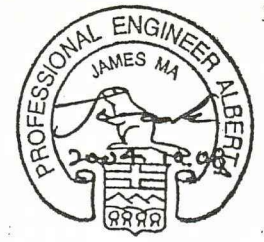
<p>COMPLETE JOINT PENETRATION GROOVE</p> <p><input type="checkbox"/> Back gouged to sound metal if required</p> <p><input type="checkbox"/> Welded onto steel backing</p> <p><input type="checkbox"/> Welded from one side without backing</p> <p><input checked="" type="checkbox"/> Welded from both sides without backing</p> <p><input type="checkbox"/> Welded onto other than steel backing</p>	<p>GROOVE WELD PARTIAL JOINT PENETRATION</p> <p><input type="checkbox"/> Minimum as per CSA W-59</p> <p><input type="checkbox"/> Others (Specify)</p> <hr/> <p>FILLET WELD</p> <p><input type="checkbox"/> Minimum as per CSA W-59</p>	<p>JOINT TYPE as per CSA W-59</p> <p><input checked="" type="checkbox"/> BUTT <input type="checkbox"/> TEE</p> <p><input type="checkbox"/> CORNER</p> <p><input type="checkbox"/> LAP <input type="checkbox"/> EDGE</p>	<p>Automatic or Semi-Automatic Electrical</p> <p>Stickout: N/A</p> <hr/> <p>Shielding Gas: cu. ft./hr.</p> <p style="text-align: center;">N/A N/A</p> <hr/> <p>Flux: N/A</p>
--	--	--	--

Material Thickness	Effective Throat	SIDE No.	LAYER NUMBER	Pass Number	ELECTRODE SIZE	CURRENT POLARITY	AMPS	Volts	Arc Travel Speed	Remarks
1/8"	1/8"	1	1	1	3/32"	AC or DC RP	75 - 110	18 - 24	2 - 8 ipm	
		1	2	2	1/8"	AC or DC RP	110 - 160	20 - 26	3 - 10 ipm	
		2	B	B	1/8"	AC or DC RP	110 - 160	20 - 26	3 - 10 ipm	after GTSM if req'd
3/16"	3/16"	1	1	1	3/32"	AC or DC RP	75 - 110	18 - 24	2 - 8 ipm	
		1	2-4	2-4	1/8"	AC or DC RP	110 - 160	20 - 26	3 - 10 ipm	
		2	B	B	1/8"	AC or DC RP	110 - 160	20 - 26	3 - 10 ipm	after GTSM if req'd

Revision Date	Explanation	CWB Approval	Engineer's Stamp

Welding Procedure Data Sheet
 CWB Accepted to CSA W47.1

 OCT 21 2004 ✓
 Acceptance valid only when Welding Consumables certified by C.W.B. (Cl. 11.8.1, CSA W47.1)



11 0 11



10285

Grade "B" Pressure Welder's Certificate of Competency

This is to certify that **Kurt Ziegler** 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:
November 25, 2005



W-23244

File no.

[Signature]
Chief Inspector and Administrator

012672070 44919A

THIS IS TO CERTIFY THAT
KURT EVAN ZIEGLER
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 January 29th, 2002	ISSUE DATE January 29th, 2002
--------------------------------------	----------------------------------

[Signature] *[Signature]*
CH. LYLE GREGG DIRECTOR OF LEARNING SHIRLEY COLE, EXECUTIVE DIRECTOR OF APPRENTICESHIP & INDUSTRY TRAINING

CANADIAN WELDING BUREAU
 This card is valid only while employed by a CWB certified company
Transferable Welder Qualification Record

Name: Kurt E Ziegler Exp. Date: Dec 18, 2010
 Employer: Triton Fabrication Services, Lamont, AB

Testing Standard: CSA W47.1-03 Material: Carbon Steel
 Process: SMAW Mode: Manual
 Mode of Transfer: N/A
 Class: Flat/Horizontal
 Classification: S Electrode: F4
 Thickness Range: 3mm & above

[Handwritten signature]



1. This card remains the property of the Canadian Welding Bureau and can be recalled and/or cancelled at any time.

Cette carte demeure la propriété du Bureau Canadien de Soudage elle peut être rappelée et/ou annulée en tout temps.

2. This card must be available for inspection by the Bureau's representatives or other officials at all times.

Cette carte doit être disponible en tout temps pour fins d'inspection par les représentants du Bureau ou tout autre organisme.

3. Fraudulent use of this card could result in loss of qualifications for the welder and/or company.

L'usage de la présente carte à des fins frauduleuses pourrait entraîner la perte des qualifications pour le soudeur et/ou la compagnie.

Performance Qualification GRB Card No. 18173

Process(es) SMAW Materials (P.No.) P1
Filler Metal (F.No) F3 F4 Min. Outside Pipe Diameter 1" OD
Max Deposited Weld Metal 0.104" MAX. TO WELD Position(s) Qualified ALL
Backing WITHOUT WITH WITH Backing Gas NONE
Progression UPHILL #E00 252
P.Q. Expiry Date SEPT 18, 2014 Welding Examiner Signature [Signature]



Welder Qualification

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

Test Centre Welder Test Record

Transferable Welder

Name: **KURT E. ZIEGLER** Exp. Date: **Sep 24, 2014**
Test Facility: **GRB Enterprises Ltd.**
Thickness Range: **3mm & above** Material: **Carbon Steel**
Mode: **MANUAL** Process: **SMAW**
Standard: **CSA W47.1**
Classification: **S**
Electrode: **F4**
Class: **FLAT/HORIZONTAL/VERTICAL UP/OVERHEAD**

See Reverse for Conditions

0

GRB Enterprises Ltd
Edmonton Alberta

AOQP 7107(C)

WELDER PERFORMANCE QUALIFICATION CARD

KURT

Name

ZIEGLER

W-23244

ABSA File Number

Name

This card is issued pursuant to the Safety Codes Act and the Pressure Welders Regulation. The performance qualification is in accordance with Section IX of the ASME BPV Code and subject to the limitations on the reverse side.

SEPT 18, 2012

Date of Test

Welder Signature

BRUCE CORMIER

Welding Examiner (Print/Type)

18173

GRB Card No.

Conditions Of Use

1. This card remains the property of the CWB and may be recalled and/or cancelled at any time. Fraudulent use of this card can result in loss of qualifications of the individual and/or the certified company employing the individual.
2. This card must be available for inspection by any CWB representative or other designated officials at all times.
3. This qualification may be revoked by the CWB if the individual is not engaged in the process qualified for a period of three months or more.

For any questions regarding this qualification, please contact:

1-800-844-6790 | www.cwbgroup.org



CWB
INSTITUTE

0



Welder Qualification

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

Transferable Welder

Name: NATHAN L. ZIEGLER	Exp. Date: Sep 03, 2014
Employer: GMC Contractors Ltd., Edmonton, AB	
Thickness Range: 3mm & above	Material: Carbon Steel
	Process: SMAW
Mode: MANUAL	Standard: CSA W47.1
	Classification: S
	Electrode: F4
Class: FLAT/HORIZONTAL/VERTICAL UP/OVERHEAD	

See Reverse for Conditions



Welder Qualification

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

Transferable Welder

Name: **BRANDON P. DEVOLDER** Exp. Date: **Jan 17, 2013**
Employer: **Garneau Manufacturing Inc., Morinville, AB**
Thickness Range: **3mm & above** Material: **Carbon Steel**
Mode: **MANUAL** Process: **SMAW**
Standard: **CSA W47.1**
Classification: **S**
Electrode: **F4**
Class: **FLAT/HORIZONTAL/VERTICAL UP/OVERHEAD**

See Reverse for Conditions

Certifying Statement

Part 1: Acceptance of the QA/Procedures Manual

I have reviewed the practices, procedures, records and certifications and control systems of the Quality Management System for:

BUFFALO INSPECTION SERVICES (2005) Inc.
of
8403 Davies Road NW. Edmonton, Alberta T6E 4N3

And henceforth, by my opinion and qualifications, have determined that the above said Company complies by meeting or exceeding the standards outlined by the CGSB and by ASNT (SNT-TC-1A) for NDE practices and procedures.

The above said,

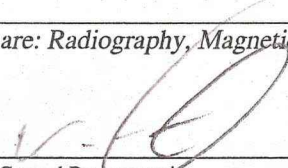
BUFFALO INSPECTION SERVICES (2005) Inc.

Is therefore hereby appointed and permitted to perform the following NDE methods for:

GMC Contractors Ltd.
3000 - 84Ave
Edmonton, Alberta T6P 1K3

Attention: Vern Hrabec

Which are: Radiography, Magnetic Particle, Liquid Penetrant, and Ultrasonic Examinations.



Signature of Quality Control Representative

JUN 14 / 2011

Date

Part 2: Level III Appointment

Robert Lewko

Robert Lewko


Is by this statement appointed to act as the Level III Operator for:

BUFFALO INSPECTION SERVICES (2005) Inc.
8403 Davies Road NW. Edmonton, Alberta T6E 4N3


And is certified by CGSB and SNT-TC-1A standards in RT(III), MT(III), PT(III), UT(I).

I hereby appointment the above person as Level III:

I hereby accept the appointment as indicated above:



Signature of QC Manager of above said Company



Signature of Level III Operator

June 14 / 2011

Date

June 14 / 2011

Date



Buffalo Inspection Services (2005) Inc.
 8403 Davies Road NW
 Edmonton, Alberta T6E 4N3
 Phone: (780) 486-7344 Fax: (780) 486-4685
 Website: www.buffaloinspection.com

RADIOGRAPHIC EXAMINATION REPORT

RT-13380

Client: GMC CONTRACTORS SHOP
 Billing Address: 3000 84 AVE NW
EDMONTON
 Contact/Attention: _____
 Work Location: _____
 Project Name: SOUTHERN PACIFIC
 Work Description/Items: _____

RT Procedure Number*: GP-RT-01 Revision _____
 *From QA Procedures Manual REPORT PAGE 2 of 6

Client Job No.: ZL-27
 P.O. Number: ZL-27-33390
 AFE Number: _____
 Examination Date: Nov 13/12

- *CODES REFERENCE**
 1: ASME B31.3 N/S
 2: ASME B31.3 S/C
 3: CSA Z662 Clause 7.11
 4: CSA Z662 Clause 16.6.9 (Sour)
 5: ASME Sect VIII Div 1 UW51
 6: ASME Sect VIII Div 1 UW52
 7: ASME B31.1
 8: API 620
 9: API 650
 10: Other: _____

Severity Codes: 1 = Slight, 2 = Medium, 3 = Severe

Hours: REG: O.T.: SUB/CAMP: ATV: OTHER: MILEAGE: kilometers

TEST RESULTS/RECORD OF INDICATIONS

Film No.	Size & Thickness of Material		Welder ID	Material	Reference Code	Technique Number	Source to Object Distance	Source Side of Object to Film Dist.	IQI Reference	Discontinuity Code and/or Comments	Severity Code	Accept	Reject
	Plus Code Max. Reinforcement												
1	X21	3"	80	0	CS	1	RT-4A/R1		2	ISO #6 Kurt Ziegler		✓	
2	22									W-23249		✓	
3	23											✓	
4	24											✓	
5	25											✓	
6	26											✓	
7	27	↓							↓			✓	
8	28	2"							↓			✓	
9	29	↓							↓			✓	
10	30	3							2			✓	
11	31								↓			✓	
12	32	↓							↓			✓	
13	33	1/2					RT-5 R1		NA	GAP shot		✓	
14	↓34	↓							↓			✓	
15													
16													
17													
18													
19													
20													

Wall Viewing: Single Wall Double Wall
 Processing: Automatic Manual/Mobile Darkroom
 Effective Focal Spot Size: .118 (inches)
 Source Isotope: IRIDIUM-192 (Gamma)

Film Make/Brand: AGFA D4 Film Class/Type: _____
 Screens: Lead Front: 0.010 Back: 0.010
 Film Density: Min: 2.0 Max: 4.0 Max Recommended U/G: _____
one (no.) film per cassette Penetrameter (IQI hole type) designation: _____

Technician: Shawn Wright CGSB Level: 11 CGSB No: 8131 SNT Level: 11 SNT No: 8053
 Assistant 1: Jon Pickard PRINT NAME CEDO # _____ SNT Level: _____ SNT No: _____ Trainee
 Assistant 2: _____ PRINT NAME CEDO # _____ SNT Level: _____ SNT No: _____ Trainee
 Technician Signature: S. Wright DATE: Nov 13/12 BIS Technician Number: 610
 Client Rep.: Ryan van der Lugt PRINT NAME TELEPHONE NUMBER _____ SIGNATURE _____ MANUF. EVALUATION DATE _____

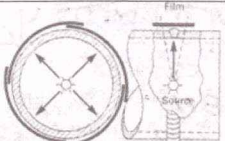
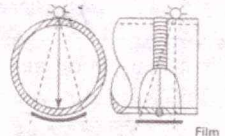
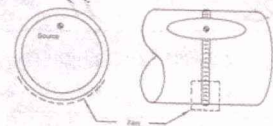
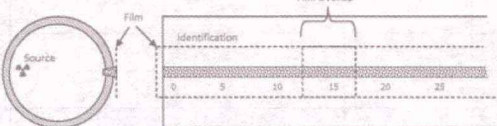
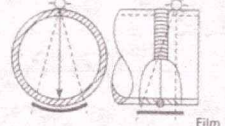

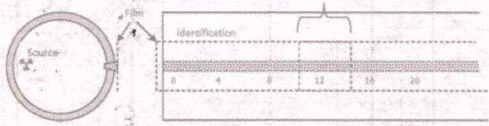
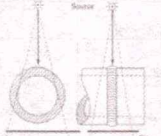
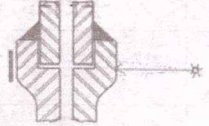
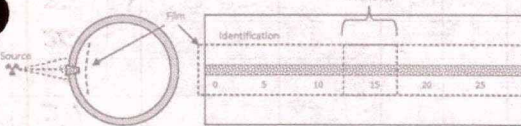
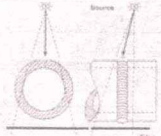
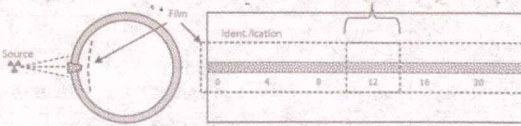
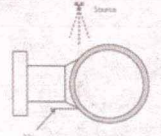
IMPORTANT: See reverse side of this form for the Buffalo Inspection Services (2005) Inc. Limited Liability Policy
 Note: SNT refers to the SNT-TC-1A Recommended Practice. Buffalo Inspection Services follows the SNT-TC-1A Recommended Practice that defines the criteria for this certification.

RADIOGRAPHIC EXAMINATION - PROCEDURE NOTES

BUFFALO INSPECTION SERVICES (2005) INC. RT TECHNIQUES (Pictographic References)

BUFFALO INSPECTION SERVICES (2005) INC. GENERAL RT PROCEDURE NUMBER: GP-RT-01 Techniques: 13 Ref: QA Manual: Module #6

Note: **R#** refers to the Revision number/status of the technique indicated. Always check the Procedures Manual for the most current revision status.

 <p style="text-align: center;">Tech #RT-1/R1 Vessel Circumferential Weld 1 Exposure: <i>QA Subsection 17.1</i></p>	 <p style="text-align: center;">Tech #RT-4A/R1 Circ. Weld – Contact – Light Wall 3 Exposures@120° Spacing: <i>QA Subsection 17.6</i></p>	 <p style="text-align: center;">Tech #RT-8/R1 Circ. Weld – Source Not Centered Exposures as required: <i>QA Subsection 17.11</i></p>
 <p style="text-align: center;">Tech #RT-2A/R1 Long. Weld - Light Wall – Source Inside 1 Exposure/15 inches: <i>QA Subsection 17.2</i></p>	 <p style="text-align: center;">Tech #RT-4B/R1 Circ. Weld – Contact - Heavy Wall 4 Exposures@90° Spacing: <i>QA Subsection 17.7</i></p>	 <p style="text-align: center;">Tech #RT-9/R1 Mitered “T” Joint – Single Wall – Source Centered Exposures as required: <i>QA Subsection 17.12</i></p>
 <p style="text-align: center;">Tech #RT-2B/R1 Long. Weld - Heavy Wall – Source Inside 1 Exposure/12 inches: <i>QA Subsection 17.3</i></p>	 <p style="text-align: center;">Tech #RT-5/R1 Circ. Weld – Dbl Wall – Superimposed 3 Exposures@60° Spacing: <i>QA Subsection 17.8</i></p>	 <p style="text-align: center;">Tech #RT-10/R1 Gap Check 1 Exposure: <i>QA Subsection 17.9</i></p>
 <p style="text-align: center;">Tech #RT-3A/R1 Long. Weld – Light Wall – Source Outside 1 Exposure/15 inches: <i>QA Subsection 17.4</i></p>	 <p style="text-align: center;">Tech #RT-6/R1 Circ. Weld – Double Wall – Ellipse 2 Exposures@90° Spacing: <i>QA Subsection 17.9</i></p>	<p style="text-align: center;">Penetrameter (IQI) Reference</p> <p>Ref # (enter in IQI # column)</p> <ol style="list-style-type: none"> 1: ASTM A 2: ASTM B 3: ASTM C 4: ASTM D 5: DIN Set/Size 1 (Wire range 1 – 7) 6: DIN Set/Size 6 (Wire range 6 – 12) 7: DIN Set/Size 10 (Wire range 10 – 16) 8: DIN Set/Size 13 (Wire range 13 – 19) 9: Hole Type: Indicate IQI Designation Number: Use Penetrameter blank on report front. <p>Hole Type Designation No's: 3, 7, 10, 12, 15, 17, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 100, 120, 140, 160, 200, 240, 280</p>
 <p style="text-align: center;">Tech #RT-3B/R1 Long. Weld – Heavy Wall – Source Outside 1 Exposure/12 inches: <i>QA Subsection 17.5</i></p>	 <p style="text-align: center;">Tech #RT-7/R1 Category “D” Weld Exposures as required: <i>QA Subsection 17.10</i></p>	

Clocktape marker and start arrow marked on weldment. It is the customer's responsibility to map welds on drawing.

LIMITED LIABILITY POLICY

Buffalo Inspection Services (2005) Inc. guarantees the film quality produced by its technicians; however, no liability shall be accepted for failure of welds or other items radiographed. The interpretation of radiographs is the opinion of the radiograph technician and final acceptance of a weld (for example) is the responsibility of the customer. Liability for film quality is limited to the value of the film only – labour and equipment costs required to reproduce films will be borne by the customer – unless the customer rejects the film before signing this report, in which case, radiographs will be retaken at no extra cost to the customer.



Buffalo Inspection Services (2005) Inc.
 8403 Davies Road NW
 Edmonton, Alberta T6E 4N3
 Phone: (780) 486-7344 Fax: (780) 486-4685
 Website: www.buffaloinpection.com

RADIOGRAPHIC EXAMINATION REPORT

RT-13379

Client: GMC CONTRACTORS SHOP
 Billing Address: 3000 84 AVE NW
Edmonton
 Contact/Attention: _____
 Work Location: _____
 Project Name: Southern Pacific
 Work Description/Items: _____

RT Procedure Number*: GP-RT-01 Revision _____
 *From QA Procedures Manual REPORT PAGE 1 of 6

Client Job No.: ZL-27
 P.O. Number: ZL-27-33390
 AFE Number: _____
 Examination Date: Nov 13/12
 Severity Codes: 1 = Slight, 2 = Medium, 3 = Severe

- *CODES REFERENCE**
- 1: ASME B31.3 N/S
 - 2: ASME B31.3 S/C
 - 3: CSA Z662 Clause 7.11
 - 4: CSA Z662 Clause 16.6.9 (Sour)
 - 5: ASME Sect VIII Div 1 UW51
 - 6: ASME Sect VIII Div 1 UW52
 - 7: ASME B31.1
 - 8: API 620
 - 9: API 650
 - 10: Other: _____

Hours: REG: O.T.: SUB/CAMP: ATV: OTHER: MILEAGE: kilometers

TEST RESULTS/RECORD OF INDICATIONS

Film No.	Size & Thickness of Material		Welder ID	Material	Reference Code	Technique Number	Source to Object Distance	Source Side of Object to Film Dist.	IQI Reference	Discontinuity Code and/or Comments	Severity Code	Accept	Reject
	Plus Code Max. Reinforcement												
1	X 1	6"	120	0	CS	1	RT-4A/RI		2	ISO*6 Kurt Ziegler		✓	
2	2	↓	16p	↓	↓	↓	↓	↓	↓	W-23244		✓	
3	3	↓	↓	↓	↓	↓	↓	↓	↓			✓	
4	4	3	80	↓	↓	↓	RT-4A/RI	↓	↓			✓	
5	5	↓	↓	↓	↓	↓	↓	↓	↓			✓	
6	6	↓	↓	↓	↓	↓	↓	↓	↓			✓	
7	7	↓	↓	↓	↓	↓	↓	↓	↓			✓	
8	8	↓	↓	↓	↓	↓	↓	↓	↓			✓	
9	9	↓	↓	↓	↓	↓	↓	↓	↓			✓	
10	10	↓	↓	↓	↓	↓	↓	↓	↓			✓	
11	11	↓	↓	↓	↓	↓	↓	↓	↓			✓	
12	12	↓	↓	↓	↓	↓	↓	↓	↓			✓	
13	13	2"	↓	↓	↓	↓	↓	1	↓			✓	
14	14	↓	↓	↓	↓	↓	↓	2	Per		1	✓	
15	15	3	↓	↓	↓	↓	↓	↓	↓			✓	
16	16	↓	↓	↓	↓	↓	↓	↓	↓			✓	
17	17	6	160	↓	↓	↓	RT-4B/RI	↓	↓			✓	
18	18	↓	↓	↓	↓	↓	↓	↓	↓			✓	
19	19	↓	↓	↓	↓	↓	↓	↓	↓			✓	
20	↓ 20	3	80	↓	↓	↓	RT-4A/RI	↓	↓			✓	

Wall Viewing: Single Wall Double Wall
 Processing: Automatic Manual/Mobile Darkroom
 Effective Focal Spot Size: .118 (inches)
 Source Isotope: IRIDIUM-192 (Gamma)

Film Make/Brand: AGFA D4 D5 Film Class/Type: 2
 Screens: Lead Front: 0.010 Back: 0.010
 Film Density: Min: 2.0 Max: 4.0 Max Recommended U/G: 1.020
one (no.) film per cassette Penetrameter (IQI hole type) designation: _____

Technician: Shawna Wright CGSB Level: 11 CGSB No: 8131 SNT Level: 11 SNT No: 8053
 Assistant 1: Jon Pickard PRINT NAME CEDO # _____ SNT Level: _____ SNT No: _____ Trainee
 Assistant 2: _____ PRINT NAME CEDO # _____ SNT Level: _____ SNT No: _____ Trainee
 Technician Signature: [Signature] DATE: Nov 13/12 BIS Technician Number: 610
 Client Rep.: [Signature] PRINT NAME TELEPHONE NUMBER _____ SIGNATURE _____ MANUF. EVALUATION DATE _____

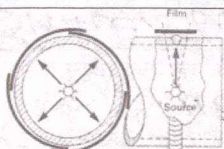
IMPORTANT: See reverse side of this form for the Buffalo Inspection Services (2005) Inc. Limited Liability Policy
 Note: SNT refers to the SNT-TC-1A Recommended Practice. Buffalo Inspection Services follows the SNT-TC-1A Recommended Practice that defines the criteria for this certification.

RADIOGRAPHIC EXAMINATION - PROCEDURE NOTES

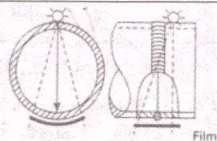
BUFFALO INSPECTION SERVICES (2005) INC. RT TECHNIQUES (Pictographic References)

BUFFALO INSPECTION SERVICES (2005) INC. GENERAL RT PROCEDURE NUMBER: GP-RT-01 Techniques: 13 Ref: QA Manual: Module #6

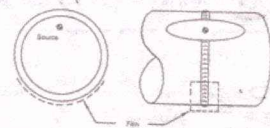
Note: **R#** refers to the Revision number/status of the technique indicated. Always check the Procedures Manual for the most current revision status.



