

# magruder fertilizer

## check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Sample # 210811

11-52-0 MAP

### Statistical Summary

# Methods: 116

# Labs Reporting: 92

Issue Date : 09/30/2021

| Method Code | Analyte & Method<br>Sample # 210811  | # Tests<br>Submitted | # Tests in Robust<br>Calculations | Raw Mean | Raw SD | Assigned Value<br>Robust Mean | IA at Method<br>Value | Robust sd | Robust<br>Uncertainty (U) | Robust % RSD | Method IA Ratio | Average Range<br>(R-bar) | Horwitz %RSD |
|-------------|--|----------------------|-----------------------------------|----------|--------|-------------------------------|-----------------------|-----------|---------------------------|--------------|-----------------|--------------------------|--------------|
| 001.10      | Ammoniacal N, Magnesium Oxide Method (%)                                   | 5                    | 5                                 | 10.44    | 0.8479 | 10.44                         |                       | 0.8479    | 0.4740                    | 8.12%        |                 | 0.4980                   | 2.81%        |
| 001.99      | Ammoniacal N, Other (%)  | 29                   | 27                                | 10.67    | 2.074  | 11.03                         |                       | 0.2482    | 0.0597                    | 2.25%        |                 | 0.0842                   | 2.79%        |
| 002.99      | Nitrate N, Other (%)   | 1                    |                                   | 0.0050   |        |                               |                       |           |                           |              |                 |                          |              |
| 005.00      | Urea N, Urease (as N) (%)  | 1                    |                                   | 0.0500   |        |                               |                       |           |                           |              |                 |                          |              |
| 010.11      | Total N, Modified Comprehensive (11%)                                      | 1                    |                                   | 11.16    |        |                               |                       |           |                           |              |                 |                          |              |
| 010.12      | Total N, Salicylic (11%)   | 2                    | 2                                 | 11.58    | 0.5268 |                               |                       |           |                           |              |                 |                          |              |
| 010.60      | Total N, Combustion (11%)  | 57                   | 54                                | 11.26    | 0.9016 | 11.22                         | 0.5982                | 0.2380    | 0.0405                    | 2.12%        | 0.93            | 0.1174                   | 2.78%        |
| 010.99      | Total N, Other (11%)   | 12                   | 11                                | 11.30    | 0.5207 | 11.12                         | 0.5968                | 0.2277    | 0.0858                    | 2.05%        | 0.89            | 0.1096                   | 2.78%        |
| 020.10      | Total P2O5, Gravimetric Quinolinium MolybdoP (%)                           | 5                    | 5                                 | 51.47    | 0.9595 | 51.47                         |                       | 0.9595    | 0.5364                    | 1.86%        |                 | 0.3360                   | 1.39%        |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%)                          | 17                   | 17                                | 51.95    | 0.6812 | 52.01                         |                       | 0.5551    | 0.1683                    | 1.07%        |                 | 0.3293                   | 1.39%        |
| 020.40      | Total P2O5, Automated (%)  | 1                    |                                   | 50.01    |        |                               |                       |           |                           |              |                 |                          |              |
| 020.50      | Total P2O5, ICP (%)  | 18                   | 18                                | 51.11    | 3.117  | 51.79                         |                       | 1.490     | 0.4389                    | 2.88%        |                 | 0.4022                   | 1.39%        |
| 020.99      | Total P2O5, Other (%)  | 5                    | 5                                 | 50.11    | 3.435  | 50.11                         |                       | 3.435     | 1.920                     | 6.85%        |                 | 1.328                    | 1.41%        |
| 030.10      | Citrate Insoluble P2O5, Gravimetric Quinolinium MolybdoP (%)               | 1                    |                                   | 51.57    |        |                               |                       |           |                           |              |                 |                          |              |
| 030.20      | Citrate Insoluble P2O5, Spectrophotometric MolybdovanadoP (%)              | 1                    |                                   | 0.0100   |        |                               |                       |           |                           |              |                 |                          |              |
| 030.99      | Citrate Insoluble P2O5, Other (%)  | 1                    |                                   | 52.27    |        |                               |                       |           |                           |              |                 |                          |              |
| 040.20      | Indirect Available P2O5, Spectrophotometric (52%)                          | 1                    |                                   | 52.45    |        |                               |                       |           |                           |              |                 |                          |              |
| 041.10      | Direct Available P2O5, Gravimetric Quinolinium (52%)                       | 5                    | 5                                 | 51.81    | 0.4839 | 51.81                         | 1.0971                | 0.4839    | 0.2705                    | 0.93%        | 1.03            | 0.3575                   | 1.39%        |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (52%) | 7                    | 7                                 | 52.13    | 0.3373 | 52.13                         | 1.1019                | 0.3824    | 0.1807                    | 0.73%        | 0.81            | 0.1614                   | 1.39%        |
| 041.20      | Direct Available P2O5, Spectrophotometric (52%)                            | 3                    | 3                                 | 51.37    | 0.6736 | 51.37                         | 1.0906                | 0.6736    | 0.4861                    | 1.31%        | 1.44            | 1.527                    | 1.40%        |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%)         | 12                   | 11                                | 50.66    | 3.775  | 51.38                         | 1.0907                | 1.515     | 0.5711                    | 2.95%        | 3.24            | 0.3643                   | 1.40%        |
| 041.40      | Direct Available P2O5, Automated, Citrate-EDTA Ext. (52%)                  | 3                    | 3                                 | 52.83    | 0.9898 | 52.83                         | 1.1124                | 0.9898    | 0.7143                    | 1.87%        | 2.07            | 1.203                    | 1.38%        |
| 041.50      | Direct Available P2O5, ICP (52%)   | 4                    | 4                                 | 51.36    | 1.182  | 51.36                         | 1.0904                | 1.182     | 0.7388                    | 2.30%        | 2.53            | 0.7711                   | 1.40%        |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (52%)                        | 7                    | 7                                 | 52.03    | 1.267  | 51.96                         | 1.0995                | 1.283     | 0.6060                    | 2.47%        | 2.72            | 0.4663                   | 1.39%        |
| 041.99      | Direct Available P2O5, Other (52%)   | 13                   | 13                                | 51.97    | 0.2323 | 51.96                         | 1.0994                | 0.2264    | 0.0785                    | 0.44%        | 0.48            | 0.1115                   | 1.39%        |
| 048.10      | Water Soluble P2O5, Gravimetric Quinolinium (%)                            | 1                    |                                   | 45.66    |        |                               |                       |           |                           |              |                 |                          |              |
| 048.20      | Water Soluble P2O5, Spectrophotometric (%)                                 | 1                    |                                   | 38.26    |        |                               |                       |           |                           |              |                 |                          |              |
| 048.50      | Water Soluble P2O5, ICP (%)  | 1                    |                                   | 46.14    |        |                               |                       |           |                           |              |                 |                          |              |
| 048.99      | Water Soluble P2O5, Other (%)  | 3                    | 3                                 | 46.09    | 5.339  | 46.09                         |                       | 5.339     | 3.853                     | 11.58%       |                 | 1.420                    | 1.47%        |
| 050.32      | Soluble K2O, AA (Citrate-EDTA) (%)   | 1                    |                                   | 0.0000   |        |                               |                       |           |                           |              |                 |                          |              |
| 050.50      | Soluble K2O, ICP (Oxalate) (%)   | 1                    |                                   | 0.2680   |        |                               |                       |           |                           |              |                 |                          |              |
| 050.51      | Soluble K2O, ICP (Citrate) (%)   | 1                    |                                   | 0.2650   |        |                               |                       |           |                           |              |                 |                          |              |
| 050.52      | Soluble K2O, ICP (Citrate-EDTA) (%)  | 3                    | 3                                 | 0.2923   | 0.0351 | 0.2923                        | 0.4100                | 0.0351    | 0.0253                    | 12.01%       | 0.20            | 0.0107                   | 4.81%        |

| Method Code | Analyte & Method<br>Sample # 210811                                      | # Tests<br>Submitted | # Tests in Robust<br>Calculations | Raw Mean | Raw SD | Assigned Value<br>Robust Mean | IA at Method<br>Value | Robust sd | Robust<br>Uncertainty (U) | Robust % RSD | Method IA Ratio | Average Range<br>(R-bar) | Horwitz %RSD |
|-------------|--|----------------------|-----------------------------------|----------|--------|-------------------------------|-----------------------|-----------|---------------------------|--------------|-----------------|--------------------------|--------------|
| 050.99      | Soluble K2O, Other (%)   | 7                    | 5                                 | 0.3393   | 0.3548 | 0.4551                        | 0.4100                | 0.3592    | 0.2008                    | 78.92%       | 2.04            | 0.0450                   | 4.50%        |
| 060.00      | Water (Free), Vacuum Oven (%)  | 1                    |                                   | 1.165    |        |                               |                       |           |                           |              |                 |                          |              |
| 101.00      | Acid Soluble Ca, AA, inorganic 965.09 (%)                                | 1                    |                                   | 0.0300   |        |                               |                       |           |                           |              |                 |                          |              |
| 101.30      | Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)                  | 3                    | 3                                 | 0.2448   | 0.0088 | 0.2448                        | 0.2122                | 0.0088    | 0.0064                    | 3.60%        | 0.10            | 0.0037                   | 4.94%        |
| 101.32      | Acid Soluble Ca, ICP, test portion 2006.03A-C (%)                        | 1                    |                                   | 1.248    |        |                               |                       |           |                           |              |                 |                          |              |
| 101.33      | Acid Soluble Ca, ICP, 2017.02 (%)  | 3                    | 3                                 | 0.2520   | 0.0677 | 0.2520                        | 0.2126                | 0.0677    | 0.0489                    | 26.87%       | 0.74            | 0.0237                   | 4.92%        |
| 101.99      | Acid Soluble Ca, Other (%)   | 1                    |                                   | 0.2000   |        |                               |                       |           |                           |              |                 |                          |              |
| 121.00      | Acid Soluble Mg, AA, inorganic 965.09 (%)                                | 1                    |                                   | 1.760    |        |                               |                       |           |                           |              |                 |                          |              |
| 121.30      | Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)                  | 3                    | 3                                 | 1.792    | 0.1200 | 1.792                         | 0.2896                | 0.1200    | 0.0866                    | 6.70%        | 0.97            | 0.0367                   | 3.66%        |
| 121.32      | Acid Soluble Mg, ICP, test portion 2006.03A-C (%)                        | 2                    | 2                                 | 1.702    | 0.1035 |                               |                       |           |                           |              |                 |                          |              |
| 121.33      | Acid Soluble Mg, ICP, 2017.02 (%)  | 3                    | 3                                 | 1.508    | 0.5699 | 1.508                         | 0.2754                | 0.5699    | 0.4113                    | 37.81%       | 4.82            | 0.0381                   | 3.76%        |
| 121.99      | Acid Soluble Mg, Other (%)   | 3                    | 3                                 | 1.384    | 0.5865 | 1.384                         | 0.2692                | 0.5865    | 0.4233                    | 42.37%       | 5.08            | 0.0915                   | 3.81%        |
| 143.99      | Elemental S, Other (%)   | 1                    |                                   | 1.705    |        |                               |                       |           |                           |              |                 |                          |              |
| 145.99      | Sulfate S, HCl soluble, Other (%)  | 1                    |                                   | 1.680    |        |                               |                       |           |                           |              |                 |                          |              |
| 146.00      | Total S in Liquid, Gravimetric - sulfate, sulfite, thiosulfate, a... (%) | 1                    |                                   | 1.820    |        |                               |                       |           |                           |              |                 |                          |              |
| 148.07      | Total S, ICP, test portion as in 2017.02 (%)                             | 4                    | 4                                 | 1.761    | 0.3533 | 1.761                         | 0.2881                | 0.3533    | 0.2208                    | 20.06%       | 2.86            | 0.0184                   | 3.67%        |
| 148.99      | Total S, Other (%)   | 1                    |                                   | 1.675    |        |                               |                       |           |                           |              |                 |                          |              |
| 149.04      | S - HNO3 soluble, ICP (%)  | 2                    | 2                                 | 1.702    | 0.0728 |                               |                       |           |                           |              |                 |                          |              |
| 151.00      | Acid Soluble As, AA, test portion 2006.03 modified w/dual acid (ppm)     | 1                    |                                   | 0.7100   |        |                               |                       |           |                           |              |                 |                          |              |
| 151.30      | Acid Soluble As, ICP (ppm)   | 4                    | 3                                 | 2.020    | 1.389  | 2.693                         |                       | 0.4201    | 0.3032                    | 15.60%       |                 | 0.1296                   | 13.78%       |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)                                      | 5                    | 5                                 | 4.747    | 4.857  | 4.747                         |                       | 4.857     | 2.715                     | 102.32%      |                 | 0.4053                   | 12.65%       |
| 151.34      | Acid Soluble As, ICP, EPA 3050B/6010C (ppm)                              | 2                    | 1                                 | 6.385    | 8.605  |                               |                       |           |                           |              |                 |                          |              |
| 151.99      | Acid Soluble As, Other (ppm)   | 2                    | 2                                 | 2.625    | 0.5303 |                               |                       |           |                           |              |                 |                          |              |
| 165.00      | Acid Soluble B, Spectrophotometric (%)                                   | 1                    |                                   | 0.0145   |        |                               |                       |           |                           |              |                 |                          |              |
| 165.30      | Acid Soluble B, ICP, test portion in 982.01 (%)                          | 2                    | 1                                 | 0.0100   | 0.0000 |                               |                       |           |                           |              |                 |                          |              |
| 165.99      | Acid Soluble B, Other (%)  | 6                    | 6                                 | 0.0106   | 0.0028 | 0.0109                        | 0.0046                | 0.0026    | 0.0013                    | 23.73%       | 1.30            | 0.0004                   | 7.90%        |
| 181.00      | Acid Soluble Cd, AA, test portion 2006.03 modified w/dual acid (ppm)     | 1                    |                                   | 40.60    |        |                               |                       |           |                           |              |                 |                          |              |
| 181.30      | Acid Soluble Cd, ICP (ppm)   | 10                   | 10                                | 55.55    | 4.745  | 55.55                         |                       | 5.380     | 2.127                     | 9.68%        |                 | 1.668                    | 8.74%        |
| 181.33      | Acid Soluble Cd, ICP, 2017.02 (ppm)                                      | 5                    | 5                                 | 75.70    | 16.64  | 75.70                         |                       | 16.64     | 9.303                     | 21.98%       |                 | 1.428                    | 8.34%        |
| 181.34      | Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)                              | 2                    | 2                                 | 43.75    | 29.20  |                               |                       |           |                           |              |                 |                          |              |
| 181.99      | Acid Soluble Cd, Other (ppm)   | 2                    | 2                                 | 64.75    | 0.4950 |                               |                       |           |                           |              |                 |                          |              |
| 190.00      | Water Soluble Cl, Titrimetric (%)  | 1                    |                                   | 0.1000   |        |                               |                       |           |                           |              |                 |                          |              |
| 191.30      | Acid Soluble Cr, ICP (ppm)   | 8                    | 8                                 | 270.6    | 24.51  | 270.6                         |                       | 27.79     | 12.28                     | 10.27%       |                 | 3.117                    | 6.89%        |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                                      | 5                    | 5                                 | 303.8    | 19.95  | 303.8                         |                       | 19.95     | 11.15                     | 6.57%        |                 | 8.586                    | 6.77%        |
| 191.34      | Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)                              | 2                    | 2                                 | 242.2    | 80.35  |                               |                       |           |                           |              |                 |                          |              |
| 191.99      | Acid Soluble Cr, Other (ppm)   | 2                    | 2                                 | 244.2    | 58.35  |                               |                       |           |                           |              |                 |                          |              |
| 202.30      | Acid Soluble Co, ICP (ppm)   | 3                    | 3                                 | 3.083    | 0.8175 | 3.083                         | 1.9250                | 0.8175    | 0.5900                    | 26.51%       | 0.99            | 0.3547                   | 13.50%       |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                                      | 4                    | 3                                 | 2.766    | 1.500  | 2.021                         | 1.6064                | 0.2202    | 0.1589                    | 10.89%       | 0.32            | 0.0878                   | 14.39%       |
| 202.34      | Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)                              | 3                    | 3                                 | 8.917    | 11.38  | 8.917                         | 3.6751                | 11.38     | 8.209                     | 127.57%      | 7.21            | 1.931                    | 11.51%       |
| 202.99      | Acid Soluble Co, Other (ppm)   | 3                    | 3                                 | 27.96    | 45.50  | 27.96                         | 9.3890                | 45.50     | 32.84                     | 162.71%      | 11.29           | 12.08                    | 9.69%        |
| 221.00      | Acid Soluble Cu, AA, inorganic 965.09 (%)                                | 1                    |                                   | 0.0050   |        |                               |                       |           |                           |              |                 |                          |              |
| 221.30      | Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)                  | 3                    | 1                                 | 0.0047   | 0.0049 | 27.96                         | 1.0000                | 45.50     | 56.87                     | 162.71%      | 106.01          | 0.0009                   | 1.89%        |
| 221.32      | Acid Soluble Cu, ICP, test portion 2006.03A-C (%)                        | 1                    |                                   | 0.0002   |        |                               |                       |           |                           |              |                 |                          |              |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)  | 5                    | 2                                 | 0.0007   | 0.0010 | 0.0004                        | 0.0050                | 0.0002    | 0.0002                    | 41.59%       | 0.08            | 0.0002                   | 12.87%       |

