

## Section 6. Nutrient Management

### 6.1. Field Information

| Field ID       | Sub-field ID | Total Acres | Spreadable Acres | County    | Predominant Soil Type     | Slope (%) | Watershed Code | FSA Farm | FSA Tract | FSA Field |
|----------------|--------------|-------------|------------------|-----------|---------------------------|-----------|----------------|----------|-----------|-----------|
| Range 1        |              | 29.0        | 26.2             | St. Clair | 8084A (Okaw SIL)          |           |                | 7161     | 8195      |           |
| Range 2        |              | 52.3        | 50.8             | St. Clair | 582B (Homen SIL)          |           |                | 7161     | 8195      |           |
| Range 3        |              | 25.5        | 25.1             | St. Clair | 884C3 (Bunkum SICL)       |           |                | 7161     | 8195      |           |
| Range 4        |              | 10.3        | 4.8              | St. Clair | 884C3 (Bunkum SICL)       |           |                | 7161     | 8195      |           |
| Range 5        |              | 26.7        | 22.4             | St. Clair | 884C3 (Bunkum SICL)       |           |                | 7161     | 8195      |           |
| Range 6        |              | 43.4        | 43.4             | St. Clair | 884C3 (Bunkum SICL)       |           |                | 7161     | 8195      |           |
| Rick Range     |              | 79.3        | 66.3             | St. Clair | 884C3 (Bunkum SICL)       |           |                |          |           |           |
| Triefenbachs 1 |              | 12.5        | 7.1              | St. Clair | 517B (Marine SIL)         |           |                |          |           |           |
| Triefenbachs 2 |              | 18.5        | 15.9             | St. Clair | 517B (Marine SIL)         |           |                |          |           |           |
| Triefenbachs 3 |              | 24.3        | 18.6             | St. Clair | 517B (Marine SIL)         |           |                |          |           |           |
| Triefenbachs 4 |              | 12.8        | 10.4             | St. Clair | 517B (Marine SIL)         |           |                |          |           |           |
| Lenzburg North |              | 24.5        | 23.9             | St. Clair | 517B (Marine SIL)         |           |                |          |           |           |
| Lenzburg       |              | 132.5       | 102.2            | St. Clair | 880B2 (Darmstadt SIL)     |           |                |          |           |           |
| Schickedanz    |              | 60.2        | 59.9             | St. Clair | 884C3 (Coulterville SICL) |           |                | 7436     | 6107      |           |
| V Schickedanz  |              | 71.2        | 54.8             | St. Clair | 517B (Marine SIL)         |           |                |          |           |           |
| McBride 120    |              | 124.8       | 86.8             | St. Clair | 517B (Marine SIL)         |           |                | 5425     | 203       |           |
| McBride 240    |              | 239.2       | 216.4            | St. Clair | 517B (Marine SIL)         |           |                | 5425     | 11045     |           |
| Tilden 20      |              | 15.0        | 7.2              | St. Clair | 5C3 (Blair SICL)          |           |                | 5425     | 911       |           |
| Tilden 40      |              | 37.3        | 23.2             | St. Clair | 5C3 (Blair SICL)          |           |                | 5425     | 910       |           |
| CPS 25         |              | 24.7        | 22.2             | St. Clair | 5C3 (Blair SICL)          |           |                | 5425     | 183       |           |
| M&M Schillings |              | 33.1        | 33.1             | St. Clair | 517A (Marine SIL)         |           |                |          |           |           |
| Johama Pasture |              | 151.8       | 138.8            | St. Clair | 880B2 (Coulterville SIL)  |           |                |          |           |           |
| Spalt          |              | 71.2        | 71.2             | St. Clair | 880B2 (Coulterville SIL)  |           |                | 939      | 8022      |           |
| John Schad     |              | 34.5        | 32.1             | St. Clair | 878C3 (Coulterville SICL) |           |                |          |           |           |

## 6.2. Manure Application Setback Distances

### Setback Requirements: NRCS standard

| Feature        | Setback Criteria | Setback Distance (Feet) |
|----------------|------------------|-------------------------|
| Wells          | All applications | 200                     |
| Sinkholes      | All applications | 200                     |
| Surface waters | All applications | 200                     |

Source: Waste Utilization Standard 633 (<http://efotg.nrcs.usda.gov/references/public/IL/633.pdf>)

### Setback Requirements: CAFO

| Feature                                       | Setback Criteria  | Setback Distance (Feet) |
|---|---|-------------------------|
| Subsurface drainage intakes                   | Manure applied upgradient, no permanent or insufficient vegetated setback | 100                     |
| Agricultural drainage wells                   | Manure applied upgradient, no permanent or insufficient vegetated setback | 100                     |
| Sinkholes                                     | Manure applied upgradient, no permanent or insufficient vegetated setback | 200                     |
| Waterways or other conduits to surface waters | Manure applied upgradient, no permanent or insufficient vegetated setback | 200                     |
| Potable water supply wells                    | All applications  | 150                     |
| Residence, not part of the facility           | Injected manure   | 0                       |

Source: NPDES Permit No. ILA01 (<http://www.epa.state.il.us/public-notices/2003/cafo-general-permit/npdes-general-permit.pdf>)

### Setback Requirements: AFO

| Feature                             | Setback Criteria                             | Setback Distance (Feet) |
|-------------------------------------|--|-------------------------|
| Residence, not part of the facility | Injected manure                              | 0                       |
| Surface water                       | Manure applied up-gradient of surface waters | 200                     |
| Potable water supply wells          | All applications                             | 150                     |

Source: Illinois Consolidated Code - Livestock Facilities Act (<http://www.ilga.gov/legislation/ilcs/ilcs2.asp?ChapterID=41>)

### 6.3. Soil Test Data

#### Soil Testing Procedures

Soil samples for soil tests should not represent more than 2.5 acres per sample and should be done at least every 3-4 years. Any field not sampled at 2.5 acre frequency should be re-sampled at 2.5 acres grids on the next scheduled soil testing cycle.

Soil sampling depth for P and K shall be 7 inches. Under no-till conditions pH can be tested using the top 4 inches only.

Soil samples shall be collected and prepared according to The Illinois Agronomy Handbook. Soil samples should be taken prior to manure or fertilizer applications. Since manure will typically be applied to soybean stubble during the fall previous to planting corn in the spring, soil tests should be taken in soybean stubble prior to manure application. Wait 9 months after manure or fertilizer applications before soil testing so that unabsorbed nutrients do not affect the results.

The minimum soil analysis for CNMP's should include the following parameters:

- soil pH,
- phosphorus (P as indicated by Bray P1 test)
- potassium, (K)

In addition, Cation Exchange Capacity (CEC), and soil organic matter should be tested to help determine liming and fertilizer recommendations. Soil testing should include analysis for any nutrients for which specific information is needed to develop the nutrient plan.

#### Soil Test Data

| Field          | Test Year | OM (%) | P Test Used | P   | K   | Mg | Ca | Units | Soil pH | Buffer pH | CEC (meq/100g) |
|----------------|-----------|--------|-------------|-----|-----|----|----|-------|---------|-----------|----------------|
| Range 1        | 2012      | 23.0   |             | 152 | 240 |    |    | lbs/a | 6.2     |           |                |
| Range 2        | 2012      | 2.3    |             | 247 | 560 |    |    | lbs/a | 6.6     |           |                |
| Range 3        | 2012      | 2.4    |             | 227 | 496 |    |    | lbs/a | 6.9     |           |                |
| Range 4        | 2012      | 2.6    |             | 110 | 244 |    |    | lbs/a | 6.5     |           |                |
| Range 5        | 2012      | 2.4    |             | 272 | 484 |    |    | lbs/a | 6.1     |           |                |
| Range 6        | 2012      | 2.5    |             | 320 | 616 |    |    | lbs/a | 6.5     |           |                |
| Rick Range     |           |        |             |     |     |    |    | ppm   |         |           |                |
| Triefenbachs 1 |           |        |             |     |     |    |    | ppm   |         |           |                |
| Triefenbachs 2 |           |        |             |     |     |    |    | ppm   |         |           |                |

| Field          | Test Year | OM (%) | P Test Used | P   | K   | Mg  | Ca    | Units | Soil pH | Buffer pH | CEC (meq/100g) |
|----------------|-----------|--------|-------------|-----|-----|-----|-------|-------|---------|-----------|----------------|
| Triefenbachs 3 |           |        |             |     |     |     |       | ppm   |         |           |                |
| Triefenbachs 4 |           |        |             |     |     |     |       | ppm   |         |           |                |
| Lenzburg North | 2010      | 1.8    |             | 55  | 154 | 298 | 2,952 | lbs/a | 5.9     | 6.8       | 11.6           |
| Lenzburg       | 2010      | 2.0    |             | 44  | 200 |     |       | lbs/a | 5.9     |           |                |
| Schickedanz    | 2010      | 1.8    |             | 57  | 154 | 334 | 2,786 | lbs/a | 5.6     |           |                |
| V Schickedanz  | 2010      | 1.7    |             | 53  | 168 | 370 | 3,254 | lbs/a | 5.9     | 6.8       | 12.7           |
| McBride 120    | 2009      | 2.7    |             | 52  | 206 |     |       | lbs/a | 6.8     |           |                |
| McBride 240    | 2009      | 2.8    |             | 54  | 240 |     |       | lbs/a | 7.2     |           |                |
| Tilden 20      | 2009      | 2.7    |             | 20  | 156 |     |       | lbs/a | 6.1     |           |                |
| Tilden 40      | 2009      | 2.8    |             | 48  | 218 |     |       | lbs/a | 6.5     |           |                |
| CPS 25         | 2009      | 2.6    |             | 86  | 198 |     |       | lbs/a | 6.9     |           |                |
| M&M Schillings | 2008      | 3.1    |             | 126 | 322 | 364 | 4,754 | lbs/a | 6.9     | 7.5       | 14.1           |
| Johama Pasture |           |        |             |     |     |     |       | ppm   |         |           |                |
| Spalt          | 2012      | 2.8    |             | 38  | 191 |     |       | lbs/a | 6.3     |           |                |
| John Schad     | 2008      | 3.2    |             | 84  | 232 | 354 | 4,320 | lbs/a | 7.2     | 7.5       | 12.6           |

## 6.4. Manure Nutrient Analysis

### Manure Sampling

- **Collecting the Sample**

When collecting a manure sample from a storage facility, the most important thing to keep in mind is to collect a sample representative of what will be land applied to the crop. If a livestock operation has more than one storage facility (e.g., a holding pond and a drystack) each unit should be sampled separately (e.g., the producer will need to collect two samples, one to represent each manure type, liquid sample, and a solid sample).

Manure tests for liquid manure should be taken every time manure is removed from each type of storage until average nutrient values can be determined.

Manure Tests for solid manure should be taken before each major spreading time such as spring and fall until average nutrient values can be determined.

- **Pit Storage Structures (Below Building)**

#### **Above Ground Storage Structures (Slurrystore)**

Manure samples can be samples prior to applications, after the structure has been agitated to assure a homogenous sample. If agitation cannot be performed, because of gas production and animal welfare, a sample can be obtained from the application equipment or the outlet line on the pump. Three to six samples should be collected from different loads and mixed together to form one composite sample. If it is not possible to collect a sample from the previous two methods, samples should be collected directly from the structure. A sample should be collected at the top, middle, and bottom of the land application event. A one-pint sample is usually sufficient to be sent to the lab, provided that it is in well-sealed container. A wide mouthed plastic bottle works well. Consult with the lab directly for specific instructions.

- **Drystacks**

The sample sent to the lab from a drystack should be a composite of several sub-samples. Sub-samples should be obtained from about 10 locations within the drystack. The sample locations should vary by depth (from 1 ft. deep to 3 inches from the bottom) and by position (from the front, back, and sides). After collecting the sub-samples, the material should be mixed in one container to make a homogeneous composite sample. The composite sample sent to the lab should be about one pint. It should be sent in a well-sealed container. Sealable plastic bags work well for relatively dry material, wide mouthed plastic bottles are better for wetter material.

- **Earthen Storages/Holding Ponds**

Storages should be sampled immediately before or during land application. The condition of the storage during sample collection should reflect the condition of the storage during land application. If the storage is agitated during land application and is well mixed, one sample will be representative of the entire facility. The agitation time required for the storage facility to become well mixed is dependent on its size and shape and the agitation equipment. Small facilities are usually well agitated after one to two hours. If the facility is not agitated during land application, it will not be well mixed. In this case three samples should be collected; a sample should be collected at the

beginning, middle, and end of the land application event. Storage facility samples can be collected from the storage itself, the outlet line on the pump or from the application equipment. A one-pint sample is usually sufficient to be sent to the lab, provided that it is in well-sealed container. A wide mouthed plastic bottled works well. Consult with the lab directly for specific instructions.

- **Lagoons**

Anaerobic lagoons should be sampled immediately before or during land application. The condition of the lagoon during sample collection should reflect the condition of the lagoon during land application. A minimum of three samples should be collected; a sample should be collected at the beginning, middle, and end of the land application event. Lagoon samples can be collected from the lagoon itself, the outlet line on the pump or from the application equipment. A one-pint sample is usually sufficient to be sent to the lab, provided that it is in well-sealed container. A wide mouthed plastic bottle works well. Consult with the lab directly for specific instructions.

- **Sample Transfer**

The sample should be mailed or delivered to the lab the day of collection to reduce sample degradation with time. Do not send samples that will not be delivered within one to two business days. For example, do not send on a Thursday and allow it to set in the post office or mail box during a weekend. The sample should be analyzed for total nitrogen, ammonia nitrogen, phosphorus, potassium and total solids. Contact the lab prior to sending in a sample to receive a sample analysis form to mail in with your sample.

### Manure Nutrient Analyses

| Manure Source | Dry Matter (%) | Total N | NH <sub>4</sub> -N | Total P <sub>2</sub> O <sub>5</sub> | Total K <sub>2</sub> O | Avail. P <sub>2</sub> O <sub>5</sub> | Avail. K <sub>2</sub> O | Units      | Analysis Source and Date |
|---------------|----------------|---------|--------------------|-------------------------------------|------------------------|--------------------------------------|-------------------------|------------|--------------------------|
| Deep Pits     |                | 28.2    | 17.8               | 29.0                                | 18.1                   | 29.0                                 | 18.1                    | Lb/1000Gal | SGS Lab # 24760          |
| Holding Ponds |                | 6.7     | 3.1                | 3.6                                 | 17.7                   | 3.6                                  | 17.7                    | Lb/1000Gal | SGS Lab # 24761          |

(1) Entered analysis may be the average of several individual analyses.

