



**2011 North American Proficiency Testing Program  
1st Quarter Report - May 10, 2011**

**Laboratory ID  
General**

| Soil Analysis   | Units   | n  | Soil 2011-101 |       |                    | Soil 2011-102 |       |                    | Soil 2011-103 |       |                    | Soil 2011-104 |       |                    | Soil 2011-105 |       |                    |
|---|---------|----|---------------|-------|--------------------|---------------|-------|--------------------|---------------|-------|--------------------|---------------|-------|--------------------|---------------|-------|--------------------|
|   |         |    | Median        | MAD   | Lab <sup>1,2</sup> | Median        | MAD   | Lab <sup>1,2</sup> | Median        | MAD   | Lab <sup>1,2</sup> | Median        | MAD   | Lab <sup>1,2</sup> | Median        | MAD   | Lab <sup>1,2</sup> |
| <b>Salinity</b>   |         |    |               |       |                    |               |       |                    |               |       |                    |               |       |                    |               |       |                    |
| Sat. Paste Moisture   | %       | 30 | 47.4          | 4.79  |                    | 43.9          | 6.51  |                    | 30.2          | 2.90  |                    | 37.2          | 4.33  |                    | 47.8          | 4.29  |                    |
| pH - sp   | Unit    | 40 | 7.207         | 0.126 |                    | 7.58          | 0.12  |                    | 5.83          | 0.145 |                    | 6.86          | 0.165 |                    | 5.10          | 0.154 |                    |
| ECe - sp  | dS/m    | 42 | 0.964         | 0.230 |                    | 4.81          | 0.57  |                    | 1.57          | 0.232 |                    | 0.818         | 0.154 |                    | 0.743         | 0.148 |                    |
| HCO3 - sp   | mmolc/L | 15 | 4.58          | 2.282 |                    | 4.32          | 1.62  |                    | 0.73          | 0.476 |                    | 3.90          | 1.710 |                    | 0.649         | 0.260 |                    |
| Ca - sp   | mmolc/L | 33 | 8.11          | 3.076 |                    | 26.89         | 2.79  |                    | 6.2           | 1.11  |                    | 5.09          | 0.974 |                    | 3.92          | 0.996 |                    |
| Mg - sp   | mmolc/L | 33 | 1.872         | 0.681 |                    | 13.40         | 1.46  |                    | 5.0           | 1.36  |                    | 2.65          | 0.456 |                    | 2.406         | 0.838 |                    |
| Na - sp   | mmolc/L | 33 | 0.881         | 0.339 |                    | 24.26         | 3.21  |                    | 3.2           | 0.34  |                    | 1.056         | 0.194 |                    | 0.662         | 0.390 |                    |
| SAR - sp  | value   | 32 | 0.379         | 0.105 |                    | 5.28          | 0.67  |                    | 1.37          | 0.164 |                    | 0.535         | 0.117 |                    | 0.363         | 0.194 |                    |
| Cl - sp   | mmolc/L | 23 | 1.556         | 0.267 |                    | 7.2           | 1.22  |                    | 1.22          | 0.179 |                    | 1.498         | 0.245 |                    | 0.263         | 0.092 |                    |
| SO4 - sp  | mmolc/L | 22 | 3.497         | 1.217 |                    | 50.60         | 5.15  |                    | 2.4           | 0.43  |                    | 1.40          | 0.235 |                    | 0.636         | 0.273 |                    |
| NO <sub>3</sub> - sp  | mmolc/L | 14 | 0.292         | 0.284 |                    | 2.078         | 1.41  |                    | 7.85          | 3.70  |                    | 0.38          | 0.315 |                    | 4.165         | 2.128 |                    |
| B - sp  | mg/L    | 14 | 0.961         | 0.414 |                    | 0.386         | 0.08  |                    | 0.201         | 0.042 |                    | 0.118         | 0.021 |                    | 0.190         | 0.139 |                    |
| <b>Soil pH &amp; EC</b>   |         |    |               |       |                    |               |       |                    |               |       |                    |               |       |                    |               |       |                    |
| Soil EC (1:1)   | (dS/m)  | 36 | 0.3           | 0.063 |                    | 2.405         | 0.53  |                    | 0.55          | 0.136 |                    | 0.289         | 0.070 |                    | 0.455         | 0.035 |                    |