| Method Code | Analyte & Method<br>Sample # 210811                                  | # Tests Submitted | # Tests in Robust Calculations | Raw Mean | Raw SD | Assigned Value<br>Robust Mean | IA at Method Value | Robust sd | Robust Uncertainty (U) | Robust % RSD | Method IA Ratio | Average Range (R-bar) | Horwitz %RSD |
|-------------|--|-------------------|--------------------------------|----------|--------|-------------------------------|--------------------|-----------|------------------------|--------------|-----------------|-----------------------|--------------|
| 221.99      | Acid Soluble Cu, Other (%)   | 4                 | 2                              | 0.0010   | 0.0017 | 0.0019                        | 0.0052             | 0.0023    | 0.0021                 | 126.13%      | 1.05            | 0.0022                | 10.31%       |
| 241.00      | Acid Soluble Fe, AA, inorganic 965.09 (%)                            | 1                 |                                | 0.6975   |        |                               |                    |           |                        |              |                 |                       |              |
| 241.30      | Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)              | 3                 | 3                              | 1.630    | 0.0229 | 1.630                         | 0.1680             | 0.0229    | 0.0165                 | 1.41%        | 0.32            | 0.0600                | 3.72%        |
| 241.32      | Acid Soluble Fe, ICP, test portion 2006.03A-C (%)                    | 2                 | 2                              | 1.489    | 0.0484 |                               |                    |           |                        |              |                 |                       |              |
| 241.33      | Acid Soluble Fe, ICP, 2017.02 (%)                                    | 4                 | 4                              | 1.282    | 0.5845 | 1.282                         | 0.1332             | 0.5845    | 0.3653                 | 45.61%       | 10.23           | 0.0327                | 3.85%        |
| 241.99      | Acid Soluble Fe, Other (%)   | 3                 | 3                              | 1.154    | 0.6592 | 1.154                         | 0.1204             | 0.6592    | 0.4757                 | 57.14%       | 12.76           | 0.0342                | 3.91%        |
| 251.00      | Acid Soluble Pb, AA, test portion 2006.03 modified w/dual acid (ppm) | 1                 |                                | 2.000    |        |                               |                    |           |                        |              |                 |                       |              |
| 251.30      | Acid Soluble Pb, ICP (ppm)   | 6                 | 5                              | 2.012    | 3.801  | 2.414                         |                    | 4.104     | 2.294                  | 169.99%      |                 | 0.0563                | 14.01%       |
| 251.33      | Acid Soluble Pb, ICP, 2017.02 (ppm)                                  | 4                 | 2                              | 1.138    | 1.359  | 0.7766                        |                    | 0.7190    | 0.6355                 | 92.57%       |                 | 0.0435                | 16.62%       |
| 251.34      | Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)                          | 2                 | 1                              | 10.95    | 14.78  |                               |                    |           |                        |              |                 |                       |              |
| 251.99      | Acid Soluble Pb, Other (ppm)   | 2                 | 2                              | 0.4025   | 0.2793 |                               |                    |           |                        |              |                 |                       |              |
| 261.00      | Acid Soluble Mn, AA, Mn2+ only (%)                                   | 1                 |                                | 0.0160   |        |                               |                    |           |                        |              |                 |                       |              |
| 261.30      | Acid Soluble Mn, ICP, test portion 972.02a (%)                       | 3                 | 3                              | 0.0208   | 0.0010 | 0.0208                        | 0.0071             | 0.0010    | 0.0008                 | 5.04%        | 0.35            | 0.0002                | 7.16%        |
| 261.34      | Acid Soluble Mn, ICP, test portion 2006.03A-C (%)                    | 1                 |                                | 0.0215   |        |                               |                    |           |                        |              |                 |                       |              |
| 261.35      | Acid Soluble Mn, ICP, 2017.02 (%)                                    | 4                 | 3                              | 0.0154   | 0.0103 | 0.0205                        | 0.0071             | 0.0014    | 0.0010                 | 6.83%        | 0.46            | 0.0009                | 7.18%        |
| 261.99      | Acid Soluble Mn, Other (%)   | 3                 | 3                              | 0.0136   | 0.0095 | 0.0136                        | 0.0064             | 0.0095    | 0.0069                 | 69.67%       | 3.48            | 0.0013                | 7.63%        |
| 281.00      | Acid Soluble Hg, AA (ppm)  | 1                 |                                | 0.0500   |        |                               |                    |           |                        |              |                 |                       |              |
| 281.30      | Acid Soluble Hg, ICP (ppm)   | 3                 | 0                              | 0.0034   | 0.0057 | 0.0136                        |                    | 0.0095    |                        | 69.67%       |                 | 0.0000                | 22.00%       |
| 281.99      | Acid Soluble Hg, Other (ppm)   | 5                 | 3                              | 0.0046   | 0.0041 | 0.0020                        |                    | 0.0026    | 0.0019                 | 128.28%      |                 | 0.0007                | 22.00%       |
| 289.30      | Acid Soluble Mo, ICP (ppm)   | 5                 | 5                              | 9.642    | 3.764  | 9.642                         | 3.8925             | 3.764     | 2.104                  | 39.03%       | 2.25            | 0.3852                | 11.37%       |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)                                  | 5                 | 5                              | 17.02    | 4.333  | 17.02                         | 6.1056             | 4.333     | 2.422                  | 25.46%       | 1.65            | 0.6086                | 10.44%       |
| 289.34      | Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)                          | 3                 | 3                              | 18.37    | 4.899  | 18.37                         | 6.5100             | 4.899     | 3.536                  | 26.68%       | 1.75            | 8.667                 | 10.32%       |
| 289.99      | Acid Soluble Mo, Other (ppm)   | 1                 |                                | 13.75    |        |                               |                    |           |                        |              |                 |                       |              |
| 291.30      | Acid Soluble Ni, ICP (ppm)   | 9                 | 9                              | 41.95    | 4.440  | 41.95                         |                    | 5.035     | 2.098                  | 12.00%       |                 | 1.993                 | 9.12%        |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)                                  | 5                 | 5                              | 48.39    | 6.243  | 48.39                         |                    | 6.243     | 3.490                  | 12.90%       |                 | 1.983                 | 8.92%        |
| 291.34      | Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)                          | 3                 | 3                              | 40.00    | 16.20  | 40.00                         |                    | 16.20     | 11.69                  | 40.49%       |                 | 4.991                 | 9.18%        |
| 291.99      | Acid Soluble Ni, Other (ppm)   | 3                 | 3                              | 48.94    | 14.54  | 48.94                         |                    | 14.54     | 10.50                  | 29.72%       |                 | 6.330                 | 8.91%        |
| 301.30      | Acid Soluble Se, ICP (ppm)   | 2                 | 2                              | 2.113    | 1.467  |                               |                    |           |                        |              |                 |                       |              |
| 301.33      | Acid Soluble Se, ICP, 2017.02 (ppm)                                  | 3                 | 3                              | 3.944    | 2.162  | 3.944                         |                    | 2.162     | 1.560                  | 54.81%       |                 | 0.0176                | 13.01%       |
| 301.34      | Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)                          | 2                 | 1                              | 7.443    | 9.254  |                               |                    |           |                        |              |                 |                       |              |
| 301.99      | Acid Soluble Se, Other (ppm)   | 3                 | 1                              | 1.097    | 1.148  | 3.944                         |                    | 2.162     | 2.702                  | 54.81%       |                 | 0.5200                | 13.01%       |
| 311.00      | Sodium, AA (%)   | 1                 |                                | 0.2165   |        |                               |                    |           |                        |              |                 |                       |              |
| 311.33      | Sodium, ICP, test portion as in 2017.02 (%)                          | 3                 | 3                              | 0.1962   | 0.0096 | 0.1962                        | 0.0246             | 0.0096    | 0.0070                 | 4.91%        | 0.91            | 0.0030                | 5.11%        |
| 311.99      | Sodium, Other (%)  | 1                 |                                | 0.2000   |        |                               |                    |           |                        |              |                 |                       |              |
| 321.00      | Acid Soluble Zn, AA, inorganic 965.09 (%)                            | 3                 | 3                              | 244.8    | 423.9  | 244.8                         | 1.0000             | 423.9     | 305.9                  | 173.14%      | 987.60          | 10.70                 | 0.64%        |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)              | 6                 | 6                              | 0.0945   | 0.0140 | 0.0945                        | 0.0145             | 0.0159    | 0.0081                 | 16.77%       | 2.56            | 0.0024                | 5.70%        |
| 321.32      | Acid Soluble Zn, ICP, test portion 2006.03A-C (%)                    | 2                 | 2                              | 0.1305   | 0.0538 |                               |                    |           |                        |              |                 |                       |              |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                                    | 7                 | 6                              | 0.0962   | 0.0373 | 0.0880                        | 0.0138             | 0.0189    | 0.0097                 | 21.51%       | 3.20            | 0.0047                | 5.77%        |
| 321.99      | Acid Soluble Zn, Other (%)   | 8                 | 8                              | 0.0806   | 0.0187 | 0.0843                        | 0.0134             | 0.0109    | 0.0048                 | 12.95%       | 1.89            | 0.0041                | 5.80%        |

The Method IA Ratio = 2.33 \* Robust SD / IA at the Method Assigned Value. IA ratios of 1 and less indicate participant data dispersion is as good or less than the IA. Red indicates the IA ratio is significantly greater than 1, Orange indicates marginally greater than 1, Green indicates IA ratio is not significantly greater than 1 and Grey indicates < 6 labs reporting. The Horwitz %RSD is calculated using the Thompson Modification, Analyst,2000,125,385-386.

|                                     |  |
|-------------------------------------|--|
| Horwitz %RSD                        |  |
| Average Range (R-bar)               |  |
| Method IA Ratio                     |  |
| Robust % RSD                        |  |
| Robust Uncertainty (U)              |  |
| Robust sd                           |  |
| IA at Method Value                  |  |
| Assigned Value<br>Robust Mean       |  |
| Raw SD                              |  |
| Raw Mean                            |  |
| # Tests in Robust Calculations      |  |
| # Tests Submitted                   |  |
| Analyte & Method<br>Sample # 210811 |  |
| Method Code                         |  |

