

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Methods: 50

Sample # 170311

Statistical Summary

Labs Reporting: 73

Grade 28-0-0 Liquid SR

Issue Date : 04/30/2017

| Method Code | Analyte & Method | # Tests Submitted | # Tests in Robust Calculations | Raw Mean | Raw SD | Assigned Value Robust Mean | IA at Analyte Value | Robust sd | Robust Uncertainty (U) | Robust % RSD | IA %RSD | Average Range (R-bar) | Horwitz %RSD |
|-------------|---|-------------------|--------------------------------|----------|--------|----------------------------|---------------------|-----------|------------------------|--------------|---------|-----------------------|--------------|
| 001.10 | Ammoniacal Nitrogen, Magnesium Oxide Method (%) | 2 | 2 | 0.8750 | 0.4808 | | | | | | | | |
| 001.99 | Ammoniacal Nitrogen, Other (%) | 1 | | 8.055 | | | | | | | | | |
| 005.00 | Urea Nitrogen, Urease (as N) (%) | 4 | 4 | 7.134 | 1.087 | 7.134 | | 1.087 | 0.6793 | 15.24% | | 0.0825 | 2.98% |
| 005.99 | Urea Nitrogen, Other (%) | 5 | 5 | 11.03 | 4.009 | 11.03 | | 4.009 | 2.241 | 36.33% | | 4.186 | 2.79% |
| 007.00 | Urea, Urease (as Urea) (%) | 3 | 3 | 8.675 | 1.329 | 8.675 | | 1.329 | 0.9593 | 15.32% | | 0.2704 | 2.89% |
| 007.99 | Urea, Other (%) | 3 | 3 | 16.04 | 15.59 | 16.04 | | 15.59 | 11.25 | 97.21% | | 0.2367 | 2.63% |
| 010.11 | Total Nitrogen, Modified Comprehensive (28%) | 5 | 5 | 27.87 | 0.5104 | 27.87 | 0.8346 | 0.5104 | 0.2853 | 1.83% | 1.50% | 0.2981 | 2.42% |
| 010.12 | Total Nitrogen, Salicylic (28%) | 5 | 5 | 28.03 | 0.3985 | 28.03 | 0.8346 | 0.3985 | 0.2228 | 1.42% | 1.49% | 0.1500 | 2.42% |
| 010.60 | Total Nitrogen, Combustion (28%) | 57 | 57 | 28.40 | 0.3213 | 28.39 | 0.8346 | 0.3240 | 0.0536 | 1.14% | 1.47% | 0.1499 | 2.42% |
| 010.99 | Total Nitrogen, Other (28%) | 10 | 9 | 28.07 | 0.2712 | 28.06 | 0.8346 | 0.2852 | 0.1188 | 1.02% | 1.49% | 0.0796 | 2.42% |
| 020.20 | Total Phosphorus as P2O5, Spectrophotometric Molyb... (%) | 1 | | 0.0800 | | | | | | | | | |
| 020.50 | Total Phosphorus as P2O5, ICP (%) | 2 | 2 | 0.0005 | 0.0004 | | | | | | | | |
| 041.50 | Direct Available Phosphorus as P2O5, ICP (%) | 1 | | 0.1000 | | | | | | | | | |
| 041.60 | Direct Available Phosphorus as P2O5, Citrate-EDTA ... (%) | 1 | | 0.0000 | | | | | | | | | |
| 050.50 | Soluble Potassium as K2O, ICP (Oxalate) (%) | 1 | | 0.5800 | | | | | | | | | |
| 050.52 | Soluble Potassium as K2O, ICP (Citrate-EDTA) (%) | 1 | | 0.0000 | | | | | | | | | |
| 050.99 | Soluble Potassium as K2O, Other (%) | 5 | 5 | 0.4297 | 0.3046 | 0.4297 | | 0.3046 | 0.1703 | 70.89% | | 0.0562 | 4.54% |
| 101.30 | Acid Soluble Calcium, ICP, test portion inorganic ... (%) | 1 | | 0.0420 | | | | | | | | | |
| 101.32 | Acid Soluble Calcium, ICP, test portion 2006.03A-C (%) | 1 | | 0.0000 | | | | | | | | | |
| 121.30 | Acid Soluble Magnesium, ICP, test portion inorgani... (%) | 1 | | 0.0125 | | | | | | | | | |
| 121.32 | Acid Soluble Magnesium, ICP, test portion 2006.03A... (%) | 1 | | 0.0001 | | | | | | | | | |
| 148.99 | Total Sulfur, Other (%) | 1 | | 0.0085 | | | | | | | | | |
| 149.04 | Sulfur - HNO3 soluble, ICP (%) | 2 | 2 | 0.0007 | 0.0008 | | | | | | | | |
| 151.99 | Acid Soluble Arsenic , Other (ppm) | 1 | | 0.0500 | | | | | | | | | |
| 165.30 | Acid Soluble Boron , ICP, test portion in 982.01 (%) | 2 | 1 | 0.0060 | | | | | | | | | |
| 165.99 | Acid Soluble Boron , Other (%) | 1 | | 0.0008 | | | | | | | | | |
| 181.30 | Acid Soluble Cadmium , ICP (ppm) | 2 | 2 | 0.0345 | 0.0290 | | | | | | | | |
| 181.99 | Acid Soluble Cadmium , Other (ppm) | 1 | | 0.0100 | | | | | | | | | |
| 191.30 | Acid Soluble Chromium , ICP (ppm) | 1 | | 0.0800 | | | | | | | | | |
| 191.99 | Acid Soluble Chromium , Other (ppm) | 1 | | 1.215 | | | | | | | | | |
| 202.99 | Acid Soluble Cobalt , Other (ppm) | 1 | | 0.0100 | | | | | | | | | |