(2) Illinois assumes that 100% of manure phosphorus and 100% of manure potassium is crop available. First-year per-acre nitrogen availability for individual manure applications is given in the Planned Nutrient Applications table. For more information about nitrogen availability in Illinois, see Illinois Administrative Code, Livestock Management Facility Regulations, sections 900.806, 900.808 (<http://www.ilga.gov/commission/jcar/admincode/008/00800900sections.html>).

## 6.5. Planned Crops and Fertilizer Recommendations

| Field   | Crop Year | Planned Crop | Yield Goal (per Acre) | N Rec (Lbs/A)    | P <sub>2</sub> O <sub>5</sub> Rec (Lbs/A) | K <sub>2</sub> O Rec (Lbs/A) | N Removed (Lbs/A) | P <sub>2</sub> O <sub>5</sub> Removed (Lbs/A) | K <sub>2</sub> O Removed (Lbs/A) | Custom Fert. Rec. Source   |
|---------|-----------|--------------|-----------------------|------------------|---|------------------------------|-------------------|---|----------------------------------|----------------------------|
| Range 1 | 2013      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 1 | 2014      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 1 | 2015      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 1 | 2016      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 1 | 2017      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 2 | 2013      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 2 | 2014      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 2 | 2015      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 2 | 2016      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 2 | 2017      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 3 | 2013      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 3 | 2014      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 3 | 2015      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 3 | 2016      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 3 | 2017      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 4 | 2013      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 4 | 2014      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 4 | 2015      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 4 | 2016      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 4 | 2017      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 5 | 2013      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 5 | 2014      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 5 | 2015      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 5 | 2016      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 5 | 2017      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 6 | 2013      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 6 | 2014      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 6 | 2015      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Range 6 | 2016      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |

| Field          | Crop Year | Planned Crop | Yield Goal (per Acre) | N Rec (Lbs/A)    | P <sub>2</sub> O <sub>5</sub> Rec (Lbs/A) | K <sub>2</sub> O Rec (Lbs/A) | N Removed (Lbs/A) | P <sub>2</sub> O <sub>5</sub> Removed (Lbs/A) | K <sub>2</sub> O Removed (Lbs/A) | Custom Fert. Rec. Source   |
|----------------|-----------|--------------|-----------------------|------------------|---|------------------------------|-------------------|---|----------------------------------|----------------------------|
| Range 6        | 2017      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Rick Range     | 2013      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Rick Range     | 2014      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Rick Range     | 2015      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Rick Range     | 2016      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Rick Range     | 2017      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Triefenbachs 1 | 2013      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Triefenbachs 1 | 2014      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52 <sup>a</sup>              |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Triefenbachs 1 | 2015      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Triefenbachs 1 | 2016      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52 <sup>a</sup>              |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Triefenbachs 1 | 2017      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Triefenbachs 2 | 2013      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52 <sup>a</sup>              |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Triefenbachs 2 | 2014      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Triefenbachs 2 | 2015      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52 <sup>a</sup>              |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Triefenbachs 2 | 2016      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Triefenbachs 2 | 2017      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52 <sup>a</sup>              |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Triefenbachs 3 | 2013      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Triefenbachs 3 | 2014      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52 <sup>a</sup>              |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Triefenbachs 3 | 2015      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Triefenbachs 3 | 2016      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52 <sup>a</sup>              |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Triefenbachs 3 | 2017      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Triefenbachs 4 | 2013      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52 <sup>a</sup>              |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Triefenbachs 4 | 2014      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Triefenbachs 4 | 2015      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52 <sup>a</sup>              |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Triefenbachs 4 | 2016      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45 <sup>a</sup>              |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Triefenbachs 4 | 2017      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52 <sup>a</sup>              |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Lenzburg North | 2013      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Lenzburg North | 2014      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Lenzburg North | 2015      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Lenzburg North | 2016      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |

## 6. Nutrient Management



| Field          | Crop Year | Planned Crop | Yield Goal (per Acre) | N Rec (Lbs/A)    | P <sub>2</sub> O <sub>5</sub> Rec (Lbs/A) | K <sub>2</sub> O Rec (Lbs/A) | N Removed (Lbs/A) | P <sub>2</sub> O <sub>5</sub> Removed (Lbs/A) | K <sub>2</sub> O Removed (Lbs/A) | Custom Fert. Rec. Source   |
|----------------|-----------|--------------|-----------------------|------------------|---|------------------------------|-------------------|---|----------------------------------|----------------------------|
| Lenzburg North | 2017      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Lenzburg       | 2013      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Lenzburg       | 2014      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Lenzburg       | 2015      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Lenzburg       | 2016      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Lenzburg       | 2017      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Schickedanz    | 2013      | Soybean      | 160.0 Bu              | 0                | 34  | 52                           |                   | 136   | 208                              | Illinois Agronomy Handbook |
| Schickedanz    | 2014      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Schickedanz    | 2015      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Schickedanz    | 2016      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Schickedanz    | 2017      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| V Schickedanz  | 2013      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| V Schickedanz  | 2014      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| V Schickedanz  | 2015      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| V Schickedanz  | 2016      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| V Schickedanz  | 2017      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| McBride 120    | 2013      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| McBride 120    | 2014      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| McBride 120    | 2015      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| McBride 120    | 2016      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| McBride 120    | 2017      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| McBride 240    | 2013      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| McBride 240    | 2014      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| McBride 240    | 2015      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| McBride 240    | 2016      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| McBride 240    | 2017      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Tilden 20      | 2013      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Tilden 20      | 2014      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Tilden 20      | 2015      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Tilden 20      | 2016      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |

6. Nutrient Management

| Field          | Crop Year | Planned Crop | Yield Goal (per Acre) | N Rec (Lbs/A)    | P <sub>2</sub> O <sub>5</sub> Rec (Lbs/A) | K <sub>2</sub> O Rec (Lbs/A) | N Removed (Lbs/A) | P <sub>2</sub> O <sub>5</sub> Removed (Lbs/A) | K <sub>2</sub> O Removed (Lbs/A) | Custom Fert. Rec. Source   |
|----------------|-----------|--------------|-----------------------|------------------|---|------------------------------|-------------------|---|----------------------------------|----------------------------|
| Tilden 20      | 2017      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Tilden 40      | 2013      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Tilden 40      | 2014      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Tilden 40      | 2015      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Tilden 40      | 2016      | Soybean      | 40.0 Bu               | 0                | 34  | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| Tilden 40      | 2017      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| CPS 25         | 2013      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| CPS 25         | 2014      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| CPS 25         | 2015      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| CPS 25         | 2016      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52                           |                   | 34  | 52                               | Illinois Agronomy Handbook |
| CPS 25         | 2017      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| M&M Schillings | 2013      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| M&M Schillings | 2014      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52 <sup>a</sup>              |                   | 34  | 52                               | Illinois Agronomy Handbook |
| M&M Schillings | 2015      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| M&M Schillings | 2016      | Soybean      | 40.0 Bu               | 0                | 34 <sup>a</sup>                           | 52 <sup>a</sup>              |                   | 34  | 52                               | Illinois Agronomy Handbook |
| M&M Schillings | 2017      | Corn         | 160.0 Bu              | 182 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Johama Pasture | 2013      | Grass        | 3.0 Ton               | 100              | 36 <sup>a</sup>                           | 150 <sup>a</sup>             |                   | 36  | 150                              | Illinois Agronomy Handbook |
| Johama Pasture | 2014      | Grass        | 3.0 Ton               | 100              | 36 <sup>a</sup>                           | 150 <sup>a</sup>             |                   | 36  | 150                              | Illinois Agronomy Handbook |
| Johama Pasture | 2015      | Grass        | 3.0 Ton               | 100              | 36 <sup>a</sup>                           | 150 <sup>a</sup>             |                   | 36  | 150                              | Illinois Agronomy Handbook |
| Johama Pasture | 2016      | Grass        | 3.0 Ton               | 100              | 36 <sup>a</sup>                           | 150 <sup>a</sup>             |                   | 36  | 150                              | Illinois Agronomy Handbook |
| Johama Pasture | 2017      | Grass        | 3.0 Ton               | 100              | 36 <sup>a</sup>                           | 150 <sup>a</sup>             |                   | 36  | 150                              | Illinois Agronomy Handbook |
| Spalt          | 2013      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Spalt          | 2014      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Spalt          | 2015      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Spalt          | 2016      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| Spalt          | 2017      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67  | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| John Schad     | 2013      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| John Schad     | 2014      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| John Schad     | 2015      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |
| John Schad     | 2016      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |

6. Nutrient Management

| Field      | Crop Year | Planned Crop | Yield Goal (per Acre) | N Rec (Lbs/A)    | P <sub>2</sub> O <sub>5</sub> Rec (Lbs/A) | K <sub>2</sub> O Rec (Lbs/A) | N Removed (Lbs/A) | P <sub>2</sub> O <sub>5</sub> Removed (Lbs/A) | K <sub>2</sub> O Removed (Lbs/A) | Custom Fert. Rec. Source   |
|------------|-----------|--------------|-----------------------|------------------|---|------------------------------|-------------------|---|----------------------------------|----------------------------|
| John Schad | 2017      | Corn         | 160.0 Bu              | 199 <sup>a</sup> | 67 <sup>a</sup>                           | 45                           |                   | 69  | 45                               | Illinois Agronomy Handbook |

\* Unharvested cover crop or first crop in double-crop system.

<sup>a</sup> Custom fertilizer recommendation.

## 6.6. Manure Application Planning Calendar – October 2012 through September 2013

| Field          | Spread. Acres | Applied. Acres | Predominant Soil Type           | Primary 2013 Crop (Prev. Primary Crop) | Oct '12 | Nov '12 | Dec '12 | Jan '13 | Feb '13 | Mar '13 | Apr '13 | May '13 | Jun '13 | Jul '13 | Aug '13 | Sep '13 |
|----------------|---------------|----------------|---------------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Range 1        | 26.2          | 26.2           | Okaw SIL (8084A 0-2%)           | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 2        | 50.8          |                | Homen SIL (582B 2-5%)           | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| Range 3        | 25.1          | 25.1           | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 4        | 4.8           | 4.8            | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 5        | 22.4          |                | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| Range 6        | 43.4          |                | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| Rick Range     | 66.3          |                | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 1 | 7.1           | 7.1            | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 2 | 15.9          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 3 | 18.6          | 18.6           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 4 | 10.4          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Lenzburg North | 23.9          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Lenzburg       | 102.2         |                | Darmstadt SIL (880B2 2-5%)      | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Schickedanz    | 59.9          |                | Coulterville SICL (884C3 5-10%) | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| V Schickedanz  | 54.8          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| McBride 120    | 86.8          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| McBride 240    | 216.4         |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Tilden 20      | 7.2           |                | Blair SICL (5C3 5-10%)          | Corn (Soybean)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Tilden 40      | 23.2          |                | Blair SICL (5C3 5-10%)          | Corn (Soybean)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| CPS 25         | 22.2          |                | Blair SICL (5C3 5-10%)          | Corn (Soybean)                         |         |         |         |         |         |         |         |         |         |         |         |         |

| Field          | Spread. Acres  | Applied. Acres | Predominant Soil Type           | Primary 2013 Crop (Prev. Primary Crop) | Oct '12 | Nov '12 | Dec '12 | Jan '13 | Feb '13 | Mar '13 | Apr '13 | May '13 | Jun '13 | Jul '13 | Aug '13 | Sep '13 |
|----------------|----------------|----------------|---------------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| M&M Schillings | 33.1           | 33.1           | Marine SIL (517A 0-2%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Johama Pasture | 138.8          |                | Coulterville SIL (880B2 2-5%)   | Grass (Grass)                          |         |         |         |         |         |         |         |         |         |         |         |         |
| Spalt          | 71.2           |                | Coulterville SIL (880B2 2-5%)   | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| John Schad     | 32.1           |                | Coulterville SICL (878C3 5-10%) | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| <i>Total</i>   | <i>1,162.8</i> | <i>114.9</i>   |                                 |  |         |         |         |         |         |         |         |         |         |         |         |         |

|                          |               |  |
|--------------------------|---------------|--|
| Slope > 5% (Winter only) | Crop in field | No. indicates application rate (1000 gal/acre)<br>Red numbers indicate applications from holding ponds<br>Black numbers indicate applications from deep pits |
|--------------------------|---------------|--|

## Manure Application Planning Calendar – October 2013 through September 2014

| Field          | Spread. Acres | Applied. Acres | Predominant Soil Type           | Primary 2014 Crop (Prev. Primary Crop) | Oct '13 | Nov '13 | Dec '13 | Jan '14 | Feb '14 | Mar '14 | Apr '14 | May '14 | Jun '14 | Jul '14 | Aug '14 | Sep '14 |
|----------------|---------------|----------------|---------------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Range 1        | 26.2          |                | Okaw SIL (8084A 0-2%)           | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| Range 2        | 50.8          | 50.8           | Homen SIL (582B 2-5%)           | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 3        | 25.1          | 25.1           | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 4        | 4.8           | 4.8            | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 5        | 22.4          | 22.4           | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 6        | 43.4          |                | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| Rick Range     | 66.3          |                | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 1 | 7.1           |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 2 | 15.9          | 15.9           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 3 | 18.6          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 4 | 10.4          | 10.4           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Lenzburg North | 23.9          | 23.9           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Lenzburg       | 102.2         | 102.2          | Darmstadt SIL (880B2 2-5%)      | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Schickedanz    | 59.9          | 59.9           | Coulterville SICL (884C3 5-10%) | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| V Schickedanz  | 54.8          | 54.8           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| McBride 120    | 86.8          | 86.8           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| McBride 240    | 216.4         | 216.4          | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Tilden 20      | 7.2           |                | Blair SICL (5C3 5-10%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Tilden 40      | 23.2          |                | Blair SICL (5C3 5-10%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| CPS 25         | 22.2          |                | Blair SICL (5C3 5-10%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |

| Field          | Spread. Acres  | Applied. Acres | Predominant Soil Type           | Primary 2014 Crop (Prev. Primary Crop) | Oct '13 | Nov '13 | Dec '13 | Jan '14 | Feb '14 | Mar '14 | Apr '14 | May '14 | Jun '14 | Jul '14 | Aug '14 | Sep '14 |
|----------------|----------------|----------------|---------------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| M&M Schillings | 33.1           |                | Marine SIL (517A 0-2%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Johama Pasture | 138.8          |                | Coulterville SIL (880B2 2-5%)   | Grass (Grass)                          |         |         |         |         |         |         |         |         |         |         |         |         |
| Spalt          | 71.2           | 71.2           | Coulterville SIL (880B2 2-5%)   | Corn (Corn)                            |         | 4.8     |         |         |         |         |         |         |         |         |         |         |
| John Schad     | 32.1           | 32.1           | Coulterville SICL (878C3 5-10%) | Corn (Corn)                            |         | 4.8     |         |         |         |         |         |         |         |         |         |         |
| <i>Total</i>   | <i>1,162.8</i> | <i>776.7</i>   |                                 |  |         |         |         |         |         |         |         |         |         |         |         |         |

|                          |               |  |
|--------------------------|---------------|--|
| Slope > 5% (Winter only) | Crop in field | No. indicates application rate (1000 gal/acre)<br>Red numbers indicate applications from holding ponds<br>Black numbers indicate applications from deep pits |
|--------------------------|---------------|--|

