



# 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-0165** Product Size: **NPS 30 STD** Production Date: **2012 Jan 5**

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

Product Standards: **ASTM/ASME A/SA106-2010 Grade B/C, A/SA53-2010 Grade B Type S, NACE MR0175-2009**

Product Markings: **.BRI-STEEL MEG NPS 30 STD ASTM/ASME A/SA106 GR B/C A/SA53 GR B HEAT BSM-0165 (PIPE # LENGTH MASS) NDE 630PSI NACE MR0175 2011/11 MADE IN CANADA.**

| Product Details |           |     |     | Non-Destructive Testing |        |            |                   |                 |              |         |            |              |              |                      |               |
|-----------------|-----------|-----|-----|-------------------------|--------|------------|-------------------|-----------------|--------------|---------|------------|--------------|--------------|----------------------|---------------|
| Heat            | Test Type | NPS | SCH | Pieces                  | Length | Mass lb/ft | Geiger $\mu$ R/hr | Res. Mag. Gauss | Visual Insp. | OD Pass | UT WT Pass | UT ASTM E213 | ET ASTM E309 | HydroTest 630 psi/5s | End Condition |
| BSM-0165        | Heat      | 30  | STD | 1                       | DRL    | 118.60     | <5                | <20             | Pass         | Pass    | Pass       | ---          | Pass         | Pass                 | 37.5° Bevel   |

| Steelmaking Method |           |                           |  | Chemical Analysis (wt%) |      |       |       |      |      |      |      |      |       |       |       |        |          |          |
|--------------------|-----------|---------------------------|--|-------------------------|------|-------|-------|------|------|------|------|------|-------|-------|-------|--------|----------|----------|
| Heat               | Test Type | Blast Furnace; EAF; Ladle |  | C                       | Mn   | P     | S     | Si   | Cr   | Cu   | Mo   | Ni   | V     | Ti    | Nb    | B      | CE (I/W) | CE (CSA) |
| BSM-0165           | Heat      | Refining; Vacuum Degass   |  | 0.21                    | 0.88 | 0.014 | 0.006 | 0.24 | 0.05 | 0.07 | 0.01 | 0.02 | 0.004 | 0.002 | 0.002 | 0.0002 | 0.38     | 0.38     |

| Mechanical Properties |           |                    |               |                 |                    |            |                   |                   |                  |                |                  |
|-----------------------|-----------|--------------------|---------------|-----------------|--------------------|------------|-------------------|-------------------|------------------|----------------|------------------|
| Heat                  | Test Type | Microstructure     | Hardness HRBW | Flattening Test | Tension Test       |            | Yield (Rt0.5) psi | Yield (Rp0.2) psi | Tensile (Rm) psi | V/T (Rt0.5/Rm) | Elongation (A) % |
|                       |           |                    |               |                 | 50mm GL; 38mm x WT | Transverse |                   |                   |                  |                |                  |
| BSM-0165              | Heat      | Ferrite & Pearlite | 77            | Pass            | Longitudinal       | 41,800     | 45,700            | 40,400            | 72,500           | 0.58           | 44               |

**Additional Details:**

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with ASTM/ASME A/SA106-2010, A/SA53-2010 and the purchase order requirements, and that the results meet the corresponding requirements.
- ✓ This pipe product meet 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 no mercury contamination.
- ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:

  
 2012 Jan 13

Kenton Dechant, P.Eng.  
 Manager of Quality and R&D