| Method Code | Analyte & Method | # Tests Submitted | # Tests in Robust Calculations | Raw Mean | Raw SD | Assigned Value Robust Mean | IA at Analyte Value | Robust sd | Robust Uncertainty (U) | Robust % RSD | IA %RSD | Average Range (R-bar) | Horwitz %RSD |
|-------------|---|-------------------|--------------------------------|----------|--------|----------------------------|---------------------|-----------|------------------------|--------------|---------|-----------------------|--------------|
| 221.30 | Acid Soluble Copper , ICP, test portion inorganic ... (%) | 1 | | 0.0020 | | | | | | | | | |
| 221.32 | Acid Soluble Copper , ICP, test portion 2006.03A-C (%) | 1 | | 0.0001 | | | | | | | | | |
| 241.30 | Acid Soluble Iron, ICP, test portion inorganic 965... (%) | 1 | | 0.0100 | | | | | | | | | |
| 241.32 | Acid Soluble Iron, ICP, test portion 2006.03A-C (%) | 1 | | 0.0000 | | | | | | | | | |
| 241.99 | Acid Soluble Iron, Other (%) | 1 | | 0.0006 | | | | | | | | | |
| 251.30 | Acid Soluble Lead , ICP (ppm) | 1 | | 0.1450 | | | | | | | | | |
| 251.99 | Acid Soluble Lead , Other (ppm) | 1 | | 0.1150 | | | | | | | | | |
| 261.30 | Acid Soluble Manganese , ICP, test portion 972.02a (%) | 1 | | 0.0000 | | | | | | | | | |
| 261.34 | Acid Soluble Manganese , ICP, test portion 2006.03... (%) | 1 | | 0.0007 | | | | | | | | | |
| 281.99 | Acid Soluble Mercury , Other (ppm) | 1 | | 0.0450 | | | | | | | | | |
| 289.30 | Acid Soluble Molybdenum , ICP (ppm) | 2 | 2 | 0.1485 | 0.0094 | | | | | | | | |
| 291.30 | Acid Soluble Nickel , ICP (ppm) | 1 | | 0.0370 | | | | | | | | | |
| 291.99 | Acid Soluble Nickel , Other (ppm) | 1 | | 0.0800 | | | | | | | | | |
| 301.30 | Acid Soluble Selenium , ICP (ppm) | 1 | | 1.623 | | | | | | | | | |
| 301.99 | Acid Soluble Selenium , Other (ppm) | 1 | | 0.0100 | | | | | | | | | |
| 311.32 | Sodium, ICP, 2006.03 test portion (%) | 1 | | 0.0468 | | | | | | | | | |
| 311.99 | Sodium, Other (%) | 2 | 2 | 0.0760 | 0.0580 | | | | | | | | |
| 321.30 | Acid Soluble Zinc , ICP, test portion inorganic 96... (%) | 2 | 1 | 0.0020 | | | | | | | | | |
| 321.32 | Acid Soluble Zinc , ICP, test portion 2006.03A-C (%) | 1 | | 0.0000 | | | | | | | | | |