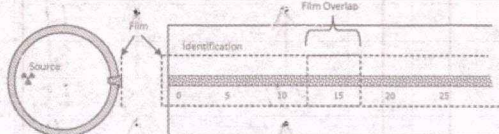
Tech #RT-1/R1
Vessel Circumferential Weld
1 Exposure: *QA Subsection 17.1*



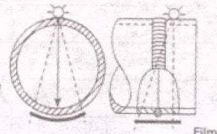
Tech #RT-4A/R1
Circ. Weld – Contact – Light Wall
3 Exposures@120° Spacing: *QA Subsection 17.6*



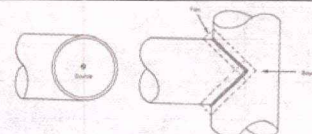
Tech #RT-8/R1
Circ. Weld – Source Not Centered
Exposures as required: *QA Subsection 17.11*



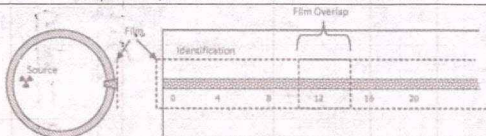
Tech #RT-2A/R1
Long. Weld - Light Wall – Source Inside
1 Exposure/15 inches: *QA Subsection 17.2*



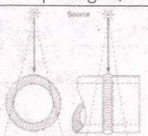
Tech #RT-4B/R1
Circ. Weld – Contact - Heavy Wall
4 Exposures@90° Spacing: *QA Subsection 17.7*



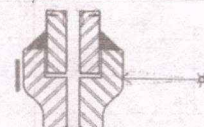
Tech #RT-9/R1
Mitered "T" Joint – Single Wall – Source Centered
Exposures as required: *QA Subsection 17.12*



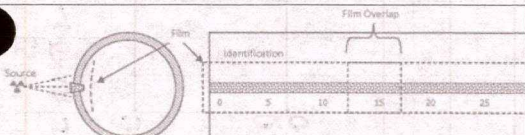
Tech #RT-2B/R1
Long. Weld - Heavy Wall – Source Inside
1 Exposure/12 inches: *QA Subsection 17.3*



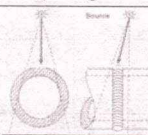
Tech #RT-5/R1
Circ. Weld – Dbl Wall – Superimposed
3 Exposures@60° Spacing: *QA Subsection 17.8*



Tech #RT-10/R1
Gap Check
1 Exposure: *QA Subsection 17.9*



Tech #RT-3A/R1
Long. Weld – Light Wall – Source Outside
1 Exposure/15 inches: *QA Subsection 17.4*



Tech #RT-6/R1
Circ. Weld – Double Wall – Ellipse
2 Exposures@90° Spacing: *QA Subsection 17.9*

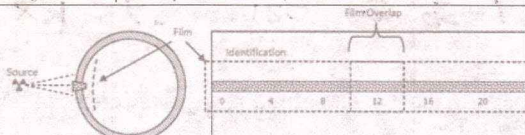
Penetrameter (IQI) Reference

Ref # (enter in IQI # column)

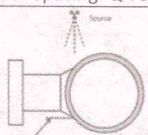
- 1: ASTM A
- 2: ASTM B
- 3: ASTM C
- 4: ASTM D
- 5: DIN Set/Size 1 (Wire range 1 – 7)
- 6: DIN Set/Size 6 (Wire range 6 – 12)
- 7: DIN Set/Size 10 (Wire range 10 – 16)
- 8: DIN Set/Size 13 (Wire range 13 – 19)

9: Hole Type: Indicate IQI Designation Number: Use Penetrameter blank on report front.

Hole Type Designation No's: 5, 7, 10, 12, 15, 17, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 100, 120, 140, 160, 200, 240, 280



Tech #RT-3B/R1
Long. Weld – Heavy Wall – Source Outside
1 Exposure/12 inches: *QA Subsection 17.5*



Tech #RT-7/R1
Category "D" Weld
Exposures as required: *QA Subsection 17.10*

Clocktape marker and start arrow marked on weldment. It is the customer's responsibility to map welds on drawing.

LIMITED LIABILITY POLICY

Buffalo Inspection Services (2005) Inc. guarantees the film quality produced by its technicians; however, no liability shall be accepted for failure of welds or other items radiographed. The interpretation of radiographs is the opinion of the radiograph technician and final acceptance of a weld (for example) is the responsibility of the customer. Liability for film quality is limited to the value of the film only – labour and equipment costs required to reproduce films will be borne by the customer – unless the customer rejects the film before signing this report, in which case, radiographs will be retaken at no extra cost to the customer.



Buffalo Inspection Services (2005) Inc.
 8403 Davies Road NW
 Edmonton, Alberta T6E 4N3
 Phone: (780) 486-7344 Fax: (780) 486-4685
 Website: www.buffaloinpection.com

MAGNETIC PARTICLE EXAMINATION REPORT

MT- 3066

Page 4 of 4

Client: GMC CONTRACTORS SHOP

Billing Address: 3000 84 AVE

Contact/Attention: _____

Work Location: _____

Work Description/Items: Shoe inspection

Regular Hours: _____ Overtime Hours: _____

Mileage: _____ (kms) Sub/Camp: _____

Client Job Number: _____

Project Name: Southern Pacific

P.O. Number: 21-27-33594 AFE Number: _____

Examination Date: Nov 14/12

MPI Procedure Number: GP-MT-01 Rev _____

MPI Proc. Technique No: MT-2V Rev _____

Acceptance Standard: B31.3

Acceptance Details: _____

EXAMINATION SURFACE INFORMATION

Surface Preparation: As Ground As Welded Machined Shot Blasted Clean Bare Metal Other
 Surface Temperature: 50°C to 50°C < 0°C > 50°C Temperature Demonstration Required
 Surface Contaminants: None - Clean & Dry Oil/Grease Rust Paint Scale Flux Weld Spatter
 Cleaning Details: Solvent Detergent De-scaling Solution Paint Remover Vapor Degreasing Sand/Grit Blast
 Other Method: _____ Product: _____ Not Applicable - Surface was clean

EXAMINATION DETAILS

Method: DRY WET FLUORESCENT CONTRAST

Continuous Residual

Brand of Particle: Magnaflux Part/Prod No: 7HF

Particle Colour: GREY BLACK RED _____

Suspension: OIL WATER NOT APPLICABLE

Contrast Paint Brand: Magnaflux Part/Prod No: WCP-2

EQUIPMENT DETAILS

Equipment: AC DC YOKE COIL _____

Mag. Time: 20 Seconds || Demag. Required? YES NO

Instrument: Parker S/N 14657 CAL Due Date: 22 Jun 13

Light Equipment: Flashlight Trouble light

Halogen/Quartz >100fc at surface

Black Light: S/N: _____ Output >1000 μW/cm²

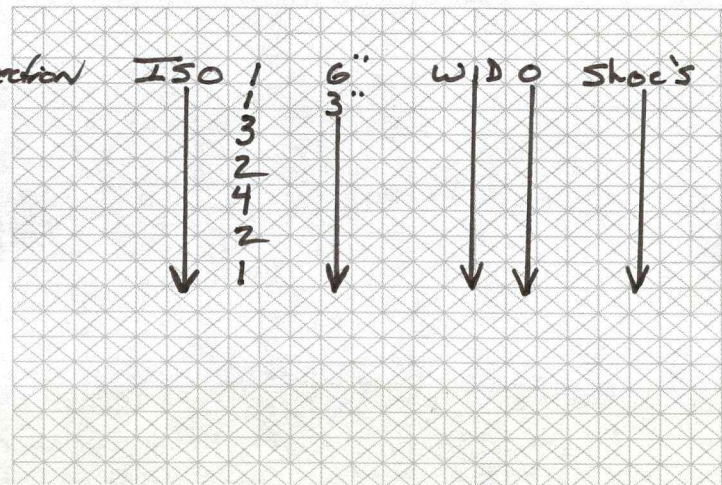
Ambient Light: Less than 2 fc for Fluorescent Examination

TEST RESULTS/RECORD OF INDICATIONS* *At time of inspection

Weld ID	Material	Thickness	Indications
MP 32	CS	-	NO INDICATION AT TIME OF INSPECTION
33			
34			
35			
36			
37			
38			

Continuance report(s) attached: CTR# _____

DRAWING/SKETCH/ISO/PHOTO INSERT



SCOPE OF SERVICES & LIMITS OF LIABILITY

Buffalo Inspection Services (2005) Inc. does not warranty or imply warranty of services stated herein and shall not be held liable for services rendered as per established service agreements. At no time shall liability be placed upon Buffalo Inspection Services (2005) Inc. of which exceeds the amount paid for said services. Buffalo Inspection Services (2005) Inc. shall utilize appropriate quality assurance measures, technical training, and safety parameters to assure services are provided to meet or exceed established NDE Procedures, Practices and Industry expectations and at no time shall warranty excess NDE services except those established in writing beyond those established prior to the services provided herein. The Client representative by signing below understands and accepts the Scope of Services and Limits of Liability as written within this document and preceding documentation shall be considered void.

Technician: Shawn Wright CGSB Level: 11 CGSB No: 8131 SNT Level: 11 SNT No: 8063

Assistant I: Jon Pickard SNT Level: _____ SNT No: _____ Trainee

Technician Signature: [Signature] DATE: Nov 14/12 BIS Technician Number: 610

Client Rep.: Ed Schykulski TELEPHONE NUMBER: _____ SIGNATURE: [Signature] DATE: 15 Nov 2012

Note: SNT refers to the SNT-TC-1A Recommended Practice. Buffalo Inspection Services follows the SNT-TC-1A Recommended Practice that defines the criteria for this certification.



Buffalo Inspection Services (2005) Inc.
 8403 Davies Road NW
 Edmonton, Alberta T6E 4N3
 Phone: (780) 486-7344 Fax: (780) 486-4685
 Website: www.buffaloinspection.com

MAGNETIC PARTICLE EXAMINATION REPORT

MT- 3064

Page 6 of 6

Client: _____
 Billing Address: _____
 Contact/Attention: _____
 Work Location: _____
 Work Description/Items: _____
 Regular Hours: _____ Overtime Hours: _____
 Mileage: _____ (kms) Sub/Camp: _____

Client Job Number: ZL-27
 Project Name: _____
 P.O. Number: _____ AFE Number: _____
 Examination Date: _____
 MPI Procedure Number: GP-MT-01 Rev _____
 MPI Proc. Technique No: MT- Rev _____
 Acceptance Standard: _____
 Acceptance Details: _____

EXAMINATION SURFACE INFORMATION

Surface Preparation: As Ground As Welded Machined Shot Blasted Clean Bare Metal Other
 Surface Temperature: 0°C to 50°C < 0°C > 50°C Temperature Demonstration Required
 Surface Contaminants: None - Clean & Dry Oil/Grease Rust Paint Scale Flux Weld Spatter
 Cleaning Details: Solvent Detergent De-scaling Solution Paint Remover Vapor Degreasing Sand/Grit Blast
 Other Method: _____ Product: _____ Not Applicable - Surface was clean

EXAMINATION DETAILS

Method: DRY WET FLUORESCENT CONTRAST
 Continuous Residual
 Brand of Particle: Magnaflux Part/Prod No: _____
 Particle Colour: GREY BLACK RED _____
 Suspension: OIL WATER NOT APPLICABLE
 Contrast Paint Brand: Magnaflux Part/Prod No: _____

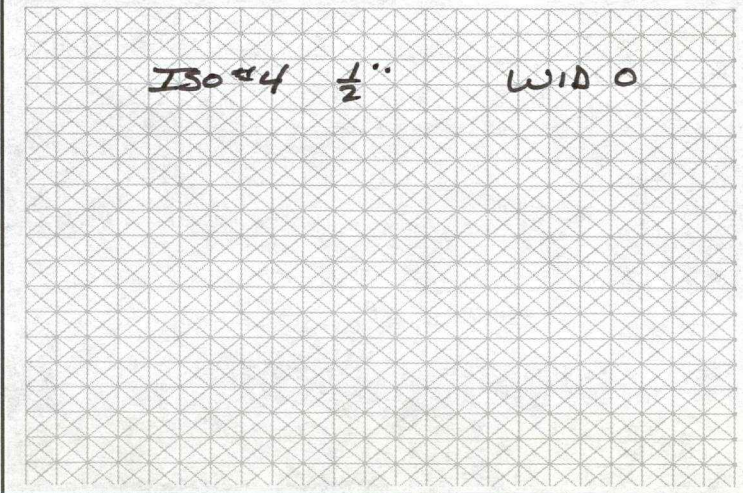
EQUIPMENT DETAILS

Equipment: AC DC YOKE COIL _____
 Mag. Time: _____ Seconds || Demag. Required? YES NO
 Instrument: _____ S/N _____ CAL Due Date: _____
 Light Equipment: Flashlight Trouble light
 Halogen/Quartz >100fc at surface
 Black Light: S/N: _____ Output >1000 μW/cm²
 Ambient Light: Less than 2 fc for Fluorescent Examination

TEST RESULTS/RECORD OF INDICATIONS* *At time of inspection

Weld ID	Material	Thickness	Indications
<u>MP31</u>	<u>CS</u>	<u>80</u>	<u>no indications at time of inspection</u>

DRAWING/SKETCH/ISO/PHOTO INSERT



Continuance report(s) attached: CTR# _____

SCOPE OF SERVICES & LIMITS OF LIABILITY
 Buffalo Inspection Services (2005) Inc. does not warranty or imply warranty of services stated herein and shall not be held liable for services rendered as per established service agreements. At no time shall liability be placed upon Buffalo Inspection Services (2005) Inc. of which exceeds the amount paid for said services. Buffalo Inspection Services (2005) Inc. shall utilize appropriate quality assurance measures, technical training, and safety parameters to assure services are provided to meet or exceed established NDE Procedures, Practices and Industry expectations and at no time shall warranty excess NDE services except those established in writing beyond those established prior to the services provided herein. The Client representative by signing below understands and accepts the Scope of Services and Limits of Liability as written within this document and preceding documentation shall be considered void.

Technician: _____ CGSB Level: _____ CGSB No: _____ SNT Level: _____ SNT No: _____
PRINT NAME
 Assistant 1: _____ SNT Level: _____ SNT No: _____ Trainee
PRINT NAME

TECHNICIAN SIGNATURE: Ryan van de Ligt DATE: _____
 Client Rep.: _____ () _____
PRINT NAME TELEPHONE NUMBER SIGNATURE DATE
 BIS Technician Number: _____

Note: SNT refers to the SNT-TC-1A Recommended Practice. Buffalo Inspection Services follows the SNT-TC-1A Recommended Practice that defines the criteria for this certification.



Buffalo Inspection Services (2005) Inc.
 8403 Davies Road NW
 Edmonton, Alberta T6E 4N3
 Phone: (780) 486-7344 Fax: (780) 486-4685
 Website: www.buffaloinspection.com

MAGNETIC PARTICLE EXAMINATION REPORT

MT- 3063

Page 5 of 6

Client: _____ Billing Address: _____ Contact/Attention: _____ Work Location: _____ Work Description/Items: _____ Regular Hours: _____ Overtime Hours: _____ Mileage: _____ (kms) Sub/Camp: _____	Client Job Number: <u>EL-27</u> Project Name: _____ P.O. Number: _____ AFE Number: _____ Examination Date: _____ MPI Procedure Number: <u>GP-MT-01</u> Rev _____ MPI Proc. Technique No: <u>MT-</u> Rev _____ Acceptance Standard: _____ Acceptance Details: _____
--	---

EXAMINATION SURFACE INFORMATION

Surface Preparation: As Ground As Welded Machined Shot Blasted Clean Bare Metal Other
 Surface Temperature: 0°C to 50°C < 0°C > 50°C Temperature Demonstration Required
 Surface Contaminants: None – Clean & Dry Oil/Grease Rust Paint Scale Flux Weld Spatter
 Cleaning Details: Solvent Detergent De-scaling Solution Paint Remover Vapor Degreasing Sand/Grit Blast
 Other Method: _____ Product: _____ Not Applicable – Surface was clean

<p>EXAMINATION DETAILS</p> Method: <input type="checkbox"/> DRY <input type="checkbox"/> WET <input type="checkbox"/> FLUORESCENT <input type="checkbox"/> CONTRAST <input type="checkbox"/> Continuous <input type="checkbox"/> Residual Brand of Particle: <u>Magnaflux</u> Part/Prod No: _____ Particle Colour: <input type="checkbox"/> GREY <input type="checkbox"/> BLACK <input type="checkbox"/> RED <input type="checkbox"/> _____ Suspension: <input type="checkbox"/> OIL <input type="checkbox"/> WATER <input type="checkbox"/> NOT APPLICABLE Contrast Paint Brand: <u>Magnaflux</u> Part/Prod No: _____	<p>EQUIPMENT DETAILS</p> Equipment: <input type="checkbox"/> AC <input type="checkbox"/> DC <input type="checkbox"/> YOKE <input type="checkbox"/> COIL <input type="checkbox"/> _____ Mag. Time: _____ Seconds Demag. Required? <input type="checkbox"/> YES <input type="checkbox"/> NO Instrument: _____ S/N _____ CAL Due Date: _____ Light Equipment: <input type="checkbox"/> Flashlight <input type="checkbox"/> Trouble light <input type="checkbox"/> Halogen/Quartz <input type="checkbox"/> >100fc at surface Black Light: S/N: _____ <input type="checkbox"/> Output >1000 μW/cm ² Ambient Light: <input type="checkbox"/> Less than 2 fc for Fluorescent Examination
--	--

<p>TEST RESULTS/RECORD OF INDICATIONS* *At time of inspection</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Weld ID</th> <th>Material</th> <th>Thickness</th> <th>Indications</th> </tr> </thead> <tbody> <tr> <td>MP21</td> <td>BS</td> <td>80</td> <td>No indications at time of inspection</td> </tr> <tr><td>22</td><td></td><td></td><td></td></tr> <tr><td>23</td><td></td><td></td><td></td></tr> <tr><td>24</td><td></td><td></td><td></td></tr> <tr><td>25</td><td></td><td></td><td></td></tr> <tr><td>26</td><td></td><td></td><td></td></tr> <tr><td>27</td><td></td><td></td><td></td></tr> <tr><td>28</td><td></td><td></td><td></td></tr> <tr><td>29</td><td></td><td></td><td></td></tr> <tr><td>30</td><td></td><td></td><td></td></tr> </tbody> </table> <input type="checkbox"/> Continuance report(s) attached: CTR# _____	Weld ID	Material	Thickness	Indications	MP21	BS	80	No indications at time of inspection	22				23				24				25				26				27				28				29				30				<p>DRAWING/SKETCH/ISO/PHOTO INSERT</p>
Weld ID	Material	Thickness	Indications																																										
MP21	BS	80	No indications at time of inspection																																										
22																																													
23																																													
24																																													
25																																													
26																																													
27																																													
28																																													
29																																													
30																																													

SCOPE OF SERVICES & LIMITS OF LIABILITY

Buffalo Inspection Services (2005) Inc. does not warranty or imply warranty of services stated herein and shall not be held liable for services rendered as per established service agreements. At no time shall liability be placed upon Buffalo Inspection Services (2005) Inc. of which exceeds the amount paid for said services. Buffalo Inspection Services (2005) Inc. shall utilize appropriate quality assurance measures, technical training, and safety parameters to assure services are provided to meet or exceed established NDE Procedures, Practices and Industry expectations and at no time shall warranty exceed NDE services except those established in writing beyond those established prior to the services provided herein. The Client representative by signing below understands and accepts the Scope of Services and Limits of Liability as written within this document and preceding documentation shall be considered void.

Technician: _____ CGSB Level: _____ CGSB No: _____ SNT Level: _____ SNT No: _____
PRINT NAME

Assistant 1: _____ SNT Level: _____ SNT No: _____ Trainee
PRINT NAME

TECHNICIAN SIGNATURE: Ryan van de Ligt DATE: _____ BIS Technician Number: _____
PRINT NAME

Client Rep.: _____ () _____
PRINT NAME TELEPHONE NUMBER SIGNATURE DATE

Note: SNT refers to the SNT-TC-1A Recommended Practice. Buffalo Inspection Services follows the SNT-TC-1A Recommended Practice that defines the criteria for this certification.



Buffalo Inspection Services (2005) Inc.
 8403 Davies Road NW
 Edmonton, Alberta T6E 4N3
 Phone: (780) 486-7344 Fax: (780) 486-4685
 Website: www.buffaloinpection.com

MAGNETIC PARTICLE EXAMINATION REPORT

MT- 3062

Page 4 of 6

Client: _____	Client Job Number: <u>ZL-27</u>
Billing Address: _____	Project Name: _____
Contact/Attention: _____	P.O. Number: _____ AFE Number: _____
Work Location: _____	Examination Date: _____
Work Description/Items: _____	MPI Procedure Number: <u>GP-MT-01</u> Rev _____
Regular Hours: _____ Overtime Hours: _____	MPI Proc. Technique No: <u>MT-</u> Rev _____
Mileage: _____ (kms) Sub/Camp: _____	Acceptance Standard: _____
	Acceptance Details: _____

EXAMINATION SURFACE INFORMATION

Surface Preparation: As Ground As Welded Machined Shot Blasted Clean Bare Metal Other

Surface Temperature: 0°C to 50°C < 0°C > 50°C Temperature Demonstration Required

Surface Contaminants: None - Clean & Dry Oil/Grease Rust Paint Scale Flux Weld Spatter

Cleaning Details: Solvent Detergent De-scaling Solution Paint Remover Vapor Degreasing Sand/Grit Blast

Other Method: _____ Product: _____ Not Applicable - Surface was clean

EXAMINATION DETAILS	EQUIPMENT DETAILS
Method: <input type="checkbox"/> DRY <input type="checkbox"/> WET <input type="checkbox"/> FLUORESCENT <input type="checkbox"/> CONTRAST	Equipment: <input type="checkbox"/> AC <input type="checkbox"/> DC <input type="checkbox"/> YOKE <input type="checkbox"/> COIL <input type="checkbox"/> _____
<input type="checkbox"/> Continuous <input type="checkbox"/> Residual	Mag. Time: _____ Seconds Demag. Required? <input type="checkbox"/> YES <input type="checkbox"/> NO
Brand of Particle: <u>Magnaflux</u> Part/Prod No: _____	Instrument: _____ S/N _____ CAL Due Date: _____
Particle Colour: <input type="checkbox"/> GREY <input type="checkbox"/> BLACK <input type="checkbox"/> RED <input type="checkbox"/> _____	Light Equipment: <input type="checkbox"/> Flashlight <input type="checkbox"/> Trouble light
Suspension: <input type="checkbox"/> OIL <input type="checkbox"/> WATER <input type="checkbox"/> NOT APPLICABLE	<input type="checkbox"/> Halogen/Quartz <input type="checkbox"/> >100fc at surface
Contrast Paint Brand: <u>Magnaflux</u> Part/Prod No: _____	Black Light: S/N: _____ <input type="checkbox"/> Output >1000 μW/cm ²
	Ambient Light: <input type="checkbox"/> Less than 2 fc for Fluorescent Examination

TEST RESULTS/RECORD OF INDICATIONS* *At time of inspection	DRAWING/SKETCH/ISO/PHOTO INSERT																																												
<table border="1"> <thead> <tr> <th>Weld ID</th> <th>Material</th> <th>Thickness</th> <th>Indications</th> </tr> </thead> <tbody> <tr> <td>MP 11</td> <td>CS</td> <td>80</td> <td>no indications at time of inspection</td> </tr> <tr> <td>12</td> <td></td> <td></td> <td></td> </tr> <tr> <td>13</td> <td></td> <td></td> <td></td> </tr> <tr> <td>14</td> <td></td> <td></td> <td></td> </tr> <tr> <td>15</td> <td></td> <td></td> <td></td> </tr> <tr> <td>16</td> <td></td> <td></td> <td></td> </tr> <tr> <td>17</td> <td></td> <td></td> <td></td> </tr> <tr> <td>18</td> <td></td> <td></td> <td></td> </tr> <tr> <td>19</td> <td></td> <td></td> <td></td> </tr> <tr> <td>20</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Weld ID	Material	Thickness	Indications	MP 11	CS	80	no indications at time of inspection	12				13				14				15				16				17				18				19				20				
Weld ID	Material	Thickness	Indications																																										
MP 11	CS	80	no indications at time of inspection																																										
12																																													
13																																													
14																																													
15																																													
16																																													
17																																													
18																																													
19																																													
20																																													
<input type="checkbox"/> Continuance report(s) attached: CTR# _____																																													

SCOPE OF SERVICES & LIMITS OF LIABILITY

Buffalo Inspection Services (2005) Inc. does not warranty or imply warranty of services stated herein and shall not be held liable for services rendered as per established service agreements. At no time shall liability be placed upon Buffalo Inspection Services (2005) Inc. of which exceeds the amount paid for said services. Buffalo Inspection Services (2005) Inc. shall utilize appropriate quality assurance measures, technical training, and safety parameters to assure services are provided to meet or exceed established NDE Procedures, Practices and Industry expectations and at no time shall warranty excess NDE services except those established in writing beyond those established prior to the services provided herein. The Client representative by signing below understands and accepts the Scope of Services and Limits of Liability as written within this document and preceding documentation shall be considered void.

