



# Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
 2125-64 Avenue, Edmonton, AB Canada T6P 1Z4  
 Tel: 001 (780) 469-6603  
 Fax: 001 (780) 469-6986  
 www.brichemsteel.com

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0914** Product Size: **NPS 20 TRUE40** Production Date: **May 16, 2013**

Production Method: **Hot Expansion** Product Heat Treatment: **As-rolled**

Product Standards: **ASME B36.10-2004, API 5L-44th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **BRI-STEEL MFG <API> 5L-0898 API 5L GR B PSL1 ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 20 TRUE40 0.594 inchWT HEAT BSM-0914 (PIPE # LENGTH MASS) 122.9lb/ft NDE 1370 PSI SM1S NACE MR0175 2013/05 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geiger HR/hr	Res. Mag. Gauss	Visual Insp.	OD Pass	WT Pass	UT Pass	UT Pass	ET Pass	HydroTest Pass	End Condition
BSM-0914	Heat	NPS 20 TRUE40 0.594 in. WT	6	DRL	122.90	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Plain End

Chemical Analysis (wt%)																			
Heat	Steelmaking Method	Analysis		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)	
		Heat	Product																
BSM-0914	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	Product	0.21	0.87	0.023	0.013	0.31	0.07	0.01	-	0.04	-	-	-	-	-	-	-
				0.21	0.90	0.027	0.016	0.28	0.07	0.01	0.00	0.04	0.003	0.003	0.001	0.0002	0.38	0.39	

Mechanical Properties													
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test Pass	Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	V/T (Rt0.5/Rm)	Lateral Expansion		Elongation (A) %	
					50mm GL	Longitudinal; 38.1mm x WT				% Shear	AVG		mm
BSM-0914	Heat	Ferrite & Pearlite	79	Pass			44,700	72,500	0.62			49	
Heat	Test Standard	Impact Test Sample Details	Temp °C	J	J	J	%	%	AVG	mm	mm	AVG	
BSM-0914	-	-	-	-	-	-	-	-	-	-	-	-	

**Additional Details:**

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API 5L-44th Ed., ASTM/ASME A/SA106-2011, A/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements.
- ✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service, and NACE MR0103-2010 Section 2.1.
- ✓ No weld repairs have been performed on this product.
- ✓ This product has not come into contact with mercury during the Bri-Steel Manufacturing processes.
- ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:

*Kenton Dechant*  
 2013 May 31  
 Kenton Dechant, P.Eng.  
 Manager of Quality and R&D



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Production Method: **Hot Expansion** Product Heat Treatment: **As-rolled**

Product Standards: **ASME B36.10-2004, API 5L-44th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **BRI-STEEL MFG <API> 5L-0898 API 5L GR B PSL1 ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 20 XS 0.5 inchWT HEAT BSM-0914 (PIPE # LENGTH MASS) 104.1lb/ft NDE 1260 PSI SMLS NACE MR0175 2013/05 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geiger HR/hr	Res. Mag. Gauss	Visual Insp.	OD Pass	UT WT Pass	UT ASTM E213 Pass	ET ASTM E309 Pass	HydroTest 1260 psi/5s Pass	End Condition 32.5° Bevel	
BSM-0914	Heat	NPS 20 XS 0.5 In. WT	6	DRL	104.10	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Pass	

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
BSM-0914	Blast Furnace: EAF; Ladle Refining: Vacuum Degass; Fully Killed	Heat	0.21	0.87	0.023	0.013	0.31	0.07	0.01	-	0.04	-	-	-	-	-	-
		Product	0.21	0.90	0.027	0.016	0.28	0.07	0.01	0.00	0.04	0.003	0.003	0.001	0.0002	0.38	0.39

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test 50mm GL	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %		
BSM-0914	Heat	Ferrite & Pearlite	79	Pass	Longitudinal; 38.1mm x WT	44,700	72,500	0.62	49		
Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy J	% Shear	AVG %	AVG %	Lateral Expansion mm	AVG mm		
BSM-0914	-	-	-	-	-	-	-	-	-		

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