# magruder fertilizer

## check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Sample # 210811

### Method Precision Report

11-52-0 MAP

Issue Date : 09/30/2021

| 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 %rstd | Reproducibility %RSD | sR/sr |
|-------------|---|-------------------|---------------------------------|--------|--------|-----------------|----------------|--------------------|-------------------|-------------------|----------------------|-------|
| 001.10      | Ammoniacal N, Magnesium Oxide Method (%)                                | 5                 | 5                               | 10.44  | 0.8479 | 0.7916          | 0.4299         | 0.9008             | 7.58%             | 4.12%             | 8.63%                | 2.095 |
| 001.99      | Ammoniacal N, Other (%)   | 29                | 25                              | 11.07  | 0.3149 | 0.3118          | 0.0623         | 0.3179             | 2.82%             | 0.56%             | 2.87%                | 5.106 |
| 010.60      | Total N, Combustion (11%)   | 57                | 52                              | 11.17  | 0.3043 | 0.2968          | 0.0949         | 0.3116             | 2.66%             | 0.85%             | 2.79%                | 3.282 |
| 010.99      | Total N, Other (11%)  | 12                | 11                              | 11.18  | 0.3367 | 0.3291          | 0.1005         | 0.3441             | 2.94%             | 0.90%             | 3.08%                | 3.422 |
| 020.10      | Total P2O5, Gravimetric Quinolinium MolybdoP (%)                        | 5                 | 5                               | 51.47  | 0.9595 | 0.9384          | 0.2830         | 0.9802             | 1.82%             | 0.55%             | 1.90%                | 3.463 |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%)                       | 17                | 15                              | 52.05  | 0.4858 | 0.4418          | 0.2855         | 0.5260             | 0.85%             | 0.55%             | 1.01%                | 1.842 |
| 020.50      | Total P2O5, ICP (%)   | 18                | 17                              | 51.64  | 2.238  | 2.221           | 0.3855         | 2.254              | 4.30%             | 0.75%             | 4.37%                | 5.847 |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext. (52%) | 7                 | 7                               | 52.13  | 0.3373 | 0.3262          | 0.1213         | 0.3480             | 0.63%             | 0.23%             | 0.67%                | 2.869 |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%)      | 12                | 9                               | 51.60  | 1.287  | 1.278           | 0.2237         | 1.297              | 2.48%             | 0.43%             | 2.51%                | 5.799 |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (52%)                     | 7                 | 7                               | 52.03  | 1.267  | 1.237           | 0.3892         | 1.297              | 2.38%             | 0.75%             | 2.49%                | 3.332 |
| 041.99      | Direct Available P2O5, Other (52%)                                      | 13                | 13                              | 51.97  | 0.2323 | 0.2233          | 0.0907         | 0.2410             | 0.43%             | 0.17%             | 0.46%                | 2.656 |
| 165.99      | Acid Soluble B, Other (%)   | 6                 | 5                               | 0.0117 | 0.0014 | 0.0014          | 0.0002         | 0.0014             | 12.01%            | 1.82%             | 12.15%               | 6.671 |
| 181.30      | Acid Soluble Cd, ICP (ppm)  | 10                | 10                              | 55.55  | 4.745  | 4.630           | 1.465          | 4.856              | 8.33%             | 2.64%             | 8.74%                | 3.315 |
| 191.30      | Acid Soluble Cr, ICP (ppm)  | 8                 | 8                               | 270.6  | 24.51  | 24.41           | 3.072          | 24.60              | 9.02%             | 1.14%             | 9.09%                | 8.010 |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                                     | 5                 | 5                               | 303.8  | 19.95  | 19.07           | 8.308          | 20.80              | 6.28%             | 2.73%             | 6.85%                | 2.503 |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)                                     | 5                 | 5                               | 17.02  | 4.333  | 4.317           | 0.5307         | 4.349              | 25.37%            | 3.12%             | 25.56%               | 8.196 |
| 291.30      | Acid Soluble Ni, ICP (ppm)  | 9                 | 9                               | 41.95  | 4.440  | 4.178           | 2.129          | 4.689              | 9.96%             | 5.07%             | 11.18%               | 2.203 |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)                                     | 5                 | 5                               | 48.39  | 6.243  | 6.135           | 1.638          | 6.350              | 12.68%            | 3.39%             | 13.12%               | 3.876 |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)                 | 6                 | 5                               | 0.0932 | 0.0152 | 0.0152          | 0.0012         | 0.0153             | 16.31%            | 1.33%             | 16.36%               | 12.33 |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                                       | 7                 | 6                               | 0.0848 | 0.0238 | 0.0236          | 0.0043         | 0.0240             | 27.83%            | 5.12%             | 28.30%               | 5.531 |
| 321.99      | Acid Soluble Zn, Other (%)  | 8                 | 7                               | 0.0867 | 0.0076 | 0.0070          | 0.0042         | 0.0081             | 8.02%             | 4.84%             | 9.36%                | 1.936 |

Notes: Precision data calculated when 5 or more Tests included.

# magruder fertilizer

## check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Sample # 210811

11-52-0 MAP

Lab Values

# Methods: 116

# Labs Reporting: 92

Issue Date : 09/30/2021

| Method Code | Analyte Name and Method (Units)          | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |  |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 001.10      | Ammoniacal N, Magnesium Oxide Method (%) | 0136     | 9.195    | 0.7300 | 10.44         | 0.8479 | 0.4980 | 5       | -1.47               |                  | 0    |
| 001.10      | Ammoniacal N, Magnesium Oxide Method (%) | 0117     | 10.05    | 0.8500 | 10.44         | 0.8479 | 0.4980 | 5       | -0.47               |                  | 0    |
| 001.10      | Ammoniacal N, Magnesium Oxide Method (%) | 0451     | 10.57    | 0.1200 | 10.44         | 0.8479 | 0.4980 | 5       | 0.15                |                  | 0    |
| 001.10      | Ammoniacal N, Magnesium Oxide Method (%) | 0444     | 11.15    | 0.0300 | 10.44         | 0.8479 | 0.4980 | 5       | 0.83                |                  | 0    |
| 001.10      | Ammoniacal N, Magnesium Oxide Method (%) | 0563     | 11.25    | 0.7600 | 10.44         | 0.8479 | 0.4980 | 5       | 0.95                |                  | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0533     | 10.52    | 0.0300 | 11.03         | 0.2482 | 0.0842 | 27      | -2.07               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0513     | 10.56    | 0.0400 | 11.03         | 0.2482 | 0.0842 | 27      | -1.89               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0546     | 10.70    | 0.3100 | 11.03         | 0.2482 | 0.0842 | 27      | -1.34               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0551     | 10.70    | 0.2000 | 11.03         | 0.2482 | 0.0842 | 27      | -1.32               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0567     | 10.81    | 0.0200 | 11.03         | 0.2482 | 0.0842 | 27      | -0.88               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0559     | 10.86    | 0.0100 | 11.03         | 0.2482 | 0.0842 | 27      | -0.70               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0562     | 10.90    | 0.1000 | 11.03         | 0.2482 | 0.0842 | 27      | -0.52               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0574     | 10.90    | 0.1000 | 11.03         | 0.2482 | 0.0842 | 27      | -0.52               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0564     | 10.94    | 0.0100 | 11.03         | 0.2482 | 0.0842 | 27      | -0.38               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0549     | 11.00    | 0.0300 | 11.03         | 0.2482 | 0.0842 | 27      | -0.14               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0368     | 11.00    | 0.0920 | 11.03         | 0.2482 | 0.0842 | 27      | -0.13               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0531     | 11.00    | 0.0200 | 11.03         | 0.2482 | 0.0842 | 27      | -0.11               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0548     | 11.00    | 0.3000 | 11.03         | 0.2482 | 0.0842 | 27      | -0.11               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0536     | 11.04    | 0.0200 | 11.03         | 0.2482 | 0.0842 | 27      | 0.05                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0255     | 11.05    | 0.0700 | 11.03         | 0.2482 | 0.0842 | 27      | 0.07                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0394     | 11.05    | 0.2310 | 11.03         | 0.2482 | 0.0842 | 27      | 0.08                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0535     | 11.05    | 0.1000 | 11.03         | 0.2482 | 0.0842 | 27      | 0.09                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0539     | 11.08    | 0.1000 | 11.03         | 0.2482 | 0.0842 | 27      | 0.21                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0200     | 11.12    | 0.0100 | 11.03         | 0.2482 | 0.0842 | 27      | 0.35                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0220     | 11.15    | 0.0000 | 11.03         | 0.2482 | 0.0842 | 27      | 0.49                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0569     | 11.16    | 0.0700 | 11.03         | 0.2482 | 0.0842 | 27      | 0.51                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0532     | 11.22    | 0.0800 | 11.03         | 0.2482 | 0.0842 | 27      | 0.77                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0493     | 11.25    | 0.1000 | 11.03         | 0.2482 | 0.0842 | 27      | 0.89                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0405     | 11.32    | 0.0700 | 11.03         | 0.2482 | 0.0842 | 27      | 1.15                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0027     | 11.41    | 0.0000 | 11.03         | 0.2482 | 0.0842 | 27      | 1.54                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0522     | 11.65    | 0.0400 | 11.03         | 0.2482 | 0.0842 | 27      | 2.50                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0545     | 12.01    | 0.1200 | 11.03         | 0.2482 | 0.0842 | 27      | 3.95                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0553     | 11.10    | 0.8000 | 11.03         | 0.2482 | 0.0842 | 27      | 0.29                | NA               | 1    |
| 001.99      | Ammoniacal N, Other (%)                  | 0524     | 0.0009   | 0.0001 | 11.03         | 0.2482 | 0.0842 | 27      | -44.43              | NA               | 2    |
| 002.99      | Nitrate N, Other (%)                     | 0553     | 0.0050   | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 005.00      | Urea N, Urease (as N) (%)                | 0574     | 0.0500   | 0.0000 |               |        |        | 1       |                     |                  | 0    |

| Method Code | Analyte Name and Method (Units)       | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|---------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                       |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 010.11      | Total N, Modified Comprehensive (11%) | 0548     | 11.16    | 0.2100 |               |        |        | 1       |                     |                  | 0    |
| 010.12      | Total N, Salicylic (11%)              | 0572     | 11.21    | 0.3100 |               |        |        | 2       |                     |                  | 0    |
| 010.12      | Total N, Salicylic (11%)              | 0568     | 11.95    | 0.3000 |               |        |        | 2       |                     |                  | 0    |
| 010.60      | Total N, Combustion (11%)             | 0070     | 10.10    | 0.0900 | 11.22         | 0.2380 | 0.1174 | 54      | -4.71               | Low              | 0    |
| 010.60      | Total N, Combustion (11%)             | 0117     | 10.50    | 0.0000 | 11.22         | 0.2380 | 0.1174 | 54      | -3.01               | Low              | 0    |
| 010.60      | Total N, Combustion (11%)             | 0422     | 10.55    | 0.1000 | 11.22         | 0.2380 | 0.1174 | 54      | -2.80               | Low              | 0    |
| 010.60      | Total N, Combustion (11%)             | 0042     | 10.60    | 0.4000 | 11.22         | 0.2380 | 0.1174 | 54      | -2.59               | Low              | 0    |
| 010.60      | Total N, Combustion (11%)             | 0523     | 10.71    | 0.0300 | 11.22         | 0.2380 | 0.1174 | 54      | -2.14               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0485     | 10.74    | 0.3900 | 11.22         | 0.2380 | 0.1174 | 54      | -2.02               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0102     | 10.88    | 0.0900 | 11.22         | 0.2380 | 0.1174 | 54      | -1.43               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0547     | 10.92    | 0.1600 | 11.22         | 0.2380 | 0.1174 | 54      | -1.24               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0234     | 10.97    | 0.0540 | 11.22         | 0.2380 | 0.1174 | 54      | -1.04               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0423     | 10.99    | 0.0700 | 11.22         | 0.2380 | 0.1174 | 54      | -0.97               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0534     | 11.00    | 0.2000 | 11.22         | 0.2380 | 0.1174 | 54      | -0.90               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0292     | 11.03    | 0.0100 | 11.22         | 0.2380 | 0.1174 | 54      | -0.80               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0402     | 11.04    | 0.0500 | 11.22         | 0.2380 | 0.1174 | 54      | -0.76               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0443     | 11.10    | 0.1100 | 11.22         | 0.2380 | 0.1174 | 54      | -0.51               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0521     | 11.10    | 0.0000 | 11.22         | 0.2380 | 0.1174 | 54      | -0.50               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0354     | 11.10    | 0.0000 | 11.22         | 0.2380 | 0.1174 | 54      | -0.48               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0494     | 11.13    | 0.1500 | 11.22         | 0.2380 | 0.1174 | 54      | -0.38               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0055     | 11.14    | 0.0300 | 11.22         | 0.2380 | 0.1174 | 54      | -0.34               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0169     | 11.18    | 0.0800 | 11.22         | 0.2380 | 0.1174 | 54      | -0.15               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0231     | 11.18    | 0.0000 | 11.22         | 0.2380 | 0.1174 | 54      | -0.15               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0291     | 11.20    | 0.0100 | 11.22         | 0.2380 | 0.1174 | 54      | -0.09               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0136     | 11.20    | 0.2000 | 11.22         | 0.2380 | 0.1174 | 54      | -0.06               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0157     | 11.20    | 0.0000 | 11.22         | 0.2380 | 0.1174 | 54      | -0.06               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0230     | 11.20    | 0.0000 | 11.22         | 0.2380 | 0.1174 | 54      | -0.06               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0389     | 11.21    | 0.1700 | 11.22         | 0.2380 | 0.1174 | 54      | -0.04               | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0177     | 11.22    | 0.0200 | 11.22         | 0.2380 | 0.1174 | 54      | 0.03                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0007     | 11.25    | 0.1000 | 11.22         | 0.2380 | 0.1174 | 54      | 0.15                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0324     | 11.25    | 0.1000 | 11.22         | 0.2380 | 0.1174 | 54      | 0.15                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0371     | 11.25    | 0.1000 | 11.22         | 0.2380 | 0.1174 | 54      | 0.15                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0368     | 11.26    | 0.2390 | 11.22         | 0.2380 | 0.1174 | 54      | 0.18                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0486     | 11.26    | 0.1000 | 11.22         | 0.2380 | 0.1174 | 54      | 0.19                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0356     | 11.27    | 0.1930 | 11.22         | 0.2380 | 0.1174 | 54      | 0.22                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0561     | 11.28    | 0.0100 | 11.22         | 0.2380 | 0.1174 | 54      | 0.25                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0451     | 11.29    | 0.2700 | 11.22         | 0.2380 | 0.1174 | 54      | 0.29                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0390     | 11.30    | 0.0500 | 11.22         | 0.2380 | 0.1174 | 54      | 0.33                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0377     | 11.30    | 0.0800 | 11.22         | 0.2380 | 0.1174 | 54      | 0.36                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0095     | 11.31    | 0.0900 | 11.22         | 0.2380 | 0.1174 | 54      | 0.38                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0073     | 11.31    | 0.1600 | 11.22         | 0.2380 | 0.1174 | 54      | 0.40                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0405     | 11.34    | 0.0600 | 11.22         | 0.2380 | 0.1174 | 54      | 0.52                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0043     | 11.35    | 0.0700 | 11.22         | 0.2380 | 0.1174 | 54      | 0.55                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0035     | 11.35    | 0.7000 | 11.22         | 0.2380 | 0.1174 | 54      | 0.57                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0027     | 11.35    | 0.1000 | 11.22         | 0.2380 | 0.1174 | 54      | 0.57                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0444     | 11.35    | 0.0800 | 11.22         | 0.2380 | 0.1174 | 54      | 0.57                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)             | 0029     | 11.39    | 0.1500 | 11.22         | 0.2380 | 0.1174 | 54      | 0.71                | OK               | 0    |