Technician: _____ CGSB Level: _____ CGSB No: _____ SNT Level: _____ SNT No: _____
PRINT NAME

Assistant 1: _____ SNT Level: _____ SNT No: _____ Trainee
PRINT NAME

TECHNICIAN SIGNATURE: Ryan van de Lief DATE: _____ BIS Technician Number: _____

Client Rep.: _____ () _____
PRINT NAME TELEPHONE NUMBER SIGNATURE DATE

Note: SNT refers to the SNT-TC-1A Recommended Practice. Buffalo Inspection Services follows the SNT-TC-1A Recommended Practice that defines the criteria for this certification.



Buffalo Inspection Services (2005) Inc.
 8403 Davies Road NW
 Edmonton, Alberta T6E 4N3
 Phone: (780) 486-7344 Fax: (780) 486-4685
 Website: www.buffaloinspection.com

MAGNETIC PARTICLE EXAMINATION REPORT

MT- 3061

Page 3 of 6

Client: <u>GMC CONTRACTORS SHOP</u>	Client Job Number: <u>ZL-27</u>
Billing Address: <u>3000 84 AVE NW</u> <u>Edmonton</u>	Project Name: <u>SOUTHERN PACIFIC</u>
Contact/Attention: _____	P.O. Number: <u>ZL-27-33390</u> AFE Number: _____
Work Location: _____	Examination Date: <u>Nov 13/12</u>
Work Description/Items: _____	MPI Procedure Number: <u>GP-MT-01</u> Rev _____
Regular Hours: _____ Overtime Hours: _____	MPI Proc. Technique No: <u>MT-2V</u> Rev _____
Mileage: _____ (kms) Sub/Camp: _____	Acceptance Standard: <u>831.3</u>
	Acceptance Details: _____

EXAMINATION SURFACE INFORMATION

Surface Preparation: As Ground As Welded Machined Shot Blasted Clean Bare Metal Other

Surface Temperature: 10°C to 50°C < 0°C > 50°C Temperature Demonstration Required

Surface Contaminants: None - Clean & Dry Oil/Grease Rust Paint Scale Flux Weld Spatter

Cleaning Details: Solvent Detergent De-scaling Solution Paint Remover Vapor Degreasing Sand/Grit Blast

Other Method: _____ Product: _____ Not Applicable - Surface was clean

EXAMINATION DETAILS	EQUIPMENT DETAILS
Method: <input type="checkbox"/> DRY <input checked="" type="checkbox"/> WET <input type="checkbox"/> FLUORESCENT <input checked="" type="checkbox"/> CONTRAST	Equipment: <input checked="" type="checkbox"/> AC <input type="checkbox"/> DC <input checked="" type="checkbox"/> YOKE <input type="checkbox"/> COIL <input type="checkbox"/> _____
<input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Residual	Mag. Time: <u>20</u> Seconds Demag. Required? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Brand of Particle: <u>Magnaflux</u> Part/Prod No: <u>THF</u>	Instrument: <u>Parker</u> S/N <u>14657</u> CAL Due Date: <u>Jan 22/13</u>
Particle Colour: <input type="checkbox"/> GREY <input checked="" type="checkbox"/> BLACK <input type="checkbox"/> RED <input type="checkbox"/> _____	Light Equipment: <input checked="" type="checkbox"/> Flashlight <input type="checkbox"/> Trouble light
Suspension: <input checked="" type="checkbox"/> OIL <input type="checkbox"/> WATER <input type="checkbox"/> NOT APPLICABLE	<input type="checkbox"/> Halogen/Quartz <input type="checkbox"/> >100fc at surface
Contrast Paint Brand: <u>Magnaflux</u> Part/Prod No: <u>WCP-2</u>	Black Light: S/N: _____ <input type="checkbox"/> Output >1000 μW/cm ²
	Ambient Light: <input type="checkbox"/> Less than 2 fc for Fluorescent Examination

TEST RESULTS/RECORD OF INDICATIONS* *At time of inspection	DRAWING/SKETCH/ISO/PHOTO INSERT																																								
<table border="1"> <thead> <tr> <th>Weld ID</th> <th>Material</th> <th>Thickness</th> <th>Indications</th> </tr> </thead> <tbody> <tr> <td>MPI 2</td> <td>CS</td> <td>80</td> <td>NO INDICATIONS AT TIME OF INSPECTION</td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td></td> <td></td> <td></td> </tr> <tr> <td>7</td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td></td> <td></td> <td></td> </tr> <tr> <td>9</td> <td></td> <td></td> <td></td> </tr> <tr> <td>10</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Weld ID	Material	Thickness	Indications	MPI 2	CS	80	NO INDICATIONS AT TIME OF INSPECTION	3				4				5				6				7				8				9				10				
Weld ID	Material	Thickness	Indications																																						
MPI 2	CS	80	NO INDICATIONS AT TIME OF INSPECTION																																						
3																																									
4																																									
5																																									
6																																									
7																																									
8																																									
9																																									
10																																									
<input checked="" type="checkbox"/> Continuance report(s) attached: CTR# <u>3062, 3063, 3064</u>																																									

SCOPE OF SERVICES & LIMITS OF LIABILITY

Buffalo Inspection Services (2005) Inc. does not warranty or imply warranty of services stated herein and shall not be held liable for services rendered as per established service agreements. At no time shall liability be placed upon Buffalo Inspection Services (2005) Inc. of which exceeds the amount paid for said services. Buffalo Inspection Services (2005) Inc. shall utilize appropriate quality assurance measures, technical training, and safety parameters to assure services are provided to meet or exceed established NDE Procedures, Practices and Industry expectations and at no time shall warranty excess NDE services except those established in writing beyond those established prior to the services provided herein. The Client representative by signing below understands and accepts the Scope of Services and Limits of Liability as written within this document and preceding documentation shall be considered void.

Technician: <u>Shawn Wright</u> PRINT NAME	CGSB Level: <u>11</u>	CGSB No: <u>8131</u>	SNT Level: <u>11</u>	SNT No: <u>8053</u>
Assistant 1: <u>Jon Pickard</u> PRINT NAME	SNT Level: _____	SNT No: _____	<input checked="" type="checkbox"/> Trainee	
TECHNICIAN SIGNATURE: <u>S. Wright</u>	DATE: <u>Nov 13/12</u>	BIS Technician Number: <u>610</u>		
Client Rep.: <u>Ryan van de Ligt</u> PRINT NAME	() TELEPHONE NUMBER	SIGNATURE: <u>[Signature]</u> DATE: _____		

Note: SNT refers to the SNT-TC-1A Recommended Practice. Buffalo Inspection Services follows the SNT-TC-1A Recommended Practice that defines the criteria for this 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: Shawn BE Wright REGISTRATION NUMBER: 8131

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.

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

I CONFIRM THAT THE CANDIDATE:
(Please check *one*)
 Meets the requirement without correction
 Meets the requirement with correction
 Does not meet the requirement

Keith Jeffries
Examiner's Name (Please Print/Type)
Optometrist
Appointment/Title

[Signature]
Examiner's Signature
2010/11/25
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).

Examiner's Name (Please Print/Type)
Appointment/Title

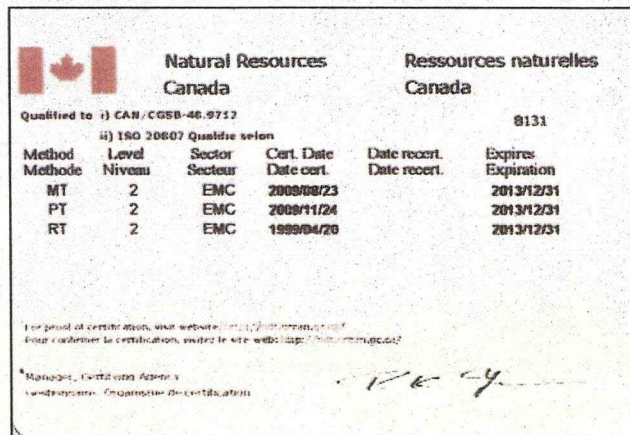
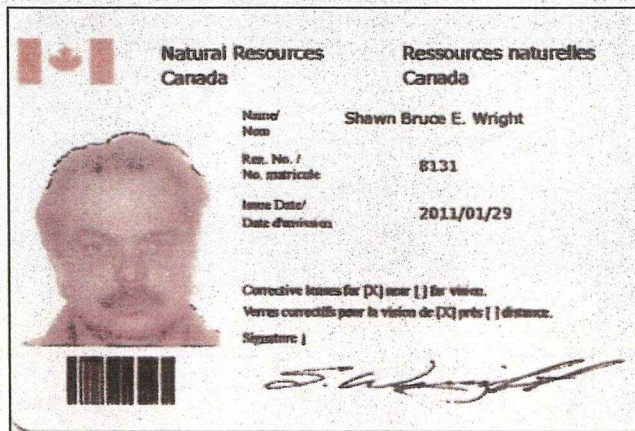
Examiner's Signature
Date of Eye Examination yyyy/mm/dd

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

NORTHERN VISION CENTRE
12111 - 99 Street
GRANDE-PRAYE, ALBERTA T8V 6X9
Phone (403) 532-2634 1-800-667-0251

Name	Shawn Wright
Type	Canadian General Standards Board (CGSB) Re:NRCan
Category	Industrial Non-destructive Examination (Materials)
Methods & Level	RT Level 2 MT Level 2 PT Level 2
Expiry Date	December 31, 2013
Current Position	Field Technician
Comments	

Photocopy Images



Updated: Feb 15, 2011
Brittney Burgardt





Buffalo Inspection Services (2005) Inc.
 8403 Davies Road NW
 Edmonton, Alberta T6E 4N3
 Phone: (780) 486-7344 Fax: (780) 486-4685
 Website: www.buffaloinspection.com

SNT-TC-1A CERTIFICATION RECORD

As per BIS Certifications Written Practice

Employee Information

Employee Name:	Shawn Wright	Employee ID Number:	9972	<input type="checkbox"/> Licensee <input checked="" type="checkbox"/> Lessee
				<input type="checkbox"/> Direct Employee

Education Background

Education (HS or equivalent):	High School	Secondary Education: (Advanced Education)	No SE Taken
-------------------------------	-------------	---	-------------

Comments:

Non-Destructive Examination Training and NDT Certifications Record

Course	Date	Hours	Instructor/Institute	
(CGSB/CEDO)	Level	Registration Number	Issue Date	Renewal/Expiry Date
RT	2	8131	April 20, 1999	December 31, 2013
MT	2	8131	August 23, 2009	December 31, 2013
PT	2	8131	November 24, 2009	December 31, 2013

Experience and On the Job Training Record

Instructor/Trainer/Experience	Method/Equipment /Technique	Date: From	To	Total Time (hrs/mnth/ys)
On the Job Training	RT, MT, PT	August 2010	Present	6+ Months

SNT-TC-1A Qualification Examination Results Record

Method Tested	General (40) Grade	Specific (20) Grade	Practical Grade	Composite Grade	Administered by	Qualifications	Examination Date
RT	Pass	88	Pass	88	Bari Walsh	Lvl3Designate	Aug 3, 2010
MT	Pass	90	Pass	90	Bari Walsh	Lvl3Designate	Aug 3, 2010
PT	Pass	100	Pass	100	Bari Walsh	Lvl3Designate	Aug 3, 2010

Certification Issuance and Renewal Date Record

*CERTIFICATION NUMBER: **BIS-SNT- 08053**

Method	Date Issued	Renewal Date (5 yrs)	Re-Certified Date	Re-Certified Date	Re-Certified Date
RT	August 3, 2010	August 3, 2015			
MT	August 3, 2010	August 3, 2015			
PT	August 3, 2010	August 3, 2015			

* Note: The certification number applies to all methods tested, regardless of when the method was tested.

Attestation

The above named employee/Licensee/Lessee has satisfactorily met the qualification requirements of the Buffalo Inspection Services (2005) Inc. certification procedures as outlined within the BIS written practice and in accordance with the current edition of SNT-TC-1A. Other certifications if any are maintained on file and are available for audit upon request.

Print Name (Certifying Level 3 or Designate): Bari Walsh Title: Level 3 Designate

**Signed: *Bari Walsh* Dated: February 15, 2011

* Note: All certifications must be reviewed by the current Buffalo Inspection Services' Level III. Certifications issued prior to the Level 3's hire date must be reviewed and re-signed by the new Level 3 or designate. If prior certifications were issued under the direction of the Level 3 designate, these shall be considered valid.

Revision Date: November 29, 2010



Trans Am

PIPING PRODUCTS LTD.

Shipped Date

Nov 7, 2012

Sold To
GENERAL MECHANICAL & CIVIL CONTRACTORS LTD.
3000 - 84 AVENUE
EDMONTON, AB
T6P 1K3

Ship To
SAME

Page 1 of 1

Ordered By RYAN

Ph# 780 466-7867

Customer P.O.#	Job# / Tag#	T/A Sales Order #
ZL27-33478		E12 - 51611


Shipping Instructions	Freight	Date Ordered
WILL P/U AT 8:00		Nov 6, 2012

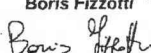

Item	Description	Qty.Ord.	Um	Qty.Ship.	Backorder	Heat #	Mnf
1	3/4X1/2 XH CONC SWAGE NIPPLE A234-WPB 'PLAIN BOTH ENDS'	4	EA	4		MY9	IML
Total MTR's Listed							1
Manufacturer's Legend & Alberta CRN #							
IML Industria Meccanica Ligure SpA OA9221.52 Exp. Feb 2014							

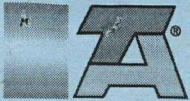
Weight Shipped	Skids	Crates	Sacks	Boxes	Loose	Pipe	Misc.	Trans Am Representative
2 Lbs.							1 BAG	Matthew (Moe) O'Donnell

is a Registered Trademark of Trans Am Piping Products Ltd.

Packing List / MTR Summary

 I.M.L. - INDUSTRIA MECCANICA LIGURE S.P.A. Via Giancarlo Farina, 25 - 16030 Casarza Ligure - GE - ITALY Tel. +39 0185 467661 - Fax +39 0185 466510 - E-mail quality.iml@farinagroup.com MATERIAL TEST DEPARTMENT		COMPANY WITH QUALITY SYSTEM ISO 9001: 2008 CERTIFIED BY RINA CERT. N° 23/91/S								
INSPECTION CERTIFICATE EN 10204:2004 / 3.1		Nr 103706	Dated 22.12.2011							
TRANS AM PIPING PRODUCTS LTD. 9335 Endeavor Drive S.E. Calgary, Alberta T3S 0A1		Purchase Order Nr 3760 Item Nr 011 Packing List Nr 747 Invoice Nr 461	CA							
Heat Code MY9	Heat Nr 10/74122	Quantity	Description CONC.SWAGE PBE S-80 3/4"x1/2" MSS SP 95 WPB							
Element	C	Si	Mn	S	P	Cr	Ni	Mo	Ti	Cu
ASTM A234 WPB (LADLE)	0,185	0,240	1,090	0,006	0,013	0,120	0,050	0,010	0,023	0,180
Element	V	Nb	N	AL					C.E.	PRE
ASTM A234 WPB (LADLE)	0,003	0,002	--	0,031					0,409	--
Test specimen Sect. mm2	Length mm	Shape 1=O - 2=□	Tensile N/mm2	Yeld Point >0,2% N/mm2	Yeld Point >1% N/mm2	Elongation %	Reduction of area %			
340,90	50,80	1	522,0	347,0	--	31,0	--			
HARDNESS				IMPACT TEST						
HBW	TYPE	Test specimen	°C	1-Joule/cm2	2-Joule/cm2	3-Joule/cm2				
158,0 - 162,0	KV	10x3,3mm	-10	54	56	54				
Heat treatment	Normalized at 880°C / Air Cool					ELECTRIC FURNACE				
Dimension in accordance	MSS SP95 Ed.2006 - NACE MR 0175 ISO 15156 Ed.2009 MSS SP25 Ed.2008 - NACE MR 0103 Ed. 2010 - SUPPLIED MATERIAL MEETS SPECIFICATIONS AND P.O. REQUIREMENTS									
Material in accordance	ASME SA ASTM A234/A234M-10 Gr. WPB									
Visual & Dimensional	SATISFACTORY		Origin	EUROPE		Our Ref.				
Notes ---										

QUALITY CONTROL DEPT. Boris Fizzotti 	INSPECTION AUTHORITY	MANUFACTURER'S SYMBOL IML or 
--	----------------------	---



Trans Am

Shipped Date

Nov 5, 2012

PIPING PRODUCTS LTD.

Ship To
SAME

Page 1 of 2

Sold To
GENERAL MECHANICAL & CIVIL
CONTRACTORS LTD.
3000 - 84 AVENUE
EDMONTON, AB
T6P 1K3

Ordered By RYAN

Ph# 780 466-7867

Customer P.O.#	Job# / Tag#	T/A Sales Order #
ZL27-33454		E12 - 51251

Shipping Instructions	Freight	Date Ordered
DELIVER TODAY PLEASE		Nov 5, 2012

Item	Description	Qty.Ord.	Um	Qty.Ship.	Backorder	Heat #	Mnf
1	6" SCH 160 LR 90 BW ELLS A234-WPB	1	EA	1	✓	1D4167	RIG
2	6" SCH 160 BW TEES A234-WPB	1	EA	1	✓	307B	CH
3	6X3 SCH 160 BW CONC REDUCER A234-WPB	1	EA	1	✓	5203	"
4	1/2 X 4 XH SMLS STEEL NIPPLES A106 PBE	7	EA	7	✓	Q6S	CAP
	1/2 X 6 "	7	EA	7	✓	W13357	WES
6	1/2X3/4-36 CL 3000 FS S/W PIPET A105N	3	EA	3	✓	58883	WFI
Total MTR's Listed							6

Manufacturer's Legend & Alberta CRN #

CAP CapProducts of Canada Ltd.
OA09967.2 Exp. Jun 2019

CH Chup Hsin Enterprise Co. Ltd.
OA12036.2 Exp. Jan 2022

RIG Rigid Industries
OA5951.2 Exp. Sep 2013

Continued Next Page

Weight Shipped	Skids	Crates	Sacks	Boxes	Loose	Pipe	Misc.	Trans Am Representative
Lbs.	1							Matthew (Moe) O'Donnell

General, Mechanical & Civil

RECEIVED

NOV - 5 / 2012

Matthew (Moe) O'Donnell

is a Registered Trademark of
Trans Am Piping Products Ltd.

Packing List / MTR Summary



Trans Am

Shipped Date

Nov 5, 2012

PIPING PRODUCTS LTD.

Ship To
SAME

Page 2 of 2

Sold To
GENERAL MECHANICAL & CIVIL CONTRACTORS LTD.
3000 - 84 AVENUE
EDMONTON, AB
T6P 1K3

Ordered By RYAN

Ph# 780 466-7867

Customer P.O.#	Job# / Tag#	T/A Sales Order #
ZL27-33454		E12 - 51251

Shipping Instructions	Freight	Date Ordered
DELIVER TODAY PLEASE		Nov 5, 2012

Item	Description	Qty.Ord.	Um	Qty.Ship.	Backorder	Heat #	Mnf
	WES Westbrook Manufacturing OA00599.92 Exp. Jul 2019						
	WFI W.F.I. International, Inc. OA2027.52 Exp. Jun 2022						

Weight Shipped	Skids	Crates	Sacks	Boxes	Loose	Pipe	Misc.	Trans Am Representative
147 Lbs.	1							Matthew (Moe) O'Donnell

is a Registered Trademark of Trans Am Piping Products Ltd.

Packing List / MTR Summary

PO# ZL27-33454 Item# 1
 Heat Number: 1D4167
 Trans Am Piping Products Ltd. - Rev'd By: SB
 Shipment/Seq #: S 12 - 1853 21
 6" SCH 160 LR 90 BW ELLS
 A234-WPB



INSPECTION CERTIFICATE
RIGID INDUSTRIES CO., LTD.

PURCHASER : SEYBOLD
 STANDARD : ASTM A234 WPB-11
ASME SA234 WPB-04

DATE: 2012 - 09 - 28

ORDER NO: 7005552/C112232

CSA Z245.11-09 Gr.241 Cat I Sour Service

8, MEI-CHUNG RD. NIAO-SONG,
 KAOHSIUNG HSIEN, 83301 TAIWAN
 TEL: 886-77310527~8
 FAX: 886-77315887

P.I. NO: 2C04-6

MATERIALS : ASTM A106 Gr.B (SEAMLESS PIPE)

INSP. SPEC. : ASME B16.9-07

ACCORDING TO EN10204/DIN50049/3.1

CERTIFI. NO: 446

ITEM NO.	PRODUCT & SIZE	QUANTITY PCS	MFG NO.	VISUAL & DIMENSIONAL INSPECTION	HARDNESS MAX 197 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	IMPACT TEST (J)
2	ELL 90 LR 3" STD	2000	1K1983	GOOD	140 - 142	A		
3	ELL 90 LR 6" 160	30	1D4167	GOOD	133 - 145	A		
4	ELL 90 LR 14" STD	30	2B4037	GOOD	149 - 150	A		
5	ELL 90 LR 16" STD	23	2G6387	GOOD	150 - 154	A		
6	ELL 90 LR 16" STD	2	2B4252	GOOD	147 - 150	A		
7	CON-RED 4X3" XH	100	2E1799	GOOD	131 - 139	N		
8	TEE 6" STD	100	2C5583	GOOD	125 - 143	N	GOOD	
9	TEE 6" XH	125	2G546V	GOOD	130 - 136	N	GOOD	
10	TEE 10" STD	46	2G5639	GOOD	141 - 147	N	GOOD	
11	RED-TEE 3X2" STD	100	2B2209	GOOD	128 - 139	N	GOOD	

ITEM NO.	MATERIAL CHARGE NO.	CHEMICAL COMPOSITION %											PHYSICAL TEST				
		C x100	Si x100	Mn x100	P x1000	S x1000	Cu x100	Ni x100	Cr x100	Mo x100	V x100	Nb x1000	Y S KSI	T S KSI	E %	C.E. X100	
		MIN.	10	29									35.0	60.0			
	STANDARD	MAX.	30	35	135	50	58	40	40	40	15	8	20		95.0		50
2	316883	18	22	53	7	2	3	3	3	2	<1	<1	44.5	64.7	30.8	28	
3	327567	12	17	75	7	1	4	2	2	1	<1	<1	35.0	61.5	50.5	25	
4	004637	15	22	96	12	2	7	3	5	1	1	<1	46.2	68.4	35.8	33	
5	296587	18	24	96	14	4	13	4	4	1	<1	9	45.9	66.7	36.9	36	
6	205452	16	23	97	9	2	7	2	4	1	1	2	45.0	68.1	33.5	33	
7	420199	15	24	68	10	5	6	3	5	1	<1	<1	44.2	68.1	32.0	28	
8	318583	18	26	54	4	2	9	4	3	1	<1	<1	45.0	69.1	33.2	28	
9	1223176V	14	22	85	10	5	6	2	5	1	<1	1	45.0	67.6	32.2	29	
10	021639	17	26	95	10	4	7	3	4	4	1	10	43.8	66.6	32.7	35	
11	309909	19	25	54	7	2	7	3	3	2	<1	<1	55.9	62.3	34.2	29	

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C-980°C, AIR COOLING.
 N: NORMALIZING AT TEMPERATURE 880°C X 0.5HR, AIR COOLING.