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Sample # 170311

Grade 28-0-0 Liquid SR

Method Precision Report

Issue Date : 04/30/2017

| Method Code | Analyte & Method | # Tests Submitted | # Tests Used in Precision Calcs | Mean | SD | Between Labs sL | Within Labs sr | Reproducibility sR | Between Labs %RSD | Within Labs %rsd | Reproducibility %RSD | sR/sr |
|-------------|----------------------------------|-------------------|---------------------------------|-------|--------|-----------------|----------------|--------------------|-------------------|------------------|----------------------|-------|
| 010.60 | Total Nitrogen, Combustion (28%) | 57 | 56 | 28.38 | 0.2981 | 0.2814 | 0.1389 | 0.3138 | 0.99% | 0.49% | 1.11% | 2.259 |
| 010.99 | Total Nitrogen, Other (28%) | 10 | 9 | 28.07 | 0.2712 | 0.2660 | 0.0746 | 0.2763 | 0.95% | 0.27% | 0.98% | 3.703 |

Notes: Precision data calculated when 8 or more Tests included.

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Methods: 50

Sample # 170311

Lab Values

Labs Reporting: 73

Grade 28-0-0 Liquid SR

Issue Date : 04/30/2017

| Method Code | Analyte Name and Method (Units) | Lab Code | Lab Data | | Method Values | | | # Tests | Magruder CS Z Score | Threshold %RSD | Flag |
|-------------|---|----------|----------|--------|---------------|--------|--------|---------|---------------------|----------------|------|
| | | | Value | Range | Rob Mean | Rob SD | R-bar | | | | |
| 001.10 | Ammoniacal Nitrogen, Magnesium Oxide Method (%) | 0444 | 0.5350 | 0.0100 | | | | 2 | | | 0 |
| 001.10 | Ammoniacal Nitrogen, Magnesium Oxide Method (%) | 0389 | 1.215 | 0.0900 | | | | 2 | | | 0 |
| 001.99 | Ammoniacal Nitrogen, Other (%) | 0524 | 8.055 | 0.1148 | | | | 1 | | | 0 |
| 005.00 | Urea Nitrogen, Urease (as N) (%) | 0230 | 5.545 | 0.0300 | 7.134 | 1.087 | 0.0825 | 4 | -1.46 | 11% | 0 |
| 005.00 | Urea Nitrogen, Urease (as N) (%) | 0389 | 7.430 | 0.1000 | 7.134 | 1.087 | 0.0825 | 4 | 0.27 | 2% | 0 |
| 005.00 | Urea Nitrogen, Urease (as N) (%) | 0444 | 7.560 | 0.0000 | 7.134 | 1.087 | 0.0825 | 4 | 0.39 | 3% | 0 |
| 005.00 | Urea Nitrogen, Urease (as N) (%) | 0498 | 8.000 | 0.2000 | 7.134 | 1.087 | 0.0825 | 4 | 0.80 | 6% | 0 |
| 005.99 | Urea Nitrogen, Other (%) | 0356 | 7.550 | 0.0600 | 11.03 | 4.009 | 4.186 | 5 | -0.87 | 16% | 0 |
| 005.99 | Urea Nitrogen, Other (%) | 0420 | 7.925 | 0.0500 | 11.03 | 4.009 | 4.186 | 5 | -0.78 | 14% | 0 |
| 005.99 | Urea Nitrogen, Other (%) | 0451 | 9.560 | 0.1800 | 11.03 | 4.009 | 4.186 | 5 | -0.37 | 7% | 0 |