## Manure Application Planning Calendar – October 2014 through September 2015

| Field          | Spread. Acres | Applied. Acres | Predominant Soil Type           | Primary 2015 Crop (Prev. Primary Crop) | Oct '14 | Nov '14 | Dec '14 | Jan '15 | Feb '15 | Mar '15 | Apr '15 | May '15 | Jun '15 | Jul '15 | Aug '15 | Sep '15 |
|----------------|---------------|----------------|---------------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Range 1        | 26.2          | 26.2           | Okaw SIL (8084A 0-2%)           | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 2        | 50.8          | 50.8           | Homen SIL (582B 2-5%)           | Corn (Corn)                            |         | 4.8     |         |         |         |         |         |         |         |         |         |         |
| Range 3        | 25.1          | 25.1           | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 4        | 4.8           | 4.8            | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 5        | 22.4          | 22.4           | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 6        | 43.4          |                | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| Rick Range     | 66.3          | 66.3           | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 4.8     |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 1 | 7.1           | 7.1            | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 2 | 15.9          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 3 | 18.6          | 18.6           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 4 | 10.4          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Lenzburg North | 23.9          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Lenzburg       | 102.2         |                | Darmstadt SIL (880B2 2-5%)      | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Schickedanz    | 59.9          |                | Coulterville SICL (884C3 5-10%) | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| V Schickedanz  | 54.8          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| McBride 120    | 86.8          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| McBride 240    | 216.4         |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Tilden 20      | 7.2           | 7.2            | Blair SICL (5C3 5-10%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Tilden 40      | 23.2          | 23.2           | Blair SICL (5C3 5-10%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| CPS 25         | 22.2          | 22.2           | Blair SICL (5C3 5-10%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |



| Field          | Spread. Acres  | Applied. Acres | Predominant Soil Type           | Primary 2015 Crop (Prev. Primary Crop) | Oct '14 | Nov '14 | Dec '14 | Jan '15 | Feb '15 | Mar '15 | Apr '15 | May '15 | Jun '15 | Jul '15 | Aug '15 | Sep '15 |
|----------------|----------------|----------------|---------------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| M&M Schillings | 33.1           | 33.1           | Marine SIL (517A 0-2%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Johama Pasture | 138.8          |                | Coulterville SIL (880B2 2-5%)   | Grass (Grass)                          |         |         |         |         |         |         |         |         |         |         |         |         |
| Spalt          | 71.2           |                | Coulterville SIL (880B2 2-5%)   | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| John Schad     | 32.1           |                | Coulterville SICL (878C3 5-10%) | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| <i>Total</i>   | <i>1,162.8</i> | <i>307.0</i>   |                                 |  |         |         |         |         |         |         |         |         |         |         |         |         |

|                          |               |  |
|--------------------------|---------------|--|
| Slope > 5% (Winter only) | Crop in field | No. indicates application rate (1000 gal/acre)<br>Red numbers indicate applications from holding ponds<br>Black numbers indicate applications from deep pits |
|--------------------------|---------------|--|

## Manure Application Planning Calendar – October 2015 through September 2016

| Field          | Spread. Acres | Applied. Acres | Predominant Soil Type           | Primary 2016 Crop (Prev. Primary Crop) | Oct '15 | Nov '15 | Dec '15 | Jan '16 | Feb '16 | Mar '16 | Apr '16 | May '16 | Jun '16 | Jul '16 | Aug '16 | Sep '16 |
|----------------|---------------|----------------|---------------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Range 1        | 26.2          | 26.2           | Okaw SIL (8084A 0-2%)           | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 2        | 50.8          |                | Homen SIL (582B 2-5%)           | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| Range 3        | 25.1          | 25.1           | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 4        | 4.8           | 4.8            | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 5        | 22.4          | 22.4           | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 19.2    |         |         |         |         |         |         |         |         |         |         |
| Range 6        | 43.4          |                | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| Rick Range     | 66.3          |                | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 1 | 7.1           |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 2 | 15.9          | 15.9           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 3 | 18.6          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 4 | 10.4          | 10.4           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Lenzburg North | 23.9          | 23.9           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Lenzburg       | 102.2         | 102.2          | Darmstadt SIL (880B2 2-5%)      | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Schickedanz    | 59.9          | 59.9           | Coulterville SICL (884C3 5-10%) | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| V Schickedanz  | 54.8          | 54.8           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| McBride 120    | 86.8          | 86.8           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| McBride 240    | 216.4         | 216.4          | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Tilden 20      | 7.2           |                | Blair SICL (5C3 5-10%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Tilden 40      | 23.2          |                | Blair SICL (5C3 5-10%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| CPS 25         | 22.2          |                | Blair SICL (5C3 5-10%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |

| Field          | Spread. Acres  | Applied. Acres | Predominant Soil Type           | Primary 2016 Crop (Prev. Primary Crop) | Oct '15 | Nov '15 | Dec '15 | Jan '16 | Feb '16 | Mar '16 | Apr '16 | May '16 | Jun '16 | Jul '16 | Aug '16 | Sep '16 |
|----------------|----------------|----------------|---------------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| M&M Schillings | 33.1           |                | Marine SIL (517A 0-2%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Johama Pasture | 138.8          |                | Coulterville SIL (880B2 2-5%)   | Grass (Grass)                          |         |         |         |         |         |         |         |         |         |         |         |         |
| Spalt          | 71.2           | 71.2           | Coulterville SIL (880B2 2-5%)   | Corn (Corn)                            |         | 4.8     |         |         |         |         |         |         |         |         |         |         |
| John Schad     | 32.1           | 32.1           | Coulterville SICL (878C3 5-10%) | Corn (Corn)                            |         | 4.8     |         |         |         |         |         |         |         |         |         |         |
| <i>Total</i>   | <i>1,162.8</i> | <i>752.1</i>   |                                 |  |         |         |         |         |         |         |         |         |         |         |         |         |

|                          |               |  |
|--------------------------|---------------|--|
| Slope > 5% (Winter only) | Crop in field | No. indicates application rate (1000 gal/acre)<br>Red numbers indicate applications from holding ponds<br>Black numbers indicate applications from deep pits |
|--------------------------|---------------|--|

## Manure Application Planning Calendar – October 2016 through September 2017

| Field          | Spread. Acres | Applied. Acres | Predominant Soil Type           | Primary 2017 Crop (Prev. Primary Crop) | Oct '16 | Nov '16 | Dec '16 | Jan '17 | Feb '17 | Mar '17 | Apr '17 | May '17 | Jun '17 | Jul '17 | Aug '17 | Sep '17 |
|----------------|---------------|----------------|---------------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Range 1        | 26.2          | 26.2           | Okaw SIL (8084A 0-2%)           | Corn (Corn)                            | 19.2    |         |         |         |         |         |         |         |         |         |         |         |
| Range 2        | 50.8          | 50.8           | Homen SIL (582B 2-5%)           | Corn (Corn)                            | 19.2    |         |         |         |         |         |         |         |         |         |         |         |
| Range 3        | 25.1          | 25.1           | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         |         |         |         |         | 19.2    |         |         |         |         |         |         |
| Range 4        | 4.8           | 4.8            | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            | 19.2    |         |         |         |         |         |         |         |         |         |         |         |
| Range 5        | 22.4          | 22.4           | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            | 19.2    |         |         |         |         |         |         |         |         |         |         |         |
| Range 6        | 43.4          | 43.4           | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         |         |         |         |         | 19.2    |         |         |         |         |         |         |
| Rick Range     | 66.3          | 66.3           | Bunkum SICL (884C3 5-10%)       | Corn (Corn)                            |         | 4.8     |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 1 | 7.1           | 7.1            | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 2 | 15.9          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 3 | 18.6          | 18.6           | Marine SIL (517B 2-5%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Triefenbachs 4 | 10.4          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Lenzburg North | 23.9          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Lenzburg       | 102.2         |                | Darmstadt SIL (880B2 2-5%)      | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Schickedanz    | 59.9          |                | Coulterville SICL (884C3 5-10%) | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| V Schickedanz  | 54.8          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| McBride 120    | 86.8          |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| McBride 240    | 216.4         |                | Marine SIL (517B 2-5%)          | Soybean (Corn)                         |         |         |         |         |         |         |         |         |         |         |         |         |
| Tilden 20      | 7.2           | 7.2            | Blair SICL (5C3 5-10%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Tilden 40      | 23.2          | 23.2           | Blair SICL (5C3 5-10%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| CPS 25         | 22.2          | 22.2           | Blair SICL (5C3 5-10%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |

| Field          | Spread. Acres  | Applied. Acres | Predominant Soil Type           | Primary 2017 Crop (Prev. Primary Crop) | Oct '16 | Nov '16 | Dec '16 | Jan '17 | Feb '17 | Mar '17 | Apr '17 | May '17 | Jun '17 | Jul '17 | Aug '17 | Sep '17 |
|----------------|----------------|----------------|---------------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| M&M Schillings | 33.1           | 33.1           | Marine SIL (517A 0-2%)          | Corn (Soybean)                         |         | 3.6     |         |         |         |         |         |         |         |         |         |         |
| Johama Pasture | 138.8          |                | Coulterville SIL (880B2 2-5%)   | Grass (Grass)                          |         |         |         |         |         |         |         |         |         |         |         |         |
| Spalt          | 71.2           |                | Coulterville SIL (880B2 2-5%)   | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| John Schad     | 32.1           |                | Coulterville SICL (878C3 5-10%) | Corn (Corn)                            |         |         |         |         |         |         |         |         |         |         |         |         |
| <i>Total</i>   | <i>1,162.8</i> | <i>350.4</i>   |                                 |  |         |         |         |         |         |         |         |         |         |         |         |         |

|                          |               |  |
|--------------------------|---------------|--|
| Slope > 5% (Winter only) | Crop in field | No. indicates application rate (1000 gal/acre)<br>Red numbers indicate applications from holding ponds<br>Black numbers indicate applications from deep pits |
|--------------------------|---------------|--|

## 6.7. Planned Nutrient Applications (Manure-spreadable Area)

| Field   | App. Month | Target Crop | Nutrient Source | Application Method | Rate Basis | Rate/Acre  | Total Amount Applied | Acres Cov. | Avail N (Lbs/A) | Avail P <sub>2</sub> O <sub>5</sub> (Lbs/A) | Avail K <sub>2</sub> O (Lbs/A) |
|---------|------------|-------------|-----------------|--------------------|------------|------------|----------------------|------------|-----------------|---|--------------------------------|
| Range 1 | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 141 Lbs    | 3,694 Lbs            | 26.2       | 116             | 0   | 0                              |
| Range 1 | Nov 2012   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 504,000 Gal          | 26.3       | 83              | 69  | 340                            |
| Range 1 | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 228 Lbs    | 5,974 Lbs            | 26.2       | 187             | 0   | 0                              |
| Range 1 | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 134 Lbs    | 3,511 Lbs            | 26.2       | 110             | 0   | 0                              |
| Range 1 | Nov 2014   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 504,000 Gal          | 26.3       | 83              | 69  | 340                            |
| Range 1 | Nov 2015   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 504,000 Gal          | 26.3       | 83              | 69  | 340                            |
| Range 1 | Nov 2015   | Corn        | 82-0-0          | Inject             | Supp. N    | 122 Lbs    | 3,196 Lbs            | 26.2       | 100             | 0   | 0                              |
| Range 1 | Oct 2016   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 504,000 Gal          | 26.3       | 83              | 69  | 340                            |
| Range 1 | Nov 2016   | Corn        | 82-0-0          | Inject             | Supp. N    | 119 Lbs    | 3,118 Lbs            | 26.2       | 98              | 0   | 0                              |
| Range 2 | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs    | 12,344 Lbs           | 50.8       | 199             | 0   | 0                              |
| Range 2 | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 158 Lbs    | 8,026 Lbs            | 50.8       | 130             | 0   | 0                              |
| Range 2 | Nov 2013   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 813,000 Gal          | 42.3       | 83              | 69  | 340                            |
| Range 2 | Nov 2014   | Corn        | Deep Pits       | Injection          | 2-yr P     | 4,800 Gal  | 244,000 Gal          | 50.8       | 102             | 139   | 87                             |
| Range 2 | Nov 2014   | Corn        | 82-0-0          | Inject             | Supp. N    | 106 Lbs    | 5,385 Lbs            | 50.8       | 87              | 0   | 0                              |
| Range 2 | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 226 Lbs    | 11,481 Lbs           | 50.8       | 185             | 0   | 0                              |
| Range 2 | Oct 2016   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 976,000 Gal          | 50.8       | 83              | 69  | 340                            |
| Range 2 | Nov 2016   | Corn        | 82-0-0          | Inject             | Supp. N    | 133 Lbs    | 6,756 Lbs            | 50.8       | 109             | 0   | 0                              |
| Range 3 | Nov 2012   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 482,000 Gal          | 25.1       | 83              | 69  | 340                            |
| Range 3 | Nov 2012   | Corn        | 82-0-0          | Inject             | Supp. N    | 141 Lbs    | 3,539 Lbs            | 25.1       | 116             | 0   | 0                              |
| Range 3 | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 127 Lbs    | 3,188 Lbs            | 25.1       | 104             | 0   | 0                              |
| Range 3 | Nov 2013   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 482,000 Gal          | 25.1       | 83              | 69  | 340                            |
| Range 3 | Nov 2014   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 482,000 Gal          | 25.1       | 83              | 69  | 340                            |
| Range 3 | Nov 2014   | Corn        | 82-0-0          | Inject             | Supp. N    | 119 Lbs    | 2,987 Lbs            | 25.1       | 98              | 0   | 0                              |
| Range 3 | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 115 Lbs    | 2,887 Lbs            | 25.1       | 94              | 0   | 0                              |
| Range 3 | Nov 2015   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 482,000 Gal          | 25.1       | 83              | 69  | 340                            |
| Range 3 | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 115 Lbs    | 2,887 Lbs            | 25.1       | 94              | 0   | 0                              |
| Range 3 | Mar 2017   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 482,000 Gal          | 25.1       | 83              | 69  | 340                            |
| Range 4 | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 141 Lbs    | 677 Lbs              | 4.8        | 116             | 0   | 0                              |
| Range 4 | Nov 2012   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 93,000 Gal           | 4.8        | 83              | 69  | 340                            |