NACE MR-01-75-09/ISO15156.2 & NACE MR 0103-10: SATISFACTORY

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.

Ou L Lan

MANAGER OF Q.A. DEPT.

PO# ZL27.33454 Item# 2
 Heat Number: 307B
 Trans Am Piping Products Ltd. - Rev'd By: SB
 Shipment/Seq #: S 12 - 1735 - 122
 6" SCH 160 BW TEES A234-WPB



INSPECTION CERTIFICATE

Customer : TRANS AM PIPING PRODUCTS LTD.
 Product : SEAMLESS CARBON STEEL BUTT WELD FITTINGS
 Spec : ASME SA/ASTM A234 WPB-11a
 CSA A245.11-96 CAT.1, NACE MR
 0175-03& ISO 15156-2009

(MILL TEST)
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 : 00100097-0312
 Order No : CI-12-376
 Date : 2012/08/20
 Page : 1 / 1

Starting Material		Specification for Inspection				Visual Inspection			Dimensional Inspection									
ASTM A106 GR.B		ASME B16.9-2007				GOOD			GOOD									
Item	Description	Quantity	Heat ID	Heat No	Raw Certificate No.	NDE	Impact Test											
							Test Temp	Size of specimen	Charpy V-Notch Impact Value	Ave.								
322	TEE SMLS S160	6	10	307B	JOL4307	SUMITOMO BYYM8146												
340	ECC RED SMLS S160	10 X 6	3	B354	190354	TIANJIN 09112428												
347	TEE SMLS XXS	3	25	439B	J8L1439	SUMITOMO BYYK3262												
349	RED TEE SMLS XXS	3 X 1	5	035C	JOL4035	SUMITOMO BYYM8363												
Specifi- cation	Chemical Composition%												Tension Test			Hardness Test	Heat Treatment	REMARK
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E	Y.S	T.S	E			
Min.		10	29										35000	60000	30			
Max.	30		106	50	58	40	40	40	15	80	20	50				197		
322	16	20	71	10	6	11	5	4	1	0	0	29	52200	70300	40	137	620°C TO 980°C HOT FORMED [DIN 50049/3.1B] EN10204 3.1	
340	18	25	93	10	5	13	4	2	2	<1	<1	34	42079	74700	34	138		
347	18	27	55	15	8	3	1	2	2	0	0	27	44900	68900	41	134		
349	17	24	52	13	6	6	4	3	2	0	0	26	39900	68900	40	134		

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

PO# ZL27-33454 Item# 3
 Heat Number: 5203
 Trans Am Piping Products Ltd. Rev'd By: SB
 Shipment/Seq #: S 11 - 1715
 6X3 SCH 160 BW CONC REDUCER
 A234-WPB



INSPECTION CERTIFICATE

(MILL TEST)

CHUP HSIN ENTERPRISE CO., LTD.

Customer: TRANS AM PIPING PRODUCTS LTD.
 Product : SEAMLESS CARBON STEEL BUTT WELD FITTINGS
 Spec : ASME SA/ASTM A234 WPB-05a
 CSA A245.11-96 Gr241 CAT.1, NACE MR0175-03**

17, TUNG LI ROAD HSIAO KANG
 KAOHSIUNG, TAIWAN R.O.C.
 TEL:(07)831-9157
 FAX:(07)831-2942, 821-7500

Certificate No : 0000011-0103
 Order No : CI-11-121
 Date : 2011/10/31

Specification for Raw Material				Specification for Inspection				Visual Examination				Dimensional Inspection								
ASTM A106 GR.B				ASME B16.9-2003				GOOD				GOOD								
Item	Description												Quantity	Heat ID.	Heat No.	Raw Material Mfg	Raw Certificate NO.			
43	CON RED S160 SEAMLESS 6 X 3 ←													5203	595203	TIANJIN	09072807			
48	ECC RED S160 SEAMLESS 8 X 6													A299	0834299	HENGYANG	08-02-0917-5			
49	ECC RED S160 SEAMLESS 10 X 6													B354	190354	TIANJIN	09112428			
Specifi- cation	Chemical Composition %												Tension Test				HARD NESS TEST	Heat Treatment	Magnetic Particle Exam.	Remark
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	Y.S P.S.I	T.S P.S.I	E %	HB				
MIN	30	10	29	50	58	40	40	40	15	80	20	50	35000	60000	30	197				
MAX	18	25	98	8	3	11	4	4	1	0	0	36	42079	71800	44	138				
43	18	25	98	8	3	11	4	4	1	0	0	36	42079	71800	44	138	S.R. 650°C ← x0.5HR	[DIN 50049/3.1B] EN10204 3.1 **&ISO 15156- 2009		
48	19	24	54	13	8	14	5	6	1	10	0	32	42775	68900	34	137				
49	18	25	93	10	5	13	4	2	2	<1	<1	34	42079	74700	34	138				

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 the requirements of above specifications and purchaser's order.

L. S. Tsai

Chief of Quality Assurance Section



**Phoenix * Capitol * Camco
 Cap Products**

Commanding a Higher Standardsm

Certified Mill Test Report

5/14/2012

Customer
 TRANS AM PIPING PRODUCTS LTD. AB

 9335 ENDEAVOR DRIVE S.E.
 CALGARY, AB T3S 0A1

P.O. CI-12 - 315

Heat No 106441
Heat Code Q6S
Phoenix Order # 854397

Material ASTM A106-2011 / ASME SA106-2010 Edition

Part Number
 15110508PBE

Description
 1/2 X 4" XH BLK SMLS PBE SQ.CUT DEB

Chemical Properties

C	Mn	P	S	Si	Cu	Cr	Ni	C Eq. Long	
0.1300	0.7000	0.0110	0.0300	0.2700	0.1200	0.0600	0.0700	0.2757	
Mo	V	Co	Al	Cb	N	Pb	Sn	Ta	Ti
0.0200	0.0020								

Additional Chemical Properties

Cr + Cu + Ni
0.2500

Mechanical Properties

Tensile (PSI)	Yield (PSI)	Elong. % in 2 in.	R of A	HBW	HBW2
65,702	48,877	42.0%		132	

Charpy Minimum Impact - ft/lbs

Test 1	Test 2	Test 3	Average
N/A	N/A	N/A	N/A

* Hydro test passed. at 2500 psi.

* Eddy Current test passed.

* Bend test passed.

This material meets the requirements of the governing specifications We certify that the above material has been inspected and tested in accordance with the methods prescribed in the governing specification and the results of such inspections and test conform with applicable requirements.

We further certify this material was inspected with independent inspectors conforming to the requirements of EN10204 Section 3.1B.

Comments:

Meets Hardness Requirments of NACE MRO175/ISO 15156 latest editions. Meets ASME SA 106 Grade B Requirements. No weld repair was 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

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

HEAT NUMBER : W13357
 TRANS AM PIPING PRODUCTS - REV'D BY: BL 1/2 X 6 XH SMLS STEEL NIPPLES A106 PBE
 Shipment/Seq #: S 6 - 5382 1

WESTBROOK MATERIAL TEST REPORT

Page 1

P.O. Box 15614
 Houston, Tx 77220-5614

Voice 713 675 6438
 Fax 713 675 9742

Sold To: CSP Products Ltd. Purchase Order: 0012453
 Order No.: 325923 Order Date: 3/08/2006

Printed: 3/10/2006

Line: Description:
 2 1/2 X 4 S80 A106B BLK SMLS NPL PBE

***** Specifications - Heat Code W13911: *****
 A106-04B GR.B, SA106 GR.B, A234-04 WPB, SA234 WPB, A530,
 A733, ASME B36.10, B1.20.1, MSS SP-25, SP-95
 STARTING MATERIAL: A106B PIPE & TUBE

Chemical Composition:

C:	Mn:	P:	S:	Si:	Cr:	Ni:	Mo:
0.190	0.630	0.024	0.009	0.250	0.050	0.100	0.010
Cu:	V:	Cb:	Ti:	C.E.:			
0.190	0.005	<0.001	0.001	.327			

Mechanical Properties:

Tensile(PSI):	Yield(PSI):	Elong(%):	Hardness:	Bend:	Hydro(PSI):
77430	59600	36.00	<=HRC 22	OK	3000

Comments:
 Hardness only to NACE MR-01-75/2003.
 HOT ROLLED

Line: Description:
 3 1/2 X 6 S80 A106B BLK SMLS NPL PBE

***** Specifications - Heat Code W13357: *****
 A106-04 GR.B, SA106 GR.B, A234-05A WPB, SA234 WPB, A530,
 A733, ASME B36.10, B1.20.1, MSS SP-25, SP-95
 STARTING MATERIAL: A106B PIPE & TUBE

Chemical Composition:

C:	Mn:	P:	S:	Si:	Cr:	Ni:	Mo:
0.150	0.620	0.019	0.010	0.220	0.080	0.060	0.010
Cu:	V:	Al:	Sn:	C.E.:			
0.150	0.000	0.034	0.007	.285			

Mechanical Properties:

Tensile(PSI):	Yield(PSI):	Elong(%):	Hardness:	Bend:	Hydro(PSI):
72532	52100	39.50	HRB 78	OK	2500

Comments:
 Hardness only to NACE MR-01-75.
 HOT ROLLED.

Line: Description:
 4 3/4 X 3 S80 A106B BLK SMLS NPL PBE

***** Specifications - Heat Code W13471: *****
 A106-99 GR.B, SA106 GR.B, A234-96A WPB, SA234 WPB, A530,
 A733, ASME B36.10, B1.20.1, MSS SP-25, SP-95
 STARTING MATERIAL: A106B PIPE & TUBE

Chemical Composition:

C:	Mn:	P:	S:	Si:	Cr:	Ni:	Mo:
0.180	0.500	0.015	0.025	0.220	0.020	0.020	0.010
Cu:	V:	C.E.:					
0.040	0.005	.274					

Mechanical Properties:

Tensile(PSI):	Yield(PSI):	Elong(%):	Hardness:	Bend:
67600	49200	30.00	<= HRC 22	SATISFACTORY

Comments:
 Hardness only to NACE MR-01-75/2003.
 Normalized.
 NDE guarantees hydro to 2500 psi.



Manufacturer of Piping and Pressure Vessel Components

4404 Haygood St - Houston, TX 77022
 Phone: 713-695-3633 Fax: 713-695-3528
 A Bonney Forge Company

Page 1 of 1

Sold To: TRANS AM PIPING PRODUCTS
 LTD
 9335 ENDEAVOR DRIVE S.E.
 CALGARY AB T3S 0A1

MTR #: 238,985

PO #: CI-12-503

Sales Order #: C001212714

Date: 09/28/2012

This product has not come in direct contact with mercury or any of its compounds, nor with any mercury-containing device employing a single boundary of containment. No welding performed.

We certify that the contents of this report are correct and accurate, and that all test results and operations performed by WFI or its subcontractors are in compliance with the material specification and requirements of the referenced code or standard, and that the material conforms to the dimensional requirements of the order. This document is in accordance with EN10204 3.1.

Certified Material Test Report

Heat Code: 58883

Material: A/SA105N 09

Item	Quantity	Description
14	100	36 - 3/4 X 1/2 3M SWP A/SA105N IAW NACE MR0175/ISO 15156-2009

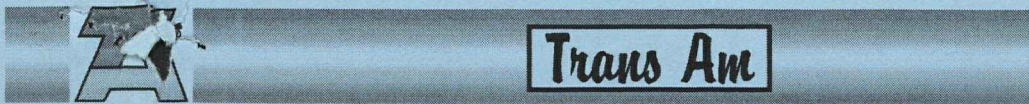
Chemical Composition

Ladle	C	CR	CU	MN	MO	NE	NI	P
	0.207	0.05	0.090	1.02	0.006	0.015	0.03	0.008
	S	SI	V					
	0.022	0.21	0.004					
Carbon Equivalency:		Ladle		0.40				

Product	Tensile PSI	Yield PSI	Elong %	RA %	Hardness	
	73,528	48,561	36.20	61.34	135 BHN	135 BHN

Normalized

Marie Dehmer
 Quality Assurance Representative



Shipped Date

Nov 2, 2012

PIPING PRODUCTS LTD.

Page 1 of 1

Sold To
GENERAL MECHANICAL & CIVIL
CONTRACTORS LTD.
3000 - 84 AVENUE
EDMONTON, AB
T6P 1K3

Ship To
SAME

Ordered By RYAN

Ph# 780 466-7867

Customer P.O.#	Job# / Tag#	T/A Sales Order #
ZL24-33416		E12 - 50902 -01

Shipping Instructions	Freight	Date Ordered
DELIVER TODAY PLEASE SHIP & B/O	COLLECT	Nov 1, 2012

Item	Description	Qty.Ord.	Um	Qty.Ship.	Backorder	Heat #	Mnf
5	6X3 SCH 160 BW CONC REDUCER A234-WPB TAPER 3" TO XH TAPER 3" TO XH BORE	1	EA	1		5203	CH
Total MTR's Listed							1
Manufacturer's Legend & Alberta CRN #							
CH Chup Hsin Enterprise Co. Ltd. OA12036.2 Exp. Jan 2022							

**General, Mechanical & Civil
Contractors Ltd.**
RECEIVED
 NOV - 2 2012
[Signature]

Weight Shipped	Skids	Crates	Sacks	Boxes	Loose	Pipe	Misc.	Trans Am Representative
15 Lbs.				1				Matthew (Moe) O'Donnell

is a Registered Trademark of
Trans Am Piping Products Ltd.

Packing List / MTR Summary

1711 - 66th. Avenue, Edmonton, Alberta T6P 1Y9
Ph# (780) 440-4567 Fax# (780) 440-1488



INSPECTION CERTIFICATE

(MILL TEST)

CHUP HSIN ENTERPRISE CO., LTD.

Customer: TRANS AM PIPING PRODUCTS LTD.
 Product : SEAMLESS CARBON STEEL BUTT WELD FITTINGS
 Spec : ASME SA/ASTM A234 WPB-05a
 CSA A245.11-96 Gr241 CAT.1, NACE MR0175-03**

17, TUNG LI ROAD HSIAO KANG
 KAOHSIUNG, TAIWAN R.O.C.
 TEL:(07)831-9157
 FAX:(07)831-2942, 821-7500

Certificate No : 00000011-0103
 Order No : CI-11-121
 Date : 2011/10/31

Specification for Raw Material		Specification for Inspection		Visual Examination		Dimensional Inspection													
ASTM A106 GR.B		ASME B16.9-2003		GOOD		GOOD													
Item	Description	Quantity	Heat ID.	Heat No.	Raw Material Mfg	Raw Certificate NO.													
43	CON RED S160 SEAMLESS 6 X 3	10	5203	595203	TIANJIN	09072807													
48	ECC RED S160 SEAMLESS 8 X 6	3	A299	0834299	HENGYANG	08-02-0917-5													
49	ECC RED S160 SEAMLESS 10 X 6	3	B354	190354	TIANJIN	09112428													
Specifi- cation	Chemical Composition %												Tension Test			HARD NESS TEST	Heat Treatment	Magnetic Particle Exam.	Remark
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	Y.S P.S.I	T.S P.S.I	E %				
MIN	10	29											35000	60000	30				
MAX	30	106	50	58	40	40	40	15	80	20	50		95000		197				
43	18	25	98	8	3	11	4	4	1	0	0	36	42079	71800	44	138	S.R. 650°C x0.5HR	[DIN 50049/3.1B] EN10204 3.1 **&ISO 15156- 2009	
48	19	24	54	13	8	14	5	6	1	10	0	32	42775	68900	34	137			
49	18	25	93	10	5	13	4	2	2	<1	<1	34	42079	74700	34	138			

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 the requirements of above specifications and purchaser's order.

L.S. Tsai

Chief of Quality Assurance Section

PO# ZL24.33416 Item# 5
 Heat Number: 5203
 Trans Am Piping Products Ltd. - Rev'd By: SJ
 P.O./Seq. No. TEL-12 - 12250
 6 X 3 SCH 160 BW CONC REDUCER
 A234-WPB
 TAPER 3" TO XH BORE



Trans Am

Shipped Date

Nov 1, 2012

PIPING PRODUCTS LTD.

Sold To
GENERAL MECHANICAL & CIVIL
CONTRACTORS LTD.
3000 - 84 AVENUE
EDMONTON, AB
T6P 1K3

Ship To
SAME

Page 1 of 1

Ordered By RYAN

Ph# 780 466-7867

Customer P.O.#	Job# / Tag#	T/A Sales Order #
ZL24-33416		E12 - 50902

Shipping Instructions	Freight	Date Ordered
DELIVER TODAY PLEASE SHIP & B/O	COLLECT	Nov 1, 2012

Item	Description	Qty.Ord.	Um	Qty.Ship.	Backorder	Heat #	Mnf
1	2" CL 900/1500 RTJ W/N FLANGE XH BORE A105N	2	EA	2		60T2 730T1	EN "
2	3" XH LR 90 BW ELLS A234-WPB	2	EA	2		6044	CH
3	2" XH BW TEES A234-WPB	1	EA	1		2874	"
4	3 X 2 XH BW RED TEE A234-WPB	2	EA	2		11P10837	BKL
5	6X3 SCH 160 BW CONC REDUCER A234-WPB TAPER 3" TO XH TAPER 3" TO XH BORE	1	EA	-	1		
Total MTR's Listed							5

Manufacturer's Legend & Alberta CRN #

BKL Thai Benkan Co. Ltd. (BKL)
OA1041.92 Exp. Jun 2014

CH Chup Hsin Enterprise Co. Ltd.
OA12036.2 Exp. Jan 2022

EN ULMA Forja, S. Coop (Enara)
OB08853.52 Exp. Aug 2013

General, Mechanical & Civil
Contractors Ltd.
RECEIVED
NOV - 1 2012
Ryan

Weight Shipped	Skids	Crates	Sacks	Boxes	Loose	Pipe	Misc.	Trans Am Representative
78 Lbs.				2				Matthew (Moe) O'Donnell

is a Registered Trademark of
Trans Am Piping Products Ltd.

Packing List / MTR Summary

1711 - 66th. Avenue, Edmonton, Alberta T6P 1Y9
Ph# (780) 440-4567 Fax# (780) 440-1488

PO# ZL24-33416 Item# 1
 Heat Number: 60T2
 Trans Am Piping Products Ltd. - Rev'd By: SB
 Shipment/Seq #.: S 12 - 1534

CLIENTE / Customer / Client
TRANS AM PIPING PRODUCTS LTD.
 9335 ENDEAVOR DRIVE S.E.
 CALGARY, ALBERTA T3S 0A1
 CANADA

CERTIFICADO DE INSPECCION
 Inspection Certificate - Certificat de Réception

DIN EN 10204 / 3.1
 ISO 10474 / 3.1



FECHA: 06/06/2012 N.º No. 148686

HOJA: Page: 1

PRODUCTO **FLANGES**
 Article - Produit

SU PEDIDO N.º **PO# CI-12 - 295**
 Your Order No.
 Votre Cde. N.º

DE of - de **13/04/2012**

Certified acc. PED 97/23/EC+AD2000-WO
 by TÜV Rheinland
 N.º 01 202 E/Q 02 7443

Bº Zubillaga, 3 - Apdo. 14
 20560 OÑATI (Gipuzkoa) SPAIN
 Tel.: 34 - 943 780552
 Fax: 34 - 943 781808
 E-mail: ulma@ulmapiping.com

NORMAS APLICABLES **ASME B16.5-09**
 Requirements - Normes Applicables **ASME B16.47-11**

MARCA DEL FABRICANTE
 Mark of factory
 Marque du fabricant



93636

MATERIAL CORRESPONDIENTE **ASTM/ASME A/SA105N-11**
 Material Correspondent - Qualité

DEPARTAMENTO **QUALITY ASSURANCE**
 Section
 Département

MODO DE FUSION (*) **NACE MR0175/ISO15156-2-09 & MR0103-10**
 Steel Making - Elaboration de l'acier
 E = Elec. Y = Oxígeno básico **Clause 7.2.1.4, Annex A.2 and SSC Region 3.**
CSA-Z245.12-09 GR248 CAT I - S

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations (*)	COLADA N.º Heat No N.ºCoulée	RESISTENCIA T.Strength Resist Rupt N/mm2	LIMITE ELAST. Y.Strength 0.2 % N/mm2	ALARGAM. Elongation Allongement Lo: 4 d %	ESTRICCION Red. Area Striction %	RESILIENCIA Impact test Résilience Joules	PROBETA - SPECIMEN		DUREZA Hardness Dureté HBW
										MEDIA Average Moyenne	°C	
2	40	WN 16 150LB STD/30 RF A105N	NE	257A2	511	326	26,80	58,60				151 157
3	4	WN 36 150LB STD RF A105N B16.47/A	NE	174R2	545	376	28,70	56,80				156 165
6	4	WN 36 150LB XS/20 RF A105N B16.47/A	NE	241R2	542	373	28,10	58,30				165 172
7	360	WN 2 300LB S40 RF A105N	NE	246T2	520	316	28,60	58,20				148 154
73	105	WN 2 1500LB S80 RTJ A105N ←	NE	60T2	510	301	28,30	52,70				147 157

COLADA N.º Heat No N.ºCoulée	COMPOSICION QUIMICA - STEEL MAKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE														
	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	Al %	Ti %	N %	CEq %
174R2	0,164	0,262	1,184	0,009	0,006	0,143	0,144	0,039	0,001	0,003	0,208	0,035	0,000	0,000	0,422
241R2	0,205	0,223	1,168	0,006	0,005	0,077	0,072	0,018	0,000	0,005	0,069	0,024	0,000	0,000	0,429
246T2	0,190	0,170	0,830	0,016	0,017	0,070	0,140	0,021	0,002	0,002	0,260	0,000	0,000	0,000	0,374
257A2	0,200	0,240	0,840	0,010	0,001	0,130	0,090	0,020	0,001	0,002	0,270	0,039	0,000	0,000	0,394
60T2	0,180	0,150	0,820	0,011	0,013	0,050	0,110	0,020	0,004	0,001	0,330	0,000	0,000	0,000	0,360

- 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.

EL INSPECTOR
 Works Inspector - L'inspecteur

 ULMA FORJA S. COOP.
 Dpto. de Garantía de calidad
 Quality Assurance Dept.