| 005.99 | Urea Nitrogen, Other (%) | 0394 | 13.09 | 20.56 | 11.03 | 4.009 | 4.186 | 5 | 0.51 | 9% | 0 |
| 005.99 | Urea Nitrogen, Other (%) | 0309 | 17.04 | 0.0800 | 11.03 | 4.009 | 4.186 | 5 | 1.50 | 27% | 0 |
| 007.00 | Urea, Urease (as Urea) (%) | 0368 | 7.644 | 0.3912 | 8.675 | 1.329 | 0.2704 | 3 | -0.78 | 6% | 0 |
| 007.00 | Urea, Urease (as Urea) (%) | 0486 | 8.205 | 0.3100 | 8.675 | 1.329 | 0.2704 | 3 | -0.35 | 3% | 0 |
| 007.00 | Urea, Urease (as Urea) (%) | 0231 | 10.18 | 0.1100 | 8.675 | 1.329 | 0.2704 | 3 | 1.13 | 9% | 0 |
| 007.99 | Urea, Other (%) | 0220 | 6.335 | 0.6500 | 16.04 | 15.59 | 0.2367 | 3 | -0.62 | 30% | 0 |
| 007.99 | Urea, Other (%) | 0519 | 7.760 | 0.0200 | 16.04 | 15.59 | 0.2367 | 3 | -0.53 | 26% | 0 |
| 007.99 | Urea, Other (%) | 0420 | 34.03 | 0.0400 | 16.04 | 15.59 | 0.2367 | 3 | 1.15 | 56% | 0 |
| 010.11 | Total Nitrogen, Modified Comprehensive (28%) | 0309 | 27.18* | 0.1200 | 27.87 | 0.5104 | 0.2981 | 5 | -1.35 | 1% | 0 |
| 010.11 | Total Nitrogen, Modified Comprehensive (28%) | 0522 | 27.51 | 0.4300 | 27.87 | 0.5104 | 0.2981 | 5 | -0.72 | 1% | 0 |
| 010.11 | Total Nitrogen, Modified Comprehensive (28%) | 0510 | 28.10 | 0.2715 | 27.87 | 0.5104 | 0.2981 | 5 | 0.44 | 0% | 0 |
| 010.11 | Total Nitrogen, Modified Comprehensive (28%) | 0114 | 28.16 | 0.5790 | 27.87 | 0.5104 | 0.2981 | 5 | 0.57 | 1% | 0 |
| 010.11 | Total Nitrogen, Modified Comprehensive (28%) | 0105 | 28.42 | 0.0900 | 27.87 | 0.5104 | 0.2981 | 5 | 1.07 | 1% | 0 |
| 010.12 | Total Nitrogen, Salicylic (28%) | 0481 | 27.51 | 0.0500 | 28.03 | 0.3985 | 0.1500 | 5 | -1.32 | 1% | 0 |
| 010.12 | Total Nitrogen, Salicylic (28%) | 0185 | 27.82 | 0.4000 | 28.03 | 0.3985 | 0.1500 | 5 | -0.53 | 0% | 0 |
| 010.12 | Total Nitrogen, Salicylic (28%) | 0397 | 27.99 | 0.1200 | 28.03 | 0.3985 | 0.1500 | 5 | -0.10 | 0% | 0 |
| 010.12 | Total Nitrogen, Salicylic (28%) | 0498 | 28.35 | 0.1000 | 28.03 | 0.3985 | 0.1500 | 5 | 0.80 | 1% | 0 |
| 010.12 | Total Nitrogen, Salicylic (28%) | 0416 | 28.49 | 0.0800 | 28.03 | 0.3985 | 0.1500 | 5 | 1.15 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0444 | 27.64 | 0.0500 | 28.39 | 0.3240 | 0.1499 | 57 | -2.34 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0137 | 27.77 | 0.1370 | 28.39 | 0.3240 | 0.1499 | 57 | -1.92 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0420 | 27.98 | 0.0500 | 28.39 | 0.3240 | 0.1499 | 57 | -1.29 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0421 | 28.00 | 0.2700 | 28.39 | 0.3240 | 0.1499 | 57 | -1.23 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0177 | 28.01 | 0.2000 | 28.39 | 0.3240 | 0.1499 | 57 | -1.19 | 1% | 0 |