| Soil EC (1:2)   | (dS/m)  | 45 | 0.2           | 0.055 |                    | 1.825         | 0.32  |                    | 0.33          | 0.055 |                    | 0.185         | 0.037 |                    | 0.249         | 0.038 |                    |
| pH (1:1) Water  | Unit    | 81 | 7.4           | 0.098 |                    | 7.80          | 0.09  |                    | 6.08          | 0.145 |                    | 7.10          | 0.085 |                    | 5.22          | 0.090 |                    |
| pH (1:2) Water  | Unit    | 35 | 7.4           | 0.130 |                    | 7.86          | 0.13  |                    | 6.19          | 0.168 |                    | 7.12          | 0.135 |                    | 5.31          | 0.107 |                    |
| pH (1:1) 0.01M CaCl <sub>2</sub>                                    | Unit    | 22 | 7.0           | 0.086 |                    | 7.67          | 0.10  |                    | 5.82          | 0.190 |                    | 6.70          | 0.084 |                    | 4.85          | 0.108 |                    |
| pH (1:2) 0.01M CaCl <sub>2</sub>                                    | Unit    | 12 | 6.9           | 0.091 |                    | 7.58          | 0.10  |                    | 5.71          | 0.122 |                    | 6.58          | 0.071 |                    | 4.84          | 0.066 |                    |
| <b>Buffer pH, Lime Req.</b>   |         |    |               |       |                    |               |       |                    |               |       |                    |               |       |                    |               |       |                    |
| SMP Buffer pH   | Unit    | 39 | 7.3           | 0.082 |                    | 7.53          | 0.09  |                    | 7.12          | 0.094 |                    | 7.23          | 0.084 |                    | 6.36          | 0.155 |                    |
| Adams-Evans Buf pH  | Unit    | 5  | 7.7           | 0.035 |                    | 7.79          | 0.03  |                    | 7.75          | 0.042 |                    | 7.76          | 0.040 |                    | 7.32          | 0.120 |                    |
| Woodruff Buf. pH  | Unit    | 21 | 7.0           | 0.034 |                    | 7.17          | 0.06  |                    | 6.82          | 0.054 |                    | 6.95          | 0.048 |                    | 6.35          | 0.102 |                    |
| Mehlich Buffer pH   | Unit    | 4  | 6.6           | 0.048 |                    | 6.83          | 0.04  |                    | 6.26          | 0.150 |                    | 6.53          | 0.067 |                    | 5.82          | 0.154 |                    |
| Sikora Buffer pH  | Unit    | 17 | 7.4           | 0.064 |                    | 7.52          | 0.11  |                    | 7.13          | 0.118 |                    | 7.29          | 0.077 |                    | 6.44          | 0.113 |                    |
| Titrateable Acidity   | cmol/kg | 1  | 1.0           | 0.00  |                    | 0.9           | 0.00  |                    | 3.4           | 0.00  |                    |               |       |                    | 5.6           | 5.39  |                    |
| <b>Inorganic Nitrogen (NO<sub>3</sub>-N &amp; NH<sub>4</sub>-N)</b> |         |    |               |       |                    |               |       |                    |               |       |                    |               |       |                    |               |       |                    |
| NO <sub>3</sub> -N Cd. Rd.  | mg/kg   | 62 | 5.3           | 1.87  |                    | 24.59         | 1.64  |                    | 54.5          | 4.57  |                    | 6.7           | 0.92  |                    | 42.2          | 2.32  |                    |
| NO <sub>3</sub> -N ISE  | mg/kg   | 17 | 11.8          | 11.56 |                    | 34.21         | 16.30 |                    | 59.8          | 22.32 |                    | 13.3          | 11.23 |                    | 38.5          | 13.04 |                    |
| NO <sub>3</sub> -N CTA  | mg/kg   | 5  | 7.7           | 1.84  |                    | 30.12         | 12.79 |                    | 75.3          | 34.69 |                    | 11.1          | 5.77  |                    | 58.1          | 20.78 |                    |
| NO <sub>3</sub> -N Ion Chr.   | mg/kg   | 1  | 102.7         | 0.000 |                    | 127.88        | 0.000 |                    | 109.3         | 50.03 |                    | 105.0         | 0.00  |                    | 98.0          | 52.38 |                    |