(*) OBSERVACIONES:
 Remarks
 Observations
 N NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR

CCM
 NOV 01 2012
 QC RECEIVED
 GMCC
 JOB # ZL-27

Line 1

PO# ZL24-33416 Item# 1
 Heat Number: 730T1
 Trans Am Piping Products Ltd. Shipm't/Seq #: 12-1209
 Rev'd By: SB
 2" CL 900/1500 RTJ W/N
 FLANGE XH BORE A105N

CLIENTE / Customer / Client
TRANS AM PIPING PRODUCTS LTD.
 9335 ENDEAVOR DRIVE S.E.
 CALGARY, ALBERTA T3S 0A1
 CANADA

CERTIFICADO DE INSPECCION
 Inspection Certificate - Certificat de Réception

DIN EN 10204 / 3.1
 ISO 10474 / 3.1



FECHA: 13/03/2012 N.º 146535 HOJA: 2
 Date: 13/03/2012 No. 146535 Page: 2

PRODUCTO **FLANGES** **SU PEDIDO N.º**
 Article - Produit Your Order No. **PO# CI-12 - 127**
 Votre Cde. N.º

DE
 of. - de **24/01/2012**

Certified acc. PED 97/23/EC+AD2000-W0
 by TÜV Rheinland
 N.º 01 202 E/Q 02 7443

Bº Zubillaga, 3 - Apdo. 14
 20560 ONATI (Gipuzkoa) SPAIN
 Tel.: 34 - 943 780552
 Fax: 34 - 943 781808
 E-mail: ulma@ulmapiping.com

NORMAS APLICABLES **ASME B16.5-09**
 Requirements - Normes Applicables

MATERIAL CORRESPONDIENTE **ASTMA105N-10**
 Material Correspondent - Qualité **ASTMA105N-10**
MODO DE FUSION (*) **NACE MR-01-75/ISO15156-2-09 & MR-01-03/10**
 Steel Making - Elaboration de l'acier **CSA-Z245.12 GR248 CAT 1**
 E = Elec. Y = Oxígeno básico

MARCA DEL FABRICANTE
 Mark of factory
 Marque du fabricant



91536

DEPARTAMENTO **QUALITY ASSURANCE**
 Section
 Département

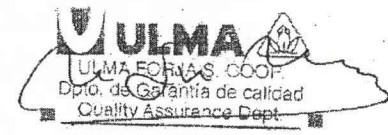
PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations (*)	COLADA N.º Heat No N.º Coulée	RESISTENCIA T.Strength Resist Rupt N/mm2	LIMITE ELAST. Y.Strength 0.2 % N/mm2	ALARGAM. Elongation Allongement Lo: 4 d %	ESTRICCION Red. Area Striction %	RESILIENCIA Impact test Résilience Joules	PROBETA - SPECIMEN		DUREZA Hardness Dureté HB
										MEDIA Average Moyenne	°C	
18		WN 2 1500LB S160 RF A105N	NE	80T2	516	304	28,60	54,80				150 154
37		WN 2 1500LB S80 RTJ A105N ←	NE	730T1	519	302	28,40	53,90				150 159

COLADA N.º Heat No N.º Coulée	COMPOSICION QUIMICA - STEEL MAKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE														
	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	Al %	Ti %	N %	CEq %
730T1	0,200	0,180	0,860	0,013	0,020	0,050	0,100	0,010	0,001	0,001	0,280	0,000	0,000	0,000	0,381
80T2	0,200	0,190	0,830	0,022	0,009	0,080	0,120	0,020	0,004	0,001	0,330	0,000	0,000	0,000	0,389

- 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.

EL INSPECTOR
 Works Inspector - L'inspecteur



(*) OBSERVACIONES:
 Remarks
 Observations

N. NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR
 JOB # ZL-27
 QCM
 NOV 0 1 2012
 QC RECEIVED
 GMCC

Line Nr 1



Thai Benkan Co., Ltd.
58 Soi Watkrana, Bangkru, Prapadaeng,
Samutprakarn, 10130 Thailand.

INSPECTION CERTIFICATE

Purchaser: TRANS-AM PIPING PRODUCTS LTD.

TO EN10204 3.1

D M Y Certificate No.

E-No.	Purchase Order No.	Job No.	Specification for Material Made from Seamless Pipe		Specification for Inspection	Visual Examination	Dimensional Inspection										
MC-603	CI-11-594 C/O 1		ASTM A234-11/ASME SA234-10 Gr. WPB CSA Z245.11 Gr. 241 CAT I NACE MR0175/ISO 15166-2:2009		ASME B16.9-2007, B16.25-2007	Good	Good										
No.	MFG. No.	Product & Size (T.W)	Quantity	Heat Treatment (Note 1)	Hardness Actual Data												
1	11P10837	T WPB 3 X 2 S80	172/200	N	HB : 118 - 145												
2	12D10837	T WPB 3 X 2 S80	28/200	N	HB : 118 - 145												
3																	
4																	
5																	
Specification		Chemical Composition %										Tension Test *2					
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E	
Min.		x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa.		%	HARDNESS MAX
Max.			10	29										240	415	30	197 HB : GOOD
Material Heat No.		30		108	50	58	40	40	40	15	80	20			655		
1	43491	15	26	85	12	1	3	4	4	2	3	1	31	329	468	37	ORIGINAL
2	J1L7545	19	19	84	15	4	1	2	5	2	0	0	35	324	493	40	
3																	
4																	
5																	

(Note 1) A : Hot formed with final temperature between 620°C-980°C. Air Cooling N : Normalizing 910°Cx0.5 HR. Air Cooling *N : Normalizing 910°Cx0.5 HR. Air Cooling (Specification for material made from plate) S : Stress Relieving 675°Cx0.5 HR. Air Cooling

The fittings was manufactured, sampled tested, and inspected in accordance with the specification, and was found to meet the requirements.
C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15 MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY :

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
Form TZ-6A/3

OB # 2L-27
CM
MAY 01 2012
RECEIVED
GMCC

Quality Assurance Manager
Thai Benkan Co., Ltd.

Line 5

PO# ZL24-33416 Item# 4
Heat Number: 11P10837
Trans Am Piping Products Ltd. Rev'd By: SB
Shipment / Seq #: S 12 1613 6

3 X 2 XH BW RED TEE A234-WPB

6" S-160 SEAMLESS STEEL PIPE
A106 GR B P.E. DRL



YANTAI LUBAO STEEL PIPE CO., LTD.



MILL TEST CERTIFICATE

NO. 185 XINGFU MIDDLE ROAD, YANTAI, CHINA
TEL: 0086 535-6843946/6854750 FAX: (0535)6842245
HTTP://WWW.LUBAOSTEEL.TUBE.COM

(EN10204 3.1)

PAGE 1 OF 1

PURCHASER	TRANS AM PIPING PRODUCTS LTD.,	DESCRIPTION OF GOODS	PIPE	
DIMENSION STANDARD	ASME B36.10	CUSTOMER'S NO.	E00109	CERTIFICATE NO.
MATERIAL SPECIFICATION	ASTM A106-B-2006, ASME SA106-B-2007, API 5L B-2007 CSA Z245.1-2007 Gr. 241 Cat I NACE MRO175-2003/ISO 15156	DATE OF DELIVERY	20110422	SUB CONTRACT NO.
		P. O. NO.		DATE OF ISSUE
		STAMP OF MILL INSPECTOR		质量专检 NO

O. D.	168.3mm	W. T.	18.26mm	Length	DRL	11-11.8M	Total Length	Total Bundles	Order Quantity																				
Total Pieces	Total Weight			Delivery Condition			As-Rolled	Making Method	Hot Finished Seamless																				
No	Heat No.	Chemical Composition													Lot No.	Tensile Test G.L.=L4				Impact Test				Hardness Brinell (HB)	Pieces	Weight MT			
		C	Si	Mn	P	S	Cu	Ni	Cr	V	Mo	Ti	B	Nb		CE	**	**	**	**	Y.S.	T.S.	E.L.				EXT.	**	**
MIN	MAX	0	0.1	0.29	0	0	0	0	0	0	0	0	0	0	0	240	415	22.0											
0.22	9.9	1.06	0.035	0.035	0.40	0.40	0.40	0.08	0.15	0.01	0.001	0.01			999	999													
400988	H	0.20	0.24	0.56	0.014	0.006	0.06	0.03	0.19	0	0.01	0	0.0002	0	0.34	1204005	P 1 2	310	510	30.5								167	
																	P 1 2	275	495	30.0								165	
E. T.	E. M. I.	U. T.	M. P. I.	Visual & Dimensions		Coating	Drift Test	Hydrostatic Pressure	Duration of Time																				
	GOOD			Good		Good		19.00MPa	5s																				
Expansion	Ring Expansion	Ring Tensile	Flattening	Bending	Flanging	SSCC	Macrostructure	Heat Treatment																					
			Good																										
NOTES	2* Chemical Composition H; Heat (Ladle) Analysis 3* P= Pipe Body; 4* 1=Longitudinal 5* 2=Script X 20mm; G.L.=Gauge Length L1=5.65SQRT(FO)																												
Remark																													
SURVEYOR	WE HERE CERTIFY THAT THE MATERIAL HEREIN DESCRIBED HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE REQUIREMENTS OF ABOVE SPECIFICATIONS AND PURCHASE ORDER, AND MET THE REQUIREMENTS.																												
	 质检站站长 CHIEF OF QUALITY CONTROL DEPT.																												

PO# ZL15.33129 Item# 6
Heat Number: 400988
Trans Am Piping Products Ltd. Rev'd By: SB
Shipment / Seq #: 11 1475

2" XH BLK SEAMLESS STEEL PIPE
A106 GR B B.E. D.R.L.



Contract No.: EI-11-709
PO.NO.: EI-11-709
Name of Customer: TRANS AM PIPING PRODUCTS LTD.,
L/C NO.:
Description: PIPE

HENGYANG VALIN STEEL TUBE CO.,LTD

Add: 10 Dalixincun, Hengyang City, Hunan, China
Tel and Fax: +86 734 8873739 8872942
Cable: 6993
P.C. 421001

MILL INSPECTION CERTIFICATE

Date: FEB 29,2012

Page: 1/1

SPEC:ASTM A106-B-2008 ,ASME SA106-B-2008 ,API 5L X42 PSL1 -2007,CSA Z245.1-2007 Gr.290 Cat I,NACE MR0175-2009/ISO 15156															CERTIFICATE NO:12-1-02-216					
NO.	BATCH NO.	HEAT NO.	STEEL GRADE	SIZE				BUNDLES	PIECES	FEETS	QUANTITY (MT)			ACTUAL WEIGHT(MT)						
1	12-A1703	615538	B	2"	XS	A106 GR B B.E.	DRL													
NO.	DELIVERY		NONDESTRUCTIVE TEST				CHEMICAL COMPOSITION % (L:Ladle analysis P:Product analysis)													
	CONDITION(≥650°C)		ET	UT	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Ti	B	NB	CE	CE(CSA)	
1	NORMALIZED		OK		L	0.14	0.25	1.07	0.007	0.002	0.08	0.02	0.02	0.01	0.03	0.001	0.0004	0	0.34	0.32
					P	0.14	0.25	1.08	0.008	0.002	0.06	0.02	0.02	0.01	0.03	0.001	0.0004	0	0.34	0.32
					P	0.14	0.25	1.08	0.008	0.002	0.06	0.02	0.02	0.01	0.03	0.001	0.0004	0	0.34	0.32
NO.	T.S. (MPA)	Y.S. (MPA)	E.L. (%)	Ak (J) IMPACT			HARDNESS BRINNEL (HB)	HYDROSTATIC TEST (MPA)	FLATTEN TEST		BEND TEST									
	Strip,L,bo=19mm,Lo=50mm				SIZE	AK	Ori/Te													
1	540	380	35				162	17.0	OK		OK									

- REMARKS: 1.We hereby certify that this certificate of quality is issued and signed by the manufacture.
2. We hereby certify that the properties described herein meet the requirement of the above spec.
3. We hereby certify that this certificate is issued accordance with EN 10204 3.1B
4. SPECIMEN SIZE: (Pipe end, Longitudinal, Gauge Length=2")
A. For pipes ≤1" full length specimen were used;
B. For pipes >1" longitudinal strip specimen were used; the width of the gauge length portion is 3/4"
5. NORMALIZED:900°C
6. DIMENSION STANDARD:ASME B36.10
7. MANUFACTURE METHOD:COLD DRAWN
8. CE=C+Mn/6+(Cr+Mo+V)/5+(Cu+Ni)/15 CE(CSA)=C+Fx[Mn/6+Si/24+Cu/15+Ni/20+(Cr+Mo+V+Nb)/5+5B]

QUALITY MANAGER



P.O.# YL56-32366 Item# 4
Heat Number: 615538
Trans Am Piping Products Ltd. - Rev'd By: SB
Shipment / Seq #: 1309



RUSSEL METALS INC.

A DIVISION OF RUSSEL METALS INC.
UNE DIVISION de MÉTAUX RUSSEL INC.

P.O. BOX 4128
EDMONTON, AB

COMBINATION SHORT FORM OF STRAIGHT BILL OF LADING - EXPRESS SHIPPING CONTRACT,
SUBJECT TO ALL TERMS, CONDITIONS AND LIMITATIONS INCORPORATED BY REFERENCE AS SHOWN ON THE BACK OF THIS BILL.
FORMULAIRE COMBINÉ DE CONNAISSANCEMENT DIRECT - ET DE CONTRAT D'EXPÉDITION PAR
MESSAGERIE ASSUJÉTI À TOUTES LES MODALITÉS, CONDITIONS ET LIMITATIONS QUI Y SONT INTÉGRÉES PAR RENVOI, AINSI
QU'IL EST INDICÉ AU VERSO DU PRÉSENT CONNAISSANCEMENT.

Shipper's No./No. d'expéditeur
Carrier's No./No. Transporteur

61481296-87463

13:09:43

CARTE TRANSPORTEUR

At/À

OUR TRUCK

From/De

PROMISED: 11/08/12

EDMONTON, AB

11/07/12

RUSSEL METALS INC.

SALESPERSON (REPRESENTANT DES VENTES):

TREVOR SELLIN

SHIPPED TO 00

SOLD TO 6110631

GMC CONTRACTORS LTD.

GMC CONTRACTORS LTD.

3000 - 84 AVENUE

3000 - 84 AVENUE

EDMONTON AB T6P 1K3

EDMONTON AB T6P 1K3

FREIGHT TERMS
MODALITES DE TRANSPORT

PREPAID

CARRIER
TRANSPORTEUR

OUR TRUCK

VEHICLE IDENT
IDENTIFICATION DU VEHICULE

NUMBER AND DESCRIPTION OF ARTICLES
NOMBRE & DESCRIPTION DES ARTICLES

WEIGHT
POIDS

SO61481296CPO#: ZL27-33425

RELEASE# TOM

CUSTOMER INSTRUCTIONS

NEED PRICED PACKING SLIPS BILL TO 00. SHIP TO 01

MUST SEND MTR'S WITH SHIPMENT

REC. PHONE NO.
NO. DE TÉLÉPHONE DU CONTACT

780-466-7867

RECEIVING HOURS & DAYS
HEURES ET JOURS DE RECEPTION

RECEIVING CONTACT
CONTACT À LA RECEPTION

01 32662 FLOOR PLATE MILD STEEL

96"

X 240"

6 MM (.236) FLOOR PLATE

HEAT#

1 EA ✓

1590 LB

COUNTRY/ORIGIN

PRICE: 1040.0000/EA

If charges are to be prepaid, write or
stamp here: "TO BE PREPAID."
Si les frais doivent être payés à
l'avance écrire ou estamper ici:
"À ÊTRE PAYÉ À L'AVANCE"

Received \$
Reçu \$

to apply in prepayment of the charges on
the property described hereon.
à appliquer comme paiement anticipé
des frais sur la marchandise décrite
aux présentes.

Per
Par
(Signature of Agent / Signature de l'Agent)

(The signature here acknowledges
only the amount prepaid)
(La signature ci-haut reconnaît
uniquement les montants payés à
l'avance.

DATE SHIPPED
DATE EXPÉDIEE

RECEIVED
REÇU

Per
Par

Date

PAGE: 1
TOTAL SKIDS

1 EA

1590 LB

THE LOAD MUST BE TARPED AND KEPT DRY / LA MARCHANDISE DOIT ÊTRE COUVERTE AVEC UNE TOILE IMPERMÉABLE

STEEL, STAINLESS STEEL, ALUMINUM, BRASS,
COPPER, NICKEL AND SPECIALTY STEEL



ACIER, ACIER INOXYDABLE, ALUMINIUM, LAITON,
CUIVRE, NICKEL ET ACIER SPÉCIALISÉ

Les produits mentionnés ci-haut, à l'état brut, ne causent aucun danger au contact, en cas d'inhalation ou d'ingestion.
Une surexposition aux poussières ou aux émanations durant la soudure, la coupe au chalumeau, le meulage ou l'usinage pourrait résulter en une irritation des voies respiratoires ou de la peau ou autres maladies. UNE VENTILATION ADEQUATE EST DE MISE AINSI QU'UN EQUIPEMENT PROTECTEUR APPROPRIÉ.
Pour ce qui est des alliages de cuivre et de laiton, un contact avec certains acides pourrait dégager des gaz hydrogène explosifs et inflammables. Si chauffé, de l'oxyde de cuivre, de zinc, de nickel, d'étain, de cadmium et/ou des vapeurs de plomb pourraient s'échapper. Les produits d'aluminium peuvent glisser lors de leur manipulation ou transportation.
TOUTS LES PRODUITS DOIVENT ÊTRE ATTACHÉS SOLIDEMENT LORS DU TRANSPORT ET DE LA MANIPULATION.
Lors de la coupe, les courroies d'acier peuvent rebondir et causer des blessures. MANIPULEZ AVEC PRÉCAUTION.
En cas d'une surexposition aux émanations, retirez-vous et respirez de l'air frais. S'il y a contact avec la peau lavez la région affectée avec de l'eau et du savon. Si les symptômes persistent consultez votre médecin.
POUR PLUS D'INFORMATION, CONSULTEZ LA FEUILLE DE DONNÉES DE SÉCURITÉ.



The above listed products, in a natural state, do not pose inhalation, ingestion or contact hazards.
Prolonged overexposure to dust or fumes during welding, burning, grinding or machining may result in respiratory irritation, skin irritation or disease. USE ADEQUATE VENTILATION AND APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT.
For Brass and Copper Alloys, contact with acids may liberate flammable and explosive hydrogen gas. If heated, copper oxide, zinc oxide, nickel oxide, tin oxide, cadmium oxide and/or lead fumes may be evolved. Aluminum products may slip during handling or transportation.
ALL PRODUCTS MUST BE SECURED FOR HANDLING AND TRANSPORTATION.
Cutting and containment strapping may result in the strapping rebounding and injuring those nearby. EXERCISE CAUTION.
For overexposure to metal fumes, remove to fresh air. For skin contact, wash thoroughly with soap and water. Obtain medical attention if symptoms persist.
SEE MATERIAL SAFETY DATA SHEETS FOR MORE DETAILED INFORMATION.

PURCHASER'S ORDER IS FILLED IN ACCORDANCE WITH THE ABOVE TERMS AND CONDITIONS AND THOSE ON THE REVERSE HEREOF, ALL OF WHICH TERMS AND CONDITIONS SUPERSEDE THE TERMS AND CONDITIONS (IF ANY) OF PURCHASER'S ORDER. BY ACCEPTING DELIVERY OF ALL OR PART OF THE ABOVE-DESCRIBED GOODS (HEREINAFTER CALLED THE "GOODS") OR BY PAYING FOR SAME IN WHOLE OR IN PART PURCHASER AGREES TO ALL THE TERMS AND CONDITIONS SET FORTH ABOVE AND ON THE REVERSE HEREOF.

LA COMMANDE DE L'ACHETEUR EST EXÉCUTÉE EN CONFORMITÉ DES CONDITIONS STIPULÉES CI-DESSUS ET AU VERSO DES PRÉSENTES. TOUTES CES CONDITIONS REMPLAÇANT CELLES (LE CAS ÉCHÉANT) ÉNONCÉES AU BON DE COMMANDE DE L'ACHETEUR EN ACCEPTANT LA LIVRAISON DE TOUT OU PARTIE DES MARCHANDISES DÉCRITES CI-DESSUS (CI-APRÈS APPELÉES LES "MARCHANDISES") OU EN LES PAYANT INTÉGRALEMENT OU PARTIELLEMENT, L'ACHETEUR ACCEPTE TOUTES LES CONDITIONS STIPULÉES CI-DESSUS ET AU VERSO DES PRÉSENTES.

CUSTOMER COPY 2 / COPIE DU CLIENT

TERMS AND CONDITIONS OF SALE

- Prices and payment.** Prices and charges are subject to change without notice and will reflect those of Vendor in effect at the time of shipment. Balances past due shall bear interest at 1 1/2% per month (18% per annum).
- Title and Risk.** Title, ownership and risk of loss or damage to the goods shall pass to Purchaser immediately upon Vendor packaging goods unless otherwise specified as being on delivery. All sales are F.O.B. Vendor's warehouse unless otherwise stipulated. Charges for spotting, switching, handling, storage or other accessory services and demurrage shall be at Purchaser's expense.
- Orders.** Vendor's interpretation of a verbal order shall be final and binding where shipment is made prior to receipt of written confirmation. Unless brought to the attention of Vendor within 10 days, Vendor cannot be responsible for any errors or discrepancies contained in the order.
- Warranties.** Purchaser acknowledges that Vendor has not made and does not make any representations or warranties, whether express, implied, statutory or otherwise, except that the goods supplied conform to the above specifications and descriptions, subject to tolerances and variations consistent with usual trade practices. Vendor shall not be liable in contract, tort or otherwise for any loss, damages, costs, claims, expenses or repairs resulting from any defect, failure to conform to specifications or breach of this agreement whether any such loss, damage, cost, claim, expense or repair is direct, indirect or consequential. Vendor's liability shall be limited in all circumstances to the invoice price paid by Purchaser for the goods purchased under this agreement. The foregoing limitation of liability is a condition of sale of the goods at the price or prices quoted and shall apply notwithstanding any defect in or failure of, including the total failure of, any product.
Should any of the goods received by Purchaser not conform, as determined by Vendor's inspection, to the above specifications and descriptions, subject to Vendor's regular practice concerning over and under shipment and normal tolerances, variations and limitations of dimension, weight, shape and composition, Purchaser acknowledges that Vendor's only liability will be to replace or repair such goods or to refund the purchase price, at the option of Vendor, provided that payment has been met and Purchaser notified Vendor in writing within 10 days of receipt of the goods. Except for test samples, goods may not be returned which Purchaser has cut, processed or altered in any way.
Purchaser acknowledges that while it may consult with Vendor's staff for assistance, recommendations or instructions in selecting goods, Vendors does not warrant the suitability or merchantability of the goods or the fitness of any of the goods for any particular use, purpose or application.
Where Purchaser has directed Vendor to perform certain shaping, cutting or other processing on the goods in accordance with Purchaser's particular specifications, Vendor does not make any representations or warranties except that those goods shall conform to the specifications supplied by Purchaser and that all processing applied by Vendor is performed in a good workmanlike manner in accordance with applicable industry trade standards and practices subject to any tolerances and variations consistent with the usual trade practices of Purchaser. Purchaser assumes all responsibility, risk and liability and agrees to indemnify and save harmless Vendor from and against any liability, loss, cost, damages, claims or expenses in respect of any defect in the whole or any part or parts of any good or goods manufactured or fabricated, incorporated or otherwise using the goods sold under this agreement.
- Indemnification of Vendor.** Vendor will not be responsible for and Purchaser shall indemnify and hold harmless Vendor from and against any loss, damages, expenses, claims, suits or judgments whether direct, indirect or otherwise, arising in any way out of the use of the goods and that Vendor's sole liability shall be to replace or repair the goods, or refund the purchase price, at Vendor's option. Where Purchaser has supplied the design for all or any part of the goods, Purchaser hereby agrees to indemnify and hold harmless Vendor from and against all loss, damages, expenses, claims, suits and judgments arising, directly or indirectly, out of the design, installation, maintenance or operation of the goods or any allegation that the goods, or any part thereof, infringe any patent, industrial design or intellectual property right.
- Delivery.** Delivery of goods is subject to stock availability. Unavailability of the goods from Vendor's suppliers shall constitute a force majeure in this agreement. Vendor shall promptly notify Purchaser of the absence or shortage of supply of the goods. Vendor shall exercise its best efforts to deliver within the times quoted but does not guarantee delivery time and shall not be liable for any damages, loss, claim or expense of any kind or nature whatsoever or howsoever caused by the delay in delivery or unavailability of goods.
- Force Majeure.** Neither party shall be responsible to the other for non-performance or delay in performance occasioned by any causes beyond its control including without limitation any acts or omissions of the other party, such as: acts of civil or military authority, strikes, lockouts, trade actions, embargoes, insurrections or acts of God.
- Claims and Credits.** Vendor shall not be liable for any shortages or errors in or damage to the goods shipped to Purchaser unless written details of such shortages, errors or damages are given by Purchaser to Vendor within 10 days of receipt of the goods.
- Changes or Cancellation.** Vendor may accept Purchaser's request to change the specifications or processing of the goods, but shall reserve the right to charge Purchaser for all costs and services necessary for such changes. Orders for goods may not be cancelled and no credits may be received by Purchaser except with the written consent of Vendor.
- Suspension of Orders.** Vendor reserves the right, without liability and without prejudice to any other remedies, to delay or stop shipment of all or any part of the goods if any time reasonable doubt exists as to Purchaser's financial situation.
- Entire Agreement.** Vendor and Purchaser acknowledge that this agreement constitutes the entire agreement between them and that no representation or agreement, whether oral, written or otherwise, has been made other than the ones expressly stated herein. This agreement is not transferable or assignable by Purchaser.
Purchaser's order will be filled in accordance with the terms and conditions set out above. This acknowledgment constitutes acceptance of Purchaser's offer subject to the conditions of sale above and it constitutes a contract made in Canada for the sale of goods described herein.