| Method Code | Analyte Name and Method (Units)                   | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|---|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |   |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 010.60      | Total N, Combustion (11%)                         | 0040     | 11.40    | 0.0000 | 11.22         | 0.2380 | 0.1174 | 54      | 0.78                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)                         | 0527     | 11.45    | 0.0140 | 11.22         | 0.2380 | 0.1174 | 54      | 0.97                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)                         | 0018     | 11.45    | 0.1000 | 11.22         | 0.2380 | 0.1174 | 54      | 0.99                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)                         | 0255     | 11.47    | 0.1720 | 11.22         | 0.2380 | 0.1174 | 54      | 1.05                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)                         | 0049     | 11.52    | 0.0100 | 11.22         | 0.2380 | 0.1174 | 54      | 1.26                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)                         | 0114     | 11.55    | 0.0900 | 11.22         | 0.2380 | 0.1174 | 54      | 1.39                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)                         | 0501     | 11.59    | 0.2300 | 11.22         | 0.2380 | 0.1174 | 54      | 1.55                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)                         | 0220     | 11.69    | 0.0200 | 11.22         | 0.2380 | 0.1174 | 54      | 1.99                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)                         | 0025     | 11.79    | 0.5300 | 11.22         | 0.2380 | 0.1174 | 54      | 2.39                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)                         | 0421     | 11.79    | 0.1100 | 11.22         | 0.2380 | 0.1174 | 54      | 2.39                | OK               | 0    |
| 010.60      | Total N, Combustion (11%)                         | 0023     | 9.199    | 1.158  | 11.22         | 0.2380 | 0.1174 | 54      | -8.47               | Low              | 1    |
| 010.60      | Total N, Combustion (11%)                         | 0325     | 11.16    | 0.7900 | 11.22         | 0.2380 | 0.1174 | 54      | -0.25               | OK               | 1    |
| 010.60      | Total N, Combustion (11%)                         | 0472     | 17.25    | 0.0200 | 11.22         | 0.2380 | 0.1174 | 54      | 25.36               | High             | 2    |
| 010.99      | Total N, Other (11%)                              | 0567     | 10.89    | 0.0200 | 11.12         | 0.2277 | 0.1096 | 11      | -1.00               | OK               | 0    |
| 010.99      | Total N, Other (11%)                              | 0559     | 10.90    | 0.0200 | 11.12         | 0.2277 | 0.1096 | 11      | -0.96               | OK               | 0    |
| 010.99      | Total N, Other (11%)                              | 0574     | 10.95    | 0.1000 | 11.12         | 0.2277 | 0.1096 | 11      | -0.74               | OK               | 0    |
| 010.99      | Total N, Other (11%)                              | 0524     | 11.03    | 0.2145 | 11.12         | 0.2277 | 0.1096 | 11      | -0.40               | OK               | 0    |
| 010.99      | Total N, Other (11%)                              | 0394     | 11.05    | 0.2310 | 11.12         | 0.2277 | 0.1096 | 11      | -0.30               | OK               | 0    |
| 010.99      | Total N, Other (11%)                              | 0562     | 11.05    | 0.1000 | 11.12         | 0.2277 | 0.1096 | 11      | -0.30               | OK               | 0    |
| 010.99      | Total N, Other (11%)                              | 0564     | 11.09    | 0.0200 | 11.12         | 0.2277 | 0.1096 | 11      | -0.12               | OK               | 0    |
| 010.99      | Total N, Other (11%)                              | 0537     | 11.16    | 0.0800 | 11.12         | 0.2277 | 0.1096 | 11      | 0.18                | OK               | 0    |
| 010.99      | Total N, Other (11%)                              | 0518     | 11.27    | 0.2700 | 11.12         | 0.2277 | 0.1096 | 11      | 0.64                | OK               | 0    |
| 010.99      | Total N, Other (11%)                              | 0563     | 11.60    | 0.1500 | 11.12         | 0.2277 | 0.1096 | 11      | 2.09                | OK               | 0    |
| 010.99      | Total N, Other (11%)                              | 0571     | 12.00    | 0.0000 | 11.12         | 0.2277 | 0.1096 | 11      | 3.87                | High             | 0    |
| 010.99      | Total N, Other (11%)                              | 0576     | 12.60    | 0.8000 | 11.12         | 0.2277 | 0.1096 | 11      | 6.51                | High             | 1    |
| 020.10      | Total P2O5, Gravimetric Quinolinium MolybdoP (%)  | 0049     | 49.86    | 0.6000 | 51.47         | 0.9595 | 0.3360 | 5       | -1.68               |                  | 0    |
| 020.10      | Total P2O5, Gravimetric Quinolinium MolybdoP (%)  | 0114     | 51.46    | 0.5700 | 51.47         | 0.9595 | 0.3360 | 5       | -0.02               |                  | 0    |
| 020.10      | Total P2O5, Gravimetric Quinolinium MolybdoP (%)  | 0493     | 51.80    | 0.1000 | 51.47         | 0.9595 | 0.3360 | 5       | 0.34                |                  | 0    |
| 020.10      | Total P2O5, Gravimetric Quinolinium MolybdoP (%)  | 0574     | 51.85    | 0.1000 | 51.47         | 0.9595 | 0.3360 | 5       | 0.40                |                  | 0    |
| 020.10      | Total P2O5, Gravimetric Quinolinium MolybdoP (%)  | 0444     | 52.39    | 0.3100 | 51.47         | 0.9595 | 0.3360 | 5       | 0.95                |                  | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0547     | 50.00    | 0.4000 | 52.01         | 0.5551 | 0.3293 | 17      | -3.62               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0561     | 51.30    | 0.2700 | 52.01         | 0.5551 | 0.3293 | 17      | -1.29               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0292     | 51.50    | 0.0600 | 52.01         | 0.5551 | 0.3293 | 17      | -0.92               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0548     | 51.58    | 0.0700 | 52.01         | 0.5551 | 0.3293 | 17      | -0.78               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0394     | 51.64    | 0.9710 | 52.01         | 0.5551 | 0.3293 | 17      | -0.66               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0493     | 51.70    | 0.1000 | 52.01         | 0.5551 | 0.3293 | 17      | -0.56               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0231     | 51.81    | 0.0400 | 52.01         | 0.5551 | 0.3293 | 17      | -0.36               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0534     | 51.85    | 0.1000 | 52.01         | 0.5551 | 0.3293 | 17      | -0.29               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0371     | 52.10    | 0.2000 | 52.01         | 0.5551 | 0.3293 | 17      | 0.16                | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0405     | 52.14    | 0.1100 | 52.01         | 0.5551 | 0.3293 | 17      | 0.23                | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0169     | 52.23    | 0.0900 | 52.01         | 0.5551 | 0.3293 | 17      | 0.39                | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0027     | 52.26    | 1.080  | 52.01         | 0.5551 | 0.3293 | 17      | 0.45                | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0324     | 52.35    | 1.500  | 52.01         | 0.5551 | 0.3293 | 17      | 0.61                | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0220     | 52.45    | 0.2100 | 52.01         | 0.5551 | 0.3293 | 17      | 0.79                | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0356     | 52.59    | 0.3570 | 52.01         | 0.5551 | 0.3293 | 17      | 1.04                | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0522     | 52.66    | 0.0400 | 52.01         | 0.5551 | 0.3293 | 17      | 1.17                | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0571     | 53.01    | 0.0000 | 52.01         | 0.5551 | 0.3293 | 17      | 1.80                | NA               | 0    |



| Method Code | Analyte Name and Method (Units)  | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |  |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 020.40      | Total P2O5, Automated (%)  | 0035     | 50.01    | 0.5300 |               |        |        | 1       |                     |                  | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0472     | 42.15    | 0.1000 | 51.79         | 1.490  | 0.4022 | 18      | -6.47               | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0389     | 45.26    | 0.0900 | 51.79         | 1.490  | 0.4022 | 18      | -4.39               | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0390     | 47.75    | 0.9000 | 51.79         | 1.490  | 0.4022 | 18      | -2.71               | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0546     | 50.67    | 0.0410 | 51.79         | 1.490  | 0.4022 | 18      | -0.76               | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0521     | 51.07    | 0.0000 | 51.79         | 1.490  | 0.4022 | 18      | -0.48               | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0444     | 51.60    | 0.4200 | 51.79         | 1.490  | 0.4022 | 18      | -0.13               | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0523     | 51.85    | 0.3000 | 51.79         | 1.490  | 0.4022 | 18      | 0.04                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0524     | 51.88    | 0.5301 | 51.79         | 1.490  | 0.4022 | 18      | 0.06                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0433     | 51.90    | 1.170  | 51.79         | 1.490  | 0.4022 | 18      | 0.07                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0255     | 52.12    | 0.1830 | 51.79         | 1.490  | 0.4022 | 18      | 0.22                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0402     | 52.20    | 0.4545 | 51.79         | 1.490  | 0.4022 | 18      | 0.27                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0291     | 52.31    | 0.0100 | 51.79         | 1.490  | 0.4022 | 18      | 0.34                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0527     | 52.42    | 0.2572 | 51.79         | 1.490  | 0.4022 | 18      | 0.42                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0451     | 52.43    | 0.6300 | 51.79         | 1.490  | 0.4022 | 18      | 0.42                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0177     | 52.44    | 0.2096 | 51.79         | 1.490  | 0.4022 | 18      | 0.43                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0423     | 52.67    | 0.4600 | 51.79         | 1.490  | 0.4022 | 18      | 0.59                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0368     | 54.05    | 0.3838 | 51.79         | 1.490  | 0.4022 | 18      | 1.52                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)  | 0422     | 55.25    | 1.100  | 51.79         | 1.490  | 0.4022 | 18      | 2.32                | NA               | 0    |
| 020.99      | Total P2O5, Other (%)  | 0515     | 43.99    | 4.698  | 50.11         | 3.435  | 1.328  | 5       | -1.78               |                  | 0    |
| 020.99      | Total P2O5, Other (%)  | 0572     | 51.18    | 1.870  | 50.11         | 3.435  | 1.328  | 5       | 0.31                |                  | 0    |
| 020.99      | Total P2O5, Other (%)  | 0443     | 51.68    | 0.0100 | 50.11         | 3.435  | 1.328  | 5       | 0.46                |                  | 0    |
| 020.99      | Total P2O5, Other (%)  | 0513     | 51.78    | 0.0400 | 50.11         | 3.435  | 1.328  | 5       | 0.49                |                  | 0    |
| 020.99      | Total P2O5, Other (%)  | 0564     | 51.93    | 0.0200 | 50.11         | 3.435  | 1.328  | 5       | 0.53                |                  | 0    |
| 030.10      | Citrate Insoluble P2O5, Gravimetric Quinolinium MolybdoP (%)               | 0444     | 51.57    | 0.3300 |               |        |        | 1       |                     |                  | 0    |
| 030.20      | Citrate Insoluble P2O5, Spectrophotometric MolybdovanadoP (%)              | 0220     | < 0.01   |        |               |        |        | 0       |                     |                  | 5    |
| 030.99      | Citrate Insoluble P2O5, Other (%)  | 0537     | 52.27    | 0.1400 |               |        |        | 1       |                     |                  | 0    |
| 040.20      | Indirect Available P2O5, Spectrophotometric (52%)                          | 0220     | 52.45    | 0.2100 |               |        |        | 1       |                     |                  | 0    |
| 041.10      | Direct Available P2O5, Gravimetric Quinolinium (52%)                       | 0102     | 51.20    | 0.1000 | 51.81         | 0.4839 | 0.3575 | 5       | -1.26               |                  | 0    |
| 041.10      | Direct Available P2O5, Gravimetric Quinolinium (52%)                       | 0040     | 51.45    | 1.500  | 51.81         | 0.4839 | 0.3575 | 5       | -0.74               |                  | 0    |
| 041.10      | Direct Available P2O5, Gravimetric Quinolinium (52%)                       | 0086     | 51.99    | 0.0092 | 51.81         | 0.4839 | 0.3575 | 5       | 0.37                |                  | 0    |
| 041.10      | Direct Available P2O5, Gravimetric Quinolinium (52%)                       | 0177     | 51.99    | 0.0185 | 51.81         | 0.4839 | 0.3575 | 5       | 0.37                |                  | 0    |
| 041.10      | Direct Available P2O5, Gravimetric Quinolinium (52%)                       | 0494     | 52.42    | 0.1600 | 51.81         | 0.4839 | 0.3575 | 5       | 1.26                |                  | 0    |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (52%) | 0055     | 51.73    | 0.1800 | 52.13         | 0.3824 | 0.1614 | 7       | -0.94               | OK               | 0    |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (52%) | 0405     | 51.79    | 0.1600 | 52.13         | 0.3824 | 0.1614 | 7       | -0.80               | OK               | 0    |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (52%) | 0220     | 51.93    | 0.1000 | 52.13         | 0.3824 | 0.1614 | 7       | -0.47               | OK               | 0    |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (52%) | 0513     | 52.09    | 0.0800 | 52.13         | 0.3824 | 0.1614 | 7       | -0.09               | OK               | 0    |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (52%) | 0485     | 52.30    | 0.1500 | 52.13         | 0.3824 | 0.1614 | 7       | 0.40                | OK               | 0    |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (52%) | 0043     | 52.44    | 0.1900 | 52.13         | 0.3824 | 0.1614 | 7       | 0.73                | OK               | 0    |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (52%) | 0073     | 52.63    | 0.2700 | 52.13         | 0.3824 | 0.1614 | 7       | 1.18                | OK               | 0    |
| 041.20      | Direct Available P2O5, Spectrophotometric (52%)                            | 0027     | 50.66    | 0.8800 | 51.37         | 0.6736 | 1.527  | 3       | -1.05               |                  | 0    |
| 041.20      | Direct Available P2O5, Spectrophotometric (52%)                            | 0553     | 51.45    | 1.700  | 51.37         | 0.6736 | 1.527  | 3       | 0.12                |                  | 0    |
| 041.20      | Direct Available P2O5, Spectrophotometric (52%)                            | 0576     | 52.00    | 2.000  | 51.37         | 0.6736 | 1.527  | 3       | 0.94                |                  | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%)         | 0472     | 39.21    | 0.6000 | 51.38         | 1.515  | 0.3643 | 11      | -8.03               | Low              | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%)         | 0230     | 49.70    | 0.6000 | 51.38         | 1.515  | 0.3643 | 11      | -1.11               | Low              | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%)         | 0095     | 50.01    | 0.6300 | 51.38         | 1.515  | 0.3643 | 11      | -0.91               | Low              | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%)         | 0200     | 51.25    | 0.2000 | 51.38         | 1.515  | 0.3643 | 11      | -0.09               | OK               | 0    |