| Method Code | Analyte Name and Method (Units) | Lab Code | Lab Data | | Method Values | | | # Tests | Magruder CS Z Score | Threshold %RSD | Flag |
|-------------|----------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|----------------|------|
| | | | Value | Range | Rob Mean | Rob SD | R-bar | | | | |
| 010.60 | Total Nitrogen, Combustion (28%) | 0234 | 28.02 | 0.0500 | 28.39 | 0.3240 | 0.1499 | 57 | -1.17 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0292 | 28.04 | 0.0100 | 28.39 | 0.3240 | 0.1499 | 57 | -1.11 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0354 | 28.04 | 0.1450 | 28.39 | 0.3240 | 0.1499 | 57 | -1.08 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0481 | 28.08 | 0.1300 | 28.39 | 0.3240 | 0.1499 | 57 | -0.99 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0389 | 28.10 | 0.4000 | 28.39 | 0.3240 | 0.1499 | 57 | -0.91 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0131 | 28.13 | 0.0740 | 28.39 | 0.3240 | 0.1499 | 57 | -0.82 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0483 | 28.13 | 0.0600 | 28.39 | 0.3240 | 0.1499 | 57 | -0.82 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0043 | 28.15 | 0.0100 | 28.39 | 0.3240 | 0.1499 | 57 | -0.77 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0029 | 28.16 | 0.1100 | 28.39 | 0.3240 | 0.1499 | 57 | -0.74 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0231 | 28.16 | 0.0100 | 28.39 | 0.3240 | 0.1499 | 57 | -0.74 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0377 | 28.17 | 0.3400 | 28.39 | 0.3240 | 0.1499 | 57 | -0.69 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0041 | 28.20 | 0.0900 | 28.39 | 0.3240 | 0.1499 | 57 | -0.62 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0157 | 28.20 | 0.0000 | 28.39 | 0.3240 | 0.1499 | 57 | -0.60 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0482 | 28.20 | 0.0000 | 28.39 | 0.3240 | 0.1499 | 57 | -0.60 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0037 | 28.21 | 0.0200 | 28.39 | 0.3240 | 0.1499 | 57 | -0.57 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0073 | 28.24 | 0.1000 | 28.39 | 0.3240 | 0.1499 | 57 | -0.48 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0451 | 28.25 | 0.1400 | 28.39 | 0.3240 | 0.1499 | 57 | -0.45 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0035 | 28.31 | 0.1900 | 28.39 | 0.3240 | 0.1499 | 57 | -0.28 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0086 | 28.32 | 0.0380 | 28.39 | 0.3240 | 0.1499 | 57 | -0.24 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0233 | 28.33 | 0.0600 | 28.39 | 0.3240 | 0.1499 | 57 | -0.20 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0452 | 28.34 | 0.2000 | 28.39 | 0.3240 | 0.1499 | 57 | -0.17 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0472 | 28.35 | 0.1600 | 28.39 | 0.3240 | 0.1499 | 57 | -0.14 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0023 | 28.36 | 0.3860 | 28.39 | 0.3240 | 0.1499 | 57 | -0.12 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0485 | 28.36 | 0.2690 | 28.39 | 0.3240 | 0.1499 | 57 | -0.10 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0501 | 28.39 | 0.0310 | 28.39 | 0.3240 | 0.1499 | 57 | -0.01 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0423 | 28.43 | 0.1500 | 28.39 | 0.3240 | 0.1499 | 57 | 0.09 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0106 | 28.46 | 0.1800 | 28.39 | 0.3240 | 0.1499 | 57 | 0.20 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0136 | 28.46 | 0.0200 | 28.39 | 0.3240 | 0.1499 | 57 | 0.20 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0494 | 28.46 | 0.1200 | 28.39 | 0.3240 | 0.1499 | 57 | 0.20 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0042 | 28.49 | 0.0100 | 28.39 | 0.3240 | 0.1499 | 57 | 0.28 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0040 | 28.50 | 0.2000 | 28.39 | 0.3240 | 0.1499 | 57 | 0.33 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0390 | 28.50 | 0.2000 | 28.39 | 0.3240 | 0.1499 | 57 | 0.33 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0025 | 28.51 | 0.1500 | 28.39 | 0.3240 | 0.1499 | 57 | 0.34 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0356 | 28.51 | 0.2200 | 28.39 | 0.3240 | 0.1499 | 57 | 0.36 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0049 | 28.53 | 0.1100 | 28.39 | 0.3240 | 0.1499 | 57 | 0.40 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0055 | 28.53 | 0.3700 | 28.39 | 0.3240 | 0.1499 | 57 | 0.40 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0034 | 28.54 | 0.1300 | 28.39 | 0.3240 | 0.1499 | 57 | 0.43 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0027 | 28.55 | 0.3000 | 28.39 | 0.3240 | 0.1499 | 57 | 0.48 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0324 | 28.60 | 0.4000 | 28.39 | 0.3240 | 0.1499 | 57 | 0.63 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0368 | 28.67 | 0.4270 | 28.39 | 0.3240 | 0.1499 | 57 | 0.86 | 0% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0291 | 28.68 | 0.0200 | 28.39 | 0.3240 | 0.1499 | 57 | 0.88 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0325 | 28.70 | 0.4000 | 28.39 | 0.3240 | 0.1499 | 57 | 0.94 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0007 | 28.75 | 0.1000 | 28.39 | 0.3240 | 0.1499 | 57 | 1.10 | 1% | 0 |