STIPULATIONS CONTRACTUELLES

- Prix et modalités de paiement.** Les prix et frais afférents sont sujets à changement sans préavis et seront ceux du vendeur, en vigueur au moment de la livraison. Tout solde passé dû portera intérêt au taux mensuel de un et demi pour cent (1 1/2 %) (18% par année).
- Titres et risque.** Les titres, la propriété et le risque de perte ou de dommages aux biens sont transférés à l'acheteur aussitôt que le vendeur emballe lesdits biens, à moins qu'il ne soit spécifié que le transfert de titre, de propriété et de le risque de perte ou de dommage aux biens n'entre en vigueur qu'à la livraison. Toutes les ventes sont F.O.B., à partir de l'entrepôt du vendeur, à moins d'indications contraires. Des frais de repérage, de substitution, de manutention, d'entreposage ou tout autre service accessoire et surestaries sont en plus à la charge de l'acheteur.
- Commandes.** L'acceptation donnée par le vendeur à une commande verbale prévaudra lorsque la livraison précédera la réception du bon la confirmant. A moins d'en être informé dans les 10 jours, le vendeur ne saurait être tenu responsable d'erreurs ou de divergences dans le contenu de la livraison.
- Garanties.** L'acheteur reconnaît et convient que le vendeur, en accordant à la présente transaction, n'a formulé ni ne formule quelques représentations ou garanties que ce soit, expresses, implicites, statutaires ou autres, si ce n'est que les marchandises fournies répondent aux spécifications et descriptions contenues au bon de commande, sous réserve des écarts et variations acceptables selon les usages commerciaux habituels. Le vendeur ne saurait être tenu responsable, contractuellement, délictuellement ou autrement, de tous dommages, pertes, réclamations, coûts, débours et réparations résultant de tout défaut de fabrication ou de non-conformité aux spécifications, ou de toute rupture de la présente entente, que tels dommages, pertes, coûts, réclamations, débours ou réparations soient directs, indirects ou conséquents. La responsabilité du vendeur sera, en toutes circonstances, limitée à la valeur des articles concernés apparaissant à la facture payée par l'acheteur relativement aux marchandises soumises à la présente entente. La présente limitation de responsabilité constitue une condition de la vente des marchandises au(x) prix indiqué(s) - sans quoi le vendeur n'aurait pas acquisé - et aura préséance nonobstant tout défaut de fabrication ou panne - même complète - affectant les marchandises vendues.
Au cas où les marchandises reçues par l'acheteur s'avèreraient, selon l'inspection qu'en aura faite le vendeur, non conformes aux spécifications et aux descriptions ci-jointes, et sous réserve de la politique suivie par le vendeur à l'occasion de livraison excédentaire ou insuffisante de marchandises, et sous réserve des normes de tolérances applicables dans l'industrie relativement à la marge d'erreur et à la tolérance d'écart des dimensions, poids, forme et composition des marchandises vendues, l'acheteur reconnaît et convient que la responsabilité du vendeur sera limitée au remplacement ou à la réparation des marchandises concernées ou au paiement du prix payé par l'acheteur et ce, à l'option exclusive du vendeur, pour autant que les modalités de paiement des marchandises aient été respectées et que l'acheteur ait avisé le vendeur par écrit de la situation en deçà des dix (10) jours suivant la réception des marchandises. Sauf pour les échantillons utilisés à des fins d'expertise, les marchandises que l'acheteur aura formées, assemblées ou altérées ne pourront faire l'objet de retour au vendeur.
L'acheteur reconnaît et convient que, bien qu'il puisse consulter le personnel du vendeur pour l'assister, lui formuler des recommandations et l'éclairer dans le choix de certaines marchandises, le vendeur n'endosse ni ne garantit d'aucune façon à propos, ni la qualité marchandise et loyale de ces marchandises ni leur avantage pour quelque fin, usage ou utilisation par l'acheteur.
Lorsque l'acheteur a requis du vendeur de former, de couper ou autrement traiter des marchandises, conformément aux exigences de l'acheteur, le vendeur ne représente ni ne garantit rien d'autre que les marchandises ainsi traitées seront conformes aux spécifications fournies par l'acheteur et que les transformations effectuées par le vendeur l'ont été professionnellement, selon les normes et pratiques applicables dans l'industrie, compte tenu de tout écart et variation acceptables selon les usages commerciaux usuels ou tels que définis par l'acheteur. L'acheteur assume et fait sien, à l'entière décharge du vendeur, tout risque, responsabilité ou obligation et convient de tenir ce dernier indemne et de prendre son fait et cause à l'égard de toute responsabilité découlant des pertes, frais, débours, dommages et réclamations encourus relativement au défaut total ou partiel de toutes ou partie des marchandises manufacturées, fabriquées, incorporées ou autrement utilisées et vendues aux termes des présentes.
- Dédommagement du vendeur.** Le vendeur ne saurait être tenu responsable - et le cas échéant, l'acheteur indemniser ce dernier et prendra son fait et cause s'il y a lieu - à l'égard de tous dommages, pertes, débours, réclamations, réparations, actions en justice et jugements rendus directement, indirectement ou autrement, et résultant d'un quelconque usage de ces marchandises, et l'acheteur, convient qu'alors la responsabilité du vendeur sera limitée au remplacement ou à la réparation de la (des) marchandise(s) ou au remboursement de son (leur) prix d'achat et ce, à l'option exclusive du vendeur. Lorsque l'acheteur a fourni les dessins de toutes ou de parties des marchandises, ce dernier convient alors d'indemniser le vendeur à prendre le fait et cause de ce dernier à l'égard et à l'encontre de tous dommages, pertes, débours, réclamations, actions en justice et jugements rendus directement, indirectement ou autrement aux dessins, à l'installation, à l'entretien et au fonctionnement des marchandises et, pareillement, à l'encontre de toute allégation prétendant que les marchandises ou parties de celles-ci enfreignent tout brevet, dessin industriel ou autre type de propriété intellectuelle.
- Livraison.** La livraison des marchandises dépend de leur disponibilité en stock. L'indisponibilité des marchandises auprès de fournisseurs du vendeur constituera une force majeure, ou égard à la présente transaction. Le vendeur avisera promptement l'acheteur de l'indisponibilité et de l'insuffisance en stock des marchandises commandées. Le vendeur déploiera ses meilleurs efforts pour livrer à l'intérieur des délais impartis, mais ne saurait garantir la livraison en deçà de ces délais et, conséquemment, ne saurait être tenu responsable de tous dommages, pertes, réclamations ou débours, lorsqu'ils soient ou qu'ils surviennent, résultant d'un retard de livraison ou de l'indisponibilité des marchandises.
- Force majeure.** Aucune des parties ne saurait être responsable de la non-exécution ou du retard dans l'exécution occasionné par toutes causes en dehors de son contrôle, incluant sans s'y restreindre, tout acte ou toute omission de la part de l'autre partie, tel acte d'autorité civile ou militaire, grèves, lock-outs, mesures relatives au commerce extérieur, embargos, émeutes ou catastrophes naturelles.
- Réclamation et crédits.** Le vendeur ne saurait être tenu responsable d'insuffisance, erreur ou dommages relativement aux marchandises livrées à l'acheteur, à moins que le détail de tels insuffisance, erreur ou dommages ne soit rapporté par écrit, adressé par l'acheteur au vendeur dans les dix (10) jours suivant la livraison.
- Modifications ou résiliation du bon de commande.** Il est loisible au vendeur d'accepter une demande de modification des spécifications ou du traitement des marchandises, ce dernier se réservant le droit de facturer l'acheteur pour les coûts et services nécessités par tels changements. Par contre, les bons de commande marchandises demeurent non résiliables et non résolubles et les marchandises livrées ne sauraient être retournées par l'acheteur, sans le consentement écrit du vendeur.
- Suspension de livraison.** Le vendeur aura le droit, sans encourir quelque responsabilité que ce soit et sous réserve de tout autre recours, de retarder ou d'interrompre la livraison de toutes ou de parties des marchandises, en tout temps, lorsque lui surviendra un doute raisonnable relativement à la solvabilité de l'acheteur.
- Teneur de la transaction.** Le vendeur et l'acheteur reconnaissent et conviennent que les présentes constituent la convention pleine et entière, intervenue entre eux et qu'il n'existe aucune représentation ou entente, verbale, écrite ou tacite, autre que celle contenue et relatée aux présentes. La présente convention est non transférable et inaliénable par l'acheteur.
La commande de l'acheteur sera remplie conformément aux dispositions qui précèdent. Ce récépissé constitue à la fois l'acceptation de la commande de la part de l'acheteur, sous réserve des conditions de vente ci-avant, et la pleine et entière transaction, conclue au Canada, relativement à la vente des marchandises y décrites.

BILL OF LADING COMMON CARRIER TERMS / CONNAISSANCE - CONDITIONS DU TRANSPORTEUR PUBLIC

Received, subject to the classifications and tariffs in effect on the date of issue of this Original Bill of Lading, or, received; subject to the Rules for the Carriage of Express and Non-Carload Freight Traffic and tariffs in effect on the date of issue of this original Shipping Contract (bill of lading), goods described, in apparent good order, except as noted (contents and conditions of contents of packages unknown), marked, consigned and destined as indicated, which said Company agrees to carry to its usual place of delivery at said destination, if on its road, otherwise to deliver to another carrier on the route to said destination.
The carrier assumes full responsibility for the securing of the load. All loads have been assembled following accepted transportation materials loading practices. The carrier assumes full responsibility for, and risk of injury, or damage. The carrier agrees to release, discharge and indemnify vendor from any actions, claim, demands, expenses or liability which may now or hereafter occur in respect of injury or damage. The carrier agrees that this agreement will be binding upon it and its heirs, executors, administrators and assigns.
It is mutually agreed, as to each carrier of all or any of said goods over all or any portion of said route to destination, and as to each party at any time interested in all or any of said goods, that every service to be performed hereunder shall be subject to all the terms and conditions, whether printed or written, herein contained and which are agreed to by the shipper and accepted for the shipper and its assigns (which are hereby incorporated by reference and have the same force and effect as if the same were severally, fully and specifically set forth herein), including (in each case, as the same may be amended or replaced from time to time):

Reçu, sous réserve des classifications et tarifs en vigueur à la date d'émission du connaissance original, ou sous réserve des règlements régissant le transport des messageries et marchandises de détail et des tarifs en vigueur à la date d'émission du contrat de transport (connaissance), les marchandises désignées, apparemment en bon état sauf les remarques contenues aux présentes (le contenu et l'état du contenu des colis étant inconnus), marquées et consignées telles qu'indiquées, et que la Compagnie s'engage à transporter à destination à son lieu habituel de livraison, pourvu que telle destination soit sur son parcours, sinon à les livrer à un autre voiturier faisant route vers cette destination.
Le transporteur est entièrement responsable de l'arrimage du chargement. Tous les chargements ont été assemblés selon les pratiques de chargement du matériel transporté. Le transporteur assume l'entière responsabilité pour l'arrimage de ce chargement ainsi que pour tout risque de blessure ou dommage. Le transporteur accepte de libérer, décharger et indemniser le fournisseur pour toute action, réclamation, demande, dépense ou responsabilité qui pourrait se présenter à l'égard de toute blessure ou dommage. Le transporteur accepte que ses héritiers, exécuteurs testamentaires, administrateurs et ayants droit soient liés par cette entente.
Il est de plus convenu que tout voiturier transportant la totalité ou une partie desdites marchandises sur la totalité ou une partie du parcours, que toute personne intéressée à tout moment à la totalité ou une partie desdites marchandises et que tous services prévus aux présentes seront assujettis à toutes les modalités et conditions, imprimées ou écrites, contenues aux présentes et dont il est convenu par l'expéditeur et qui sont acceptées pour le compte de l'expéditeur et de ses ayants cause (lesquelles, par renvoi, sont intégrées aux présentes et ont la même force et le même effet que si elles étaient ici énoncées séparément, intégralement et expressément):

CONDITIONS

1. approved by the Canadian Transportation Agency as set forth or prescribed in the Canada Transportation Act and the regulations thereto; 2. set forth or prescribed by the Railway Traffic Liability Regulations when said goods are carried by a rail carrier; 3. or the bill of lading of the water carrier set forth or prescribed in the Carriage of Goods by Water Act (Canada) when said goods are carried by a water carrier; 4. of the bill of lading set forth in or prescribed by the relevant tariffs, classification, statutes and regulations pertaining to motor carrier services when said goods are carried by a motor carrier; 5. of the bill of lading form schedule "A" amended by O.C. 986-79-4 April 1979 Sect. 12A - as approved by the Quebec Transportation Board when said goods originating in Quebec were to be carried by a motor carrier; and 6. of the bill of lading of the air carrier set forth or prescribed in the Carriage by Air Act (Canada) when said goods are carried by air carrier.

1. approuvées par la Commission des transports, tel que prévu ou prescrit par la Loi sur les transports au Canada et ses règlements; 2. prévues ou prescrites par le Règlement sur la responsabilité à l'égard du transport ferroviaire des marchandises, si lesdites marchandises sont transportées par rail; 3. du connaissance du transporteur maritime, tel que prévu ou prescrit par la Loi sur le transport des marchandises par eau (Canada), si les marchandises sont transportées par un transporteur maritime; 4. des conditions de transport des marchandises, si lesdites marchandises sont transportées par les tarifs, classifications, lois et règlements se rapportant aux services de camionnage si lesdites marchandises sont transportées par camion; 5. du connaissance sur annexe "A" modifiée par le décret 986-79 en date du 4 avril 1979, section 12A le cas échéant approuvée par la Régie des Transports du Québec, si les marchandises sont expédiées de la Province du Québec par camion; et 6. du connaissance du transporteur aérien prévues ou prescrites en vertu de la Loi sur le transport aérien (Canada) si les marchandises sont expédiées par transporteur aérien.

FOR MOTOR CARRIER SERVICE / POUR SERVICES DE CAMIONNAGE

Declared valuation / Valeur déclarée: \$200.00
Maximum liability of \$2.00 per pound computed on the total weight of the shipment unless declared valuation states otherwise (Conditions 9 and 10).
Responsabilité maximum de \$2.00 la livre, calculée sur le poids total de l'expédition, à moins d'indication contraire par la valeur déclarée (Conditions 9 et 10).

NOTICE OF CLAIM / AVIS DE RÉCLAMATION

- No claim or notice of loss, damage or delay to any goods carried under the Bill of Lading unless notice thereof setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or, in the case of failure to make delivery, within (9) months from the date of shipment.
- The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill.
- Le transporteur n'est responsable de pertes, de dommages ou de retards aux marchandises transportées, qui sont décrites au connaissance, qu'à la condition qu'un avis écrit précisant l'origine des marchandises, leur destination, leur date d'expédition et le montant approximatif réclamé en réparation de la perte, des dommages ou du retard, ne soit significatif au transporteur initial ou au transporteur de destination, dans les soixante (60) jours suivant la date de la livraison des marchandises; ou dans les cas de non-livraison, dans un délai de neuf (9) mois suivant la date de l'expédition.
- la présentation de la réclamation finale accompagnée d'une preuve du paiement des frais de transport doit être soumise au transporteur dans un délai de neuf (9) mois suivant la date de l'expédition.



SHIPPER
EXPÉDITEUR

PER NO.
DE COMMANDE

61481296

ITEM
NO. OF
ITEMS
N. PART

1

CUSTOMER ORDER NO.
NO DE COMMANDE DU CLIENT

1 2127-3425

SHIP VIA - EXPÉDIEZ PAR

CITY EAST-CENTRE

ORDER DATE
DATE DE COMMANDE

11 7 13 11 8 12

DATE PROMISED

11 7 13 11 8 12

HEAT # - NO. COULÉE

3759M

TAB # - NO. ÉTIQUETTE

124357D

GMC CONTRACTORS LTD.
1000 - 84 AVENUE
EDMONTON

78 T&F TRK

DESCRIPTION ORDERED - DESCRIPTION COMMANDEE

FLOOR PLATE W/TP STEEL

6 MM (.236) FLOOR PLATE

PIECES

WEIGHT - LIVRES

FEEET - PIEDS

QUANTITY SHIPPED - QUANTITE EXPEDIEE

UNLES - PAQUETS
LOOSE - DETACHEE

*** 1 CERTS REQUIRED ***

*** 1 TEST REPORTS REQUIRED ***

(ON TIMBERS)

28

MJK's

32663

ESSAR Steel Algoma Inc.

105 West Street, Sault Ste. Marie, Ontario Canada P6A 7B4



CUSTOMER PURCHASE ORDER NUMBER M 61040934	ENTRY DATE 2012/03/06	CREATE DATE 2012/04/18	TALLY NUMBER 273779	SHIPPER'S NO. -	CARRIER CN	-622579	MILL ORDER 17993
---	---------------------------------	----------------------------------	-------------------------------	---------------------------	----------------------	----------------	----------------------------

CHARGE TO CUSTOMER NAME AND ADDRESS
**RUSSEL METALS INC.
PO BOX 4128
EDMONTON ALBERTA
T6E 4T2**

SHIP TO CUSTOMER NAME AND ADDRESS
**RUSSEL METALS INC.
C/O CN SCOTSFORD DISTRIBUTION
4060 99TH STREET
SCOTSFORD, ALBERTA T6E 3N5**

MILL TEST REPORTS
ESSAR STEEL ALGOMA INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN. ALL RESULTS ARE RETAINED IN ACCORDANCE WITH THE COMPANY'S STANDARD RECORD KEEPING PRACTICES.

K. UGHADPAGA
MANAGER METALLURGICAL SERVICES

CUSTOMER SPECIFICATION
HR FLOOR PLATE - CARBON - ALGOMA 50/ASTM A786 (09) - ASTM A786

SUPPLEMENTARY INSTRUCTIONS
TEST CERT 1: GBEYERS@RUSSELMETALS.COM TEST CERT 2: MLEAHY@RUSSELMETALS.COM PLATE TEST COUPON:

INSP T/R **CHEMICAL ANALYSIS REPORT REQUIRED** **2000221825 WS**
CUST USE **RESALE** **2012/04/21 07:54**

THIS MILL TEST REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF ESSAR STEEL ALGOMA INC. IF YOU RECEIVE THIS DOCUMENT AND ARE NOT THE INTENDED RECEIVER, PLEASE CALL (705)945-2624 COLLECT FOR INSTRUCTIONS ON METHOD OF DISPOSAL OF DOCUMENT.

MEETS EN 10204:2004 TYPE 3.1
ISO QUALITY AND ENVIRONMENTAL CERTIFICATES AVAILABLE AT WWW.ESSARSTEELALGOMA.COM
ALL HEATS FULLY KILLED
HEATS INDICATED WITH (*) FINE GRAINED
PRODUCED FROM COIL
HEATS INDICATED WITH (+) MADE IN CANADA WITH DOMESTIC AND NORTH AMERICAN MATERIALS

***** PRODUCT SHIPPED *****
CUSTOMER ITEM 00002 OUR ITEM 003 DIMENSIONS .236 X 96 X 240 "

TAG NUMBER	NO. PIECES	WEIGHT	HEAT(S)	TAG NUMBER	NO. PIECES	WEIGHT	HEAT(S)
J05453	6	9480	3759M	J05454	6	9480	3697M 3759M
J05475	6	9550	4246M	J05483	4	6380	4051M

***** CHEMICAL PROPERTIES *****

HEAT	(WT %)	C	MN	P	S	SI	CR	NI	CU	MO	AL	CB	V	B
3697M*+		.06	.37	.008	.006	.01	.01	.01	.02	.00	.033	.000	.000	
3759M*+		.001												
		.16	.39	.014	.003	.03	.04	.02	.03	.01	.037	.000	.000	
4051M*+		.001												
		.07	.38	.007	.005	.01	.02	.03	.04	.00	.023	.000	.000	
4246M*+		.001												
		.06	.38	.009	.004	.02	.02	.01	.03	.00	.017S	.000	.000	
		.001												

****WARNING**** THE TEST RESULTS AND VALUES REPORTED HEREIN INDICATE ONLY THAT (1) THE PARTICULAR STEEL FOR WHICH THIS CERTIFICATE IS ISSUED MEETS THE MINIMUM SPECIFIED YIELD STRENGTH AND (2) THE CHEMICAL ANALYSIS AND PHYSICAL PROPERTIES OF SUCH STEEL ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE SPECIFICATION INDICATED. THE RESULTS OR VALUES REPORTED HEREIN CAN NOT BE USED TO QUALIFY THE STEEL FOR ANY SPECIFICATION OTHER THAN THE ONE INDICATED AND CAN NOT BE RELIED UPON FOR ANY PURPOSE (INCLUDING DESIGN OR CALCULATIONS) AS REPRESENTING THE ACTUAL STRENGTH OF SUCH STEEL.