1 - Values flagged exceed Warning Limits \* \* \* 2.5x MAD (Median Absolute Deviation) and Control Limits \* \* \* 4 x MAD. "<" and "ND" values not recorded.  
2 - Limits not compared to lab data for methods with < 7 labs reporting



2011 North American Proficiency Testing Program  
1st Quarter Report - May 10, 2011

Laboratory ID  
General

| Soil                                   | Soil 2011-101 |    |        |        |                    | Soil 2011-102 |        |                    | Soil 2011-103 |       |                    | Soil 2011-104 |       |                    | Soil 2011-105 |       |                    |
|--|---------------|----|--------|--------|--------------------|---------------|--------|--------------------|---------------|-------|--------------------|---------------|-------|--------------------|---------------|-------|--------------------|
| Analysis                               | Units         | n  | Median | MAD    | Lab <sup>1,2</sup> | Median        | MAD    | Lab <sup>1,2</sup> | Median        | MAD   | Lab <sup>1,2</sup> | Median        | MAD   | Lab <sup>1,2</sup> | Median        | MAD   | Lab <sup>1,2</sup> |
| NO3-N Other _____                      | mg/kg         | 7  | 5.7    | 1.19   |                    | 27.09         | 2.47   |                    | 57.0          | 5.67  |                    | 7.2           | 1.19  |                    | 44.8          | 4.039 |                    |
| NH4 - N (KCl Extr.)                    | mg/kg         | 55 | 42.2   | 7.048  |                    | 6.8           | 1.31   |                    | 2.50          | 0.958 |                    | 13.9          | 1.85  |                    | 18.81         | 5.395 |                    |
| <b>Phosphorus and Sulfur</b>           |               |    |        |        |                    |               |        |                    |               |       |                    |               |       |                    |               |       |                    |
| PO4-P Bray P (1:10)                    | mg/kg         | 45 | 197.9  | 28.26  |                    | 14.0          | 5.47   |                    | 49.0          | 3.69  |                    | 98.4          | 7.66  |                    | 24.6          | 2.43  |                    |
| PO4-P Bray P1 (1:7)                    | mg/kg         | 9  | 157.4  | 22.18  |                    | 14.9          | 2.26   |                    | 39.3          | 3.64  |                    | 82.7          | 6.53  |                    | 19.9          | 2.50  |                    |
| PO4-P Olsen/Bicarb                     | mg/kg         | 57 | 76.8   | 12.71  |                    | 28.3          | 2.22   |                    | 27.5          | 3.01  |                    | 41.1          | 4.04  |                    | 13.5          | 2.68  |                    |
| PO4-P AB-DTPA                          | mg/kg         | 2  | 50.1   | 4.85   |                    | 12.8          | 2.00   |                    | 15.4          | 0.5   |                    | 22.0          | 1.3   |                    | 3.95          | 1.65  |                    |
| PO4-P Modified Morgan                  | mg/kg         | 4  | 105.3  | 23.125 |                    | 33.73         | 3.363  |                    | 9.4           | 2.08  |                    | 20.2          | 1.83  |                    | 1.93          | 0.58  |                    |
| PO4-P True Morgan                      | mg/kg         | 6  | 123.0  | 11.174 |                    | 30.60         | 1.694  |                    | 9.1           | 0.49  |                    | 19.4          | 0.79  |                    | 1.67          | 0.239 |                    |
| PO4-P Mod. Kewlona                     | mg/kg         | 5  | 149.4  | 21.94  |                    | 43.5          | 3.40   |                    | 29.4          | 2.83  |                    | 64.9          | 11.85 |                    | 15.8          | 2.63  |                    |
| PO4-P Stong Bray (1:10)                | mg/kg         | 8  | 656.3  | 117.1  |                    | 131.5         | 24.11  |                    | 310           | 42.0  |                    | 154           | 11.6  |                    | 41.5          | 4.73  |                    |
| PO4-P Water Soluble                    | mg/kg         | 2  | 10.5   | 5.41   |                    | 2.81          | 1.28   |                    | 3.23          | 2.162 |                    | 5.48          | 2.95  |                    | 1.23          | 1.11  |                    |
| SO4 - S (PO4 Extr.)                    | mg/kg         | 37 | 23.6   | 4.87   |                    | 398.8         | 213.99 |                    | 17            | 5     |                    | 10.3          | 2.68  |                    | 7.32          | 2.55  |                    |
| <b>Bases</b>                           |               |    |        |        |                    |               |        |                    |               |       |                    |               |       |                    |               |       |                    |
| K Ammonium Acetate                     | mg/kg         | 79 | 338.8  | 49     |                    | 591           | 52.1   |                    | 345           | 44.3  |                    | 154           | 17.4  |                    | 423           | 35.0  |                    |
