

Table 33. Results of portable x-ray fluorescence analyses for major elements and instrument two-sigma error for National Institute of Standards and Technology (NIST) Standard Reference Material 2710, Hurricane Sandy reconnaissance study, June–October 2013.

[Measured value and instrument performance error, in percent of total weight; --, not applicable]

| Measurement | Major element (number in parentheses is NIST Standard Reference Material 2710 certified or nominal value, in percent of total weight) | | | | | | | | | | | | | | | | | | | |
|--------------------|---|-------|--------------------|-------|---------------------|-------|-------------------|-------|--------------------|-------|----------------|-------|---------------------|-------|------------------|-------|-----------------------|-------|----------------------|-------|
| | Silicon (28.97) | | Aluminum (6.44) | | Potassium (2.11) | | Calcium (1.25) | | Titanium (0.28) | | Iron (3.38) | | Manganese (1.01) | | Sulfur (0.24) | | Chloride ¹ | | Phosphorus (0.11) | |
| | Value | Error | Value | Error | Value | Error | Value | Error | Value | Error | Value | Error | Value | Error | Value | Error | Value | Error | Value | Error |
| 1 | 29.91 | 0.33 | 5.43 | 0.15 | 2.02 | 0.05 | 1.19 | 0.02 | 0.35 | 0.01 | 3.63 | 0.05 | 1.11 | 0.12 | 0.65 | 0.01 | 0.29 | 0.01 | 0.20 | 0.02 |
| 2 | 28.85 | 0.33 | 5.13 | 0.15 | 2.07 | 0.05 | 1.19 | 0.02 | 0.35 | 0.01 | 3.61 | 0.05 | 1.04 | 0.12 | 0.64 | 0.01 | 0.29 | 0.01 | 0.16 | 0.02 |
| 3 | 30.14 | 0.32 | 5.33 | 0.15 | 2.03 | 0.05 | 1.17 | 0.02 | 0.34 | 0.01 | 3.64 | 0.05 | 1.09 | 0.13 | 0.66 | 0.01 | 0.31 | 0.01 | 0.17 | 0.02 |
| 4 | 30.22 | 0.34 | 5.50 | 0.16 | 2.07 | 0.05 | 1.02 | 0.04 | 0.36 | 0.01 | 3.65 | 0.05 | 1.06 | 0.12 | 0.66 | 0.01 | 0.31 | 0.01 | 0.17 | 0.02 |
| 5 | 30.90 | 0.27 | 5.68 | 0.16 | 1.99 | 0.05 | 1.05 | 0.04 | 0.35 | 0.01 | 3.67 | 0.05 | 1.05 | 0.12 | 0.68 | 0.01 | 0.35 | 0.01 | 0.20 | 0.02 |
| 6 | 26.85 | 0.33 | 4.43 | 0.18 | 1.69 | 0.05 | 1.20 | 0.02 | 0.35 | 0.01 | 3.61 | 0.06 | 1.04 | 0.15 | 0.55 | 0.02 | 0.08 | 0.01 | 0.12 | 0.03 |
| 7 | 28.24 | 0.31 | 4.94 | 0.17 | 1.87 | 0.05 | 1.18 | 0.02 | 0.34 | 0.01 | 3.61 | 0.05 | 1.03 | 0.13 | 0.60 | 0.02 | 0.08 | 0.01 | 0.14 | 0.03 |
| 8 | 29.01 | 0.31 | 5.18 | 0.17 | 1.79 | 0.05 | 1.14 | 0.02 | 0.34 | 0.01 | 3.65 | 0.05 | 1.06 | 0.13 | 0.63 | 0.02 | 0.28 | 0.01 | 0.15 | 0.03 |
| 9 | 26.56 | 0.30 | 4.17 | 0.13 | 2.04 | 0.05 | 1.00 | 0.04 | 0.34 | 0.01 | 3.75 | 0.05 | 1.09 | 0.11 | 0.65 | 0.01 | 0.40 | 0.01 | 0.40 | 0.02 |
| 10 | 28.48 | 0.32 | 4.92 | 0.14 | 2.03 | 0.05 | 1.17 | 0.02 | 0.35 | 0.01 | 3.63 | 0.05 | 1.06 | 0.12 | 0.62 | 0.01 | 0.35 | 0.01 | 0.14 | 0.02 |
| 11 | 28.73 | 0.31 | 4.68 | 0.16 | 1.78 | 0.04 | 1.15 | 0.02 | 0.34 | 0.01 | 3.55 | 0.05 | 1.01 | 0.13 | 0.58 | 0.01 | 0.09 | 0.01 | 0.13 | 0.03 |
| 12 | 25.39 | 0.28 | 3.75 | 0.15 | 1.79 | 0.04 | 1.12 | 0.02 | 0.32 | 0.01 | 3.67 | 0.05 | 1.06 | 0.12 | 0.55 | 0.01 | 0.07 | 0.01 | 0.34 | 0.03 |
| 13 | 25.86 | 0.29 | 3.93 | 0.16 | 1.84 | 0.05 | 1.16 | 0.02 | 0.33 | 0.01 | 3.77 | 0.05 | 1.05 | 0.12 | 0.65 | 0.02 | 0.07 | 0.01 | 0.39 | 0.03 |
| 14 | 25.57 | 0.28 | 4.01 | 0.15 | 1.84 | 0.05 | 1.15 | 0.02 | 0.33 | 0.01 | 3.77 | 0.05 | 1.08 | 0.12 | 0.63 | 0.02 | 0.06 | 0.01 | 0.40 | 0.03 |
| 15 | 25.59 | 0.29 | 4.00 | 0.17 | 1.81 | 0.05 | 1.16 | 0.02 | 0.32 | 0.01 | 3.76 | 0.05 | 1.05 | 0.12 | 0.56 | 0.01 | 0.07 | 0.01 | 0.38 | 0.03 |
| 16 | 23.94 | 0.28 | 3.55 | 0.14 | 1.80 | 0.05 | 1.24 | 0.02 | 0.31 | 0.01 | 3.75 | 0.05 | 1.08 | 0.12 | 0.55 | 0.01 | 0.05 | 0.01 | 0.37 | 0.03 |
| Average value | 27.76 | -- | 4.66 | -- | 1.90 | -- | 1.14 | -- | 0.34 | -- | 3.67 | -- | 1.06 | -- | 0.62 | -- | 0.20 | -- | 0.24 | -- |
| Standard deviation | 1.83 | -- | 0.60 | -- | 0.11 | -- | 0.05 | -- | 0.01 | -- | 0.06 | -- | 0.02 | -- | 0.04 | -- | 0.13 | -- | 0.10 | -- |
| Percent difference | -4 | -- | -28 | -- | -10 | -- | -9 | -- | 21 | -- | 9 | -- | 5 | -- | 157 | -- | -- | -- | 122 | -- |

¹No certified value was provided by NIST.