CERTIFICATE OF CONFORMANCE

GMC CONTRACTORS
46278327
yl5732324
Lot Number :8405-09d2

Air Liquide Canada Inc.
1250 René-Lévesque Blvd West, Suite 1700
Montreal, Quebec H3B 5E5

Product: Blueshield LA 7018
Item #: BLU-32971712 (5.0mm - 3/16")

Standard/Classification: CSA W48-06 / E4918-1-H4
AWS 5.1-2004/ASME SFA A5.1 / E7018-1-H4

Test Date: 01-Nov-2010

The above named product is of the same classification as the filler metal used for testing. The typical chemical analysis and mechanical properties were as follows:

<u>CHEMICAL ANALYSIS (%)</u>	Carbon	Chromium	Manganese	Molybdenum	Nickel	Phosphorus	Silicon	Sulphur	Vanadium	Mn + Ni + Cr + Mo + V
Deposit	0.04	0.04	1.11	<0.01	0.01	0.01	0.52	0.01	<0.01	1.16
CSA E4918-1-H4	<0.15	<0.2	<1.6	<0.3	<0.3	<0.035	<0.75	<0.035	<0.08	<1.75
AWS E7018-1-H4	<0.15	<0.2	<1.6	<0.3	<0.3	<0.035	<0.75	<0.035	<0.08	<1.75

Radiographic Test
Met requirements

Fillet Weld Test
Met requirements

Diffusible Hydrogen Test (as per AWS A4.3)
RH (%): 21.0 AbsH g/kg (gr/lb): 14.6 (102.2) Temp °C (°F): 20.0 (68.0) Average (ml/100g): 3.0

MECHANICAL PROPERTIES AS WELDED

WELDING PARAMETERS

Prepared according to : AWS CSA
Diameter used for testing mm (in): 4.0 (5/32)
Amperage (A): 180
Arc Voltage (V): 23.0
Current Polarity : AC
Weld Travel Speed cm/min (ipm): 12.8 (5.0)
No. of passes/layers : 13/6
Preheat Temp. °C (°F): 105 (221)
Interpass Temp. °C (°F): 170 (338)
Base Material : A516 Gr. 70
Welding Position : Flat

TEST RESULTS

Tensile Strength MPa (ksi): 540 (78.4)
Yield Strength MPa (ksi): 450 (65.3)
Elongation (%): 32.0
Charpy V-notch Impact Energy J (ft-lb): 127.0 (93.7)
Charpy Temperature °C (°F): -45.0 (-49.0)
Charpy Lateral Expansion mm (in): 1.5 (0.0604)
Charpy Shear Fracture (%): 36.7

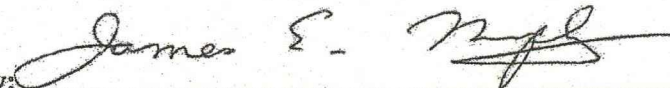
Typical Results

CSA E4918-1-H4 Requirements

AWS E7018-1-H4 Requirements

490-650 (70.0-94.0)
>400 (58.0)
>22.0
>27.0 (20.0)
-45.0 (-50.0)
>22.0
>27.0 (20.0)
-45.0 (-50.0)

The undersigned certifies that the product supplied will meet the requirements of the applicable filler metal standard when tested in accordance with that standard's classification, and that no significant change has been made in the formulation and manufacturing procedures described in the qualification approval.

Signed by: 
Jim Murphy, Specialist, Product Management



Note: The information showed in the section "Mechanical Properties - Welding Parameters" is the latest test performed to certify this product. Therefore, the diameter chosen for this test gave mechanical and chemical test results which are representative and valid for all the other diameters of the product mentioned above. This certificate complies to the requirements of EN10204 Type 2.2



CERTIFICATE OF COMFORMANCE

GMC CONTRACTORS

Lot Number :8195-16c2

Air Liquide Canada Inc.
250 René-Lévesque Blvd West, Suite 1700
Montreal, Quebec H3B 5E5

Product: **Blueshield LA 7018**
Item #: **BLU-32971710 (4.0mm - 5/32")**

Standard/Classification: **CSA W48-06 / E4918-1-H4**
AWS 5.1-2004/ASME SFA A5.1 / E7018-1-H4

Test Date: **01-Nov-2010**

The above named product is of the same classification as the filler metal used for testing. The typical chemical analysis and mechanical properties were as follows:

<u>CHEMICAL ANALYSIS (%)</u>	Carbon	Chromium	Manganese	Molybdenum	Nickel	Phosphorus	Silicon	Sulphur	Vanadium	Mn + Ni + Cr + Mo + V
Deposited	0.04	0.04	1.11	<0.01	0.01	0.01	0.52	0.01	<0.01	1.16
SA E4918-1-H4	<0.15	<0.2	<1.6	<0.3	<0.3	<0.035	<0.75	<0.035	<0.08	<1.75
AWS E7018-1-H4	<0.15	<0.2	<1.6	<0.3	<0.3	<0.035	<0.75	<0.035	<0.08	<1.75

Radiographic Test
Met requirements

Fillet Weld Test
Met requirements

Diffusible Hydrogen Test (as per AWS A4.3)
RH (%): 21.0 AbsH g/kg (gr/lb): 14.6 (102.2) Temp °C (°F): 20.0 (68.0) Average (ml/100g): 3.0

MECHANICAL PROPERTIES AS WELDED

WELDING PARAMETERS

Prepared according to : AWS CSA

Diameter used for testing mm (in): 4.0 (5/32)

Amperage (A): 180

Arc Voltage (V): 23.0

Current Polarity : AC

Weld Travel Speed cm/min (ipm): 12.8 (5.0)

No. of passes/layers : 13/6

Preheat Temp. °C (°F): 105 (221)

Interpass Temp. °C (°F): 170 (338)

Base Material : A516 Gr. 70

Welding Position : Flat

TEST RESULTS

	<u>Typical Results</u>	<u>CSA E4918-1-H4 Requirements</u>	<u>AWS E7018-1-H4 Requirements</u>
Tensile Strength MPa (ksi):	540 (78.4)	490-650 (70.0-94.0)	>490 (70.0)
Yield Strength MPa (ksi):	450 (65.3)	>400 (58.0)	>400 (58.0)
Elongation (%):	32.0	>22.0	>22.0
Charpy V-notch Impact Energy J (ft-lb):	127.0 (93.7)	>27.0 (20.0)	>27.0 (20.0)
Charpy Temperature °C (°F):	-45.0 (-49.0)	-45.0 (-50.0)	-45.0 (-50.0)
Charpy Lateral Expansion mm (in):	1.5 (0.0604)		
Charpy Shear Fracture (%):	36.7		

The undersigned certifies that the product supplied will meet the requirements of the applicable filler metal standard when tested in accordance with that standard's classification, and that no significant change has been made in the formulation and manufacturing procedures described in the qualification approval.

Signed by:
Jim Murphy, Specialist, Product Management

Note: The information showed in the section "Mechanical Properties - Welding Parameters" is the latest test performed to certify this product. Therefore, the diameter chosen for this test is representative and valid for all the other diameters of the product mentioned above. This certificate complies to the requirements of AWS 5.1-2004 Type 2.2



YOUR FREIGHT IS OUR BUSINESS**

Bill of Lading

10943

Order#: 10943 Date: 01/11/2012

Southern Pacific Resources...
Box 1239
Unity SK S0L 4L0

OF PIECES: 1 Skid

SHIPPED: Prepaid

Shipper 01/11/2012 Southern Pacific Resources BOL#: 10853
Partnership
Box 1239
Unity SK S0L 4L0
Work: 306-228-4491
Fax: 306-228-4599

Consignee 02/11/2012 General Mechanical & Civil
Contractors
3000 84 Avenue
Edmonton AB

Total Quantity: 485.00 lbs Rate: 84.250

Freight Amount	84.25
Other Charges	15.17
GST	4.97
TOTAL	104.39

Received in good order

Signature: _____ Date: _____

Print Name: _____

**18% FSC charged on orders under 5000 Lbs
**24% FSC charged on orders over 5000 Lbs
FSC charges are totaled in OTHER CHARGES on your BOL

GST#13192 0571RT

**General, Mechanical & Civil
Contractors Ltd.**
RECEIVED
NOV 02 2012
Bob

PROVOST DEPOT
HEAD OFFICE
Box 681, Provost, AB
Office: 780-753-2299
Fax: 780-753-6764
Email: freight2@telus.net

GRANDE CACHE DEPOT
Bay 2 - 10006 98 Street
Grande Cache, Alberta
Office: 780-827-2288
Fax: 780-827-2264
Cell: 780-827-6300

EDMONTON DEPOT
Central Carriers
13008 - 163 Street
Edmonton, Alberta
Toll Free: 1-800-639-6768

FITTINGS TO GMCC

ITEM	QTY	DESCRIPTION	VENDOR	STATUS	DELIVERY DATE
1	1	6CJ62 SCH120 BW HUB	BLUESKY	AT PLANT	
2	2	3CJ27 SCH 80 BW HUB	BLUESKY	AT PLANT	
3	2	2" 1500# THERMOWELL FOR TT-209/239	PLANT	SHIPPED	OCT 26 /2012
4	2	3" FLOW NOZZLE SCH 80	CORIX	ON ORDER	
5	2	3" 1500# GATE VALVES SCH 80 BW	APEX V/V		
6	2	3" 1500# GLOBE VALVES SCH 80 BW	APEX V/V	SHIPPED	
7	2	3" 1500 CHECK VALVE SCH 80 BW	APEX V/V		
8	1	1/2" EDWARDS GLOBE VALVE SW X SW FOR PT-205	INLAND V/V	AT PLANT	
9	1	1/2" EDWARDS GLOBE VALVE SW X SC FOR PT-205	INLAND V/V	AT PLANT	
10	2	1/2" EDWARDS GLOBE VALVE SW X SW FOR FT-205/35	INLAND V/V	AT PLANT	
11	2	1/2" EDWARDS GLOBE VALVE SW X SC FOR FT-205/35	INLAND V/V	AT PLANT	
12	2	1/2" EDWARDS GLOBE VALVE SW X SC FOR PT-204/34	INLAND V/V	AT PLANT	

SHIP FOR HYDRO

13	1	6CJ62 BLIND HUB	PLANT
14	2	3CJ27 BLIND HUB	PLANT
15	1	6" BLUELOCK CLAMP SET	PLANT
16	2	2.5"/3" BLUELOCK CLAMP SET	PLANT
17	1	SIZE 62 SEAL RING	PLANT
18	2	SIZE 27 SEAL RING	PLANT

Received, subject to the classification and tariffs in effect on the date of issue of this Original Bill of Lading, or, received, subject to the Rules for the Carriage of Express and Non-Carload Freight Traffic and tariffs in effect on the date of issue of this original Shipping Contract (bill of

lading), goods described below, in apparent good order, except as noted (contents and conditions of contents of packages unknown), marked, consigned and destined as indicated below, which said Company agrees to carry to its usual place of delivery at said destination, if on its road,

otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said goods over all or any portion of said route to destination, and as to each party at any time interested in all or any of said goods, that every service to be per-

- formed hereunder shall be subject to all the terms and conditions (which are hereby incorporated by reference and have the same force and effect as if the same were severally, fully and specifically set forth herein),
- approved by the Board of Transport Commissioners for Canada by General Order No. T-5, dated February 1, 1965 set forth in the Canadian Freight Classification and also available at all Railway agency stations and freight offices upon request, when said goods are carried by a rail carrier; or
 - of the bill of lading of the water carrier as provided in its tariffs of Rules and Regulations when said goods are carried by water carrier; or
 - of the bill of lading set forth in or prescribed by the relevant tariffs, classification, statutes and regulations pertaining to motor carrier's services when said goods are carried by a motor carrier; or
- of the uniform bill of lading, as approved under Annex A of Quebec O.C. 986-79 of April 4, 1979 and as approved by other provincial authorities;
- or approved by the Board of Transport Commissioners for Canada by General Order No. T-43, set forth in the Rules for the Carriage of Express and Non-Carload Freight Traffic and also available at all express and railway agency stations and express and freight offices upon request, when said goods are carried by a rail carrier and which are agreed to by the shipper and accepted for himself and his assigns.

THE CONTRACT FOR THE CARRIAGE OF GOODS LISTED IN THIS BILL OF LADING IS COVERED BY REGULATIONS IN FORCE IN THE JURISDICTION AT THE TIME AND PLACE OF SHIPMENT AND IS SUBJECT TO THE CONDITIONS SET OUT IN SUCH REGULATIONS.

NAME OF CARRIER CENTRAL CARRIERS		POINT OF ORIGIN EDM	SHIPPER'S NO. 3083491	IF CHARGES ARE TO BE PREPAID WRITE OR STAMP HERE, "TO BE PREPAID" Collect	
CONSIGNEE GENERAL MECHANICAL & CIVIL		SHIPPING DATE 06 NOV 2012	CARRIER'S NO.	FREIGHT CHARGES WILL BE COLLECT UNLESS MARKED PREPAID.	
CONSIGNEE'S STREET ADDRESS 1000-847H AVE		SHIPPER NAME & ADDRESS BARBER ENGINEERING & CONTROLS LTD.			
MAIL ADDRESS - NOT FOR PURPOSES OF DELIVERY		8803 - 58 AVE.			
DESTINATION (CITY-TOWN) EDMONTON	PROV./STATE AB	POSTAL CODE T6P 1K3	EDMONTON, ALTA. T6E 5X1		
ROUTE	CAR INITIAL-CAR NO./TRAILER NO./CONTAINER NO.	CONNECTING CARRIER			

PIECES/PACKAGES	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT SUBJECT TO CORRECTION	RATE	AMOUNT	RECEIVED \$
	SKID	235 LBS			TO APPLY IN PREPAYMENT OF CHARGES ON THE PROPERTY DESCRIBED HEREON. AGENT OR CASHIER
					FOR CARRIER'S USE - CHARGES
					ADVANCE AND/OR BEYOND \$
					MISC. \$
					BASIC \$
					PIECE \$
					VALUE \$
					TOTAL \$
					SHIPPER SHOW AMT. OF C.O.D.
					COLLECT <input type="checkbox"/> PREPAID <input type="checkbox"/>
					C AMOUNT \$
					O FEE \$
					D TOTAL \$
					DECLARED VALUE OF SHIPMENT
					Maximum liability of \$4.41/kg. (\$2.00/lb.) computed on the total weight of the shipment unless declared valuation states otherwise.
					IF AT CONSIGNOR'S RISK WRITE OR STAMP HERE
WHERE REQUIRED BY THE TARIFF SHIPPER MUST COMPLETE THE FOLLOWING					
TOTAL NO. PCS./PKGS.	DIMENSIONS OF SHIPMENT	TOTAL CUBIC FEET	DIMENSIONAL WEIGHT	TOTAL WEIGHT	NUMBER X.L. PIECES/PACKAGES

**CCBL - 0654190
CENTRAL CARRIERS
(EDM) LTD**

NOTICE OF CLAIM (a) No carrier is liable for loss, damage or delay to any goods under the Bill of Lading unless notice thereof setting out particulars of the origin, destination and date of shipment of the goods and the estimated amount claimed in respect of such loss, damage or delay is given in writing to the originating carrier or the delivering carrier within sixty (60) days after the delivery of the goods, or, in the case of failure to make delivery, within nine (9) months from the date of shipment. (b) The final statement of the claim must be filed within nine (9) months from the date of shipment together with a copy of the paid freight bill.

SPECIAL AGREEMENT BETWEEN CONSIGNOR AND CARRIER, ADVISE HERE	CUSTOMER ORDER NO. 46-RL-4205
SHIPPER BARBER ENGINEERING & CONTROLS LTD.	RECEIVER
PER ms	CONSIGNEE
PER ms	PER (1)

COPIX[®]

Control Solutions

Formerly Barber Eng. and Controls

Packing Slip

Packing Slip Number



PS78904

Customer Purchase



SNL-RL-4208

Bill Of Lading



Sales Order ID : SO83491

Ship Date : 11/6/2012 8:28:00 AM

Page Number : 1

Bill To :

C12649

SOUTHERN PACIFIC RESOURCE CORPORATION #1
 SUITE 1700 BVS II
 205 - 5 AVENUE S.W.
 CALGARY, AB T2P 2V7

Ship To :

GENERAL,MECHANICAL & CIVIL CONTRACTORS LTD
 3000 - 84TH AVE
 EDMONTON, AB T6P 1K3

Order Date: 10/22/2012 3:05:43 PM
Ship Method: Central Carriers (Collect)
Tag Number:
Bill of Lading :

FOB: EDMONTON
Territory: 1 Edmonton Admin Sales

Pallets: 1
Cartons:
Weight: 235

<u>Line /</u>	<u>Item ID /</u>	<u>Item Name</u>	<u>Req. Date</u>	<u>Req. Qty</u>	<u>Ship Qty</u>
<u>at PO Line Nbr</u>	<u>Cust Item ID</u>				
1	90307	3" SCH. 80 C1018 CS WI FLO NOZ C/W A106 B, 2X3/4" 6000# SOL, OAL 3060 MM, BORE 1.749", RT & MT	10/31/2012	2.0000	2.0000
				EA	EA

Special instructions: TAG #'s: FE-205, FE-235

Special Instructions for Sales Order:

SHIPPING: PHONE RICK AT CENTRAL CARRIERS WHEN GOODS ARE READY FOR PICK UP.
 PH: 780-447-1610 ext.229
 INVOICING INFO: AFE# 12SNL60103 ACCOUNT CODE F002
 SHIP ATTN: VERN



Flow Control Division - Raleigh Operations

Flowserve - Raleigh
1900 S. Saunders St.
Raleigh, NC 27603
Phone: (919) 832-0525
Fax: (919) 831-3369

CUSTOMER: INLAND VALVE CORP LTD
P.O. NUMBER: 30366
S.O. NUMBER: 69630
LINE ITEM: 013
PART NUMBER: 026027836963013
VALVE SIZE & FIGURE: 3.000

FIG D36228 JT

CERTIFICATE OF TEST

THIS IS TO CERTIFY THAT THE VALVES LISTED ABOVE HAVE BEEN SUPPLIED IN ACCORDANCE WITH ANSI/ASME B16.34 & API 598, 7TH EDITION. FURTHER, THE VALVES WERE PROCESSED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PURCHASE ORDER.

HYDROSTATIC TEST PRESSURES ARE AS FOLLOWS:

BACKSEAT	4650 PSI
SHELL	6350 PSI
SEAT	4650 PSI

THIS IS TO CERTIFY THAT THE INFORMATION ABOVE IS CORRECT.

NAME vic sep DATE 9-6-12
QA ENGINEER



69630-13

HYDRO REPORT

Nuclear _____ Traceable X

HYDRO METHOD SPEC.: 7135 REV.: 10

VALVE DESC. 3 FIG 36228JT

CUSTOMER INLAND VALVE CORP LTD

TEST OP.	GAGE NO.	CALIB.	PSI	MIN.	ALW. LKG	ACT. PSI
BACKSEAT	501	5.30.12	4650	2	NONE	4700
SHELL	501	5.30.12	6350	1	NONE	6400
SEAT	501	5.31.12	4650	2	NONE	4700

VALVE SERIAL NO.	BODY	BONNET/COVER						SEAT LEAKAGE	TESTER NUMBER / DATE
11	BUO	JZ10/21	42488/48						3220
12	BUO	JZ10/22	42488/49					None	9-5-12
13	BUO	JZ10/23	42488/50					None	9-5-12
14	BUO	JZ10/24	42488/51						
15	BUO	JZ10/25	42488/52						
16	BUO	JZ10/26	42488/53						
17	BUO	JZ10/27	42488/54						
18	BUO	JZ10/28	42488/55						
19	BUO	JZ10/29	42488/56						
20	BUO	JZ10/30	42488/57						

CUSTOMER INSPECTOR: _____ ANI INSPECTOR: _____
FORM 36-Q-614 Rev. 1 (10/2009)

Note: The Recording of False, Fictitious or Fraudulent statements on entries on this document may be punished as a felony under federal statute.

GMCC
QC RECEIVED

MAY 01 2012

[Signature]

JOB # 26-27

1900 S. Saunders Street
Raleigh, NC 27603

69630-13

HYDRO REPORT

Nuclear _____ Traceable X

HYDRO METHOD SPEC.: 7135 REV.: 10

VALVE DESC. 3 FIG 36228JT

CUSTOMER INLAND VALVE CORP LTD

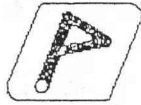
TEST OP.	GAGE NO.	CALIB.	PSI	MIN.	ALW. LKG	ACT. PSI
BACKSEAT	701	5-30-12	4650	2	NONE	4700
SHELL	701	5-30-12	6350	1	NONE	6400
SEAT	701	5-30-12	4650	2	NONE	4700

VALVE SERIAL NO.	BODY	BONNET/COVER						SEAT LEAKAGE	TESTER NUMBER / DATE
01	BUO	JZ10/1	42488/38						
02	BUO	JZ10/2	42488/39						
03	BUO	JZ10/3	42488/40						
04	BUO	JZ10/4	42488/41						
05	BUO	JZ10/5	42488/42						
06	BUO	JZ10/6	42488/43						
07	BUO	JZ10/7	42488/44						
08	BUO	JZ10/8	42488/45						
09	BUO	JZ10/9	42488/46						
10	BUO	JZ10/10	42488/47						

CUSTOMER INSPECTOR: _____ ANI INSPECTOR: _____
FORM 36-Q-614 Rev. 1 (10/2009)

Note: The Recording of False, Fictitious or Fraudulent statements on entries on this document may be punished as a felony under federal statute.

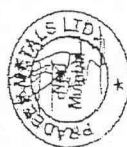
GMCC
QC RECEIVED
 NOV 01 2012
 GCM
 JOB # 21-27



Pradeep Metals Limited

Manufacturers of Precision Closed Die Forgings

MATERIAL TEST CERTIFICATE ACC. TO EN10204 - 3.1 (LAB/FM/03/01)

FLOWSERVE-RALEIGH OPERATION,										Cert.No.		0222		
1900 S.SAUNDERS STREET										Date		20/03/2012		
RALEIGH.NC 27603										Invoice No.		PML /EXP/658/11-12		
U.S.A.										Date		20/03/2012		
CTC : Mr. DAVE SHECKLER										Client Ref.		111550		
										Date		22/12/2011		
Material		RMC 70002 : ASTM A105N/2011 REV. 4												
PM No.	Part Name	Part Number	Lot Code	Heat No.	Qty	Mill								
8705	BODY FORG.	00495755	JZ10	1-RRY-4	105 Nos.	R.L.STEEL & ENGERY LTD.								
Chemical Composition (%)														
	C	Mn	Si	P	S	Cr	Ni	Mo	Cu	V	Al	Cb	C.E	
Min	-	0.60	0.10	-	-	-	-	-	-	-	-	-	-	
Max	0.22	1.05	0.35	0.035	0.040	0.30	0.40	0.12	0.40	0.08	-	0.02	0.47	
Actual	0.20	0.99	0.24	0.023	0.032	0.052	0.020	0.003	0.022	0.001	0.023	0.005	0.379	
Mechanical / Metallurgical Properties														
Tensile Testing Done as per A370							Impact Testing Done as per EN 10045 ISO "V" Notch size (mm) 10x10x55							
	UTS KSI	YS KSI 0.2%	YS KSI 1.0%	RA %	Elong. %	Impact (T) at (RT) Joule				Impact (L) at (RT) Joule				
Min.	70	36	NA	30	22	1	2	3	Avg	1	2	3	Avg	
Max.	-	-	-	-	-	-	-	-	-	-	-	-	-	
	72.21	47.02	-	47.08	28.40	-	-	-	-	-	-	-	-	
Hardness (HB) 10/3000	Min.	-	Max.:	187	Actual	143-149								
Inclusion	A		B		C		D			Grain Size				
Heat Treatment							Microstructure							
NORMALISED							Uniformly Distributed Ferrite & Pearlite							
Remarks :										For Pradeep Metals Ltd.				
<ul style="list-style-type: none"> ➤ No weld repair of forging was performed. ➤ Material conforms as ASTM A105 ➤ Material is Radiation free 										 (D.K.PATIL) Authorised Signatory				
We certify that the material described above conform to the specification.														

R-205, M.I.D.C, RABALE, NAVI MUMBAI-400 701, INDIA
 Phone : 91-22-2769 1026, 2769 3173 Fax 91-22-2769 1123
 E-Mail : pramet@vsnl.com Website : www.pradeepmetals.com

GMCC
QC RECEIVED
 NOV 01 2012
 QCM 
 JOB # ZL-27

DUBOSE NATIONAL ENERGY SERVICES, INC.
900 INDUSTRIAL DRIVE // CLINTON, NC 28328
Certificate of Conformance/Compliance/CMTR

79

Customer:

FLOWSERVE US, INC
1900 SOUTH SAUNDERS STREET
RALEIGH NC 27603

Date 6/19/12 Serial No. 299944
Our DC No. 299944
This material meets the requirements
of your PO number 115495

Item	Pieces	Description Specification	Grade/Type	Heat # / Heat Code
001	6	3 1/2" DIAMETER X 10' LG ROUND BAR 60'3" ASTM A 105-05	US ALLOYS STEEL DYNAMICS LTI	A121540 TRACE# 42488

PART# 00664587

TOTAL: 3PCS @ 10'0" & 3PCS @ 10'1"

BONNET

This is to certify that the material described above meets the
specification requirements noted.