| Ca Ammonium Acetate                    | mg/kg         | 75 | 2016.4 | 368    |                    | 5313          | 1077.9 |                    | 1046          | 171   |                    | 1213          | 145.3 |                    | 2020          | 199.8 |                    |
| Mg Ammonium Acetate                    | mg/kg         | 76 | 150.6  | 22.2   |                    | 763           | 82.2   |                    | 281           | 33.4  |                    | 222           | 20.7  |                    | 503           | 49.3  |                    |
| Na Ammonium Acetate                    | mg/kg         | 60 | 22.0   | 7.37   |                    | 534.1         | 80.74  |                    | 96            | 66.0  |                    | 26.7          | 9.47  |                    | 26.7          | 17.21 |                    |
| Bray Extractable K                     | mg/kg         | 3  | 256.0  | 12.7   |                    | 396           | 18.0   |                    | 314           | 17.3  |                    | 132           | 2.2   |                    | 292.0         | 16.00 |                    |
| K- Olsen/Bicarb.                       | mg/kg         | 6  | 317.8  | 8.9    |                    | 443           | 7.60   |                    | 282           | 11.9  |                    | 146           | 5.2   |                    | 296           | 11.4  |                    |
| K Modified Morgan                      | mg/kg         | 2  | 364.0  | 2.0    |                    | 605           | 82.5   |                    | 306           | 10.0  |                    | 148           | 0.0   |                    | 417           | 11.5  |                    |
| K True Morgan                          | mg/kg         | 6  | 251.9  | 28.6   |                    | 298           | 25.29  |                    | 206           | 28.1  |                    | 126           | 12.5  |                    | 218.1         | 24.92 |                    |
| Ca Modified Morgan                     | mg/kg         | 3  | 2926.3 | 184    |                    | 24897         | 3084.3 |                    | 1000          | 147.5 |                    | 1294          | 49.1  |                    | 1980          | 83.4  |                    |
| Aluminum KCL Extr.                     | mg/kg         | 3  | 1.0    | 1.313  |                    | 1.67          | 1.556  |                    | 2.353         | 2.431 |                    | 2.04          | 1.31  |                    | 2             | 2.4   |                    |
| <b>Mehlich-1 Multi Element (scoop)</b> |               |    |        |        |                    |               |        |                    |               |       |                    |               |       |                    |               |       |                    |
| Scoop Soil Mass                        | g             | 5  | 5.0    | 0.042  |                    | 5.10          | 0.160  |                    | 5.18          | 0.282 |                    | 5.13          | 0.208 |                    | 4.99          | 0.016 |                    |
| P                                      | mg/kg         | 5  | 490.7  | 63.7   |                    | 14.2          | 2.66   |                    | 243           | 7.6   |                    | 82.5          | 5.2   |                    | 16.2          | 1.17  |                    |
| K                                      | mg/kg         | 5  | 285.2  | 40.7   |                    | 230           | 33.0   |                    | 245           | 16.7  |                    | 132           | 10.8  |                    | 229.3         | 19.20 |                    |
| Ca                                     | mg/kg         | 5  | 3689.5 | 283    |                    | 4790          | 259.7  |                    | 1349          | 54    |                    | 1556          | 58.3  |                    | 1460          | 78.4  |                    |
| Mg                                     | mg/kg         | 5  | 195.5  | 20.7   |                    | 571           | 36.49  |                    | 250           | 13.1  |                    | 251           | 12.57 |                    | 376           | 23.7  |                    |
| Mn                                     | mg/kg         | 4  | 176.6  | 23.70  |                    | 4.0           | 0.78   |                    | 17.2          | 0.72  |                    | 52.3          | 2.99  |                    | 65.9          | 5.83  |                    |
| Zn                                     | mg/kg         | 4  | 15.4   | 2.068  |                    | 0.08          | 0.049  |                    | 2.8           | 0.32  |                    | 3.90          | 0.508 |                    | 2.54          | 0.373 |                    |
| <b>Mehlich-3 Multi-Element (scoop)</b> |               |    |        |        |                    |               |        |                    |               |       |                    |               |       |                    |               |       |                    |

1 - Values flagged exceed Warning Limits \* \* \* 2.5x MAD (Median Absolute Deviation) and Control Limits \* \* \* 4 x MAD. "<" and "ND" values not recorded.