| Method Code | Analyte Name and Method (Units) | Lab Code | Lab Data | | Method Values | | | # Tests | Magruder CS Z Score | Threshold %RSD | Flag |
|-------------|--|----------|----------|--------|---------------|--------|--------|---------|---------------------|----------------|------|
| | | | Value | Range | Rob Mean | Rob SD | R-bar | | | | |
| 010.60 | Total Nitrogen, Combustion (28%) | 0105 | 28.76 | 0.0600 | 28.39 | 0.3240 | 0.1499 | 57 | 1.13 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0230 | 28.80 | 0.2000 | 28.39 | 0.3240 | 0.1499 | 57 | 1.25 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0523 | 28.80 | 0.0000 | 28.39 | 0.3240 | 0.1499 | 57 | 1.25 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0521 | 28.88 | 0.0000 | 28.39 | 0.3240 | 0.1499 | 57 | 1.49 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0527 | 28.88 | 0.3050 | 28.39 | 0.3240 | 0.1499 | 57 | 1.50 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0117 | 28.90 | 0.0000 | 28.39 | 0.3240 | 0.1499 | 57 | 1.56 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0486 | 28.90 | 0.1000 | 28.39 | 0.3240 | 0.1499 | 57 | 1.56 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0095 | 28.92 | 0.4300 | 28.39 | 0.3240 | 0.1499 | 57 | 1.61 | 1% | 0 |
| 010.60 | Total Nitrogen, Combustion (28%) | 0360 | 29.34 | 0.2100 | 28.39 | 0.3240 | 0.1499 | 57 | 2.90 | 2% | 0 |
| 010.99 | Total Nitrogen, Other (28%) | 0394 | 27.80 | 0.2000 | 28.06 | 0.2852 | 0.0796 | 9 | -0.85 | 0% | 0 |
| 010.99 | Total Nitrogen, Other (28%) | 0526 | 27.80 | 0.0000 | 28.06 | 0.2852 | 0.0796 | 9 | -0.85 | 0% | 0 |
| 010.99 | Total Nitrogen, Other (28%) | 0493 | 27.85 | 0.1000 | 28.06 | 0.2852 | 0.0796 | 9 | -0.68 | 0% | 0 |
| 010.99 | Total Nitrogen, Other (28%) | 0519 | 27.88 | 0.0600 | 28.06 | 0.2852 | 0.0796 | 9 | -0.59 | 0% | 0 |
| 010.99 | Total Nitrogen, Other (28%) | 0513 | 28.07 | 0.1900 | 28.06 | 0.2852 | 0.0796 | 9 | 0.01 | 0% | 0 |
| 010.99 | Total Nitrogen, Other (28%) | 0420 | 28.13 | 0.0500 | 28.06 | 0.2852 | 0.0796 | 9 | 0.21 | 0% | 0 |
| 010.99 | Total Nitrogen, Other (28%) | 0220 | 28.19 | 0.0100 | 28.06 | 0.2852 | 0.0796 | 9 | 0.40 | 0% | 0 |
| 010.99 | Total Nitrogen, Other (28%) | 0508 | 28.36 | 0.0200 | 28.06 | 0.2852 | 0.0796 | 9 | 0.97 | 1% | 0 |
| 010.99 | Total Nitrogen, Other (28%) | 0524 | 28.58 | 0.0864 | 28.06 | 0.2852 | 0.0796 | 9 | 1.67 | 1% | 0 |
| 010.99 | Total Nitrogen, Other (28%) | 0522 | 28.29 | 0.6700 | 28.06 | 0.2852 | 0.0796 | 9 | 0.72 | 0% | 1 |
