

# BROOKSIDE LABORATORIES, INC.

## SOIL AUDIT AND INVENTORY REPORT

Name Tucson Country Club City Tucson State AZ

Independent Consultant Soil and Water Consulting Date 3/10/2020

|                                    |                                                              |  |              |              |  |  |  |
|------------------------------------|--------------------------------------------------------------|--|--------------|--------------|--|--|--|
| Sample Location <u>TEE</u>         |                                                              |  | 1            | 10           |  |  |  |
| Sample Identification              |                                                              |  |              |              |  |  |  |
| Lab Number                         |                                                              |  | 0614-1       | 0615-1       |  |  |  |
| Total Exchange Capacity (ME/100 g) |                                                              |  | 10.06        | 9.32         |  |  |  |
| pH (H <sub>2</sub> O 1:1)          |                                                              |  | a<br>7.7     | a<br>7.9     |  |  |  |
| Organic Matter (360°C LOI) %       |                                                              |  | 3.58         | 2.97         |  |  |  |
| Estimated Nitrogen Release lb/A    |                                                              |  | 86           | 79           |  |  |  |
| ANIONS                             | SOLUBLE SULFUR* ppm                                          |  | 16           | 14           |  |  |  |
|                                    | PHOSPHORUS                                                   |  |              |              |  |  |  |
|                                    | MEHLICH III lb/A P as P <sub>2</sub> O <sub>5</sub> ppm of P |  |              |              |  |  |  |
|                                    | BRAY II lb/A P as P <sub>2</sub> O <sub>5</sub> ppm of P     |  |              |              |  |  |  |
| EXCHANGEABLE CATIONS               | OLSEN lb/A P as P <sub>2</sub> O <sub>5</sub> ppm of P       |  | 50<br>11     | 37<br>8      |  |  |  |
|                                    | CALCIUM* lb/A ppm                                            |  | 3202<br>1601 | 2998<br>1499 |  |  |  |
|                                    | MAGNESIUM* lb/A ppm                                          |  | 194<br>97    | 166<br>83    |  |  |  |
|                                    | POTASSIUM* lb/A ppm                                          |  | 336<br>168   | 284<br>142   |  |  |  |
|                                    | SODIUM* lb/A ppm                                             |  | 202<br>101   | 206<br>103   |  |  |  |
| BASE SATURATION PERCENT            |                                                              |  |              |              |  |  |  |
|                                    | Calcium %                                                    |  | 79.57        | 80.42        |  |  |  |
|                                    | Magnesium %                                                  |  | 8.04         | 7.42         |  |  |  |
|                                    | Potassium %                                                  |  | 4.28         | 3.91         |  |  |  |
|                                    | Sodium %                                                     |  | 4.37         | 4.81         |  |  |  |
|                                    | Other Bases %                                                |  | 3.70         | 3.50         |  |  |  |
|                                    | Hydrogen %                                                   |  | 0.00         | 0.00         |  |  |  |
| EXTRACTABLE MINORS                 |                                                              |  |              |              |  |  |  |
|                                    | Boron** (ppm)                                                |  | 1.01         | 0.96         |  |  |  |
|                                    | Iron** (ppm)                                                 |  | 194          | 156          |  |  |  |
|                                    | Manganese** (ppm)                                            |  | 43           | 44           |  |  |  |
|                                    | Copper** (ppm)                                               |  | 3.49         | 2.75         |  |  |  |
|                                    | Zinc** (ppm)                                                 |  | 20.07        | 14.13        |  |  |  |
|                                    | Aluminum** (ppm)                                             |  | 121          | 98           |  |  |  |
| OTHER TESTS                        | Soluble Salts (mmhos/cm)                                     |  |              |              |  |  |  |
|                                    | Chlorides (ppm)                                              |  |              |              |  |  |  |
|                                    | NO <sub>3</sub> -N (ppm)                                     |  | 7.0          | 6.3          |  |  |  |
|                                    | NH <sub>4</sub> -N (ppm)                                     |  | 8.8          | 4.1          |  |  |  |

a - alkaline soil

\* Ammonium Acetate Extractable (pH of 8.1)