2 - Limits not compared to lab data for methods with < 7 labs reporting



2011 North American Proficiency Testing Program  
1st Quarter Report - May 10, 2011

Laboratory ID

General

| Soil                       | Soil 2011-101     |    |        |       | Soil 2011-102      |        |       | Soil 2011-103      |        |       | Soil 2011-104      |        |       | Soil 2011-105      |        |       |                    |
|----------------------------|-------------------|----|--------|-------|--------------------|--------|-------|--------------------|--------|-------|--------------------|--------|-------|--------------------|--------|-------|--------------------|
| Analysis                   | Units             | n  | Median | MAD   | Lab <sup>1,2</sup> | Median | MAD   | Lab <sup>1,2</sup> | Median | MAD   | Lab <sup>1,2</sup> | Median | MAD   | Lab <sup>1,2</sup> | Median | MAD   | Lab <sup>1,2</sup> |
| Scoop Soil Mass            | g                 | 25 | 1.9    | 0.334 |                    | 2.20   | 0.344 |                    | 2.43   | 0.423 |                    | 2.13   | 0.369 |                    | 2.10   | 0.307 |                    |
| Assumed Density            | g/cm <sup>3</sup> | 13 | 1.1    | 0.075 |                    | 1.18   | 0.054 |                    | 1.23   | 0.092 |                    | 1.19   | 0.045 |                    | 1.15   | 0.062 |                    |
| Volume of Scoop            | cm <sup>3</sup>   | 23 | 2.0    | 0.285 |                    | 1.96   | 0.283 |                    | 2.92   | 1.840 |                    | 1.96   | 0.272 |                    | 1.96   | 0.261 |                    |
| Extractant Volume mL       | mL                | 31 | 19.7   | 2.175 |                    | 19.7   | 2.24  |                    | 19.5   | 2.27  |                    | 19.7   | 2.32  |                    | 19.7   | 2.24  |                    |
| P Colorimetric             | mg/kg             | 20 | 275.1  | 57.28 |                    | 69.3   | 6.43  |                    | 57.5   | 6.07  |                    | 103.8  | 8.42  |                    | 23.6   | 2.40  |                    |
| P ICP-AES                  | mg/kg             | 43 | 341.6  | 34.57 |                    | 94.5   | 35.88 |                    | 62.7   | 7.20  |                    | 122.1  | 9.01  |                    | 30.2   | 3.19  |                    |
| K                          | mg/kg             | 49 | 344.6  | 48.0  |                    | 615    | 53.6  |                    | 393    | 64.5  |                    | 162    | 15.7  |                    | 433    | 37.4  |                    |
| Ca                         | mg/kg             | 48 | 2575.5 | 294   |                    | 7204   | 767.4 |                    | 1157   | 172   |                    | 1377   | 151.4 |                    | 2014   | 218.0 |                    |
| Mg                         | mg/kg             | 48 | 172.0  | 23.6  |                    | 1030   | 94.1  |                    | 319    | 33.0  |                    | 253    | 26.2  |                    | 503    | 46.6  |                    |
| Na                         | mg/kg             | 36 | 37.9   | 26.64 |                    | 575.5  | 76.53 |                    | 78     | 25.7  |                    | 39.1   | 25.15 |                    | 30.9   | 22.49 |                    |
| S                          | mg/kg             | 36 | 44.0   | 11.05 |                    | 651.3  | 98.95 |                    | 24     | 7.2   |                    | 21.3   | 5.28  |                    | 17.4   | 6.73  |                    |
| Al                         | mg/kg             | 29 | 735.1  | 72.7  |                    | 203    | 65.0  |                    | 407    | 47.1  |                    | 822    | 72.9  |                    | 895    | 74.2  |                    |
| Zn                         | mg/kg             | 41 | 15.7   | 1.729 |                    | 5.39   | 0.795 |                    | 3.7    | 0.52  |                    | 4.57   | 0.515 |                    | 3.78   | 0.516 |                    |
| Mn                         | mg/kg             | 39 | 315.4  | 42.7  |                    | 116.7  | 17.71 |                    | 48.7   | 12.05 |                    | 63.9   | 10.01 |                    | 103.3  | 20.31 |                    |
| Fe                         | mg/kg             | 37 | 180.3  | 22.77 |                    | 103    | 13.7  |                    | 218    | 27.2  |                    | 173    | 19.7  |                    | 252    | 27.5  |                    |