| 020.20 | Total Phosphorus as P2O5, Spectrophotometric ... (%) | 0292 | 0.0800 | 0.0000 | | | | 1 | | | 0 |
| 020.50 | Total Phosphorus as P2O5, ICP (%) | 0521 | 0.0002 | 0.0000 | | | | 2 | | | 0 |
| 020.50 | Total Phosphorus as P2O5, ICP (%) | 0524 | 0.0008 | 0.0001 | | | | 2 | | | 0 |
| 041.50 | Direct Available Phosphorus as P2O5, ICP (%) | 0325 | 0.1000 | 0.0000 | | | | 1 | | | 0 |
| 041.60 | Direct Available Phosphorus as P2O5, Citrate-... (%) | 0354 | 0.0000 | 0.0000 | | | | 0 | | | 4 |
| 050.50 | Soluble Potassium as K2O, ICP (Oxalate) (%) | 0292 | 0.5800 | 0.0000 | | | | 1 | | | 0 |
| 050.52 | Soluble Potassium as K2O, ICP (Citrate-EDTA) (%) | 0354 | 0.0000 | 0.0000 | | | | 0 | | | 4 |
| 050.99 | Soluble Potassium as K2O, Other (%) | 0524 | 0.0708 | 0.0108 | 0.4297 | 0.3046 | 0.0562 | 5 | -1.18 | 42% | 0 |
| 050.99 | Soluble Potassium as K2O, Other (%) | 0325 | 0.2000 | 0.2000 | 0.4297 | 0.3046 | 0.0562 | 5 | -0.75 | 27% | 0 |
| 050.99 | Soluble Potassium as K2O, Other (%) | 0389 | 0.4750 | 0.0100 | 0.4297 | 0.3046 | 0.0562 | 5 | 0.15 | 5% | 0 |
| 050.99 | Soluble Potassium as K2O, Other (%) | 0482 | 0.5600 | 0.0600 | 0.4297 | 0.3046 | 0.0562 | 5 | 0.43 | 15% | 0 |
| 050.99 | Soluble Potassium as K2O, Other (%) | 0521 | 0.8426 | 0.0000 | 0.4297 | 0.3046 | 0.0562 | 5 | 1.36 | 48% | 0 |
| 101.30 | Acid Soluble Calcium, ICP, test portion inorg... (%) | 0354 | 0.0420 | 0.0180 | | | | 1 | | | 0 |
| 101.32 | Acid Soluble Calcium, ICP, test portion 2006.... (%) | 0521 | 0.0000 | 0.0000 | | | | 0 | | | 4 |
| 121.30 | Acid Soluble Magnesium, ICP, test portion ino... (%) | 0354 | 0.0125 | 0.0050 | | | | 1 | | | 0 |
| 121.32 | Acid Soluble Magnesium, ICP, test portion 200... (%) | 0521 | 0.0001 | 0.0000 | | | | 1 | | | 0 |
| 148.99 | Total Sulfur, Other (%) | 0354 | 0.0085 | 0.0070 | | | | 1 | | | 0 |
| 149.04 | Sulfur - HNO3 soluble, ICP (%) | 0521 | 0.0001 | 0.0000 | | | | 2 | | | 0 |
| 149.04 | Sulfur - HNO3 soluble, ICP (%) | 0524 | 0.0013 | 0.0004 | | | | 2 | | | 0 |
| 151.99 | Acid Soluble Arsenic , Other (ppm) | 0519 | 0.0500 | 0.0200 | | | | 1 | | | 0 |
| 165.30 | Acid Soluble Boron , ICP, test portion in 982... (%) | 0354 | 0.0060 | 0.0040 | | | | 1 | | | 0 |
| 165.30 | Acid Soluble Boron , ICP, test portion in 982... (%) | 0521 | 0.0000 | 0.0000 | | | | 1 | | | 4 |
| 165.99 | Acid Soluble Boron , Other (%) | 0524 | 0.0008 | 0.0001 | | | | 1 | | | 0 |
| 181.30 | Acid Soluble Cadmium , ICP (ppm) | 0524 | 0.0140 | 0.0055 | | | | 2 | | | 0 |

