



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

Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1153** Product Size: **NPS 14 STD** Production Date: **August 8, 2013**

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

Product Standards: **ASME B36.10-2004, API SL-44th Ed, Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B 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 14 STD 0.375 inchWT HEAT BSM-1153 (PIPE # LENGTH MASS) 54.57lb/ft NDE 1140 PSI SMIS NACE MR0175 2013/08 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End	
BSM-1153	Heat	NPS 14 STD 0.375 in. WT	5	DRL	54.57	µR/hr	Gauss	Insp.	Pass	Pass	ASTM E213	ASTM E309	1140 psi/5s	Condition	
						<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel	

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Min	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
BSM-1153	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.22	0.91	0.011	0.006	0.22	0.09	0.06	0.01	0.06	-	-	-	-	0.0002	-
		Product	0.23	0.92	0.016	0.006	0.23	0.09	0.07	0.02	0.05	0.003	0.001	0.001	0.0001	0.41	0.42

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5)	Tensile (Rm)	Y/T	Elongation (A)
BSM-1153	Heat	Ferrite & Pearlite	78	Pass	50mm GL	Longitudinal; 38.1mm x WT	psi	psi	(Rt0.5/Rm)	%
							47,900	75,500	0.63	42

Heat	Test Standard	Impact Test Sample Details	Temp 9C	Impact Energy			% Shear			Lateral Expansion				
BSM-1153	-	-	-	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG
				-	-	-	-	-	-	-	-	-	-	-

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API SL-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:

Paul Sowden

2013 AUG 16

Paul Sowden, T.T.
 Assistant QA Manager



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Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1158** Product Size: **NPS 14 STD** Production Date: **August 12, 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 14 STD 0.375 inchWT HEAT BSM-1158 (PIPE # LENGTH MASS) 54.57lb/ft NDE 1140 PSI SMILS NACE MR0175 2013/08 MADE IN CANADA.**

Product Details				Non-Destructive Testing									
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geiger μ R/hr	Res. Mag. Gauss	Visual Insp.	UT	UT	ET	HydroTest	End Condition
BSM-1158	Heat	NPS 14 STD 0.375 in WT	8	DRL	54.57	<5	<20	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

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-1158	Blast Furnace: EAF; Ladle Refining: Vacuum Degas: Fully Killed	Heat	0.22	0.91	0.011	0.006	0.22	0.09	0.06	0.01	0.06	-	-	-	-	0.0002	-
		Product	0.23	0.94	0.015	0.006	0.24	0.09	0.07	0.02	0.05	0.003	0.001	0.001	0.0001	0.42	0.42

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-1158	Heat	Ferrite & Pearlite	77	Pass	50mm GL Longitudinal; 38.1mm x WT	43,700	75,500	0.58	41
Heat	Test Standard	Impact Test Sample Details	Temp $^{\circ}$ C	Impact Energy J	% Shear	Lateral Expansion mm	mm	mm	AVG
BSM-1158	-	-	-	-	-	-	-	-	-

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:

Paul Sowden

2613 AUG 23

Paul Sowden, T.T.
 Assistant QA Manager



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Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1159** Product Size: **NPS 14 STD** Production Date: **August 12, 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 14 STD 0.375 inchWT HEAT BSM-1159 (PIPE # LENGTH MASS) 54.57lb/ft NDE 1140 PSI SMLS NACE MR0175 2013/08 MADE IN CANADA.**

Product Details				Non-Destructive Testing									
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Gelger $\mu R/hr$	Res. Mag. Gauss	Visual Insp.	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 1140 psi/5s	End Condition
BSM-1159	Heat	NPS 14 STD 0.375 in. WT	11	DRL	54.57	<5	<20	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

Chemical Analysis (wt%)																				
Heat	BSM-1159	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)		
				Blast Furnace; EAF; Ladle Refining;	Heat	0.20	0.88	0.015	0.006	0.24	0.08	0.05	0.01	0.05	-	-	-	-	0.0003	-
				Vacuum Degass; Fully Killed	Product	0.21	0.87	0.018	0.005	0.24	0.08	0.05	0.02	0.04	0.002	0.001	0.001	0.0001	0.38	0.39