\*\* Mehlich III Extractable

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|                                    |                                                                         |           |           |  |  |  |
|------------------------------------|-------------------------------------------------------------------------|-----------|-----------|--|--|--|
| Sample Location FAIRWAY            |                                                                         | 1         | 10        |  |  |  |
| Sample Identification              |                                                                         |           |           |  |  |  |
| Lab Number                         |                                                                         | 0616-1    | 0617-1    |  |  |  |
| Total Exchange Capacity (ME/100 g) |                                                                         | 9.49      | 12.62     |  |  |  |
| pH (H <sub>2</sub> O 1:1)          |                                                                         | a 7.7     | a 7.6     |  |  |  |
| Organic Matter (360°C LOI) %       |                                                                         | 2.64      | 3.87      |  |  |  |
| Estimated Nitrogen Release lb/A    |                                                                         | 73        | 89        |  |  |  |
| ANIONS                             | SOLUBLE SULFUR* ppm                                                     | 16        | 20        |  |  |  |
|                                    | PHOSPHORUS MEHLICH III lb/A P as P <sub>2</sub> O <sub>5</sub> ppm of P |           |           |  |  |  |
|                                    | BRAY II lb/A P as P <sub>2</sub> O <sub>5</sub> ppm of P                |           |           |  |  |  |
|                                    | OLSEN lb/A P as P <sub>2</sub> O <sub>5</sub> ppm of P                  | 119<br>26 | 156<br>34 |  |  |  |
| EXCHANGEABLE CATIONS               | CALCIUM* lb/A                                                           | 2834      | 3788      |  |  |  |
|                                    | ppm                                                                     | 1417      | 1894      |  |  |  |
|                                    | MAGNESIUM* lb/A                                                         | 216       | 284       |  |  |  |
|                                    | ppm                                                                     | 108       | 142       |  |  |  |
|                                    | POTASSIUM* lb/A                                                         | 500       | 654       |  |  |  |
|                                    | ppm                                                                     | 250       | 327       |  |  |  |
|                                    | SODIUM* lb/A                                                            | 236       | 298       |  |  |  |
|                                    | ppm                                                                     | 118       | 149       |  |  |  |
| BASE SATURATION PERCENT            |                                                                         |           |           |  |  |  |
| Calcium %                          |                                                                         | 74.66     | 75.04     |  |  |  |
| Magnesium %                        |                                                                         | 9.48      | 9.38      |  |  |  |
| Potassium %                        |                                                                         | 6.75      | 6.64      |  |  |  |
| Sodium %                           |                                                                         | 5.41      | 5.13      |  |  |  |
| Other Bases %                      |                                                                         | 3.70      | 3.80      |  |  |  |
| Hydrogen %                         |                                                                         | 0.00      | 0.00      |  |  |  |
| EXTRACTABLE MINORS                 |                                                                         |           |           |  |  |  |
| Boron** (ppm)                      |                                                                         | 1.06      | 1.09      |  |  |  |
| Iron** (ppm)                       |                                                                         | 217       | 283       |  |  |  |
| Manganese** (ppm)                  |                                                                         | 55        | 45        |  |  |  |
| Copper** (ppm)                     |                                                                         | 2.64      | 3.63      |  |  |  |
| Zinc** (ppm)                       |                                                                         | 10.65     | 15.78     |  |  |  |
| Aluminum** (ppm)                   |                                                                         | 118       | 111       |  |  |  |
| OTHER TESTS                        | Soluble Salts (mmhos/cm)                                                |           |           |  |  |  |
|                                    | Chlorides (ppm)                                                         |           |           |  |  |  |
|                                    | NO <sub>3</sub> -N (ppm)                                                | 6.5       | 9.4       |  |  |  |
|                                    | NH <sub>4</sub> -N (ppm)                                                | 5.0       | 14.2      |  |  |  |