| Method Code | Analyte Name and Method (Units)                                    | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |  |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%) | 0177     | 51.34    | 0.1518 | 51.38         | 1.515  | 0.3643 | 11      | -0.03               | OK               | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%) | 0405     | 51.58    | 0.0100 | 51.38         | 1.515  | 0.3643 | 11      | 0.13                | OK               | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%) | 0231     | 51.74    | 0.1700 | 51.38         | 1.515  | 0.3643 | 11      | 0.23                | OK               | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%) | 0394     | 51.92    | 1.305  | 51.38         | 1.515  | 0.3643 | 11      | 0.36                | OK               | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%) | 0522     | 52.24    | 0.0400 | 51.38         | 1.515  | 0.3643 | 11      | 0.57                | OK               | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%) | 0354     | 52.65    | 0.1000 | 51.38         | 1.515  | 0.3643 | 11      | 0.84                | High             | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%) | 0055     | 53.92    | 0.2000 | 51.38         | 1.515  | 0.3643 | 11      | 1.68                | High             | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (52%) | 0568     | 52.35    | 6.900  | 51.38         | 1.515  | 0.3643 | 11      | 0.64                | OK               | 1    |
| 041.40      | Direct Available P2O5, Automated, Citrate-EDTA Ext. (52%)          | 0018     | 51.70    | 0.0000 | 52.83         | 0.9898 | 1.203  | 3       | -1.14               |                  | 0    |
| 041.40      | Direct Available P2O5, Automated, Citrate-EDTA Ext. (52%)          | 0034     | 53.24    | 3.370  | 52.83         | 0.9898 | 1.203  | 3       | 0.41                |                  | 0    |
| 041.40      | Direct Available P2O5, Automated, Citrate-EDTA Ext. (52%)          | 0029     | 53.55    | 0.2400 | 52.83         | 0.9898 | 1.203  | 3       | 0.73                |                  | 0    |
| 041.50      | Direct Available P2O5, ICP (52%)                                   | 0007     | 49.90    | 1.400  | 51.36         | 1.182  | 0.7711 | 4       | -1.24               |                  | 0    |
| 041.50      | Direct Available P2O5, ICP (52%)                                   | 0325     | 51.30    | 1.000  | 51.36         | 1.182  | 0.7711 | 4       | -0.05               |                  | 0    |
| 041.50      | Direct Available P2O5, ICP (52%)                                   | 0421     | 51.45    | 0.1000 | 51.36         | 1.182  | 0.7711 | 4       | 0.08                |                  | 0    |
| 041.50      | Direct Available P2O5, ICP (52%)                                   | 0368     | 52.79    | 0.5844 | 51.36         | 1.182  | 0.7711 | 4       | 1.21                |                  | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (52%)                | 0377     | 50.45    | 0.4500 | 51.96         | 1.283  | 0.4663 | 7       | -1.07               | Low              | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (52%)                | 0025     | 51.20    | 0.2000 | 51.96         | 1.283  | 0.4663 | 7       | -0.54               | OK               | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (52%)                | 0423     | 51.46    | 0.4740 | 51.96         | 1.283  | 0.4663 | 7       | -0.36               | OK               | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (52%)                | 0494     | 51.64    | 1.030  | 51.96         | 1.283  | 0.4663 | 7       | -0.23               | OK               | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (52%)                | 0136     | 52.55    | 0.7000 | 51.96         | 1.283  | 0.4663 | 7       | 0.41                | OK               | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (52%)                | 0486     | 52.58    | 0.1100 | 51.96         | 1.283  | 0.4663 | 7       | 0.43                | OK               | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (52%)                | 0023     | 54.35    | 0.3000 | 51.96         | 1.283  | 0.4663 | 7       | 1.68                | High             | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0551     | 51.56    | 0.1800 | 51.96         | 0.2264 | 0.1115 | 13      | -1.76               | OK               | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0536     | 51.66    | 0.1600 | 51.96         | 0.2264 | 0.1115 | 13      | -1.32               | OK               | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0535     | 51.85    | 0.1000 | 51.96         | 0.2264 | 0.1115 | 13      | -0.48               | OK               | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0559     | 51.87    | 0.0100 | 51.96         | 0.2264 | 0.1115 | 13      | -0.42               | OK               | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0562     | 51.88    | 0.1500 | 51.96         | 0.2264 | 0.1115 | 13      | -0.37               | OK               | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0569     | 51.95    | 0.1500 | 51.96         | 0.2264 | 0.1115 | 13      | -0.06               | OK               | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0533     | 51.95    | 0.1400 | 51.96         | 0.2264 | 0.1115 | 13      | -0.04               | OK               | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0549     | 51.99    | 0.2200 | 51.96         | 0.2264 | 0.1115 | 13      | 0.13                | OK               | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0531     | 52.01    | 0.0200 | 51.96         | 0.2264 | 0.1115 | 13      | 0.22                | OK               | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0539     | 52.03    | 0.1500 | 51.96         | 0.2264 | 0.1115 | 13      | 0.29                | OK               | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0518     | 52.11    | 0.0400 | 51.96         | 0.2264 | 0.1115 | 13      | 0.66                | OK               | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0532     | 52.28    | 0.0700 | 51.96         | 0.2264 | 0.1115 | 13      | 1.39                | OK               | 0    |
| 041.99      | Direct Available P2O5, Other (52%)                                 | 0545     | 52.45    | 0.0600 | 51.96         | 0.2264 | 0.1115 | 13      | 2.17                | OK               | 0    |
| 048.10      | Water Soluble P2O5, Gravimetric Quinolinium (%)                    | 0444     | 45.66    | 0.1000 |               |        |        | 1       |                     |                  | 0    |
| 048.20      | Water Soluble P2O5, Spectrophotometric (%)                         | 0472     | 38.26    | 0.3000 |               |        |        | 1       |                     |                  | 0    |
| 048.50      | Water Soluble P2O5, ICP (%)  | 0444     | 46.14    | 0.1100 |               |        |        | 1       |                     |                  | 0    |
| 048.99      | Water Soluble P2O5, Other (%)                                      | 0572     | 41.11    | 4.170  | 46.09         | 5.339  | 1.420  | 3       | -0.93               |                  | 0    |
| 048.99      | Water Soluble P2O5, Other (%)                                      | 0513     | 45.45    | 0.0400 | 46.09         | 5.339  | 1.420  | 3       | -0.12               |                  | 0    |
| 048.99      | Water Soluble P2O5, Other (%)                                      | 0567     | 51.73    | 0.0500 | 46.09         | 5.339  | 1.420  | 3       | 1.05                |                  | 0    |
| 050.32      | Soluble K2O, AA (Citrate-EDTA) (%)                                 | 0472     | 0.0000   | 0.0000 |               |        |        | 0       |                     |                  | 4    |
| 050.50      | Soluble K2O, ICP (Oxalate) (%)                                     | 0422     | 0.2680   | 0.0260 |               |        |        | 1       |                     |                  | 0    |
| 050.51      | Soluble K2O, ICP (Citrate) (%)                                     | 0568     | 0.2650   | 0.0500 |               |        |        | 1       |                     |                  | 0    |
| 050.52      | Soluble K2O, ICP (Citrate-EDTA) (%)                                | 0023     | 0.2605   | 0.0030 | 0.2923        | 0.0351 | 0.0107 | 3       | -0.91               |                  | 0    |
| 050.52      | Soluble K2O, ICP (Citrate-EDTA) (%)                                | 0354     | 0.2865   | 0.0090 | 0.2923        | 0.0351 | 0.0107 | 3       | -0.17               |                  | 0    |
| 050.52      | Soluble K2O, ICP (Citrate-EDTA) (%)                                | 0423     | 0.3300   | 0.0200 | 0.2923        | 0.0351 | 0.0107 | 3       | 1.07                |                  | 0    |