Mechanical Properties											
Heat	BSM-1159	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
						Heat	Ferrite & Pearlite				

Heat	BSM-1159	Test Standard	Impact Test Sample Details	Temp $^{\circ}C$	Impact Energy			% Shear			Lateral Expansion						
					J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG	
Heat	Standard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Additional Details:

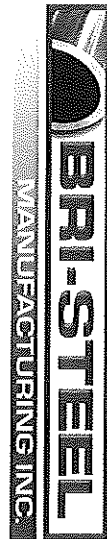
- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API 5L-44th Ed., ASTM/ASME A/SA106-2011, A/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements.
- ✓ This 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.
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- ✓ 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:

Paul Sowden

2013 AUG 23

Paul Sowden, T.T.
 Assistant QA Manager



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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1160** Product Size: **NPS 14 STD** Production Date: **August 13, 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 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 14 STD 0.375 InchWT HEAT BSM-1160 (PIPE # LENGTH MASS) 54.57lb/ft NDE 1140 PSI SMIS NACE MR0175 2013/08 MADE IN CANADA.**

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Gelger μR/hr	Res.Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 1140 psi/5s	End Condition
BSM-1160	Heat	NPS 14 STD 0.375 in.WT	1	DRL	54.57	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

Heat	Steelmaking Method	Chemical Analysis (wt%)														
		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
BSM-1160	Blast Furnace; EAF; Ladle Refining;	0.20	0.89	0.013	0.004	0.24	0.04	0.05	0.01	0.03	-	-	-	0.0002	-	-
	Vacuum Degass; Fully Killed	0.22	0.91	0.013	0.003	0.24	0.04	0.06	0.01	0.03	0.003	0.002	0.001	0.0002	0.39	0.40

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
					50mm Gl	Longitudinal; 38.1mm x WT				
BSM-1160	Heat	Ferrite & Pearlite	73	Pass			45,500	72,000	0.63	42

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear			Lateral Expansion				
				J	J	J	%	%	%	mm	mm	mm	AVG	
BSM-1160	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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:

Paul Sowden

2013 AUG 23

Paul Sowden, T.T.
 Assistant QA Manager



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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1161** Product Size: **NPS 14 STD** Production Date: **August 13, 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 14 STD 0.375 inchWT HEAT BSM-1161 (PIPE # LENGTH MASS) 54.57lb/ft NDE 1140 PSI SMIS NACE MR0175 2013/08 MADE IN CANADA.**

Product Details				Non-Destructive Testing									
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geiger μ R/hr	Res. Mag. Gauss	Visual Insp.	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 1140 psi/5s	End Condition
BSM-1161	Heat	NPS 14 STD 0.375 in. WT	49	DRL	54.57	<5	<20	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

Heat		Chemical Analysis (wt%)														
BSM-1161	Steelmaking Method	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
	Blast Furnace: EAF; Ladle Refining:	0.20	0.88	0.015	0.006	0.24	0.08	0.05	0.01	0.05	-	-	-	0.0003	-	-
	Vacuum Degass: Fully Killed	Product	0.21	0.87	0.019	0.006	0.24	0.08	0.02	0.01	0.04	0.002	0.001	0.001	0.0002	0.38

Heat		Mechanical Properties									
BSM-1161	Test Type	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)		Elongation (A) %	
	Heat	Ferrite & Pearlite	Pass	50mm GI	Longitudinal: 38.1mm x WT	42,400	72,000	0.59	43		
BSM-1161	Test Standard	Impact Test Sample Details	Temp $^{\circ}$ C	Impact Energy		% Shear		Lateral Expansion		AVG	
	-	-	-	J	J	J	AVG	mm	mm	mm	AVG

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:

2013 AUG 23

Paul Sowden, T.T.
 Assistant QA Manager



Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1162** Product Size: **NPS 14 STD** Production Date: **August 13, 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 Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **BRI-STEEL MFG <API> 5L-08998 API 5L GR B PSL1 ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 14 STD 0.375 inchWT HEAT BSM-1162 (PIPE # LENGTH MASS) 54.57lb/ft NDE 1140 PSI SMIS NACE MR0175 2013/08 MADE IN CANADA.**