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|                                    |                                                                         |          |          |  |  |  |
|------------------------------------|-------------------------------------------------------------------------|----------|----------|--|--|--|
| Sample Location <u>GREEN</u>       |                                                                         | 1        | 10       |  |  |  |
| Sample Identification              |                                                                         |          |          |  |  |  |
| Lab Number                         |                                                                         | 0618-1   | 0619-1   |  |  |  |
| Total Exchange Capacity (ME/100 g) |                                                                         | 8.06     | 7.52     |  |  |  |
| pH (H <sub>2</sub> O 1:1)          |                                                                         | a 8.2    | a 7.8    |  |  |  |
| Organic Matter (360°C LOI) %       |                                                                         | 0.52     | 0.48     |  |  |  |
| Estimated Nitrogen Release lb/A    |                                                                         | 21       | 19       |  |  |  |
| ANIONS                             | SOLUBLE SULFUR* ppm                                                     | 11       | 9        |  |  |  |
|                                    | PHOSPHORUS MEHLICH III lb/A P as P <sub>2</sub> O <sub>5</sub> ppm of P |          |          |  |  |  |
|                                    | BRAY II lb/A P as P <sub>2</sub> O <sub>5</sub> ppm of P                |          |          |  |  |  |
|                                    | OLSEN lb/A P as P <sub>2</sub> O <sub>5</sub> ppm of P                  | 78<br>17 | 69<br>15 |  |  |  |
| EXCHANGEABLE CATIONS               | CALCIUM* lb/A                                                           | 2182     | 2102     |  |  |  |
|                                    | ppm                                                                     | 1091     | 1051     |  |  |  |
|                                    | MAGNESIUM* lb/A                                                         | 222      | 180      |  |  |  |
|                                    | ppm                                                                     | 111      | 90       |  |  |  |
|                                    | POTASSIUM* lb/A                                                         | 800      | 700      |  |  |  |
|                                    | ppm                                                                     | 400      | 350      |  |  |  |
|                                    | SODIUM* lb/A                                                            | 182      | 160      |  |  |  |
|                                    | ppm                                                                     | 91       | 80       |  |  |  |
| BASE SATURATION PERCENT            |                                                                         |          |          |  |  |  |
| Calcium %                          |                                                                         | 67.68    | 69.88    |  |  |  |
| Magnesium %                        |                                                                         | 11.48    | 9.97     |  |  |  |
| Potassium %                        |                                                                         | 12.73    | 11.93    |  |  |  |
| Sodium %                           |                                                                         | 4.91     | 4.63     |  |  |  |
| Other Bases %                      |                                                                         | 3.20     | 3.60     |  |  |  |
| Hydrogen %                         |                                                                         | 0.00     | 0.00     |  |  |  |
| EXTRACTABLE MINORS                 |                                                                         |          |          |  |  |  |
| Boron** (ppm)                      |                                                                         | 0.85     | 0.64     |  |  |  |
| Iron** (ppm)                       |                                                                         | 112      | 132      |  |  |  |
| Manganese** (ppm)                  |                                                                         | 92       | 91       |  |  |  |
| Copper** (ppm)                     |                                                                         | 4.10     | 4.51     |  |  |  |
| Zinc** (ppm)                       |                                                                         | 18.32    | 17.40    |  |  |  |
| Aluminum** (ppm)                   |                                                                         | 343      | 328      |  |  |  |
| OTHER TESTS                        | Soluble Salts (mmhos/cm)                                                |          |          |  |  |  |
|                                    | Chlorides (ppm)                                                         |          |          |  |  |  |
|                                    | NO <sub>3</sub> -N (ppm)                                                | 2.4      | 1.6      |  |  |  |
|                                    | NH <sub>4</sub> -N (ppm)                                                | 4.8      | 3.5      |  |  |  |

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