| Field      | App. Month | Target Crop | Nutrient Source | Application Method | Rate Basis | Rate/Acre  | Total Amount Applied | Acres Cov. | Avail N (Lbs/A) | Avail P <sub>2</sub> O <sub>5</sub> (Lbs/A) | Avail K <sub>2</sub> O (Lbs/A) |
|------------|------------|-------------|-----------------|--------------------|------------|------------|----------------------|------------|-----------------|---|--------------------------------|
| Range 4    | Nov 2013   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 93,000 Gal           | 4.8        | 83              | 69  | 340                            |
| Range 4    | Nov 2013   | Corn        | 82-0-0          | Inject             | Supp. N    | 127 Lbs    | 610 Lbs              | 4.8        | 104             | 0   | 0                              |
| Range 4    | Nov 2014   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 93,000 Gal           | 4.8        | 83              | 69  | 340                            |
| Range 4    | Nov 2014   | Corn        | 82-0-0          | Inject             | Supp. N    | 119 Lbs    | 571 Lbs              | 4.8        | 98              | 0   | 0                              |
| Range 4    | Nov 2015   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 93,000 Gal           | 4.8        | 83              | 69  | 340                            |
| Range 4    | Nov 2015   | Corn        | 82-0-0          | Inject             | Supp. N    | 115 Lbs    | 552 Lbs              | 4.8        | 94              | 0   | 0                              |
| Range 4    | Oct 2016   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 93,000 Gal           | 4.8        | 83              | 69  | 340                            |
| Range 4    | Nov 2016   | Corn        | 82-0-0          | Inject             | Supp. N    | 115 Lbs    | 552 Lbs              | 4.8        | 94              | 0   | 0                              |
| Range 5    | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs    | 5,443 Lbs            | 22.4       | 199             | 0   | 0                              |
| Range 5    | Nov 2013   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 431,000 Gal          | 22.4       | 83              | 69  | 340                            |
| Range 5    | Nov 2013   | Corn        | 82-0-0          | Inject             | Supp. N    | 141 Lbs    | 3,158 Lbs            | 22.4       | 116             | 0   | 0                              |
| Range 5    | Nov 2014   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 431,000 Gal          | 22.4       | 83              | 69  | 340                            |
| Range 5    | Nov 2014   | Corn        | 82-0-0          | Inject             | Supp. N    | 127 Lbs    | 2,845 Lbs            | 22.4       | 104             | 0   | 0                              |
| Range 5    | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 119 Lbs    | 2,666 Lbs            | 22.4       | 98              | 0   | 0                              |
| Range 5    | Nov 2015   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 431,000 Gal          | 22.4       | 83              | 69  | 340                            |
| Range 5    | Oct 2016   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 431,000 Gal          | 22.4       | 83              | 69  | 340                            |
| Range 5    | Nov 2016   | Corn        | 82-0-0          | Inject             | Supp. N    | 115 Lbs    | 2,576 Lbs            | 22.4       | 94              | 0   | 0                              |
| Range 6    | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs    | 10,546 Lbs           | 43.4       | 199             | 0   | 0                              |
| Range 6    | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs    | 10,546 Lbs           | 43.4       | 199             | 0   | 0                              |
| Range 6    | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs    | 10,546 Lbs           | 43.4       | 199             | 0   | 0                              |
| Range 6    | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs    | 10,546 Lbs           | 43.4       | 199             | 0   | 0                              |
| Range 6    | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 141 Lbs    | 6,119 Lbs            | 43.4       | 116             | 0   | 0                              |
| Range 6    | Mar 2017   | Corn        | Holding Ponds   | Injection          | 1-yr P     | 19,200 Gal | 834,000 Gal          | 43.4       | 83              | 69  | 340                            |
| Rick Range | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs    | 16,111 Lbs           | 66.3       | 199             | 0   | 0                              |
| Rick Range | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs    | 16,111 Lbs           | 66.3       | 199             | 0   | 0                              |
| Rick Range | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 118 Lbs    | 7,823 Lbs            | 66.3       | 97              | 0   | 0                              |
| Rick Range | Nov 2014   | Corn        | Deep Pits       | Injection          | 2-yr P     | 4,800 Gal  | 319,000 Gal          | 66.5       | 102             | 139   | 87                             |
| Rick Range | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 232 Lbs    | 15,382 Lbs           | 66.3       | 190             | 0   | 0                              |
| Rick Range | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 113 Lbs    | 7,492 Lbs            | 66.3       | 93              | 0   | 0                              |
| Rick Range | Nov 2016   | Corn        | Deep Pits       | Injection          | 2-yr P     | 4,800 Gal  | 319,000 Gal          | 66.5       | 102             | 139   | 87                             |

**6. Nutrient Management**

| Field          | App. Month | Target Crop | Nutrient Source | Application Method | Rate Basis | Rate/Acre | Total Amount Applied | Acres Cov. | Avail N (Lbs/A) | Avail P <sub>2</sub> O <sub>5</sub> (Lbs/A) | Avail K <sub>2</sub> O (Lbs/A) |
|----------------|------------|-------------|-----------------|--------------------|------------|-----------|----------------------|------------|-----------------|---|--------------------------------|
| Triefenbachs 1 | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 127 Lbs   | 902 Lbs              | 7.1        | 104             | 0   | 0                              |
| Triefenbachs 1 | Nov 2012   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 26,000 Gal           | 7.2        | 77              | 104   | 65                             |
| Triefenbachs 1 | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 123 Lbs   | 873 Lbs              | 7.1        | 101             | 0   | 0                              |
| Triefenbachs 1 | Nov 2014   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 26,000 Gal           | 7.2        | 77              | 104   | 65                             |
| Triefenbachs 1 | Nov 2016   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 26,000 Gal           | 7.2        | 77              | 104   | 65                             |
| Triefenbachs 1 | Nov 2016   | Corn        | 82-0-0          | Inject             | Supp. N    | 123 Lbs   | 873 Lbs              | 7.1        | 101             | 0   | 0                              |
| Triefenbachs 2 | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 127 Lbs   | 2,019 Lbs            | 15.9       | 104             | 0   | 0                              |
| Triefenbachs 2 | Nov 2013   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 58,000 Gal           | 16.1       | 77              | 104   | 65                             |
| Triefenbachs 2 | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 123 Lbs   | 1,956 Lbs            | 15.9       | 101             | 0   | 0                              |
| Triefenbachs 2 | Nov 2015   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 58,000 Gal           | 16.1       | 77              | 104   | 65                             |
| Triefenbachs 3 | Nov 2012   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 67,000 Gal           | 18.6       | 77              | 104   | 65                             |
| Triefenbachs 3 | Nov 2012   | Corn        | 82-0-0          | Inject             | Supp. N    | 128 Lbs   | 2,381 Lbs            | 18.6       | 105             | 0   | 0                              |
| Triefenbachs 3 | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 124 Lbs   | 2,306 Lbs            | 18.6       | 102             | 0   | 0                              |
| Triefenbachs 3 | Nov 2014   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 67,000 Gal           | 18.6       | 77              | 104   | 65                             |
| Triefenbachs 3 | Nov 2016   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 67,000 Gal           | 18.6       | 77              | 104   | 65                             |
| Triefenbachs 3 | Nov 2016   | Corn        | 82-0-0          | Inject             | Supp. N    | 124 Lbs   | 2,306 Lbs            | 18.6       | 102             | 0   | 0                              |
| Triefenbachs 4 | Nov 2013   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 38,000 Gal           | 10.6       | 77              | 104   | 65                             |
| Triefenbachs 4 | Nov 2013   | Corn        | 82-0-0          | Inject             | Supp. N    | 127 Lbs   | 1,321 Lbs            | 10.4       | 104             | 0   | 0                              |
| Triefenbachs 4 | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 123 Lbs   | 1,279 Lbs            | 10.4       | 101             | 0   | 0                              |
| Triefenbachs 4 | Nov 2015   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 38,000 Gal           | 10.6       | 77              | 104   | 65                             |
| Lenzburg North | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 127 Lbs   | 3,035 Lbs            | 23.9       | 104             | 0   | 0                              |
| Lenzburg North | Nov 2013   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 87,000 Gal           | 24.2       | 77              | 104   | 65                             |
| Lenzburg North | Nov 2015   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 87,000 Gal           | 24.2       | 77              | 104   | 65                             |
| Lenzburg North | Nov 2015   | Corn        | 82-0-0          | Inject             | Supp. N    | 123 Lbs   | 2,940 Lbs            | 23.9       | 101             | 0   | 0                              |
| Lenzburg       | Nov 2013   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 368,000 Gal          | 102.2      | 77              | 104   | 65                             |
| Lenzburg       | Nov 2013   | Corn        | 82-0-0          | Inject             | Supp. N    | 128 Lbs   | 13,082 Lbs           | 102.2      | 105             | 0   | 0                              |
| Lenzburg       | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 124 Lbs   | 12,673 Lbs           | 102.2      | 102             | 0   | 0                              |
| Lenzburg       | Nov 2015   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 368,000 Gal          | 102.2      | 77              | 104   | 65                             |
| Schickedanz    | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 128 Lbs   | 7,667 Lbs            | 59.9       | 105             | 0   | 0                              |
| Schickedanz    | Nov 2013   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 216,000 Gal          | 60.0       | 77              | 104   | 65                             |

**6. Nutrient Management**



| Field          | App. Month | Target Crop | Nutrient Source | Application Method | Rate Basis | Rate/Acre | Total Amount Applied | Acres Cov. | Avail N (Lbs/A) | Avail P <sub>2</sub> O <sub>5</sub> (Lbs/A) | Avail K <sub>2</sub> O (Lbs/A) |
|----------------|------------|-------------|-----------------|--------------------|------------|-----------|----------------------|------------|-----------------|---|--------------------------------|
| Schickedanz    | Nov 2015   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 216,000 Gal          | 60.0       | 77              | 104   | 65                             |
| Schickedanz    | Nov 2015   | Corn        | 82-0-0          | Inject             | Supp. N    | 124 Lbs   | 7,428 Lbs            | 59.9       | 102             | 0   | 0                              |
| V Schickedanz  | Nov 2013   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 198,000 Gal          | 55.0       | 77              | 104   | 65                             |
| V Schickedanz  | Nov 2013   | Corn        | 82-0-0          | Inject             | Supp. N    | 128 Lbs   | 7,014 Lbs            | 54.8       | 105             | 0   | 0                              |
| V Schickedanz  | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 124 Lbs   | 6,795 Lbs            | 54.8       | 102             | 0   | 0                              |
| V Schickedanz  | Nov 2015   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 198,000 Gal          | 55.0       | 77              | 104   | 65                             |
| McBride 120    | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 128 Lbs   | 11,110 Lbs           | 86.8       | 105             | 0   | 0                              |
| McBride 120    | Nov 2013   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 313,000 Gal          | 86.9       | 77              | 104   | 65                             |
| McBride 120    | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 124 Lbs   | 10,763 Lbs           | 86.8       | 102             | 0   | 0                              |
| McBride 120    | Nov 2015   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 313,000 Gal          | 86.9       | 77              | 104   | 65                             |
| McBride 240    | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 128 Lbs   | 27,699 Lbs           | 216.4      | 105             | 0   | 0                              |
| McBride 240    | Nov 2013   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 780,000 Gal          | 216.7      | 77              | 104   | 65                             |
| McBride 240    | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 124 Lbs   | 26,834 Lbs           | 216.4      | 102             | 0   | 0                              |
| McBride 240    | Nov 2015   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 780,000 Gal          | 216.7      | 77              | 104   | 65                             |
| Tilden 20      | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 1,598 Lbs            | 7.2        | 182             | 0   | 0                              |
| Tilden 20      | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 128 Lbs   | 922 Lbs              | 7.2        | 105             | 0   | 0                              |
| Tilden 20      | Nov 2014   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 26,000 Gal           | 7.2        | 77              | 104   | 65                             |
| Tilden 20      | Nov 2016   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 26,000 Gal           | 7.2        | 77              | 104   | 65                             |
| Tilden 20      | Nov 2016   | Corn        | 82-0-0          | Inject             | Supp. N    | 124 Lbs   | 893 Lbs              | 7.2        | 102             | 0   | 0                              |
| Tilden 40      | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 5,150 Lbs            | 23.2       | 182             | 0   | 0                              |
| Tilden 40      | Nov 2014   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 84,000 Gal           | 23.3       | 77              | 104   | 65                             |
| Tilden 40      | Nov 2014   | Corn        | 82-0-0          | Inject             | Supp. N    | 128 Lbs   | 2,970 Lbs            | 23.2       | 105             | 0   | 0                              |
| Tilden 40      | Nov 2016   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 84,000 Gal           | 23.3       | 77              | 104   | 65                             |
| Tilden 40      | Nov 2016   | Corn        | 82-0-0          | Inject             | Supp. N    | 124 Lbs   | 2,877 Lbs            | 23.2       | 102             | 0   | 0                              |
| CPS 25         | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 4,928 Lbs            | 22.2       | 182             | 0   | 0                              |
| CPS 25         | Nov 2014   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 80,000 Gal           | 22.2       | 77              | 104   | 65                             |
| CPS 25         | Nov 2014   | Corn        | 82-0-0          | Inject             | Supp. N    | 128 Lbs   | 2,842 Lbs            | 22.2       | 105             | 0   | 0                              |
| CPS 25         | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 124 Lbs   | 2,753 Lbs            | 22.2       | 102             | 0   | 0                              |
| CPS 25         | Nov 2016   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 80,000 Gal           | 22.2       | 77              | 104   | 65                             |
| M&M Schillings | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 128 Lbs   | 4,237 Lbs            | 33.1       | 105             | 0   | 0                              |