| Method Code | Analyte Name and Method (Units)  | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |  |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 050.99      | Soluble K2O, Other (%)   | 0553     | 0.2730   | 0.0020 | 0.4551        | 0.3592 | 0.0450 | 5       | -0.44               |                  | 0    |
| 050.99      | Soluble K2O, Other (%)   | 0524     | 0.2859   | 0.0067 | 0.4551        | 0.3592 | 0.0450 | 5       | -0.41               |                  | 0    |
| 050.99      | Soluble K2O, Other (%)   | 0389     | 0.3050   | 0.0100 | 0.4551        | 0.3592 | 0.0450 | 5       | -0.36               |                  | 0    |
| 050.99      | Soluble K2O, Other (%)   | 0527     | 0.3146   | 0.0018 | 0.4551        | 0.3592 | 0.0450 | 5       | -0.34               |                  | 0    |
| 050.99      | Soluble K2O, Other (%)   | 0515     | 1.097    | 0.2044 | 0.4551        | 0.3592 | 0.0450 | 5       | 1.56                |                  | 0    |
| 050.99      | Soluble K2O, Other (%)   | 0571     | 0.0000   | 0.0000 | 0.4551        | 0.3592 | 0.0450 | 5       |                     |                  | 4    |
| 050.99      | Soluble K2O, Other (%)   | 0325     | < 0.1    |        | 0.4551        | 0.3592 | 0.0450 | 5       |                     |                  | 5    |
| 060.00      | Water (Free), Vacuum Oven (%)  | 0513     | 1.165    | 0.0100 |               |        |        | 1       |                     |                  | 0    |
| 101.00      | Acid Soluble Ca, AA, inorganic 965.09 (%)                                | 0553     | 0.0300   | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 101.30      | Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)                  | 0035     | 0.2395   | 0.0090 | 0.2448        | 0.0088 | 0.0037 | 3       | -0.61               |                  | 0    |
| 101.30      | Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)                  | 0354     | 0.2400   | 0.0000 | 0.2448        | 0.0088 | 0.0037 | 3       | -0.55               |                  | 0    |
| 101.30      | Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)                  | 0568     | 0.2550   | 0.0020 | 0.2448        | 0.0088 | 0.0037 | 3       | 1.15                |                  | 0    |
| 101.32      | Acid Soluble Ca, ICP, test portion 2006.03A-C (%)                        | 0423     | 1.248    | 2.003  |               |        |        | 1       |                     |                  | 0    |
| 101.33      | Acid Soluble Ca, ICP, 2017.02 (%)  | 0527     | 0.1804   | 0.0084 | 0.2520        | 0.0677 | 0.0237 | 3       | -1.06               |                  | 0    |
| 101.33      | Acid Soluble Ca, ICP, 2017.02 (%)  | 0494     | 0.2607   | 0.0327 | 0.2520        | 0.0677 | 0.0237 | 3       | 0.13                |                  | 0    |
| 101.33      | Acid Soluble Ca, ICP, 2017.02 (%)  | 0472     | 0.3150   | 0.0300 | 0.2520        | 0.0677 | 0.0237 | 3       | 0.93                |                  | 0    |
| 101.99      | Acid Soluble Ca, Other (%)   | 0389     | 0.2000   | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 121.00      | Acid Soluble Mg, AA, inorganic 965.09 (%)                                | 0553     | 1.760    | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 121.30      | Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)                  | 0568     | 1.655    | 0.0300 | 1.792         | 0.1200 | 0.0367 | 3       | -1.14               |                  | 0    |
| 121.30      | Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)                  | 0354     | 1.840    | 0.0600 | 1.792         | 0.1200 | 0.0367 | 3       | 0.40                |                  | 0    |
| 121.30      | Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)                  | 0035     | 1.880    | 0.0200 | 1.792         | 0.1200 | 0.0367 | 3       | 0.74                |                  | 0    |
| 121.32      | Acid Soluble Mg, ICP, test portion 2006.03A-C (%)                        | 0521     | 1.629    | 0.0000 |               |        |        | 2       |                     |                  | 0    |
| 121.32      | Acid Soluble Mg, ICP, test portion 2006.03A-C (%)                        | 0423     | 1.775    | 0.0300 |               |        |        | 2       |                     |                  | 0    |
| 121.33      | Acid Soluble Mg, ICP, 2017.02 (%)  | 0472     | 0.8500   | 0.0000 | 1.508         | 0.5699 | 0.0381 | 3       | -1.15               |                  | 0    |
| 121.33      | Acid Soluble Mg, ICP, 2017.02 (%)  | 0527     | 1.812    | 0.0096 | 1.508         | 0.5699 | 0.0381 | 3       | 0.53                |                  | 0    |
| 121.33      | Acid Soluble Mg, ICP, 2017.02 (%)  | 0494     | 1.860    | 0.1047 | 1.508         | 0.5699 | 0.0381 | 3       | 0.62                |                  | 0    |
| 121.99      | Acid Soluble Mg, Other (%)   | 0515     | 0.7225   | 0.2177 | 1.384         | 0.5865 | 0.0915 | 3       | -1.13               |                  | 0    |
| 121.99      | Acid Soluble Mg, Other (%)   | 0524     | 1.590    | 0.0367 | 1.384         | 0.5865 | 0.0915 | 3       | 0.35                |                  | 0    |
| 121.99      | Acid Soluble Mg, Other (%)   | 0389     | 1.840    | 0.0200 | 1.384         | 0.5865 | 0.0915 | 3       | 0.78                |                  | 0    |
| 143.99      | Elemental S, Other (%)   | 0389     | 1.705    | 0.0500 |               |        |        | 1       |                     |                  | 0    |
| 145.99      | Sulfate S, HCl soluble, Other (%)  | 0553     | 1.680    | 0.0200 |               |        |        | 1       |                     |                  | 0    |
| 146.00      | Total S in Liquid, Gravimetric - sulfate, sulfite, thiosulfate, a... (%) | 0522     | 1.820    | 0.0200 |               |        |        | 1       |                     |                  | 0    |
| 148.07      | Total S, ICP, test portion as in 2017.02 (%)                             | 0527     | 1.398    | 0.0172 | 1.761         | 0.3533 | 0.0184 | 4       | -1.03               |                  | 0    |
| 148.07      | Total S, ICP, test portion as in 2017.02 (%)                             | 0563     | 1.676    | 0.0244 | 1.761         | 0.3533 | 0.0184 | 4       | -0.24               |                  | 0    |
| 148.07      | Total S, ICP, test portion as in 2017.02 (%)                             | 0494     | 1.726    | 0.0218 | 1.761         | 0.3533 | 0.0184 | 4       | -0.10               |                  | 0    |
| 148.07      | Total S, ICP, test portion as in 2017.02 (%)                             | 0472     | 2.245    | 0.0100 | 1.761         | 0.3533 | 0.0184 | 4       | 1.37                |                  | 0    |
| 148.99      | Total S, Other (%)   | 0354     | 1.675    | 0.0300 |               |        |        | 1       |                     |                  | 0    |
| 149.04      | S - HNO3 soluble, ICP (%)  | 0423     | 1.650    | 0.0400 |               |        |        | 2       |                     |                  | 0    |
| 149.04      | S - HNO3 soluble, ICP (%)  | 0524     | 1.753    | 0.1252 |               |        |        | 2       |                     |                  | 0    |
| 151.00      | Acid Soluble As, AA, test portion 2006.03 modified w/dual acid (ppm)     | 0534     | 0.7100   | 0.0400 |               |        |        | 1       |                     |                  | 0    |
| 151.30      | Acid Soluble As, ICP (ppm)   | 0169     | 2.363    | 0.1800 | 2.693         | 0.4201 | 0.1296 | 3       | -0.79               |                  | 0    |
| 151.30      | Acid Soluble As, ICP (ppm)   | 0501     | 2.550    | 0.1000 | 2.693         | 0.4201 | 0.1296 | 3       | -0.34               |                  | 0    |
| 151.30      | Acid Soluble As, ICP (ppm)   | 0524     | 3.166    | 0.1089 | 2.693         | 0.4201 | 0.1296 | 3       | 1.13                |                  | 0    |
| 151.30      | Acid Soluble As, ICP (ppm)   | 0255     | 0.0000   | 0.0000 | 2.693         | 0.4201 | 0.1296 | 3       |                     |                  | 4    |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)                                      | 0548     | 2.045    | 0.0300 | 4.747         | 4.857  | 0.4053 | 5       | -0.56               |                  | 0    |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)                                      | 0527     | 2.492    | 0.1295 | 4.747         | 4.857  | 0.4053 | 5       | -0.46               |                  | 0    |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)                                      | 0136     | 2.530    | 0.0000 | 4.747         | 4.857  | 0.4053 | 5       | -0.46               |                  | 0    |

| Method Code | Analyte Name and Method (Units)                                      | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |  |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)                                  | 0563     | 3.267    | 0.0669 | 4.747         | 4.857  | 0.4053 | 5       | -0.30               |                  | 0    |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)                                  | 0494     | 13.40    | 1.800  | 4.747         | 4.857  | 0.4053 | 5       | 1.78                |                  | 0    |
| 151.34      | Acid Soluble As, ICP, EPA 3050B/6010C (ppm)                          | 0515     | 12.47    | 11.22  |               |        |        | 1       |                     |                  | 0    |
| 151.34      | Acid Soluble As, ICP, EPA 3050B/6010C (ppm)                          | 0368     | < 0.3    |        |               |        |        | 1       |                     |                  | 5    |
| 151.99      | Acid Soluble As, Other (ppm)   | 0572     | 2.250    | 0.0800 |               |        |        | 2       |                     |                  | 0    |
| 151.99      | Acid Soluble As, Other (ppm)   | 0405     | 3.000    | 0.0000 |               |        |        | 2       |                     |                  | 0    |
| 165.00      | Acid Soluble B, Spectrophotometric (%)                               | 0553     | 0.0145   | 0.0010 |               |        |        | 1       |                     |                  | 0    |
| 165.30      | Acid Soluble B, ICP, test portion in 982.01 (%)                      | 0389     | 0.0100   | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 165.30      | Acid Soluble B, ICP, test portion in 982.01 (%)                      | 0354     | < 0.01   |        |               |        |        | 1       |                     |                  | 5    |
| 165.99      | Acid Soluble B, Other (%)  | 0515     | 0.0056   | 0.0014 | 0.0109        | 0.0026 | 0.0004 | 6       | -1.82               | Low              | 0    |
| 165.99      | Acid Soluble B, Other (%)  | 0472     | 0.0100   | 0.0000 | 0.0109        | 0.0026 | 0.0004 | 6       | -0.30               | OK               | 0    |
| 165.99      | Acid Soluble B, Other (%)  | 0524     | 0.0104   | 0.0003 | 0.0109        | 0.0026 | 0.0004 | 6       | -0.18               | OK               | 0    |
| 165.99      | Acid Soluble B, Other (%)  | 0423     | 0.0120   | 0.0000 | 0.0109        | 0.0026 | 0.0004 | 6       | 0.39                | OK               | 0    |
| 165.99      | Acid Soluble B, Other (%)  | 0527     | 0.0129   | 0.0000 | 0.0109        | 0.0026 | 0.0004 | 6       | 0.70                | OK               | 0    |
| 165.99      | Acid Soluble B, Other (%)  | 0563     | 0.0130   | 0.0006 | 0.0109        | 0.0026 | 0.0004 | 6       | 0.73                | OK               | 0    |
| 181.00      | Acid Soluble Cd, AA, test portion 2006.03 modified w/dual acid (ppm) | 0534     | 40.60    | 4.200  |               |        |        | 1       |                     |                  | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)   | 0501     | 48.50    | 1.000  | 55.55         | 5.380  | 1.668  | 10      | -1.22               | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)   | 0444     | 48.67    | 2.330  | 55.55         | 5.380  | 1.668  | 10      | -1.19               | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)   | 0389     | 51.15    | 0.7000 | 55.55         | 5.380  | 1.668  | 10      | -0.76               | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)   | 0255     | 54.10    | 4.640  | 55.55         | 5.380  | 1.668  | 10      | -0.25               | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)   | 0027     | 56.50    | 3.000  | 55.55         | 5.380  | 1.668  | 10      | 0.16                | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)   | 0169     | 56.79    | 1.080  | 55.55         | 5.380  | 1.668  | 10      | 0.21                | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)   | 0035     | 58.80    | 0.6000 | 55.55         | 5.380  | 1.668  | 10      | 0.56                | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)   | 0394     | 59.51    | 0.8600 | 55.55         | 5.380  | 1.668  | 10      | 0.68                | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)   | 0524     | 60.00    | 0.9739 | 55.55         | 5.380  | 1.668  | 10      | 0.77                | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)   | 0485     | 61.51    | 1.500  | 55.55         | 5.380  | 1.668  | 10      | 1.03                | NA               | 0    |
| 181.33      | Acid Soluble Cd, ICP, 2017.02 (ppm)                                  | 0136     | 64.80    | 1.000  | 75.70         | 16.64  | 1.428  | 5       | -0.65               |                  | 0    |
| 181.33      | Acid Soluble Cd, ICP, 2017.02 (ppm)                                  | 0494     | 65.60    | 2.800  | 75.70         | 16.64  | 1.428  | 5       | -0.61               |                  | 0    |
| 181.33      | Acid Soluble Cd, ICP, 2017.02 (ppm)                                  | 0563     | 69.72    | 2.826  | 75.70         | 16.64  | 1.428  | 5       | -0.36               |                  | 0    |
| 181.33      | Acid Soluble Cd, ICP, 2017.02 (ppm)                                  | 0527     | 73.58    | 0.3125 | 75.70         | 16.64  | 1.428  | 5       | -0.13               |                  | 0    |
| 181.33      | Acid Soluble Cd, ICP, 2017.02 (ppm)                                  | 0548     | 104.8    | 0.2000 | 75.70         | 16.64  | 1.428  | 5       | 1.75                |                  | 0    |
| 181.34      | Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)                          | 0515     | 23.10    | 23.80  |               |        |        | 2       |                     |                  | 0    |
| 181.34      | Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)                          | 0368     | 64.40    | 0.2000 |               |        |        | 2       |                     |                  | 0    |
| 181.99      | Acid Soluble Cd, Other (ppm)   | 0572     | 64.40    | 0.8200 |               |        |        | 2       |                     |                  | 0    |
| 181.99      | Acid Soluble Cd, Other (ppm)   | 0405     | 65.10    | 1.200  |               |        |        | 2       |                     |                  | 0    |
| 190.00      | Water Soluble Cl, Titrimetric (%)                                    | 0553     | < 0.1    |        |               |        |        | 0       |                     |                  | 5    |
| 191.30      | Acid Soluble Cr, ICP (ppm)   | 0389     | 239.0    | 4.000  | 270.6         | 27.79  | 3.117  | 8       | -1.04               | NA               | 0    |
| 191.30      | Acid Soluble Cr, ICP (ppm)   | 0444     | 242.5    | 9.000  | 270.6         | 27.79  | 3.117  | 8       | -0.92               | NA               | 0    |
| 191.30      | Acid Soluble Cr, ICP (ppm)   | 0524     | 254.3    | 2.397  | 270.6         | 27.79  | 3.117  | 8       | -0.53               | NA               | 0    |
| 191.30      | Acid Soluble Cr, ICP (ppm)   | 0035     | 267.0    | 6.000  | 270.6         | 27.79  | 3.117  | 8       | -0.12               | NA               | 0    |
| 191.30      | Acid Soluble Cr, ICP (ppm)   | 0169     | 280.5    | 3.496  | 270.6         | 27.79  | 3.117  | 8       | 0.33                | NA               | 0    |
| 191.30      | Acid Soluble Cr, ICP (ppm)   | 0394     | 281.2    | 0.0400 | 270.6         | 27.79  | 3.117  | 8       | 0.35                | NA               | 0    |
| 191.30      | Acid Soluble Cr, ICP (ppm)   | 0027     | 290.0    | 0.0000 | 270.6         | 27.79  | 3.117  | 8       | 0.64                | NA               | 0    |
| 191.30      | Acid Soluble Cr, ICP (ppm)   | 0501     | 310.0    | 0.0000 | 270.6         | 27.79  | 3.117  | 8       | 1.30                | NA               | 0    |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                                  | 0136     | 270.0    | 18.00  | 303.8         | 19.95  | 8.586  | 5       | -1.69               |                  | 0    |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                                  | 0563     | 303.0    | 2.015  | 303.8         | 19.95  | 8.586  | 5       | -0.04               |                  | 0    |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                                  | 0548     | 312.3    | 0.6000 | 303.8         | 19.95  | 8.586  | 5       | 0.43                |                  | 0    |