NO WELDING WITH FILLER METAL PERFORMED
COMPLIES WITH RMC# 70005 REV.1

Kimberly W. Brown
QA Representative

6-19-12
Date



05/15/2012 From: U.S. ALLOYS, INC.

To: DUBOSE

Note 3:

Note 4:

Note 1:

Note 2:



8000 N. County Road 225 East
Pittsboro, IN 46167
Phone: (317) 892-7000
Fax: (317) 892-7286

Certified Material Test Report

Cert #: 132503	Mill Order: 1204366	Heat #: A121540	Issued: 4/20/2012 19:20:21
Work Order: 127266	Sales Order: 99340-1	Customer: U.S. Alloys	PO #: 16969-4
Load #: 159074	Reference #:	Reference Desc:	End Use:
Size: 3-1/2"	Shape: Round	Grade: A350/LF2 Chem	Length: 20'00"
Grain Practice: A1 Fine Grain (5-8) per ASTM A29		Reduction Ratio: 14.9 to 1	Disposition: 1

Ladle Chemistry Analysis (ASTM A29)

C	Mn	P	S	Si	Al	Cu	Ni	Cr	Mo	Sn	N	V	Cb	B	Ca	W	Ti	Di
0.19	1.01	0.012	0.025	0.21	0.024	0.26	0.10	0.16	0.04	0.013	0.0068	0.003	0.001	0.0002	0.0008	0.000	0.001	0.93
Pb	Co	As	Sb	Zr	Bi	H	O	Ceq	J-Factor									
0.002	0.007	0.005	0.003	0.000	0.001	1.8		0.43										

Product Check Analysis (ASTM A29)

C	Mn	P	S	Si	Al	Cu	Ni	Cr	Mo	Sn	N	V	Cb	Ti	B	Ca	O
Front																	
Back																	

Jominy (ASTM A255)

	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J12	J14	J16	J18	J20	J24	J28	J32
Calc'd																		
Front																		
Back																		

Microcleanliness (ASTM E45)

Method A								Method C			Method E		Microcleanliness (DIN 50602)				
AT	AH	BT	BH	CT	CH	DT	DH	S	O	SAM "B"	SAM "D"	K		H			
											S	O	Tot	Tot			
Decarb																	
Grainsize																	
Macrostructure (ASTM E381)																	
Magnetic Particle Inspection																	
Frequency																	
Severity																	

Mechanical Properties (ASTM A370)

Tensile Properties					Hardness	
Tensile Strength	0.2% Yield Strength	% Elong (2")	% ROA	0.35% EUL Yield Strength	(MR)	(Surf)

Steel Dynamics - Engineered Bar Products has a quality system in place which has been certified ISO 9001:2008 compliant, including PED certification.

Comments/Specs

ASTM A105-05 — ASME SA105-04 — Electric Arc Furnace Melted - Vacuum Tank Degassed — Electric Arc Furnace Melted - Vacuum Tank Degassed — NACE MR-01-75 / ISO 15156-2009 — Normalize — DIN EN 10204:2004 issue 3.1 — ASTM A350-04a LF2 Class 1 — ASTM A696-90a Grade C — ASTM A675-03 Grade 70 — ASME SA350-04 LF-2 Class 1 — ASME SA596-04 Gr C — ASME SA675-04 Gr 70 — DIN 3.1.6 — Cameron MR-005 Rev. C1 — ASTM A420-07 WPLS — NACE MR0103-2007 — NACE MR0103-2003 — U.S. Alloys Spec USA/4H dtd 7/20/2010 — U.S. Alloys Spec USA/4H dtd 7/20/2010

DUBOSE
QA REVIEW
SATISFACTORY
KWP 5-16-12
INITIAL DATE

GMCC
QC RECEIVED
NOV 01 2012
QCM [Signature]
JOB # ZL-27

Condition: Normalize, Straighten

I hereby certify that the content of this report is correct and accurate, and that all tests and operations performed on this material were in compliance with applicable material specifications and purchaser designated requirements.

Dylan Kate
Dylan Kate - Rolling Mill Metallurgist

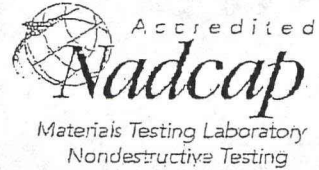
Any alteration to this report voids Steel Dynamic's warranting of results. No weld repair has been performed on this material. This material is not radioactive and has not been exposed to radioactivity while under the control of Steel Dynamics. This material has not been exposed to mercury while under the control of Steel Dynamics. Unless otherwise noted, this material was melted, continually cast, and rolled in the USA; w/ all testing performed by Steel Dynamics.



LABORATORY TESTING INC.

2331 Topaz Drive, Hatfield, PA 19440
TEL: 800-219-9095 • FAX: 800-219-9096

Certified Test Report
DSI001-12-05-20135-1



SOLD TO

Dubose National Energy Svcs.
P.O. Box 499
Clinton, NC 28328

SHIP TO

Dubose National Energy Svcs.
900 Industrial Drive
Clinton, NC 28328
ATTN: Dave Stepp

CUSTOMER P.O.

89375-75

CERTIFICATION DATE

6/13/2012

SHIP VIA

EMAIL & CONWAY COLLECT

DESCRIPTION

Quantity: 12 pcs. (120' 10")
Trace No.: 42488
Heat No.: A121540
Size: 3 1/2" Diameter x 10' R/L
Description: Round Bar
Material: ASTM A105-05
Customer: Flowserve USA, inc.
Customer PO No.: 115495
DC No.: 299944
Reference: Vendor - US Alloys, PO No. 89370-75

The above material was 100% Ultrasonically Inspected in accordance with ASTM A-105 using L.T.I. Procedures UT-SA-388-1, Rev. 19, dated 4/22/2009 and UT-SA-388-1, Addenda ASME B16.34, Annex E, Rev. 3, dated 1/6/2012 and (120' 10") were found to be acceptable to those requirements.

Testing performed by Brian Bortz, SNT-TC-1A, Level II.

The provisions of 10CFR21, 10CFR50, Appendix B, NCA-3800 and NQA-1 apply to this order.

All testing performed in accordance with L.T.I. QA Program Rev. 19 dated 11/11/11 as audited and approved by DuBose National Energy Services, Inc.

The services performed above were done in accordance with LTI's Quality System Program Manual Revision 19 dated 11/11/11 and ISO/IEC 17025. These results relate only to the items tested and this report shall not be reproduced, except in full, without the written approval of Laboratory Testing, Inc. L.T.I. is accredited by PRI to ISO17025 and by Nadcap for NDT and Materials Testing for the test methods and specific services as listed in the Scopes of Accreditation available at www.labtesting.com and www.eAuditNet.com. The results reported on this test report represent the actual attributes of the material tested and indicate full compliance with all applicable specification and contract requirements.

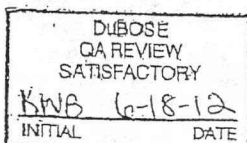
MERCURY CONTAMINATION: During the testing and inspection, the product did not come in direct contact with mercury or any of its compounds nor with any mercury containing devices employing a single boundary of containment.

NOTE: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statutes.

Sherri L Scheifele
QA Specialist

Sherri L Scheifele

Authorized Signature (ES)





LABORATORY TESTING INC.

2331 Topaz Drive, Hatfield, PA 19440
TEL: 800-219-9095 • FAX: 800-219-9096

Certified Test Report
DSI001-12-05-20135-1

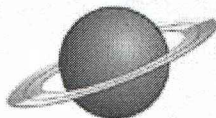


ULTRASONIC INSPECTION REPORT

DATE RECEIVED: 5/23/2012		QTY RECD: 12 pcs. (120' 10")		ACC.: 120' 10"		REJ.: -0-	
APPROVED TEST PROCEDURE: UT-SA-388-1, Rev. 19, dated 4/22/2009 and UT-SA-388-1, Addenda ASME B16.34, Annex E, Rev. 3, dated 1/6/2012				APPLICABLE SPECS: ASTM A-105			
DESCRIPTION OF MATERIAL / STAGE OF MATERIAL AT TIME OF TEST: 3 1/2" Diameter x 10' R/L Round Bar, ASTM A105-05, Trace No. 42488, Heat No. A121540 Reference: Customer - Flowserve USA, Inc., PO No. 115495, DC No. 299944, Vendor - US Alloys, PO No. 89370-75							
TEST DIR.	SURFACE	Straight Beam	OD	Straight Beam	Back Ref.		
MODE	ANGLE	Long.	0°	Long.	0°		
EQUIP. MFG:		Krautkramer		Krautkramer			
MODEL NO.:		USN-58L		USN-58L			
SERIAL NO.:		00Y6JK		00Y6JK			
TRANS. MFG.:		Aerotech		Aerotech			
MODEL NO.:		Gamma		Gamma			
SERIAL NO.:		0126CK		0126CK			
SIZE:		.750"		.750"			
FREQ.	GAIN (dB)	5 MHz	59.3	5 MHz	55.0		
CABLE LENGTH: .6'		CALIBRATION STD NO.:		B-306		CALIBRATION STD FINISH: <250 RMS	
TYPE: RG-58		DESCRIPTION: 1/8" Diameter FBH 3/4" Deep					
DAMPING CONTROL: 50 OHMS		REJECT CONTROL: 0		PRODUCTION FINISH: <250 RMS		IMMERSION CONTACT <input checked="" type="checkbox"/> TAC-TIC <input type="checkbox"/> UPK-II <input type="checkbox"/>	
SCANNING SPEED: <6 SIPS			COUPLANT: Echo Gel 14		REFERENCE LEVEL: 80% F.S.H.		
AREA GATED: N/A			DEFECT ALARM LEVEL: N/A		RECORDING EQUIP. (IF USED): N/A		
ADDITIONAL INFORMATION (IF NECESSARY):							
ULTRASONIC INSPECTOR: <i>Brian Bortz</i> Brian Bortz, SNT-TC-1A, Level II				DATE OF INSPECTION: 6/13/2012 TIME OF INSPECTION: 2:45 p.m.			

DUBOSE QA REVIEW SATISFACTORY	
KWB	6-18-12
INITIAL	DATE

GMCC
DC RECEIVED
NOV 01 2012
QCM
JOB # ZL-27



Universe Machine

CORPORATION

Phone: (780) 468-5211
Fax: (780) 468-5430
5545 - 91 ST
Edmonton, AB Canada T6E 6K4
Internet: www.umcorp.com

PACKING LIST

Sales Order No: 51131

Ship Date: 11/2/2012

Customer Phone: (403) 268 - 7333

Customer Fax: (403) 269 - 2669

B APEX DISTRIBUTION INC
I 550 407 - 2 ST S W
L
L CALGARY, AB T2P 2Y3
Attention:

S SOUTHERN PACIFIC RESOURCE CORP
H GENERAL, MECHANICAL &
I CIVIL CONTRACTORS LTD.
P 3000-84TH AVE.
EDMONTON, AB T6P 1K3
Attention: VERN

Order Date: 10/24/2012
Cust Code: APEDIS0100
UMC Job: I51131

Purchase Order: 720-002398
Ship Via: Murray's
FOB: EXWORKS UMC DOC
Sales Person: 2

Line	UMC Part	Description/Comments	UM	Qty Orig Ordered	Qty Shipped To Date	Qty On Back Order	Qty This Shipment	Qty Act Shipped
01	I000127	3" 1500# VELAN P/S GATE VALVE B10-3054P-02NE - MODIFY FROM S/160 TO SCH 80 *SHIP VIA B & R ECKELS AND 3RD PARTY BILL APEX BONNYVILLE* *INFORM MELANIE AT APEX OF THE WEIGH BILL NUMBER*	EA	2	0	0	2	2

General, Mechanical & Civil
Contractors Ltd.
RECEIVED
NOV 02 2012
Ryan

Shipper: <i>Rose</i>	Carrier:	Carrier Signature: X	Date Shipped: Nov 2/12
-------------------------	----------	--------------------------------	---------------------------



SUNBELT - CANADA
 2305 84TH AVE NW
 EDMONTON, AB T6P 1K1
 Phone: 780.468.3999



PICK TICKET

PO NO	ORDERED DATE	ORDER NO	PAGE #
720-002398	10/22/12	19299-00	1
PRINTED 10/31/12 09:32AM	PLACED BY	BRAD M.	REP ra01

*** R E P R I N T ***

1046

BILL TO: APEX DISTRIBUTION INC
 550 407 2ND STREET SW
 CALGARY, AB T2P 2Y3
 CANADA

SHIP TO: GENERAL MECHANICAL & CIVIL
 CONTACTORS LTD
 3000-84 AVENUE
 EDMONTON, AB T6P 1K3
 CANADA
 Phone: 403-268-7333

2127

SHIP DATE	INSTRUCTIONS	TERMS	SHIP VIA	FREIGHT TERMS				
10/30/12	MTRS REQUIRED	N60D	MURRAYS	COLLECT FOB SHIP POINT				
LINE NO.	PRODUCT AND DESCRIPTION	BIN LOCATION	ECCN NO.	QUANTITY ORDERED	QUANTITY TO PICK	QUANTITY BO	UOM	WEIGHT (NET)

All amounts are listed in Canadian Dollars
 Sunbelt Supply Canada GST#119425072

 TAG: SOUTHERN PACIFIC RESOURCE CORP

1	11111A 3 VEL 3114P02TS 1500 PS SWG CK WCB/FHF S/ 80 BW	Non Stock		2.00	2.00	0.00	each	0
---	--	-----------	--	------	------	------	------	---

CC51/2INL



1/2 SKID @ 194LBS

LINES TOTAL		# OF LINES NOT PRINTED	0	STAGING LOCATION		RECEIVED BY		DATE RECEIVED
CHECKED BY	CHECKED BY	PACKED BY	EST WEIGHT	CUBE				
<i>EP</i>	<i>[Signature]</i>		0.00000	0.00000	1034000			

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. Law is prohibited. By accepting this quote and/or these goods and/or services you are agreeing to abide by, and be bound to the additional terms and conditions at www.sunbeltsupply.com/legalnotices/terms.html. A Material Safety Data Sheet (MSDS) for any of our products may be obtained at the Safetec website at www.hdsupply.msds.com

2127



INSPECTION CERTIFICATE EN-10204-3.1

Certificate #: 56807

Plant 2 Velan Inc.
550 McArthur Street
Montreal, Quebec
Canada, H4T 1X8
Phone 514-748-7743
Fax 514-342-2311

Customer Name : ZENITH SUPPLY COMPANY
Customer Po # : 11S04181S
Design Spec : ASME B16.34
Drawing Number :
Tag Number(s) : NONE

Velan Order # : P012-857811-B
Item Number : 16 Position No : 25
Quantity : 9
Figure Number : B10-3114P-02TS
Description : 3"-1500 PS SWING CHECK

NOTES : BODY / BONNET MATERIAL MEETS ASME SA SECTION II
BODY S/N: 2564, 2583, 2584, 2585, 2586, 2587, 2603, 2604, 2606

Test Standard: ASME B16.34 / MSS SP-61 Dimensional Examination: ACCEPTABLE Markings MSS SP-25: ACCEPTABLE Visual: ACCEPTABLE

MATERIAL TEST RESULTS SHOWN BELOW:

		CHEMICALS				MECHANICALS					
Supplier :	ME	Carbon (C)	0.240	Manganese (Mn)	1.100	Phosphorous (P)	0.035	Tensile (MPa)	515.893	Tensile (ksi)	74.824
Heat Code :	CC51	Sulfur (S)	0.013	Silicon (Si)	0.220	Copper (Cu)	0.005	Yield (MPa)	297.750	Yield (ksi)	43.185
ASTM Code :	A105-09-	Nickel (Ni)	0.001	Chromium (Cr)	0.020	Molybdenum (Mo)	0.001	Elongation (%)	33.530	Reduction Of Area (%)	73.770
Description :	BODY (9 pcs)	Vanadium (V)	0.001					Hardness (HB)	156.000	Hardness (HB)	174.000
		C.E.	0.428					Heat Treatment	NORMALIZED		
Supplier :	PA	Carbon (C)	0.190	Manganese (Mn)	1.160	Phosphorous (P)	0.006	Tensile (MPa)	513.660	Tensile (ksi)	74.500
Heat Code :	21NL	Sulfur (S)	0.008	Silicon (Si)	0.240	Copper (Cu)	0.210	Yield (MPa)	361.975	Yield (ksi)	52.500
ASTM Code :	A105-10-	Nickel (Ni)	0.080	Chromium (Cr)	0.070	Molybdenum (Mo)	0.020	Elongation (%)	34.000	Reduction Of Area (%)	71.000
Description :	BONNET (9 pcs)	Vanadium (V)	0.017					Hardness (HB)	145.000	Hardness (HB)	145.000
		C.E.	0.424					Heat Treatment	NORMALIZED		

QC RECEIVED
GMCC
NOV 01 2012
OCM
JOB # 21-27

2127

VELAN

**INSPECTION CERTIFICATE
EN-10204-3.1**

Page 2 Of 2

Certificate #: 56807

Velan certifies that all valve(s) described above are in compliance with purchase order and specification requirements.

Rita Manoukian

Rita Manoukian

Manager of Q.C. Documentation

09-DEC-2011

Date

Customer Representative

Date

GMCC
QC RECEIVED
 NOV 01 2012
 OCM
 JOB # 21-27



4905 - 72 Avenue
Edmonton, Alberta T6B 2M6
Tel: (780) 440-4560
Fax: (780) 440-0658

Sales Order No.
28588

2127

Sales Person:
E-Mail:
Website: www.alcoinc.ca
Business #: BN 800691099

Order Date: 24-Oct-2012	Due Date: 30-Oct-2012
-----------------------------------	---------------------------------

Bill To:

Sunbelt Supply Company
Attn: Debbie Biggs
2305 - 84 Avenue

Edmonton AB T6P 1K1
Phone: Fax:

Ship To:

Sunbelt Supply Company
2305 - 84 Avenue

Edmonton AB T6P 1K1
Attn: Debbie Biggs

Customer #	Terms	Customer PO #	Rig/Reference #	Equipment #
C10838	Net 30	10356-00		

Part #	Description	Quantity	Unit Price	Tax	Total
ZR50-MiscRepair	Misc Repair One Off Job - FC	2.0	\$600.00	GST	\$1,200.00
* 1500# BW SCH 160 VELAN PRESSURE SEAL SWING CHECK, BODY A105					
MACHINE ENDS TO BW SCH 80 MAINTAINING B16.10 END TO END					
D 3.50"					
/A 0.300"					
ND TO END OF 12.00"					

Attn: Eric

GMCC
QC RECEIVED
NOV 01 2012
QCM *[Signature]*
JOB # 21-27

SUBTOTAL:	\$1,200.00
Discount:	
Freight:	
GST/HST:	\$60.00
PST:	
TOTAL:	\$1,260.00

*** All prices in Canadian dollars unless otherwise indicated ***

Thank you for your business

M & Z INDUSTRIAL SUPPLY LTD
7823 25 ST
EDMONTON AB T6P 1N4

Phone (780) 440-2737
800 661-6923
Fax (780) 440-4696
877 440-4601

Printed: NOV 01 2012
8:17:46
Salesman: GEORGE
Order Date: NOV 01 2012

FT# 4497103-01
Page: 1

SHIP TO 24705 01

BILL TO 24705 01

RN

GMC CONTRACTORS LTD
3000 84 AVE
EDMONTON AB T6P 1K3

GMC CONTRACTORS LTD
3000 84 AVE
EDMONTON AB T6P 1K3

Phone (780) 466-7867
Fax (780) 467-2421

Ordered By: DEREK

P.O.#: ZL27-33417

Ship Via: DELIVER TODAY

Instructions:

Waybill:

FOB: EDMONTON

QUANTITY

LINE DESCRIPTION	UOM	ORDERED	B/O	SHIPPED	UNIT COST
001 63624 R24 MILD STEEL OVAL RING GASKET	EA	2	:	2	4.1800
MTR #: 0012200575 7/8"-9 X 5 3/4" A193-B7 THREADED STUDS	EA	16	:	16	1.4026
MTR #: 04122 7/8"-9 A194-2H HEAVY HEX NUTS	EA	32	:	32	.4384
MTR #: U290702					

1 @ 2

1 Box

General, Mechanical & Civil
Contractors Ltd.
RECEIVED
NOV - 1 2012

ZL-27

TUBES

SKIDS with 2 Boxes PIECES.

Dimensions:

h. J. A.

Picked by GEORGE

Customer (Please print)

Date NOV-1, 2012

Product Weight

22.3200 LBS *

Gross Weight

25

LBS

***** ANY CLAIMS FOR SHORTAGES MUST BE MADE WITHIN SEVEN DAYS OF RECEIPT OF SHIPMENT. *****

*** ALL RETURNS MUST HAVE A RETURN GOODS AUTHORIZATION NUMBER ISSUED BY M & Z INDUSTRIAL SUPPLY LTD

Canadian Pipe Clamps Ltd.

"Oilfield Pipe Clamps and Hangers"

7261 - 18 St

Edmonton, Alberta T6P 1N1

780-490-6887

INVOICE

Invoice No.: 29611

Date: 11/01/2012

Ship Date:

Page: 1

Re: Order No. ZL27-33418

Sold to:

GMC Contractors Ltd

3000 - 84 Ave

Edmonton, AB T6P 1K3

Canada

Ship to:

GMC Contractors Ltd

3000 - 84 Ave

Edmonton, AB T6P 1K3

Canada

"Oilfield Pipe Clamps & Hangers"

Business No.: 87657 0755 RT0001

Item No.	Unit	Quantity	Description	Tax	Unit Price	Amount	
		6	Weld on Shoe	G	21.13	126.78	
			Ordered by Ryan Call for pickup				
			G - GST 5.00% GST			6.34	
Canadian Pipe Clamps Ltd. GST: #87657 0755 RT0001							
Shipped By: _____ Packing Number: _____							
Comment: Net 30 days. Service charge 2% / month thereafter						Total Amount	133.12
Sold By: _____							

**General Mechanical & Civil
Contractors Ltd.**
RECEIVED
 NOV 01 2012
Ryan

ZL-27

SOL Thermal Consulting Inc.

4005 Cloverbar RD Suite 20
PO Box 72223
Sherwood Park, AB
T8H 0M6 (780) 757-5490

Packing Slip

Date: January/11/2012

TO:
TSI Insulation Ltd.
#208 26229 Township Road 531A
Acheson, AB
T7X 5A4

Reference:

JOB DESCRIPTION
GMC YARD Job #10516

Quantity	Blanket #	Description		
5	01-05	(2) 1/2" UNI VALVE		
1	6	1/2" UNI VALVE		
2	8,9	2" 600 FLG		
2	10,11	3" 1500 CHECK V / BONNET		
2	12,13	3" 1500 Y VALVE		
2	14,15	3" 1500 GATE VALVE / BONNET		

*HS Lines are priced for high temperature blankets
*Gate, Globe, Check valves all priced with bonnets included

Standard Insulation Cover 0 - 260 Degrees	High Temperature Cover 261+ Degrees
Outer Jacket: 17oz Teflon Coated Fiberglass Cloth Inner Jacket: 17oz Teflon Coated Fiberglass Cloth Insulation: 1" Thick Lewco Mat Insulation Draw cord: HT 3/16" with FG Core Misc: 14 Gauge Stainless Steel Pins/Washers Stainless Steel Lacing Anchors If Needed Strap And "D" Rings Attached 2" Wide Flaps And Draw cords	Outer Jacket: 17oz Teflon Coated Fiberglass Cloth Inner Jacket: 18oz Fiberglass Cloth Insulation: 1.5" Thick Lewco Mat Insulation Draw cord: HT 3/16" with FG Core Misc: 14 Gauge Stainless Steel Pins/Washers Stainless Steel Lacing Anchors If Needed Strap And "D" Rings Attached 2" Wide Flaps And Draw cords



General, Mechanical & Civil
Contractors Ltd.

Southern Pacific – Steam Skid

Ship Loose B.O.M.

- 1 - ½" Y-Pattern Globe Valve (SW x SW)