| Method Code | Analyte Name and Method (Units) | Lab Code | Lab Data | | Method Values | | | # Tests | Magruder CS Z Score | Threshold %RSD | Flag |
|-------------|--|----------|----------|--------|---------------|--------|-------|---------|---------------------|----------------|------|
| | | | Value | Range | Rob Mean | Rob SD | R-bar | | | | |
| 181.30 | Acid Soluble Cadmium , ICP (ppm) | 0389 | 0.0550 | 0.0100 | | | | 2 | | 0 | |
| 181.99 | Acid Soluble Cadmium , Other (ppm) | 0519 | 0.0100 | 0.0000 | | | | 1 | | 0 | |
| 191.30 | Acid Soluble Chromium , ICP (ppm) | 0389 | 0.0800 | 0.0200 | | | | 1 | | 0 | |
| 191.99 | Acid Soluble Chromium , Other (ppm) | 0519 | 1.215 | 0.0700 | | | | 1 | | 0 | |
| 202.99 | Acid Soluble Cobalt , Other (ppm) | 0519 | 0.0100 | 0.0000 | | | | 1 | | 0 | |
| 221.30 | Acid Soluble Copper , ICP, test portion inorg... | 0354 | 0.0020 | 0.0000 | | | | 1 | | 0 | |
| 221.32 | Acid Soluble Copper , ICP, test portion 2006.... | 0521 | 0.0001 | 0.0000 | | | | 1 | | 0 | |
| 241.30 | Acid Soluble Iron, ICP, test portion inorgani... | 0354 | 0.0100 | 0.0040 | | | | 1 | | 0 | |
| 241.32 | Acid Soluble Iron, ICP, test portion 2006.03A... | 0521 | 0.0000 | 0.0000 | | | | 0 | | 4 | |
| 241.99 | Acid Soluble Iron, Other (%) | 0524 | 0.0006 | 0.0009 | | | | 1 | | 0 | |
| 251.30 | Acid Soluble Lead , ICP (ppm) | 0389 | 0.1450 | 0.0300 | | | | 1 | | 0 | |
| 251.99 | Acid Soluble Lead , Other (ppm) | 0519 | 0.1150 | 0.0300 | | | | 1 | | 0 | |
| 261.30 | Acid Soluble Manganese , ICP, test portion 97... | 0354 | 0.0000 | 0.0000 | | | | 0 | | 4 | |
| 261.34 | Acid Soluble Manganese , ICP, test portion 20... | 0521 | 0.0007 | 0.0000 | | | | 1 | | 0 | |
| 281.99 | Acid Soluble Mercury , Other (ppm) | 0519 | 0.0450 | 0.0100 | | | | 1 | | 0 | |
| 289.30 | Acid Soluble Molybdenum , ICP (ppm) | 0521 | 0.1418 | 0.0000 | | | | 2 | | 0 | |
| 289.30 | Acid Soluble Molybdenum , ICP (ppm) | 0524 | 0.1551 | 0.0328 | | | | 2 | | 0 | |
| 291.30 | Acid Soluble Nickel , ICP (ppm) | 0521 | 0.0370 | 0.0000 | | | | 1 | | 0 | |
| 291.99 | Acid Soluble Nickel , Other (ppm) | 0519 | 0.0800 | 0.0200 | | | | 1 | | 0 | |
| 301.30 | Acid Soluble Selenium , ICP (ppm) | 0524 | 1.623 | 0.0326 | | | | 1 | | 0 | |
| 301.99 | Acid Soluble Selenium , Other (ppm) | 0519 | 0.0100 | 0.0000 | | | | 1 | | 0 | |
| 311.32 | Sodium, ICP, 2006.03 test portion (%) | 0521 | 0.0468 | 0.0000 | | | | 1 | | 0 | |
| 311.99 | Sodium, Other (%) | 0482 | 0.0350 | 0.0100 | | | | 2 | | 0 | |
| 311.99 | Sodium, Other (%) | 0354 | 0.1170 | 0.0400 | | | | 2 | | 0 | |
| 321.30 | Acid Soluble Zinc , ICP, test portion inorgan... | 0354 | 0.0020 | 0.0000 | | | | 1 | | 0 | |
| 321.30 | Acid Soluble Zinc , ICP, test portion inorgan... | 0292 | 0.0000 | 0.0000 | | | | 1 | | 4 | |
| 321.32 | Acid Soluble Zinc , ICP, test portion 2006.03... | 0521 | 0.0000 | 0.0000 | | | | 0 | | 4 | |

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier and a 4 flag indicates rejected due to 0 value submitted. Robust statistics not used if < 6 labs used in calculations, in this case the Z Scores are included for information only (Grey). An offset lab value with an astrix indicates that the value is lower than the Analyte value less the IA. Method or Analyte codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for the purpose of this Proficiency Testing program.