## 6. Nutrient Management

| Field          | App. Month | Target Crop | Nutrient Source | Application Method | Rate Basis | Rate/Acre | Total Amount Applied | Acres Cov. | Avail N (Lbs/A) | Avail P <sub>2</sub> O <sub>5</sub> (Lbs/A) | Avail K <sub>2</sub> O (Lbs/A) |
|----------------|------------|-------------|-----------------|--------------------|------------|-----------|----------------------|------------|-----------------|---|--------------------------------|
| M&M Schillings | Nov 2012   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 120,000 Gal          | 33.3       | 77              | 104   | 65                             |
| M&M Schillings | Nov 2014   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 120,000 Gal          | 33.3       | 77              | 104   | 65                             |
| M&M Schillings | Nov 2014   | Corn        | 82-0-0          | Inject             | Supp. N    | 124 Lbs   | 4,104 Lbs            | 33.1       | 102             | 0   | 0                              |
| M&M Schillings | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 124 Lbs   | 4,104 Lbs            | 33.1       | 102             | 0   | 0                              |
| M&M Schillings | Nov 2016   | Corn        | Deep Pits       | Injection          | 2-yr P     | 3,600 Gal | 120,000 Gal          | 33.3       | 77              | 104   | 65                             |
| Spalt          | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 17,302 Lbs           | 71.2       | 199             | 0   | 0                              |
| Spalt          | Nov 2013   | Corn        | Deep Pits       | Injection          | 2-yr P     | 4,800 Gal | 342,000 Gal          | 71.3       | 102             | 139   | 87                             |
| Spalt          | Nov 2013   | Corn        | 82-0-0          | Inject             | Supp. N    | 118 Lbs   | 8,402 Lbs            | 71.2       | 97              | 0   | 0                              |
| Spalt          | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 232 Lbs   | 16,518 Lbs           | 71.2       | 190             | 0   | 0                              |
| Spalt          | Nov 2015   | Corn        | Deep Pits       | Injection          | 2-yr P     | 4,800 Gal | 342,000 Gal          | 71.3       | 102             | 139   | 87                             |
| Spalt          | Nov 2015   | Corn        | 82-0-0          | Inject             | Supp. N    | 113 Lbs   | 8,046 Lbs            | 71.2       | 93              | 0   | 0                              |
| Spalt          | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 229 Lbs   | 16,305 Lbs           | 71.2       | 188             | 0   | 0                              |
| John Schad     | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 7,800 Lbs            | 32.1       | 199             | 0   | 0                              |
| John Schad     | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 117 Lbs   | 3,756 Lbs            | 32.1       | 96              | 0   | 0                              |
| John Schad     | Nov 2013   | Corn        | Deep Pits       | Injection          | 2-yr P     | 4,800 Gal | 155,000 Gal          | 32.3       | 102             | 139   | 87                             |
| John Schad     | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 232 Lbs   | 7,447 Lbs            | 32.1       | 190             | 0   | 0                              |
| John Schad     | Nov 2015   | Corn        | Deep Pits       | Injection          | 2-yr P     | 4,800 Gal | 155,000 Gal          | 32.3       | 102             | 139   | 87                             |
| John Schad     | Nov 2015   | Corn        | 82-0-0          | Inject             | Supp. N    | 112 Lbs   | 3,595 Lbs            | 32.1       | 92              | 0   | 0                              |
| John Schad     | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 229 Lbs   | 7,351 Lbs            | 32.1       | 188             | 0   | 0                              |

### Planned Nutrient Applications (Non-manure-spreadable Area)

| Field   | App. Month | Target Crop | Nutrient Source | Application Method | Rate Basis | Rate/Acre | Total Amount Applied | Acres Cov. | Avail N (Lbs/A) | Avail P <sub>2</sub> O <sub>5</sub> (Lbs/A) | Avail K <sub>2</sub> O (Lbs/A) |
|---------|------------|-------------|-----------------|--------------------|------------|-----------|----------------------|------------|-----------------|---|--------------------------------|
| Range 1 | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 680 Lbs              | 2.8        | 199             | 0   | 0                              |
| Range 1 | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 680 Lbs              | 2.8        | 199             | 0   | 0                              |
| Range 1 | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 680 Lbs              | 2.8        | 199             | 0   | 0                              |
| Range 1 | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 680 Lbs              | 2.8        | 199             | 0   | 0                              |
| Range 1 | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 680 Lbs              | 2.8        | 199             | 0   | 0                              |
| Range 2 | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 365 Lbs              | 1.5        | 199             | 0   | 0                              |
| Range 2 | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 365 Lbs              | 1.5        | 199             | 0   | 0                              |

| Field          | App. Month | Target Crop | Nutrient Source | Application Method | Rate Basis | Rate/Acre | Total Amount Applied | Acres Cov. | Avail N (Lbs/A) | Avail P <sub>2</sub> O <sub>5</sub> (Lbs/A) | Avail K <sub>2</sub> O (Lbs/A) |
|----------------|------------|-------------|-----------------|--------------------|------------|-----------|----------------------|------------|-----------------|---|--------------------------------|
| Range 2        | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 365 Lbs              | 1.5        | 199             | 0   | 0                              |
| Range 2        | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 365 Lbs              | 1.5        | 199             | 0   | 0                              |
| Range 2        | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 365 Lbs              | 1.5        | 199             | 0   | 0                              |
| Range 3        | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 97 Lbs               | 0.4        | 199             | 0   | 0                              |
| Range 3        | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 97 Lbs               | 0.4        | 199             | 0   | 0                              |
| Range 3        | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 97 Lbs               | 0.4        | 199             | 0   | 0                              |
| Range 3        | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 97 Lbs               | 0.4        | 199             | 0   | 0                              |
| Range 3        | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 97 Lbs               | 0.4        | 199             | 0   | 0                              |
| Range 4        | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 1,337 Lbs            | 5.5        | 199             | 0   | 0                              |
| Range 4        | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 1,337 Lbs            | 5.5        | 199             | 0   | 0                              |
| Range 4        | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 1,337 Lbs            | 5.5        | 199             | 0   | 0                              |
| Range 4        | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 1,337 Lbs            | 5.5        | 199             | 0   | 0                              |
| Range 4        | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 1,337 Lbs            | 5.5        | 199             | 0   | 0                              |
| Range 5        | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 1,045 Lbs            | 4.3        | 199             | 0   | 0                              |
| Range 5        | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 1,045 Lbs            | 4.3        | 199             | 0   | 0                              |
| Range 5        | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 1,045 Lbs            | 4.3        | 199             | 0   | 0                              |
| Range 5        | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 1,045 Lbs            | 4.3        | 199             | 0   | 0                              |
| Range 5        | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 1,045 Lbs            | 4.3        | 199             | 0   | 0                              |
| Rick Range     | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 3,159 Lbs            | 13.0       | 199             | 0   | 0                              |
| Rick Range     | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 3,159 Lbs            | 13.0       | 199             | 0   | 0                              |
| Rick Range     | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 3,159 Lbs            | 13.0       | 199             | 0   | 0                              |
| Rick Range     | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 3,159 Lbs            | 13.0       | 199             | 0   | 0                              |
| Rick Range     | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 3,159 Lbs            | 13.0       | 199             | 0   | 0                              |
| Triefenbachs 1 | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 1,199 Lbs            | 5.4        | 182             | 0   | 0                              |
| Triefenbachs 1 | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 1,199 Lbs            | 5.4        | 182             | 0   | 0                              |
| Triefenbachs 1 | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 1,199 Lbs            | 5.4        | 182             | 0   | 0                              |
| Triefenbachs 2 | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 577 Lbs              | 2.6        | 182             | 0   | 0                              |
| Triefenbachs 2 | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 577 Lbs              | 2.6        | 182             | 0   | 0                              |
| Triefenbachs 3 | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 1,265 Lbs            | 5.7        | 182             | 0   | 0                              |
| Triefenbachs 3 | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 1,265 Lbs            | 5.7        | 182             | 0   | 0                              |

**6. Nutrient Management**

| Field          | App. Month | Target Crop | Nutrient Source | Application Method | Rate Basis | Rate/Acre | Total Amount Applied | Acres Cov. | Avail N (Lbs/A) | Avail P <sub>2</sub> O <sub>5</sub> (Lbs/A) | Avail K <sub>2</sub> O (Lbs/A) |
|----------------|------------|-------------|-----------------|--------------------|------------|-----------|----------------------|------------|-----------------|---|--------------------------------|
| Triefenbachs 3 | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 1,265 Lbs            | 5.7        | 182             | 0   | 0                              |
| Triefenbachs 4 | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 533 Lbs              | 2.4        | 182             | 0   | 0                              |
| Triefenbachs 4 | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 533 Lbs              | 2.4        | 182             | 0   | 0                              |
| Lenzburg North | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 133 Lbs              | 0.6        | 182             | 0   | 0                              |
| Lenzburg North | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 133 Lbs              | 0.6        | 182             | 0   | 0                              |
| Lenzburg       | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 6,727 Lbs            | 30.3       | 182             | 0   | 0                              |
| Lenzburg       | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 6,727 Lbs            | 30.3       | 182             | 0   | 0                              |
| Schickedanz    | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 67 Lbs               | 0.3        | 182             | 0   | 0                              |
| Schickedanz    | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 67 Lbs               | 0.3        | 182             | 0   | 0                              |
| V Schickedanz  | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 3,641 Lbs            | 16.4       | 182             | 0   | 0                              |
| V Schickedanz  | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 3,641 Lbs            | 16.4       | 182             | 0   | 0                              |
| McBride 120    | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 8,436 Lbs            | 38.0       | 182             | 0   | 0                              |
| McBride 120    | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 8,436 Lbs            | 38.0       | 182             | 0   | 0                              |
| McBride 240    | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 5,062 Lbs            | 22.8       | 182             | 0   | 0                              |
| McBride 240    | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 5,062 Lbs            | 22.8       | 182             | 0   | 0                              |
| Tilden 20      | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 1,732 Lbs            | 7.8        | 182             | 0   | 0                              |
| Tilden 20      | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 1,732 Lbs            | 7.8        | 182             | 0   | 0                              |
| Tilden 20      | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 1,732 Lbs            | 7.8        | 182             | 0   | 0                              |
| Tilden 40      | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 3,130 Lbs            | 14.1       | 182             | 0   | 0                              |
| Tilden 40      | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 3,130 Lbs            | 14.1       | 182             | 0   | 0                              |
| Tilden 40      | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 3,130 Lbs            | 14.1       | 182             | 0   | 0                              |
| CPS 25         | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 555 Lbs              | 2.5        | 182             | 0   | 0                              |
| CPS 25         | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 555 Lbs              | 2.5        | 182             | 0   | 0                              |
| CPS 25         | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 222 Lbs   | 555 Lbs              | 2.5        | 182             | 0   | 0                              |
| John Schad     | Nov 2012   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 583 Lbs              | 2.4        | 199             | 0   | 0                              |
| John Schad     | Nov 2013   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 583 Lbs              | 2.4        | 199             | 0   | 0                              |
| John Schad     | Nov 2014   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 583 Lbs              | 2.4        | 199             | 0   | 0                              |
| John Schad     | Nov 2015   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 583 Lbs              | 2.4        | 199             | 0   | 0                              |
| John Schad     | Nov 2016   | Corn        | 82-0-0          | Inject             | 1-yr N     | 243 Lbs   | 583 Lbs              | 2.4        | 199             | 0   | 0                              |

6. Nutrient Management



## 6.8. Field Nutrient Balance (Manure-spreadable Area)

| Year         | Field          | Size  | Crop | Yield Goal | Fertilizer Recs <sup>1</sup> |                                    |                       | Nutrients Applied <sup>2</sup> |                                    |                       | Balance After Recs <sup>3</sup> |                                    |                       | Balance After Removal <sup>4</sup> |                       |
|--------------|----------------|-------|------|------------|------------------------------|------------------------------------|-----------------------|--------------------------------|------------------------------------|-----------------------|---------------------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|
|              |                |       |      |            | N Lb/A                       | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                         | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                          | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A |
|              |                | Acres |      | /Acre      |                              |                                    |                       |                                |                                    |                       |                                 |                                    |                       |                                    |                       |
| 2013         | Range 1        | 26.2  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 69                                 | 341                   | 0                               | 2                                  | 296                   | 0                                  | 296                   |
| 2014         | Range 1        | 26.2  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 187                            | 0                                  | 0                     | 0 <sup>†</sup>                  | -65                                | 251                   | -69                                | 251                   |
| 2015         | Range 1        | 26.2  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 193                            | 69                                 | 341                   | 0 <sup>†</sup>                  | 2                                  | 547                   | 0                                  | 547                   |
| 2016         | Range 1        | 26.2  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 183                            | 69                                 | 341                   | 0 <sup>†</sup>                  | 4                                  | 843                   | 0                                  | 843                   |
| 2017         | Range 1        | 26.2  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 181                            | 69                                 | 341                   | 0 <sup>†</sup>                  | 6                                  | 1,139                 | 0                                  | 1,139                 |
| <b>Total</b> | <b>Range 1</b> |       |      |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>943</b>                     | <b>276</b>                         | <b>1364</b>           |                                 |                                    |                       |                                    |                       |
| 2013         | Range 2        | 50.8  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Range 2        | 50.8  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 57                                 | 283                   | 0                               | -10                                | 238                   | -12                                | 238                   |
| 2015         | Range 2        | 50.8  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 189                            | 139                                | 87                    | 0 <sup>†</sup>                  | 72                                 | 280                   | 70                                 | 280                   |
| 2016         | Range 2        | 50.8  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 185                            | 0                                  | 0                     | 0 <sup>†</sup>                  | 5                                  | 235                   | 1                                  | 235                   |
| 2017         | Range 2        | 50.8  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 192                            | 69                                 | 340                   | 0 <sup>†</sup>                  | 7                                  | 530                   | 1                                  | 530                   |
| <b>Total</b> | <b>Range 2</b> |       |      |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>964</b>                     | <b>265</b>                         | <b>710</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | Range 3        | 25.1  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 69                                 | 340                   | 0                               | 2                                  | 295                   | 0                                  | 295                   |
| 2014         | Range 3        | 25.1  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 187                            | 69                                 | 340                   | 0 <sup>†</sup>                  | 4                                  | 590                   | 0                                  | 590                   |
| 2015         | Range 3        | 25.1  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 181                            | 69                                 | 340                   | 0 <sup>†</sup>                  | 6                                  | 885                   | 0                                  | 885                   |
| 2016         | Range 3        | 25.1  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 177                            | 69                                 | 340                   | 0 <sup>†</sup>                  | 8                                  | 1,180                 | 0                                  | 1,180                 |
| 2017         | Range 3        | 25.1  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 177                            | 69                                 | 340                   | 0 <sup>†</sup>                  | 10                                 | 1,475                 | 0                                  | 1,475                 |
| <b>Total</b> | <b>Range 3</b> |       |      |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>921</b>                     | <b>345</b>                         | <b>1700</b>           |                                 |                                    |                       |                                    |                       |
| 2013         | Range 4        | 4.8   | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 69                                 | 340                   | 0                               | 2                                  | 295                   | 0                                  | 295                   |
| 2014         | Range 4        | 4.8   | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 187                            | 69                                 | 340                   | 0 <sup>†</sup>                  | 4                                  | 590                   | 0                                  | 590                   |
| 2015         | Range 4        | 4.8   | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 181                            | 69                                 | 340                   | 0 <sup>†</sup>                  | 6                                  | 885                   | 0                                  | 885                   |
| 2016         | Range 4        | 4.8   | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 177                            | 69                                 | 340                   | 0 <sup>†</sup>                  | 8                                  | 1,180                 | 0                                  | 1,180                 |
| 2017         | Range 4        | 4.8   | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 177                            | 69                                 | 340                   | 0 <sup>†</sup>                  | 10                                 | 1,475                 | 0                                  | 1,475                 |
| <b>Total</b> | <b>Range 4</b> |       |      |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>921</b>                     | <b>345</b>                         | <b>1700</b>           |                                 |                                    |                       |                                    |                       |
| 2013         | Range 5        | 22.4  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Range 5        | 22.4  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 69                                 | 340                   | 0                               | 2                                  | 295                   | 0                                  | 295                   |
| 2015         | Range 5        | 22.4  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 187                            | 69                                 | 340                   | 0 <sup>†</sup>                  | 4                                  | 590                   | 0                                  | 590                   |
| 2016         | Range 5        | 22.4  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 181                            | 69                                 | 340                   | 0 <sup>†</sup>                  | 6                                  | 885                   | 0                                  | 885                   |