| Method Code | Analyte Name and Method (Units)                                      | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |  |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                                  | 0494     | 312.3    | 18.67  | 303.8         | 19.95  | 8.586  | 5       | 0.43                | 0                |      |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                                  | 0527     | 321.2    | 3.650  | 303.8         | 19.95  | 8.586  | 5       | 0.88                | 0                |      |
| 191.34      | Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)                          | 0515     | 185.4    | 8.542  |               |        |        | 2       |                     | 0                |      |
| 191.34      | Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)                          | 0368     | 299.0    | 2.000  |               |        |        | 2       |                     | 0                |      |
| 191.99      | Acid Soluble Cr, Other (ppm)   | 0572     | 203.0    | 0.2300 |               |        |        | 2       |                     | 0                |      |
| 191.99      | Acid Soluble Cr, Other (ppm)   | 0405     | 285.5    | 3.000  |               |        |        | 2       |                     | 0                |      |
| 202.30      | Acid Soluble Co, ICP (ppm)   | 0389     | 2.485    | 0.0100 | 3.083         | 0.8175 | 0.3547 | 3       | -0.73               | 0                |      |
| 202.30      | Acid Soluble Co, ICP (ppm)   | 0035     | 2.750    | 0.9800 | 3.083         | 0.8175 | 0.3547 | 3       | -0.41               | 0                |      |
| 202.30      | Acid Soluble Co, ICP (ppm)   | 0524     | 4.015    | 0.0740 | 3.083         | 0.8175 | 0.3547 | 3       | 1.14                | 0                |      |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                                  | 0563     | 1.884    | 0.0025 | 2.021         | 0.2202 | 0.0878 | 3       | -0.62               | 0                |      |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                                  | 0548     | 1.905    | 0.1700 | 2.021         | 0.2202 | 0.0878 | 3       | -0.53               | 0                |      |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                                  | 0527     | 2.276    | 0.0908 | 2.021         | 0.2202 | 0.0878 | 3       | 1.15                | 0                |      |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                                  | 0136     | < 5      |        | 2.021         | 0.2202 | 0.0878 | 3       |                     | 5                |      |
| 202.34      | Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)                          | 0501     | 2.200    | 0.0000 | 8.917         | 11.38  | 1.931  | 3       | -0.59               | 0                |      |
| 202.34      | Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)                          | 0368     | 2.500    | 0.2000 | 8.917         | 11.38  | 1.931  | 3       | -0.56               | 0                |      |
| 202.34      | Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)                          | 0515     | 22.05    | 5.593  | 8.917         | 11.38  | 1.931  | 3       | 1.15                | 0                |      |
| 202.99      | Acid Soluble Co, Other (ppm)   | 0572     | 1.390    | 0.0200 | 27.96         | 45.50  | 12.08  | 3       | -0.58               | 0                |      |
| 202.99      | Acid Soluble Co, Other (ppm)   | 0405     | 2.000    | 0.2000 | 27.96         | 45.50  | 12.08  | 3       | -0.57               | 0                |      |
| 202.99      | Acid Soluble Co, Other (ppm)   | 0255     | 80.50    | 36.02  | 27.96         | 45.50  | 12.08  | 3       | 1.15                | 0                |      |
| 221.00      | Acid Soluble Cu, AA, inorganic 965.09 (%)                            | 0553     | < 0.005  |        |               |        |        | 0       |                     | 5                |      |
| 221.30      | Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)              | 0402     | 0.0035   | 0.0009 |               |        |        | 1       |                     | 0                |      |
| 221.30      | Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)              | 0255     | 0.0005   | 0.0010 |               |        |        | 1       |                     | 4                |      |
| 221.30      | Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)              | 0354     | < 0.01   |        |               |        |        | 1       |                     | 5                |      |
| 221.32      | Acid Soluble Cu, ICP, test portion 2006.03A-C (%)                    | 0394     | 0.0002   | 0.0001 |               |        |        | 1       |                     | 0                |      |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                                    | 0527     | 0.0003   | 0.0000 |               |        |        | 2       |                     | 0                |      |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                                    | 0548     | 0.0006   | 0.0003 |               |        |        | 2       |                     | 0                |      |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                                    | 0472     | 0.0000   | 0.0000 |               |        |        | 2       |                     | 4                |      |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                                    | 0563     | < 0.0001 |        |               |        |        | 2       |                     | 5                |      |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                                    | 0136     | < 0.0025 |        |               |        |        | 2       |                     | 5                |      |
| 221.99      | Acid Soluble Cu, Other (%)   | 0368     | 0.0002   | 0.0000 |               |        |        | 2       |                     | 0                |      |
| 221.99      | Acid Soluble Cu, Other (%)   | 0515     | 0.0035   | 0.0044 |               |        |        | 2       |                     | 0                |      |
| 221.99      | Acid Soluble Cu, Other (%)   | 0405     | < 0.0001 |        |               |        |        | 2       |                     | 5                |      |
| 221.99      | Acid Soluble Cu, Other (%)   | 0572     | < 0.0001 |        |               |        |        | 2       |                     | 5                |      |
| 241.00      | Acid Soluble Fe, AA, inorganic 965.09 (%)                            | 0553     | 0.6975   | 0.0050 |               |        |        | 1       |                     | 0                |      |
| 241.30      | Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)              | 0035     | 1.605    | 0.1300 | 1.630         | 0.0229 | 0.0600 | 3       | -1.09               | 0                |      |
| 241.30      | Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)              | 0444     | 1.635    | 0.0100 | 1.630         | 0.0229 | 0.0600 | 3       | 0.22                | 0                |      |
| 241.30      | Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)              | 0354     | 1.650    | 0.0400 | 1.630         | 0.0229 | 0.0600 | 3       | 0.87                | 0                |      |
| 241.32      | Acid Soluble Fe, ICP, test portion 2006.03A-C (%)                    | 0423     | 1.455    | 0.0300 |               |        |        | 2       |                     | 0                |      |
| 241.32      | Acid Soluble Fe, ICP, test portion 2006.03A-C (%)                    | 0521     | 1.524    | 0.0000 |               |        |        | 2       |                     | 0                |      |
| 241.33      | Acid Soluble Fe, ICP, 2017.02 (%)                                    | 0472     | 0.4050   | 0.0100 | 1.282         | 0.5845 | 0.0327 | 4       | -1.50               | 0                |      |
| 241.33      | Acid Soluble Fe, ICP, 2017.02 (%)                                    | 0527     | 1.558    | 0.0025 | 1.282         | 0.5845 | 0.0327 | 4       | 0.47                | 0                |      |
| 241.33      | Acid Soluble Fe, ICP, 2017.02 (%)                                    | 0494     | 1.574    | 0.1142 | 1.282         | 0.5845 | 0.0327 | 4       | 0.50                | 0                |      |
| 241.33      | Acid Soluble Fe, ICP, 2017.02 (%)                                    | 0563     | 1.589    | 0.0041 | 1.282         | 0.5845 | 0.0327 | 4       | 0.53                | 0                |      |
| 241.99      | Acid Soluble Fe, Other (%)   | 0515     | 0.3944   | 0.0762 | 1.154         | 0.6592 | 0.0342 | 3       | -1.15               | 0                |      |
| 241.99      | Acid Soluble Fe, Other (%)   | 0524     | 1.487    | 0.0064 | 1.154         | 0.6592 | 0.0342 | 3       | 0.50                | 0                |      |
| 241.99      | Acid Soluble Fe, Other (%)   | 0389     | 1.580    | 0.0200 | 1.154         | 0.6592 | 0.0342 | 3       | 0.65                | 0                |      |
| 251.00      | Acid Soluble Pb, AA, test portion 2006.03 modified w/dual acid (ppm) | 0534     | < 2      |        |               |        |        | 0       |                     | 5                |      |

| Method Code | Analyte Name and Method (Units)                   | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|---|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |   |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 251.30      | Acid Soluble Pb, ICP (ppm)                        | 0501     | 0.2700   | 0.0000 | 2.414         | 4.104  | 0.0563 | 5       | -0.46               |                  | 0    |
| 251.30      | Acid Soluble Pb, ICP (ppm)                        | 0394     | 0.2995   | 0.0410 | 2.414         | 4.104  | 0.0563 | 5       | -0.45               |                  | 0    |
| 251.30      | Acid Soluble Pb, ICP (ppm)                        | 0524     | 0.4258   | 0.0764 | 2.414         | 4.104  | 0.0563 | 5       | -0.42               |                  | 0    |
| 251.30      | Acid Soluble Pb, ICP (ppm)                        | 0035     | 1.365    | 0.1300 | 2.414         | 4.104  | 0.0563 | 5       | -0.22               |                  | 0    |
| 251.30      | Acid Soluble Pb, ICP (ppm)                        | 0169     | 9.712    | 0.0340 | 2.414         | 4.104  | 0.0563 | 5       | 1.55                |                  | 0    |
| 251.30      | Acid Soluble Pb, ICP (ppm)                        | 0255     | 0.0000   | 0.0000 | 2.414         | 4.104  | 0.0563 | 5       |                     |                  | 4    |
| 251.33      | Acid Soluble Pb, ICP, 2017.02 (ppm)               | 0563     | 0.2683   | 0.0169 |               |        |        | 2       |                     |                  | 0    |
| 251.33      | Acid Soluble Pb, ICP, 2017.02 (ppm)               | 0548     | 1.285    | 0.0700 |               |        |        | 2       |                     |                  | 0    |
| 251.33      | Acid Soluble Pb, ICP, 2017.02 (ppm)               | 0527     | < 0.0001 |        |               |        |        | 2       |                     |                  | 5    |
| 251.33      | Acid Soluble Pb, ICP, 2017.02 (ppm)               | 0136     | < 3      |        |               |        |        | 2       |                     |                  | 5    |
| 251.34      | Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)       | 0515     | 21.41    | 1.406  |               |        |        | 1       |                     |                  | 0    |
| 251.34      | Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)       | 0368     | < 0.5    |        |               |        |        | 1       |                     |                  | 5    |
| 251.99      | Acid Soluble Pb, Other (ppm)                      | 0572     | 0.2050   | 0.1100 |               |        |        | 2       |                     |                  | 0    |
| 251.99      | Acid Soluble Pb, Other (ppm)                      | 0405     | 0.6000   | 0.4000 |               |        |        | 2       |                     |                  | 0    |
| 261.00      | Acid Soluble Mn, AA, Mn2+ only (%)                | 0553     | 0.0160   | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 261.30      | Acid Soluble Mn, ICP, test portion 972.02a (%)    | 0354     | 0.0200   | 0.0000 | 0.0208        | 0.0010 | 0.0002 | 3       | -0.78               |                  | 0    |
| 261.30      | Acid Soluble Mn, ICP, test portion 972.02a (%)    | 0035     | 0.0205   | 0.0005 | 0.0208        | 0.0010 | 0.0002 | 3       | -0.35               |                  | 0    |
| 261.30      | Acid Soluble Mn, ICP, test portion 972.02a (%)    | 0444     | 0.0220   | 0.0000 | 0.0208        | 0.0010 | 0.0002 | 3       | 1.13                |                  | 0    |
| 261.34      | Acid Soluble Mn, ICP, test portion 2006.03A-C (%) | 0423     | 0.0215   | 0.0010 |               |        |        | 1       |                     |                  | 0    |
| 261.35      | Acid Soluble Mn, ICP, 2017.02 (%)                 | 0494     | 0.0191   | 0.0020 | 0.0205        | 0.0014 | 0.0009 | 3       | -1.00               |                  | 0    |
| 261.35      | Acid Soluble Mn, ICP, 2017.02 (%)                 | 0563     | 0.0205   | 0.0000 | 0.0205        | 0.0014 | 0.0009 | 3       | 0.00                |                  | 0    |
| 261.35      | Acid Soluble Mn, ICP, 2017.02 (%)                 | 0527     | 0.0219   | 0.0008 | 0.0205        | 0.0014 | 0.0009 | 3       | 1.00                |                  | 0    |
| 261.35      | Acid Soluble Mn, ICP, 2017.02 (%)                 | 0472     | 0.0000   | 0.0000 | 0.0205        | 0.0014 | 0.0009 | 3       |                     |                  | 4    |
| 261.99      | Acid Soluble Mn, Other (%)                        | 0515     | 0.0027   | 0.0028 | 0.0136        | 0.0095 | 0.0013 | 3       | -1.15               |                  | 0    |
| 261.99      | Acid Soluble Mn, Other (%)                        | 0524     | 0.0184   | 0.0009 | 0.0136        | 0.0095 | 0.0013 | 3       | 0.50                |                  | 0    |
| 261.99      | Acid Soluble Mn, Other (%)                        | 0389     | 0.0199   | 0.0001 | 0.0136        | 0.0095 | 0.0013 | 3       | 0.65                |                  | 0    |
| 281.00      | Acid Soluble Hg, AA (ppm)                         | 0534     | < 0.05   |        |               |        |        | 0       |                     |                  | 5    |
| 281.30      | Acid Soluble Hg, ICP (ppm)                        | 0515     | 0.0000   | 0.0000 |               |        |        | 0       |                     |                  | 4    |
| 281.30      | Acid Soluble Hg, ICP (ppm)                        | 0527     | < 0.0001 |        |               |        |        | 0       |                     |                  | 5    |
| 281.30      | Acid Soluble Hg, ICP (ppm)                        | 0563     | < 0.01   |        |               |        |        | 0       |                     |                  | 5    |
| 281.99      | Acid Soluble Hg, Other (ppm)                      | 0368     | 0.0001   | 0.0000 | 0.0020        | 0.0026 | 0.0007 | 3       | -0.74               |                  | 0    |
| 281.99      | Acid Soluble Hg, Other (ppm)                      | 0524     | 0.0010   | 0.0002 | 0.0020        | 0.0026 | 0.0007 | 3       | -0.40               |                  | 0    |
| 281.99      | Acid Soluble Hg, Other (ppm)                      | 0035     | 0.0050   | 0.0020 | 0.0020        | 0.0026 | 0.0007 | 3       | 1.14                |                  | 0    |
| 281.99      | Acid Soluble Hg, Other (ppm)                      | 0572     | < 0.007  |        | 0.0020        | 0.0026 | 0.0007 | 3       |                     |                  | 5    |
| 281.99      | Acid Soluble Hg, Other (ppm)                      | 0405     | < 0.01   |        | 0.0020        | 0.0026 | 0.0007 | 3       |                     |                  | 5    |
| 289.30      | Acid Soluble Mo, ICP (ppm)                        | 0485     | 3.045    | 0.0190 | 9.642         | 3.764  | 0.3852 | 5       | -1.75               |                  | 0    |
| 289.30      | Acid Soluble Mo, ICP (ppm)                        | 0402     | 10.65    | 0.9000 | 9.642         | 3.764  | 0.3852 | 5       | 0.27                |                  | 0    |
| 289.30      | Acid Soluble Mo, ICP (ppm)                        | 0035     | 10.65    | 0.7000 | 9.642         | 3.764  | 0.3852 | 5       | 0.27                |                  | 0    |
| 289.30      | Acid Soluble Mo, ICP (ppm)                        | 0255     | 11.38    | 0.2800 | 9.642         | 3.764  | 0.3852 | 5       | 0.46                |                  | 0    |
| 289.30      | Acid Soluble Mo, ICP (ppm)                        | 0524     | 12.48    | 0.0268 | 9.642         | 3.764  | 0.3852 | 5       | 0.76                |                  | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)               | 0563     | 12.88    | 0.0654 | 17.02         | 4.333  | 0.6086 | 5       | -0.95               |                  | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)               | 0136     | 13.15    | 1.300  | 17.02         | 4.333  | 0.6086 | 5       | -0.89               |                  | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)               | 0527     | 17.33    | 0.4577 | 17.02         | 4.333  | 0.6086 | 5       | 0.07                |                  | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)               | 0548     | 18.28    | 0.3200 | 17.02         | 4.333  | 0.6086 | 5       | 0.29                |                  | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)               | 0494     | 23.45    | 0.9000 | 17.02         | 4.333  | 0.6086 | 5       | 1.48                |                  | 0    |
| 289.34      | Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)       | 0368     | 15.10    | 0.0000 | 18.37         | 4.899  | 8.667  | 3       | -0.67               |                  | 0    |
| 289.34      | Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)       | 0501     | 16.00    | 0.0000 | 18.37         | 4.899  | 8.667  | 3       | -0.48               |                  | 0    |

