



Certificate of Test

Class G Well Cement
Grade MSR

May 4, 2018
Lot 120

| Chemical Requirements - Table 1 | | | Physical and Performance Requirements – Table 2 | | |
|---------------------------------|------------|--------|---|-----------------|---------|
| Item | Spec Limit | Result | Item | Spec Limit | Result |
| MgO | 6.0 max | 1.0 | Free-Fluid Content, % | 5.9 max | 5.3 |
| SO ₃ | 3.0 max | 2.9 | Compressive Strengths, PSI | 8 hours @ 38° C | 300 min |
| Loss on Ignition | 3.0 max | 0.8 | | | |
| Insoluble Residue | 0.75 max | 0.39 | Schedule 5 Thickening Time, minutes | 90 to 120 | 101 |
| C ₃ S, % | 48 to 58 | 58 | | | |
| C ₃ A, % | 8 max | 5 | | | |
| Equivalent Alkalies, % | 0.75 max | 0.57 | | | |

This cement has been sampled and tested in accordance with API Specification 10A. Cement analysis are reported as oxides, in accordance with ASTM Test Method C114. This cement is manufactured at our Laramie, Wyoming facility. All test results are certified to comply with the type specification designated. We are not responsible for improper use or workmanship.

Bob Kersey
Chief Chemist



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