| Year         | Field                 | Size | Crop    | Yield Goal | Fertilizer Recs <sup>1</sup> |                                    |                       | Nutrients Applied <sup>2</sup> |                                    |                       | Balance After Recs <sup>3</sup> |                                    |                       | Balance After Removal <sup>4</sup> |                       |
|--------------|-----------------------|------|---------|------------|------------------------------|------------------------------------|-----------------------|--------------------------------|------------------------------------|-----------------------|---------------------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|
|              |                       |      |         |            | N Lb/A                       | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                         | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                          | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A |
| 2017         | Range 5               | 22.4 | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 177                            | 69                                 | 340                   | 0 <sup>†</sup>                  | 8                                  | 1,180                 | 0                                  | 1,180                 |
| <b>Total</b> | <b>Range 5</b>        |      |         |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>943</b>                     | <b>276</b>                         | <b>1360</b>           |                                 |                                    |                       |                                    |                       |
| 2013         | Range 6               | 43.4 | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Range 6               | 43.4 | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Range 6               | 43.4 | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2016         | Range 6               | 43.4 | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | Range 6               | 43.4 | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 69                                 | 340                   | 0                               | 2                                  | 295                   | 0                                  | 295                   |
| <b>Total</b> | <b>Range 6</b>        |      |         |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>995</b>                     | <b>69</b>                          | <b>340</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | Rick Range            | 66.3 | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Rick Range            | 66.3 | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Rick Range            | 66.3 | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 139                                | 87                    | 0                               | 72                                 | 42                    | 70                                 | 42                    |
| 2016         | Rick Range            | 66.3 | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 190                            | 0                                  | 0                     | 0 <sup>†</sup>                  | 5                                  | -3                    | 1                                  | -3                    |
| 2017         | Rick Range            | 66.3 | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 195                            | 139                                | 87                    | 0 <sup>†</sup>                  | 77                                 | 42                    | 71                                 | 42                    |
| <b>Total</b> | <b>Rick Range</b>     |      |         |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>982</b>                     | <b>278</b>                         | <b>174</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | Triefenbachs 1        | 7.1  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 105                                | 66                    | 0                               | 38                                 | 21                    | 36                                 | 21                    |
| 2014         | Triefenbachs 1        | 7.1  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 4                                  | -31                   | 2                                  | -31                   |
| 2015         | Triefenbachs 1        | 7.1  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 105                                | 66                    | 0 <sup>†</sup>                  | 42                                 | 21                    | 38                                 | 21                    |
| 2016         | Triefenbachs 1        | 7.1  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 8                                  | -31                   | 4                                  | -31                   |
| 2017         | Triefenbachs 1        | 7.1  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 105                                | 66                    | 0 <sup>†</sup>                  | 46                                 | 21                    | 40                                 | 21                    |
| <b>Total</b> | <b>Triefenbachs 1</b> |      |         |            | <b>546</b>                   | <b>269</b>                         | <b>239</b>            | <b>540</b>                     | <b>315</b>                         | <b>198</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | Triefenbachs 2        | 15.9 | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | Triefenbachs 2        | 15.9 | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 105                                | 66                    | 0                               | 38                                 | 21                    | 36                                 | 21                    |
| 2015         | Triefenbachs 2        | 15.9 | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 4                                  | -31                   | 2                                  | -31                   |
| 2016         | Triefenbachs 2        | 15.9 | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 105                                | 66                    | 0 <sup>†</sup>                  | 42                                 | 21                    | 38                                 | 21                    |
| 2017         | Triefenbachs 2        | 15.9 | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 8                                  | -31                   | 4                                  | -31                   |
| <b>Total</b> | <b>Triefenbachs 2</b> |      |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>361</b>                     | <b>210</b>                         | <b>132</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | Triefenbachs 3        | 18.6 | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 104                                | 65                    | 0                               | 37                                 | 20                    | 35                                 | 20                    |
| 2014         | Triefenbachs 3        | 18.6 | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 3                                  | -32                   | 1                                  | -32                   |
| 2015         | Triefenbachs 3        | 18.6 | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 104                                | 65                    | 0 <sup>†</sup>                  | 40                                 | 20                    | 36                                 | 20                    |

## 6. Nutrient Management

| Year         | Field                 | Size  | Crop    | Yield Goal | Fertilizer Recs <sup>1</sup> |                                    |                       | Nutrients Applied <sup>2</sup> |                                    |                       | Balance After Recs <sup>3</sup> |                                    |                       | Balance After Removal <sup>4</sup> |                       |
|--------------|-----------------------|-------|---------|------------|------------------------------|------------------------------------|-----------------------|--------------------------------|------------------------------------|-----------------------|---------------------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|
|              |                       |       |         |            | N Lb/A                       | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                         | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                          | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A |
|              |                       | Acres |         | /Acre      |                              |                                    |                       |                                |                                    |                       |                                 |                                    |                       |                                    |                       |
| 2016         | Triefenbachs 3        | 18.6  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 6                                  | -32                   | 2                                  | -32                   |
| 2017         | Triefenbachs 3        | 18.6  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 104                                | 65                    | 0 <sup>†</sup>                  | 43                                 | 20                    | 37                                 | 20                    |
| <b>Total</b> | <b>Triefenbachs 3</b> |       |         |            | <b>546</b>                   | <b>269</b>                         | <b>239</b>            | <b>540</b>                     | <b>312</b>                         | <b>195</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | Triefenbachs 4        | 10.4  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | Triefenbachs 4        | 10.4  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 106                                | 66                    | 0                               | 39                                 | 21                    | 37                                 | 21                    |
| 2015         | Triefenbachs 4        | 10.4  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 5                                  | -31                   | 3                                  | -31                   |
| 2016         | Triefenbachs 4        | 10.4  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 106                                | 66                    | 0 <sup>†</sup>                  | 44                                 | 21                    | 40                                 | 21                    |
| 2017         | Triefenbachs 4        | 10.4  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 10                                 | -31                   | 6                                  | -31                   |
| <b>Total</b> | <b>Triefenbachs 4</b> |       |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>361</b>                     | <b>212</b>                         | <b>132</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | Lenzburg North        | 23.9  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | Lenzburg North        | 23.9  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 105                                | 66                    | 0                               | 38                                 | 21                    | 36                                 | 21                    |
| 2015         | Lenzburg North        | 23.9  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 4                                  | -31                   | 2                                  | -31                   |
| 2016         | Lenzburg North        | 23.9  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 105                                | 66                    | 0 <sup>†</sup>                  | 42                                 | 21                    | 38                                 | 21                    |
| 2017         | Lenzburg North        | 23.9  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 8                                  | -31                   | 4                                  | -31                   |
| <b>Total</b> | <b>Lenzburg North</b> |       |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>361</b>                     | <b>210</b>                         | <b>132</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | Lenzburg              | 102.2 | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | Lenzburg              | 102.2 | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 104                                | 65                    | 0                               | 37                                 | 20                    | 35                                 | 20                    |
| 2015         | Lenzburg              | 102.2 | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 3                                  | -32                   | 1                                  | -32                   |
| 2016         | Lenzburg              | 102.2 | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 104                                | 65                    | 0 <sup>†</sup>                  | 40                                 | 20                    | 36                                 | 20                    |
| 2017         | Lenzburg              | 102.2 | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 6                                  | -32                   | 2                                  | -32                   |
| <b>Total</b> | <b>Lenzburg</b>       |       |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>361</b>                     | <b>208</b>                         | <b>130</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | Schickedanz           | 59.9  | Soybean | 160        | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -136                               | -208                  |
| 2014         | Schickedanz           | 59.9  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 104                                | 65                    | 0                               | 37                                 | 20                    | 35                                 | 20                    |
| 2015         | Schickedanz           | 59.9  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 3                                  | -32                   | 1                                  | -32                   |
| 2016         | Schickedanz           | 59.9  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 104                                | 65                    | 0 <sup>†</sup>                  | 40                                 | 20                    | 36                                 | 20                    |
| 2017         | Schickedanz           | 59.9  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 6                                  | -32                   | 2                                  | -32                   |
| <b>Total</b> | <b>Schickedanz</b>    |       |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>361</b>                     | <b>208</b>                         | <b>130</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | V Schickedanz         | 54.8  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | V Schickedanz         | 54.8  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 104                                | 65                    | 0                               | 37                                 | 20                    | 35                                 | 20                    |

## 6. Nutrient Management



| Year         | Field                | Size  | Crop    | Yield Goal | Fertilizer Recs <sup>1</sup> |                                    |                       | Nutrients Applied <sup>2</sup> |                                    |                       | Balance After Recs <sup>3</sup> |                                    |                       | Balance After Removal <sup>4</sup> |                       |
|--------------|----------------------|-------|---------|------------|------------------------------|------------------------------------|-----------------------|--------------------------------|------------------------------------|-----------------------|---------------------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|
|              |                      |       |         |            | N Lb/A                       | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                         | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                          | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A |
|              |                      | Acres |         | /Acre      |                              |                                    |                       |                                |                                    |                       |                                 |                                    |                       |                                    |                       |
| 2015         | V Schickedanz        | 54.8  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 3                                  | -32                   | 1                                  | -32                   |
| 2016         | V Schickedanz        | 54.8  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 104                                | 65                    | 0 <sup>†</sup>                  | 40                                 | 20                    | 36                                 | 20                    |
| 2017         | V Schickedanz        | 54.8  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 6                                  | -32                   | 2                                  | -32                   |
| <b>Total</b> | <b>V Schickedanz</b> |       |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>361</b>                     | <b>208</b>                         | <b>130</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | McBride 120          | 86.8  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | McBride 120          | 86.8  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 104                                | 65                    | 0                               | 37                                 | 20                    | 35                                 | 20                    |
| 2015         | McBride 120          | 86.8  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 3                                  | -32                   | 1                                  | -32                   |
| 2016         | McBride 120          | 86.8  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 104                                | 65                    | 0 <sup>†</sup>                  | 40                                 | 20                    | 36                                 | 20                    |
| 2017         | McBride 120          | 86.8  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 6                                  | -32                   | 2                                  | -32                   |
| <b>Total</b> | <b>McBride 120</b>   |       |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>361</b>                     | <b>208</b>                         | <b>130</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | McBride 240          | 216.4 | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | McBride 240          | 216.4 | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 104                                | 65                    | 0                               | 37                                 | 20                    | 35                                 | 20                    |
| 2015         | McBride 240          | 216.4 | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 3                                  | -32                   | 1                                  | -32                   |
| 2016         | McBride 240          | 216.4 | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 104                                | 65                    | 0 <sup>†</sup>                  | 40                                 | 20                    | 36                                 | 20                    |
| 2017         | McBride 240          | 216.4 | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 6                                  | -32                   | 2                                  | -32                   |
| <b>Total</b> | <b>McBride 240</b>   |       |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>361</b>                     | <b>208</b>                         | <b>130</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | Tilden 20            | 7.2   | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Tilden 20            | 7.2   | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2015         | Tilden 20            | 7.2   | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 104                                | 65                    | 0                               | 37                                 | 20                    | 35                                 | 20                    |
| 2016         | Tilden 20            | 7.2   | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 3                                  | -32                   | 1                                  | -32                   |
| 2017         | Tilden 20            | 7.2   | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 104                                | 65                    | 0 <sup>†</sup>                  | 40                                 | 20                    | 36                                 | 20                    |
| <b>Total</b> | <b>Tilden 20</b>     |       |         |            | <b>546</b>                   | <b>269</b>                         | <b>239</b>            | <b>543</b>                     | <b>208</b>                         | <b>130</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | Tilden 40            | 23.2  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Tilden 40            | 23.2  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2015         | Tilden 40            | 23.2  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 104                                | 65                    | 0                               | 37                                 | 20                    | 35                                 | 20                    |
| 2016         | Tilden 40            | 23.2  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 3                                  | -32                   | 1                                  | -32                   |
| 2017         | Tilden 40            | 23.2  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 104                                | 65                    | 0 <sup>†</sup>                  | 40                                 | 20                    | 36                                 | 20                    |
| <b>Total</b> | <b>Tilden 40</b>     |       |         |            | <b>546</b>                   | <b>269</b>                         | <b>239</b>            | <b>543</b>                     | <b>208</b>                         | <b>130</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | CPS 25               | 22.2  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |

## 6. Nutrient Management

| Year         | Field                     | Size  | Crop    | Yield Goal | Fertilizer Recs <sup>1</sup> |                                    |                       | Nutrients Applied <sup>2</sup> |                                    |                       | Balance After Recs <sup>3</sup> |                                    |                       | Balance After Removal <sup>4</sup> |                       |
|--------------|---------------------------|-------|---------|------------|------------------------------|------------------------------------|-----------------------|--------------------------------|------------------------------------|-----------------------|---------------------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|
|              |                           |       |         |            | N Lb/A                       | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                         | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                          | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A |
|              |                           | Acres |         | /Acre      |                              |                                    |                       |                                |                                    |                       |                                 |                                    |                       |                                    |                       |
| 2014         | CPS 25                    | 22.2  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2015         | CPS 25                    | 22.2  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 104                                | 65                    | 0                               | 37                                 | 20                    | 35                                 | 20                    |
| 2016         | CPS 25                    | 22.2  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 3                                  | -32                   | 1                                  | -32                   |
| 2017         | CPS 25                    | 22.2  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 104                                | 65                    | 0 <sup>†</sup>                  | 40                                 | 20                    | 36                                 | 20                    |
| <b>Total</b> | <b>CPS 25</b>             |       |         |            | <b>546</b>                   | <b>269</b>                         | <b>239</b>            | <b>543</b>                     | <b>208</b>                         | <b>130</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | M&M Schillings            | 33.1  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 182                            | 105                                | 65                    | 0                               | 38                                 | 20                    | 36                                 | 20                    |
| 2014         | M&M Schillings            | 33.1  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 4                                  | -32                   | 2                                  | -32                   |
| 2015         | M&M Schillings            | 33.1  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 105                                | 65                    | 0 <sup>†</sup>                  | 42                                 | 20                    | 38                                 | 20                    |
| 2016         | M&M Schillings            | 33.1  | Soybean | 40         | 0                            | 34 <sup>±</sup>                    | 52 <sup>±</sup>       | 0                              | 0                                  | 0                     | 0                               | 8                                  | -32                   | 4                                  | -32                   |
| 2017         | M&M Schillings            | 33.1  | Corn    | 160        | 182 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 179                            | 105                                | 65                    | 0 <sup>†</sup>                  | 46                                 | 20                    | 40                                 | 20                    |
| <b>Total</b> | <b>M&amp;M Schillings</b> |       |         |            | <b>546</b>                   | <b>269</b>                         | <b>239</b>            | <b>540</b>                     | <b>315</b>                         | <b>195</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | Johama Pasture            | 138.8 | Grass   | 3          | 100 <sup>±</sup>             | 36 <sup>±</sup>                    | 150 <sup>±</sup>      | 0                              | 0                                  | 0                     | -100                            | -36                                | -150                  | -36                                | -150                  |
| 2014         | Johama Pasture            | 138.8 | Grass   | 3          | 100 <sup>±</sup>             | 36 <sup>±</sup>                    | 150 <sup>±</sup>      | 0                              | 0                                  | 0                     | -100                            | -36                                | -150                  | -36                                | -150                  |
| 2015         | Johama Pasture            | 138.8 | Grass   | 3          | 100 <sup>±</sup>             | 36 <sup>±</sup>                    | 150 <sup>±</sup>      | 0                              | 0                                  | 0                     | -100                            | -36                                | -150                  | -36                                | -150                  |
| 2016         | Johama Pasture            | 138.8 | Grass   | 3          | 100 <sup>±</sup>             | 36 <sup>±</sup>                    | 150 <sup>±</sup>      | 0                              | 0                                  | 0                     | -100                            | -36                                | -150                  | -36                                | -150                  |
| 2017         | Johama Pasture            | 138.8 | Grass   | 3          | 100 <sup>±</sup>             | 36 <sup>±</sup>                    | 150 <sup>±</sup>      | 0                              | 0                                  | 0                     | -100                            | -36                                | -150                  | -36                                | -150                  |
| <b>Total</b> | <b>Johama Pasture</b>     |       |         |            | <b>500</b>                   | <b>180</b>                         | <b>750</b>            | <b>0</b>                       | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Spalt                     | 71.2  | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Spalt                     | 71.2  | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 139                                | 87                    | 0                               | 72                                 | 42                    | 70                                 | 42                    |
| 2015         | Spalt                     | 71.2  | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 190                            | 0                                  | 0                     | 0 <sup>†</sup>                  | 5                                  | -3                    | 1                                  | -3                    |
| 2016         | Spalt                     | 71.2  | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 195                            | 139                                | 87                    | 0 <sup>†</sup>                  | 77                                 | 42                    | 71                                 | 42                    |
| 2017         | Spalt                     | 71.2  | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 188                            | 0                                  | 0                     | 0 <sup>†</sup>                  | 10                                 | -3                    | 2                                  | -3                    |
| <b>Total</b> | <b>Spalt</b>              |       |         |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>971</b>                     | <b>278</b>                         | <b>174</b>            |                                 |                                    |                       |                                    |                       |
| 2013         | John Schad                | 32.1  | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | John Schad                | 32.1  | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 140                                | 88                    | 0                               | 73                                 | 43                    | 71                                 | 43                    |
| 2015         | John Schad                | 32.1  | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 190                            | 0                                  | 0                     | 0 <sup>†</sup>                  | 6                                  | -2                    | 2                                  | -2                    |
| 2016         | John Schad                | 32.1  | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 195                            | 140                                | 88                    | 0 <sup>†</sup>                  | 79                                 | 43                    | 73                                 | 43                    |
| 2017         | John Schad                | 32.1  | Corn    | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 188                            | 0                                  | 0                     | 0 <sup>†</sup>                  | 12                                 | -2                    | 4                                  | -2                    |
| <b>Total</b> | <b>John Schad</b>         |       |         |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>971</b>                     | <b>280</b>                         | <b>176</b>            |                                 |                                    |                       |                                    |                       |

6. Nutrient Management

## Field Nutrient Balance (Non-manure-spreadable Area)

| Year         | Field          | Size | Crop | Yield Goal | Fertilizer Recs <sup>1</sup> |                                    |                       | Nutrients Applied <sup>2</sup> |                                    |                       | Balance After Recs <sup>3</sup> |                                    |                       | Balance After Removal <sup>4</sup> |                       |
|--------------|----------------|------|------|------------|------------------------------|------------------------------------|-----------------------|--------------------------------|------------------------------------|-----------------------|---------------------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|
|              |                |      |      |            | N Lb/A                       | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                         | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                          | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A |
| 2013         | Range 1        | 2.8  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Range 1        | 2.8  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Range 1        | 2.8  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2016         | Range 1        | 2.8  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | Range 1        | 2.8  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| <b>Total</b> | <b>Range 1</b> |      |      |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>995</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Range 2        | 1.5  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Range 2        | 1.5  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Range 2        | 1.5  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2016         | Range 2        | 1.5  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | Range 2        | 1.5  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| <b>Total</b> | <b>Range 2</b> |      |      |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>995</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Range 3        | 0.4  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Range 3        | 0.4  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Range 3        | 0.4  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2016         | Range 3        | 0.4  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | Range 3        | 0.4  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| <b>Total</b> | <b>Range 3</b> |      |      |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>995</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Range 4        | 5.5  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Range 4        | 5.5  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Range 4        | 5.5  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2016         | Range 4        | 5.5  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | Range 4        | 5.5  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| <b>Total</b> | <b>Range 4</b> |      |      |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>995</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Range 5        | 4.3  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Range 5        | 4.3  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Range 5        | 4.3  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2016         | Range 5        | 4.3  | Corn | 160        | 199 <sup>±</sup>             | 67 <sup>±</sup>                    | 45 <sup>±</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |

| Year         | Field                 | Size | Crop    | Yield Goal | Fertilizer Recs <sup>1</sup> |                                    |                       | Nutrients Applied <sup>2</sup> |                                    |                       | Balance After Recs <sup>3</sup> |                                    |                       | Balance After Removal <sup>4</sup> |                       |
|--------------|-----------------------|------|---------|------------|------------------------------|------------------------------------|-----------------------|--------------------------------|------------------------------------|-----------------------|---------------------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|
|              |                       |      |         |            | N Lb/A                       | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                         | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                          | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A |
| 2017         | Range 5               | 4.3  | Corn    | 160        | 199 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| <b>Total</b> | <b>Range 5</b>        |      |         |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>995</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Rick Range            | 13.0 | Corn    | 160        | 199 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Rick Range            | 13.0 | Corn    | 160        | 199 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Rick Range            | 13.0 | Corn    | 160        | 199 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2016         | Rick Range            | 13.0 | Corn    | 160        | 199 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | Rick Range            | 13.0 | Corn    | 160        | 199 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 199                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| <b>Total</b> | <b>Rick Range</b>     |      |         |            | <b>995</b>                   | <b>335</b>                         | <b>225</b>            | <b>995</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Triefenbachs 1        | 5.4  | Corn    | 160        | 182 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Triefenbachs 1        | 5.4  | Soybean | 40         | 0                            | 34 <sup>㉑</sup>                    | 52 <sup>㉑</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2015         | Triefenbachs 1        | 5.4  | Corn    | 160        | 182 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2016         | Triefenbachs 1        | 5.4  | Soybean | 40         | 0                            | 34 <sup>㉑</sup>                    | 52 <sup>㉑</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2017         | Triefenbachs 1        | 5.4  | Corn    | 160        | 182 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| <b>Total</b> | <b>Triefenbachs 1</b> |      |         |            | <b>546</b>                   | <b>269</b>                         | <b>239</b>            | <b>546</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Triefenbachs 2        | 2.6  | Soybean | 40         | 0                            | 34 <sup>㉑</sup>                    | 52 <sup>㉑</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | Triefenbachs 2        | 2.6  | Corn    | 160        | 182 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Triefenbachs 2        | 2.6  | Soybean | 40         | 0                            | 34 <sup>㉑</sup>                    | 52 <sup>㉑</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2016         | Triefenbachs 2        | 2.6  | Corn    | 160        | 182 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | Triefenbachs 2        | 2.6  | Soybean | 40         | 0                            | 34 <sup>㉑</sup>                    | 52 <sup>㉑</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| <b>Total</b> | <b>Triefenbachs 2</b> |      |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>364</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Triefenbachs 3        | 5.7  | Corn    | 160        | 182 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Triefenbachs 3        | 5.7  | Soybean | 40         | 0                            | 34 <sup>㉑</sup>                    | 52 <sup>㉑</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2015         | Triefenbachs 3        | 5.7  | Corn    | 160        | 182 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2016         | Triefenbachs 3        | 5.7  | Soybean | 40         | 0                            | 34 <sup>㉑</sup>                    | 52 <sup>㉑</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2017         | Triefenbachs 3        | 5.7  | Corn    | 160        | 182 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| <b>Total</b> | <b>Triefenbachs 3</b> |      |         |            | <b>546</b>                   | <b>269</b>                         | <b>239</b>            | <b>546</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Triefenbachs 4        | 2.4  | Soybean | 40         | 0                            | 34 <sup>㉑</sup>                    | 52 <sup>㉑</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | Triefenbachs 4        | 2.4  | Corn    | 160        | 182 <sup>㉑</sup>             | 67 <sup>㉑</sup>                    | 45 <sup>㉑</sup>       | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Triefenbachs 4        | 2.4  | Soybean | 40         | 0                            | 34 <sup>㉑</sup>                    | 52 <sup>㉑</sup>       | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |

## 6. Nutrient Management

| Year         | Field                 | Size | Crop    | Yield Goal | Fertilizer Recs <sup>1</sup> |                                    |                       | Nutrients Applied <sup>2</sup> |                                    |                       | Balance After Recs <sup>3</sup> |                                    |                       | Balance After Removal <sup>4</sup> |                       |
|--------------|-----------------------|------|---------|------------|------------------------------|------------------------------------|-----------------------|--------------------------------|------------------------------------|-----------------------|---------------------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|
|              |                       |      |         |            | N Lb/A                       | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                         | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                          | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A |
| 2016         | Triefenbachs 4        | 2.4  | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | Triefenbachs 4        | 2.4  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| <b>Total</b> | <b>Triefenbachs 4</b> |      |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>364</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Lenzburg North        | 0.6  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | Lenzburg North        | 0.6  | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Lenzburg North        | 0.6  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2016         | Lenzburg North        | 0.6  | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | Lenzburg North        | 0.6  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| <b>Total</b> | <b>Lenzburg North</b> |      |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>364</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Lenzburg              | 30.3 | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | Lenzburg              | 30.3 | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Lenzburg              | 30.3 | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2016         | Lenzburg              | 30.3 | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | Lenzburg              | 30.3 | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| <b>Total</b> | <b>Lenzburg</b>       |      |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>364</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Schickedanz           | 0.3  | Soybean | 160        | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -136                               | -208                  |
| 2014         | Schickedanz           | 0.3  | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | Schickedanz           | 0.3  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2016         | Schickedanz           | 0.3  | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | Schickedanz           | 0.3  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| <b>Total</b> | <b>Schickedanz</b>    |      |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>364</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | V Schickedanz         | 16.4 | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | V Schickedanz         | 16.4 | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | V Schickedanz         | 16.4 | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2016         | V Schickedanz         | 16.4 | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | V Schickedanz         | 16.4 | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| <b>Total</b> | <b>V Schickedanz</b>  |      |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>364</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | McBride 120           | 38.0 | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | McBride 120           | 38.0 | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |

6. Nutrient Management

| Year         | Field              | Size  | Crop    | Yield Goal | Fertilizer Recs <sup>1</sup> |                                    |                       | Nutrients Applied <sup>2</sup> |                                    |                       | Balance After Recs <sup>3</sup> |                                    |                       | Balance After Removal <sup>4</sup> |                       |
|--------------|--------------------|-------|---------|------------|------------------------------|------------------------------------|-----------------------|--------------------------------|------------------------------------|-----------------------|---------------------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|
|              |                    |       |         |            | N Lb/A                       | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                         | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | N Lb/A                          | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A | P <sub>2</sub> O <sub>5</sub> Lb/A | K <sub>2</sub> O Lb/A |
|              |                    | Acres |         | /Acre      |                              |                                    |                       |                                |                                    |                       |                                 |                                    |                       |                                    |                       |
| 2015         | McBride 120        | 38.0  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2016         | McBride 120        | 38.0  | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | McBride 120        | 38.0  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| <b>Total</b> | <b>McBride 120</b> |       |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>364</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | McBride 240        | 22.8  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2014         | McBride 240        | 22.8  | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2015         | McBride 240        | 22.8  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2016         | McBride 240        | 22.8  | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2017         | McBride 240        | 22.8  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| <b>Total</b> | <b>McBride 240</b> |       |         |            | <b>364</b>                   | <b>236</b>                         | <b>246</b>            | <b>364</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Tilden 20          | 7.8   | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Tilden 20          | 7.8   | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2015         | Tilden 20          | 7.8   | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2016         | Tilden 20          | 7.8   | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2017         | Tilden 20          | 7.8   | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| <b>Total</b> | <b>Tilden 20</b>   |       |         |            | <b>546</b>                   | <b>269</b>                         | <b>239</b>            | <b>546</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Tilden 40          | 14.1  | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | Tilden 40          | 14.1  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2015         | Tilden 40          | 14.1  | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2016         | Tilden 40          | 14.1  | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2017         | Tilden 40          | 14.1  | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| <b>Total</b> | <b>Tilden 40</b>   |       |         |            | <b>546</b>                   | <b>269</b>                         | <b>239</b>            | <b>546</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | CPS 25             | 2.5   | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2014         | CPS 25             | 2.5   | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2015         | CPS 25             | 2.5   | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| 2016         | CPS 25             | 2.5   | Soybean | 40         | 0                            | 34 <sup>px</sup>                   | 52 <sup>px</sup>      | 0                              | 0                                  | 0                     | 0                               | -34                                | -52                   | -34                                | -52                   |
| 2017         | CPS 25             | 2.5   | Corn    | 160        | 182 <sup>px</sup>            | 67 <sup>px</sup>                   | 45 <sup>px</sup>      | 182                            | 0                                  | 0                     | 0                               | -67                                | -45                   | -69                                | -45                   |
| <b>Total</b> | <b>CPS 25</b>      |       |         |            | <b>546</b>                   | <b>269</b>                         | <b>239</b>            | <b>546</b>                     | <b>0</b>                           | <b>0</b>              |                                 |                                    |                       |                                    |                       |
| 2013         | Johama Pasture     | 13.0  | Grass   | 3          | 100 <sup>px</sup>            | 36 <sup>px</sup>                   | 150 <sup>px</sup>     | 0                              | 0                                  | 0                     | -100                            | -36                                | -150                  | -36                                | -150                  |