| Cu                         | mg/kg             | 40 | 13.7   | 1.481 |                    | 3.197  | 0.359 |                    | 1.3    | 0.20  |                    | 2.54   | 0.264 |                    | 1.79   | 0.222 |                    |
| B                          | mg/kg             | 35 | 7.8    | 8.643 |                    | 7.927  | 8.843 |                    | 5.55   | 9.367 |                    | 5.693  | 8.952 |                    | 5.440  | 9.027 |                    |
| <b>Micronutrients</b>      |                   |    |        |       |                    |        |       |                    |        |       |                    |        |       |                    |        |       |                    |
| Zn - DTPA                  | mg/kg             | 71 | 5.8    | 0.918 |                    | 2.01   | 0.397 |                    | 1.84   | 0.271 |                    | 2.10   | 0.256 |                    | 2.49   | 0.336 |                    |
| Mn - DTPA                  | mg/kg             | 57 | 66.4   | 13.94 |                    | 12.8   | 3.36  |                    | 10.55  | 3.34  |                    | 28.7   | 2.75  |                    | 71.0   | 11.15 |                    |
| Fe - DTPA                  | mg/kg             | 60 | 30.7   | 5.639 |                    | 12     | 2.5   |                    | 58.0   | 8.47  |                    | 32.7   | 5.4   |                    | 102.8  | 17.63 |                    |
| Cu - DTPA                  | mg/kg             | 62 | 9.4    | 2.756 |                    | 1.793  | 0.371 |                    | 0.98   | 0.140 |                    | 1.57   | 0.176 |                    | 1.43   | 0.208 |                    |
| Zn - HCl                   | mg/kg             | 4  | 12.8   | 4.256 |                    | 1.99   | 1.714 |                    | 4.5    | 0.59  |                    | 3.25   | 1.533 |                    | 7.49   | 5.675 |                    |
| Mn-H3PO4                   | mg/kg             | 10 | 137.6  | 23.98 |                    | 7.0    | 1.36  |                    | 10.8   | 1.41  |                    | 39.6   | 3.86  |                    | 46.7   | 5.20  |                    |
| Cl - Ca(NO3)2 Extr.        | mg/kg             | 17 | 23.6   | 3.63  |                    | 117    | 18.4  |                    | 15.3   | 2.99  |                    | 20.33  | 2.66  |                    | 4.88   | 2.31  |                    |
| B - Hot Wat.               | mg/kg             | 41 | 2.3    | 0.712 |                    | 1.604  | 0.574 |                    | 0.429  | 0.141 |                    | 0.599  | 0.196 |                    | 0.574  | 0.186 |                    |
| B-DTPA/Sorbitol            | mg/kg             | 14 | 1.6    | 0.135 |                    | 2.112  | 0.227 |                    | 0.242  | 0.052 |                    | 0.358  | 0.070 |                    | 0.253  | 0.093 |                    |
| <b>Soil Organic Matter</b> |                   |    |        |       |                    |        |       |                    |        |       |                    |        |       |                    |        |       |                    |
| Soil Kjeldahl N            | %                 | 19 | 0.204  | 0.010 |                    | 0.100  | 0.005 |                    | 0.060  | 0.002 |                    | 0.121  | 0.005 |                    | 0.160  | 0.006 |                    |
| Soil TN (combustion)       | %                 | 34 | 0.2    | 0.044 |                    | 0.121  | 0.030 |                    | 0.089  | 0.044 |                    | 0.141  | 0.029 |                    | 0.186  | 0.037 |                    |
| Soil TOC (Combustion)      | %                 | 7  | 2.0    | 0.112 |                    | 1.27   | 0.264 |                    | 0.506  | 0.032 |                    | 1.256  | 0.095 |                    | 1.48   | 0.354 |                    |
| Soil Total C (Combustion)  | %                 | 25 | 2.1    | 0.056 |                    | 1.98   | 0.116 |                    | 0.492  | 0.040 |                    | 1.262  | 0.090 |                    | 1.63   | 0.077 |                    |
| SOM - Walkley-Black        | %                 | 40 | 3.1    | 0.392 |                    | 1.59   | 0.231 |                    | 0.904  | 0.171 |                    | 2.11   | 0.177 |                    | 2.60   | 0.274 |                    |