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End
BSM-1162	Heat	NPS 14 STD 0.375 in.WT	52	DRL	54.57 lb/ft	<5 μ R/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	1140 psi/5s	Condition
														32.5" Bevel

Chemical Analysis (wt%)																		
Heat	Steelmaking Method	Analysis		C	Min	P	S	Si	Cr	Cu	Mo	Ni	V	TI	Nb	B	CE	CE
BSM-1162	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat		0.22	0.91	0.011	0.006	0.22	0.09	0.06	0.01	0.06	-	-	-	0.0002	-	-
		Product		0.23	0.93	0.014	0.008	0.24	0.09	0.07	0.02	0.05	0.003	0.001	0.001	0.0001	0.41	0.42

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A)	
					50mm GL	Longitudinal; 38.1mm x WT				%	%
BSM-1162	Heat	Ferrite & Pearlite	79	Pass			45,100	76,500	0.59		44

- 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:

Paul Sowden

2013 AUG 23

Paul Sowden, T.T.
 Assistant QA Manager



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Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1163** Product Size: **NPS 14 STD** Production Date: **August 21, 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 14 STD 0.375 inchWT HEAT BSM-1163 (PIPE # LENGTH MASS) 54.57lb/ft NDE 1140 PSI SMIS NACE MR0175 2013/08 MADE IN CANADA.**

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geliger $\mu\text{R/hr}$	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT	ET	HydroTest	End Condition
BSM-1163	Heat	NPS 14 STD 0.375 in WT	2	DRL	54.57	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

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-1163	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.18	0.96	0.002	0.003	0.24	0.03	0.08	0.01	0.04	-	-	-	0.0003	-
		Product	0.20	0.96	0.010	0.004	0.24	0.03	0.08	0.01	0.04	0.003	0.002	0.001	0.0001	0.38

Mechanical Properties																
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %						
					50mm GL	Longitudinal; 38.1mm x WT										
BSM-1163	Heat	Ferrite & Pearlite	77	Pass			47,800	73,500	0.65	44						
Heat	Test Standard	Impact Test Sample Details	Temp $^{\circ}\text{C}$	Impact Energy			% Shear			Lateral Expansion						
				J	J	AVG	%	%	AVG	mm	mm	mm	AVG			
BSM-1163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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 products 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.
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 Assistant QA Manager



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Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1164** Product Size: **NPS 14 STD** Production Date: **August 21, 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 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 14 STD 0.375 inchWT HEAT BSM-1164 (PIPE # LENGTH MASS) 54.57lb/ft NDE 1140 PSI SMIS NACE MR0175 2013/08 MADE IN CANADA.**

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End
BSM-1164	Heat	NPS 14 STD 0.375 in.WT	2	DRL	54.57	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

Chemical Analysis (wt%)																
Heat	Steelmaking Method	Analysis														
		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
BSM-1164	Blast Furnace; EAF; Ladle Refining;	Heat	0.20	0.87	0.012	0.004	0.23	0.04	0.06	0.01	0.04	-	-	0.0003	-	-
	Vacuum Degas; Fully Killed	Product	0.21	0.91	0.011	0.005	0.24	0.04	0.07	0.01	0.04	0.004	0.001	0.001	0.0002	0.37

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rt0.5)	Tensile (Rm)	Y/T	Elongation (A)
					HRBW	Pass				
BSM-1164	Heat	Ferrite & Pearlite	76	Pass			44,300	71,000	0.62	44

Heat	Test	Impact Test	Temp °C	Impact Energy			% Shear			Lateral Expansion			
				J	J	AVG	%	%	AVG	mm	mm	mm	AVG
BSM-1164	Standard	Sample Details	-	J	J	AVG	%	%	AVG	mm	mm	mm	AVG

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 products 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:

Paul Sowden

2013 AUG 23

Paul Sowden, T.T.
 Assistant QA Manager