| Method Code | Analyte Name and Method (Units)                         | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|---|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |   |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 289.34      | Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)             | 0515     | 24.00    | 26.00  | 18.37         | 4.899  | 8.667  | 3       | 1.15                |                  | 0    |
| 289.99      | Acid Soluble Mo, Other (ppm)                            | 0405     | 13.75    | 0.5000 |               |        |        | 1       |                     |                  | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                              | 0444     | 35.87    | 5.480  | 41.95         | 5.035  | 1.993  | 9       | -1.12               | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                              | 0389     | 37.00    | 0.0000 | 41.95         | 5.035  | 1.993  | 9       | -0.91               | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                              | 0485     | 37.40    | 0.3000 | 41.95         | 5.035  | 1.993  | 9       | -0.83               | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                              | 0524     | 41.45    | 0.1140 | 41.95         | 5.035  | 1.993  | 9       | -0.09               | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                              | 0521     | 41.68    | 0.0000 | 41.95         | 5.035  | 1.993  | 9       | -0.05               | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                              | 0169     | 43.73    | 0.5690 | 41.95         | 5.035  | 1.993  | 9       | 0.33                | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                              | 0027     | 46.00    | 2.000  | 41.95         | 5.035  | 1.993  | 9       | 0.74                | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                              | 0394     | 47.05    | 3.670  | 41.95         | 5.035  | 1.993  | 9       | 0.93                | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                              | 0035     | 47.40    | 5.800  | 41.95         | 5.035  | 1.993  | 9       | 1.00                | NA               | 0    |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)                     | 0563     | 40.22    | 2.280  | 48.39         | 6.243  | 1.983  | 5       | -1.31               |                  | 0    |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)                     | 0136     | 43.70    | 2.800  | 48.39         | 6.243  | 1.983  | 5       | -0.75               |                  | 0    |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)                     | 0548     | 50.67    | 0.0900 | 48.39         | 6.243  | 1.983  | 5       | 0.36                |                  | 0    |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)                     | 0494     | 51.95    | 3.500  | 48.39         | 6.243  | 1.983  | 5       | 0.57                |                  | 0    |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)                     | 0527     | 55.42    | 1.243  | 48.39         | 6.243  | 1.983  | 5       | 1.13                |                  | 0    |
| 291.34      | Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)             | 0515     | 21.30    | 13.77  | 40.00         | 16.20  | 4.991  | 3       | -1.15               |                  | 0    |
| 291.34      | Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)             | 0501     | 49.00    | 0.0000 | 40.00         | 16.20  | 4.991  | 3       | 0.56                |                  | 0    |
| 291.34      | Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)             | 0368     | 49.70    | 1.200  | 40.00         | 16.20  | 4.991  | 3       | 0.60                |                  | 0    |
| 291.99      | Acid Soluble Ni, Other (ppm)                            | 0572     | 34.36    | 1.500  | 48.94         | 14.54  | 6.330  | 3       | -1.00               |                  | 0    |
| 291.99      | Acid Soluble Ni, Other (ppm)                            | 0405     | 49.00    | 2.000  | 48.94         | 14.54  | 6.330  | 3       | 0.00                |                  | 0    |
| 291.99      | Acid Soluble Ni, Other (ppm)                            | 0255     | 63.45    | 15.49  | 48.94         | 14.54  | 6.330  | 3       | 1.00                |                  | 0    |
| 301.30      | Acid Soluble Se, ICP (ppm)                              | 0524     | 1.076    | 0.3362 |               |        |        | 2       |                     |                  | 0    |
| 301.30      | Acid Soluble Se, ICP (ppm)                              | 0501     | 3.150    | 0.9000 |               |        |        | 2       |                     |                  | 0    |
| 301.33      | Acid Soluble Se, ICP, 2017.02 (ppm)                     | 0563     | 1.858    | 0.0147 | 3.944         | 2.162  | 0.0176 | 3       | -0.97               |                  | 0    |
| 301.33      | Acid Soluble Se, ICP, 2017.02 (ppm)                     | 0548     | 3.800    | 0.0200 | 3.944         | 2.162  | 0.0176 | 3       | -0.07               |                  | 0    |
| 301.33      | Acid Soluble Se, ICP, 2017.02 (ppm)                     | 0527     | 6.174    | 0.0181 | 3.944         | 2.162  | 0.0176 | 3       | 1.03                |                  | 0    |
| 301.34      | Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)             | 0515     | 13.99    | 17.30  |               |        |        | 1       |                     |                  | 0    |
| 301.34      | Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)             | 0368     | < 0.9    |        |               |        |        | 1       |                     |                  | 5    |
| 301.99      | Acid Soluble Se, Other (ppm)                            | 0572     | 2.290    | 0.5200 |               |        |        | 1       |                     |                  | 0    |
| 301.99      | Acid Soluble Se, Other (ppm)                            | 0255     | 0.0000   | 0.0000 |               |        |        | 1       |                     |                  | 4    |
| 301.99      | Acid Soluble Se, Other (ppm)                            | 0405     | < 1      |        |               |        |        | 1       |                     |                  | 5    |
| 311.00      | Sodium, AA (%)  | 0553     | 0.2165   | 0.0010 |               |        |        | 1       |                     |                  | 0    |
| 311.33      | Sodium, ICP, test portion as in 2017.02 (%)             | 0527     | 0.1875   | 0.0009 | 0.1962        | 0.0096 | 0.0030 | 3       | -0.90               |                  | 0    |
| 311.33      | Sodium, ICP, test portion as in 2017.02 (%)             | 0423     | 0.1945   | 0.0070 | 0.1962        | 0.0096 | 0.0030 | 3       | -0.17               |                  | 0    |
| 311.33      | Sodium, ICP, test portion as in 2017.02 (%)             | 0035     | 0.2065   | 0.0010 | 0.1962        | 0.0096 | 0.0030 | 3       | 1.07                |                  | 0    |
| 311.99      | Sodium, Other (%)                                       | 0354     | 0.2000   | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 321.00      | Acid Soluble Zn, AA, inorganic 965.09 (%)               | 0534     | 0.0955   | 0.0090 | 244.8         | 423.9  | 10.70  | 3       | -0.58               |                  | 0    |
| 321.00      | Acid Soluble Zn, AA, inorganic 965.09 (%)               | 0553     | 0.1005   | 0.0010 | 244.8         | 423.9  | 10.70  | 3       | -0.58               |                  | 0    |
| 321.00      | Acid Soluble Zn, AA, inorganic 965.09 (%)               | 0485     | 734.3    | 32.10  | 244.8         | 423.9  | 10.70  | 3       | 1.15                |                  | 0    |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%) | 0402     | 0.0750   | 0.0003 | 0.0945        | 0.0159 | 0.0024 | 6       | -1.10               | Low              | 0    |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%) | 0255     | 0.0860   | 0.0000 | 0.0945        | 0.0159 | 0.0024 | 6       | -0.48               | OK               | 0    |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%) | 0354     | 0.0900   | 0.0000 | 0.0945        | 0.0159 | 0.0024 | 6       | -0.25               | OK               | 0    |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%) | 0444     | 0.1000   | 0.0000 | 0.0945        | 0.0159 | 0.0024 | 6       | 0.31                | OK               | 0    |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%) | 0035     | 0.1010   | 0.0100 | 0.0945        | 0.0159 | 0.0024 | 6       | 0.36                | OK               | 0    |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%) | 0234     | 0.1153   | 0.0039 | 0.0945        | 0.0159 | 0.0024 | 6       | 1.16                | High             | 0    |
| 321.32      | Acid Soluble Zn, ICP, test portion 2006.03A-C (%)       | 0394     | 0.0924   | 0.0010 |               |        |        | 2       |                     |                  | 0    |

| Method Code | Analyte Name and Method (Units)                   | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|---|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |   |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 321.32      | Acid Soluble Zn, ICP, test portion 2006.03A-C (%) | 0423     | 0.1685   | 0.0010 |               |        |        | 2       |                     |                  | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                 | 0472     | 0.0400   | 0.0000 | 0.0880        | 0.0189 | 0.0047 | 6       | -2.26               | Low              | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                 | 0136     | 0.0835   | 0.0050 | 0.0880        | 0.0189 | 0.0047 | 6       | -0.21               | OK               | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                 | 0494     | 0.0858   | 0.0121 | 0.0880        | 0.0189 | 0.0047 | 6       | -0.11               | OK               | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                 | 0043     | 0.0900   | 0.0060 | 0.0880        | 0.0189 | 0.0047 | 6       | 0.09                | OK               | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                 | 0563     | 0.1029   | 0.0041 | 0.0880        | 0.0189 | 0.0047 | 6       | 0.70                | High             | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                 | 0527     | 0.1064   | 0.0012 | 0.0880        | 0.0189 | 0.0047 | 6       | 0.86                | High             | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                 | 0548     | 0.1650   | 0.0500 | 0.0880        | 0.0189 | 0.0047 | 6       | 3.62                | High             | 1    |
| 321.99      | Acid Soluble Zn, Other (%)                        | 0515     | 0.0378   | 0.0027 | 0.0843        | 0.0109 | 0.0041 | 8       | -3.90               | Low              | 0    |
| 321.99      | Acid Soluble Zn, Other (%)                        | 0501     | 0.0720   | 0.0000 | 0.0843        | 0.0109 | 0.0041 | 8       | -1.03               | OK               | 0    |
| 321.99      | Acid Soluble Zn, Other (%)                        | 0572     | 0.0832   | 0.0097 | 0.0843        | 0.0109 | 0.0041 | 8       | -0.10               | OK               | 0    |
| 321.99      | Acid Soluble Zn, Other (%)                        | 0027     | 0.0860   | 0.0060 | 0.0843        | 0.0109 | 0.0041 | 8       | 0.14                | OK               | 0    |
| 321.99      | Acid Soluble Zn, Other (%)                        | 0368     | 0.0884   | 0.0003 | 0.0843        | 0.0109 | 0.0041 | 8       | 0.34                | OK               | 0    |
| 321.99      | Acid Soluble Zn, Other (%)                        | 0405     | 0.0901   | 0.0040 | 0.0843        | 0.0109 | 0.0041 | 8       | 0.48                | OK               | 0    |
| 321.99      | Acid Soluble Zn, Other (%)                        | 0524     | 0.0922   | 0.0002 | 0.0843        | 0.0109 | 0.0041 | 8       | 0.66                | OK               | 0    |
| 321.99      | Acid Soluble Zn, Other (%)                        | 0389     | 0.0950   | 0.0100 | 0.0843        | 0.0109 | 0.0041 | 8       | 0.89                | OK               | 0    |

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, 3 = removed from stats, 4 = rejected due to 0s submitted and 5 = LOD. A 9 flag indicates a data problem - scores not calculated. Robust statistics not used if < 6 labs used in calculations, in this case the Z Scores are grey and included for information only. IA Status describes where your result is relative to the Assigned Value ± IA. Red indicates Higher or Lower, Green indicates within the IA range. Method 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.