1 - Values flagged exceed Warning Limits \* \* \* 2.5x MAD (Median Absolute Deviation) and Control Limits \* \* \* 4 x MAD. "<" and "ND" values not recorded.

2 - Limits not compared to lab data for methods with < 7 labs reporting



**2011 North American Proficiency Testing Program  
1st Quarter Report - May 10, 2011**

**Laboratory ID  
General**

| Soil                                     | Soil 2011-101 |    |        |       | Soil 2011-102      |        |       | Soil 2011-103      |        |       | Soil 2011-104      |        |       | Soil 2011-105      |        |       |                    |
|--|---------------|----|--------|-------|--------------------|--------|-------|--------------------|--------|-------|--------------------|--------|-------|--------------------|--------|-------|--------------------|
| Analysis                                 | Units         | n  | Median | MAD   | Lab <sup>1,2</sup> | Median | MAD   | Lab <sup>1,2</sup> | Median | MAD   | Lab <sup>1,2</sup> | Median | MAD   | Lab <sup>1,2</sup> | Median | MAD   | Lab <sup>1,2</sup> |
| <b>SOM - LOI (% Wt loss)</b>             | %             | 71 | 4.3    | 0.353 |                    | 2.29   | 0.411 |                    | 1.398  | 0.348 |                    | 2.86   | 0.266 |                    | 3.66   | 0.388 |                    |
| <b>CaCO3 Content</b>                     | %             | 17 | 1.2    | 0.504 |                    | 8.906  | 1.244 |                    | 0.514  | 0.352 |                    | 0.610  | 0.575 |                    | 0.395  | 0.327 |                    |
| <b>CEC - Cation Displacement</b>         | cmol/kg       | 22 | 15.1   | 2.04  |                    | 21.52  | 2.338 |                    | 9.39   | 0.928 |                    | 10.34  | 1.687 |                    | 21.8   | 2.45  |                    |
| <b>CEC - Estimation</b>                  | cmol/kg       | 16 | 17.7   | 9.09  |                    | 48.11  | 18.59 |                    | 13.2   | 5.86  |                    | 11.49  | 5.474 |                    | 26.0   | 12.06 |                    |
| <b>Soil Density (Scoop)</b>              | g/cc          | 11 | 1.2    | 0.348 |                    | 1.30   | 0.078 |                    | 1.49   | 0.046 |                    | 1.22   | 0.087 |                    | 1.21   | 0.055 |                    |
| <b>Particle Size Analysis-Hydrometer</b> |               |    |        |       |                    |        |       |                    |        |       |                    |        |       |                    |        |       |                    |
| <b>Sand 2000 - 50 um</b>                 | %             | 34 | 22.9   | 6.47  |                    | 32.1   | 3.32  |                    | 74.9   | 4.34  |                    | 35.0   | 3.67  |                    | 18.2   | 6.01  |                    |
| <b>Silt 50 - 2 um</b>                    | %             | 34 | 56.8   | 6.59  |                    | 39.2   | 3.83  |                    | 16.5   | 4.26  |                    | 47.0   | 3.92  |                    | 51.5   | 5.50  |                    |
| <b>Clay 2 - 0 um</b>                     | %             | 34 | 20.0   | 4.26  |                    | 28.76  | 3.93  |                    | 8.28   | 3.15  |                    | 17.82  | 2.51  |                    | 30.4   | 3.93  |                    |
| <b>Particle Size Analysis- Pipette</b>   |               |    |        |       |                    |        |       |                    |        |       |                    |        |       |                    |        |       |                    |

1 - Values flagged exceed Warning Limits \* \* \* 2.5x MAD (Median Absolute Deviation) and Control Limits \* \* \* 4 x MAD. "<" and "ND" values not recorded.  
2 - Limits not compared to lab data for methods with < 7 labs reporting