## 6. Nutrient Management

| Year         | Field                 | Size<br>Acres | Crop  | Yield<br>Goal<br>/Acre | Fertilizer Recs <sup>1</sup> |                                       |                          | Nutrients Applied <sup>2</sup> |                                       |                          | Balance After Recs <sup>3</sup> |                                       |                          | Balance After<br>Removal <sup>4</sup> |                          |
|--------------|-----------------------|---------------|-------|------------------------|------------------------------|---------------------------------------|--------------------------|--------------------------------|---------------------------------------|--------------------------|---------------------------------|---------------------------------------|--------------------------|---------------------------------------|--------------------------|
|              |                       |               |       |                        | N<br>Lb/A                    | P <sub>2</sub> O <sub>5</sub><br>Lb/A | K <sub>2</sub> O<br>Lb/A | N<br>Lb/A                      | P <sub>2</sub> O <sub>5</sub><br>Lb/A | K <sub>2</sub> O<br>Lb/A | N<br>Lb/A                       | P <sub>2</sub> O <sub>5</sub><br>Lb/A | K <sub>2</sub> O<br>Lb/A | P <sub>2</sub> O <sub>5</sub><br>Lb/A | K <sub>2</sub> O<br>Lb/A |
| 2014         | Johama Pasture        | 13.0          | Grass | 3                      | 100 <sup>‡</sup>             | 36 <sup>‡</sup>                       | 150 <sup>‡</sup>         | 0                              | 0                                     | 0                        | -100                            | -36                                   | -150                     | -36                                   | -150                     |
| 2015         | Johama Pasture        | 13.0          | Grass | 3                      | 100 <sup>‡</sup>             | 36 <sup>‡</sup>                       | 150 <sup>‡</sup>         | 0                              | 0                                     | 0                        | -100                            | -36                                   | -150                     | -36                                   | -150                     |
| 2016         | Johama Pasture        | 13.0          | Grass | 3                      | 100 <sup>‡</sup>             | 36 <sup>‡</sup>                       | 150 <sup>‡</sup>         | 0                              | 0                                     | 0                        | -100                            | -36                                   | -150                     | -36                                   | -150                     |
| 2017         | Johama Pasture        | 13.0          | Grass | 3                      | 100 <sup>‡</sup>             | 36 <sup>‡</sup>                       | 150 <sup>‡</sup>         | 0                              | 0                                     | 0                        | -100                            | -36                                   | -150                     | -36                                   | -150                     |
| <b>Total</b> | <b>Johama Pasture</b> |               |       |                        | <b>500</b>                   | <b>180</b>                            | <b>750</b>               | <b>0</b>                       | <b>0</b>                              | <b>0</b>                 |                                 |                                       |                          |                                       |                          |
| 2013         | John Schad            | 2.4           | Corn  | 160                    | 199 <sup>‡</sup>             | 67 <sup>‡</sup>                       | 45 <sup>‡</sup>          | 199                            | 0                                     | 0                        | 0                               | -67                                   | -45                      | -69                                   | -45                      |
| 2014         | John Schad            | 2.4           | Corn  | 160                    | 199 <sup>‡</sup>             | 67 <sup>‡</sup>                       | 45 <sup>‡</sup>          | 199                            | 0                                     | 0                        | 0                               | -67                                   | -45                      | -69                                   | -45                      |
| 2015         | John Schad            | 2.4           | Corn  | 160                    | 199 <sup>‡</sup>             | 67 <sup>‡</sup>                       | 45 <sup>‡</sup>          | 199                            | 0                                     | 0                        | 0                               | -67                                   | -45                      | -69                                   | -45                      |
| 2016         | John Schad            | 2.4           | Corn  | 160                    | 199 <sup>‡</sup>             | 67 <sup>‡</sup>                       | 45 <sup>‡</sup>          | 199                            | 0                                     | 0                        | 0                               | -67                                   | -45                      | -69                                   | -45                      |
| 2017         | John Schad            | 2.4           | Corn  | 160                    | 199 <sup>‡</sup>             | 67 <sup>‡</sup>                       | 45 <sup>‡</sup>          | 199                            | 0                                     | 0                        | 0                               | -67                                   | -45                      | -69                                   | -45                      |
| <b>Total</b> | <b>John Schad</b>     |               |       |                        | <b>995</b>                   | <b>335</b>                            | <b>225</b>               | <b>995</b>                     | <b>0</b>                              | <b>0</b>                 |                                 |                                       |                          |                                       |                          |

<sup>1</sup> Fertilizer Recs are the crop fertilizer recommendations. The N rec accounts for any N credit from previous legume crop.

<sup>2</sup> Nutrients Applied are the nutrients expected to be available to the crop from that year's manure applications plus nutrients from that year's commercial fertilizer applications and nitrates from irrigation water. With a double-crop year, the total nutrients applied for both crops and the year's balances are listed on the second crop's line.

<sup>3</sup> For N, Nutrients Applied minus Fertilizer Recs for indicated crop year. Also includes amount of residual N expected to become available that year from prior years' manure applications. For P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O, Nutrients Applied minus Fertilizer Recs *through* the indicated crop year, with positive balances carried forward to subsequent years. Negative values indicate a potential need to apply additional nutrients.

<sup>4</sup> Nutrients Applied minus amount removed by harvested portion of crop through the indicated year. Positive balances are carried forward to subsequent years.

<sup>‡</sup> Indicates a custom fertilizer recommendation in the Fertilizer Recs column.

<sup>a</sup> Indicates in the Balance After Recs N column that the legume crop is assumed to utilize up to 150 pounds of the supplied N.

<sup>†</sup> Indicates in the Balance After Recs N column that the value includes residual N expected to become available that year from prior years' manure applications.

## Projected Soil P And K Levels

| Field ID       | P Level At    |            |             | Years to Reach 300 lbs/acre P | K Level At    |            |             | Units |
|----------------|---------------|------------|-------------|-------------------------------|---------------|------------|-------------|-------|
|                | Start Of Plan | P Build Up | End Of Plan |                               | Start Of Plan | K Build Up | End Of Plan |       |
| Range 1        | 152           | -6.6       | 145.4       | Drawdown of Soil Test P       | 240           | 284.8      | 524.8       | Lb/A  |
| Range 2        | 247           | -7.8       | 239.2       | Drawdown of Soil Test P       | 560           | 121.3      | 681.3       | Lb/A  |
| Range 3        | 227           | 1.1        | 228.1       | 328                           | 496           | 368.8      | 864.8       | Lb/A  |
| Range 4        | 110           | 1.1        | 111.1       | 855                           | 244           | 368.8      | 612.8       | Lb/A  |
| Range 5        | 272           | -6.6       | 265.4       | Drawdown of Soil Test P       | 484           | 283.8      | 767.8       | Lb/A  |
| Range 6        | 320           | -29.6      | 290.4       | Drawdown of Soil Test P       | 616           | 28.8       | 644.8       | Lb/A  |
| Rick Range     |               | -6.3       |             |                               |               | -12.8      |             | Lb/A  |
| Triefenbachs 1 |               | 5.1        |             |                               |               | -10.3      |             | Lb/A  |
| Triefenbachs 2 |               | -2.9       |             |                               |               | -28.5      |             | Lb/A  |
| Triefenbachs 3 |               | 4.8        |             |                               |               | -11.0      |             | Lb/A  |
| Triefenbachs 4 |               | -2.7       |             |                               |               | -28.5      |             | Lb/A  |
| Lenzburg North | 55            | -2.9       | 52.1        | Drawdown of Soil Test P       | 154           | -28.5      | 125.5       | Lb/A  |
| Lenzburg       | 44            | -3.1       | 40.9        | Drawdown of Soil Test P       | 200           | -29.0      | 171.0       | Lb/A  |
| Schickedanz    | 57            | -3.1       | 53.9        | Drawdown of Soil Test P       | 154           | -29.0      | 125.0       | Lb/A  |
| V Schickedanz  | 53            | -3.1       | 49.9        | Drawdown of Soil Test P       | 168           | -29.0      | 139.0       | Lb/A  |
| McBride 120    | 52            | -3.1       | 48.9        | Drawdown of Soil Test P       | 206           | -29.0      | 177.0       | Lb/A  |
| McBride 240    | 54            | -3.1       | 50.9        | Drawdown of Soil Test P       | 240           | -29.0      | 211.0       | Lb/A  |
| Tilden 20      | 20            | -6.8       | 13.2        | Drawdown of Soil Test P       | 156           | -27.3      | 128.8       | Lb/A  |
| Tilden 40      | 48            | -6.8       | 41.2        | Drawdown of Soil Test P       | 218           | -27.3      | 190.8       | Lb/A  |
| CPS 25         | 86            | -6.8       | 79.2        | Drawdown of Soil Test P       | 198           | -27.3      | 170.8       | Lb/A  |
| M&M Schillings | 126           | 5.1        | 131.1       | 170                           | 322           | -11.0      | 311.0       | Lb/A  |
| Johama Pasture |               | -20.0      |             | Drawdown of Soil Test P       |               | -187.5     |             | Lb/A  |
| Spalt          | 38            | -6.3       | 31.7        | Drawdown of Soil Test P       | 191           | -12.8      | 178.3       | Lb/A  |
| John Schad     | 84            | -6.1       | 77.9        | Drawdown of Soil Test P       | 232           | -12.3      | 219.8       | Lb/A  |

### Notes

Equations used to determine change in soil test P and K:

$$\text{Change in P (Lb/A)} = \text{Round}(\text{NetP2O5/9})$$



*Change in K (Lb/A) = Round(NetK2O/4)*

## 6.9. Manure Inventory Annual Summary

| Manure Source      | Plan Period              | On Hand at Start of Period | Total Generated  | Total Imported | Total Transferred In | Total Applied    | Total Exported   | Total Transferred Out | On Hand at End of Period | Units      |
|--------------------|--------------------------|----------------------------|------------------|----------------|----------------------|------------------|------------------|-----------------------|--------------------------|------------|
| Deep Pits          | Oct '12 - Sep '13        | 1,500,000                  | 2,472,147        | 0              | 0                    | 213,000          | 1,500,000        | 0                     | 2,259,147                | Gal        |
| Holding Ponds      | Oct '12 - Sep '13        | 1,000,000                  | 1,626,806        | 0              | 0                    | 1,079,000        | 0                | 0                     | 1,547,806                | Gal        |
| <b>All Sources</b> | <b>Oct '12 - Sep '13</b> | <b>2,500,000</b>           | <b>4,098,953</b> | <b>0</b>       | <b>0</b>             | <b>1,292,000</b> | <b>1,500,000</b> | <b>0</b>              | <b>3,806,953</b>         | <b>Gal</b> |
| Deep Pits          | Oct '13 - Sep '14        | 2,259,147                  | 2,472,147        | 0              | 0                    | 2,555,000        | 0                | 0                     | 2,176,294                | Gal        |
| Holding Ponds      | Oct '13 - Sep '14        | 1,547,806                  | 1,626,806        | 0              | 0                    | 1,819,000        | 0                | 0                     | 1,355,612                | Gal        |
| <b>All Sources</b> | <b>Oct '13 - Sep '14</b> | <b>3,806,953</b>           | <b>4,098,953</b> | <b>0</b>       | <b>0</b>             | <b>4,374,000</b> | <b>0</b>         | <b>0</b>              | <b>3,531,906</b>         | <b>Gal</b> |
| Deep Pits          | Oct '14 - Sep '15        | 2,176,294                  | 2,472,147        | 0              | 0                    | 966,000          | 0                | 750,000               | 2,932,441                | Gal        |
| Holding Ponds      | Oct '14 - Sep '15        | 1,355,612                  | 1,626,806        | 0              | 750,000              | 1,510,000        | 0                | 0                     | 2,222,418                | Gal        |
| <b>All Sources</b> | <b>Oct '14 - Sep '15</b> | <b>3,531,906</b>           | <b>4,098,953</b> | <b>0</b>       | <b>750,000</b>       | <b>2,476,000</b> | <b>0</b>         | <b>750,000</b>        | <b>5,154,859</b>         | <b>Gal</b> |
| Deep Pits          | Oct '15 - Sep '16        | 2,932,441                  | 2,472,147        | 0              | 0                    | 2,555,000        | 0                | 0                     | 2,849,588                | Gal        |
| Holding Ponds      | Oct '15 - Sep '16        | 2,222,418                  | 1,626,806        | 0              | 0                    | 1,510,000        | 0                | 0                     | 2,339,224                | Gal        |
| <b>All Sources</b> | <b>Oct '15 - Sep '16</b> | <b>5,154,859</b>           | <b>4,098,953</b> | <b>0</b>       | <b>0</b>             | <b>4,065,000</b> | <b>0</b>         | <b>0</b>              | <b>5,188,812</b>         | <b>Gal</b> |
| Deep Pits          | Oct '16 - Sep '17        | 2,849,588                  | 2,472,147        | 0              | 0                    | 722,000          | 0                | 1,500,000             | 3,099,735                | Gal        |
| Holding Ponds      | Oct '16 - Sep '17        | 2,339,224                  | 1,626,806        | 0              | 1,500,000            | 3,320,000        | 0                | 0                     | 2,146,030                | Gal        |
| <b>All Sources</b> | <b>Oct '16 - Sep '17</b> | <b>5,188,812</b>           | <b>4,098,953</b> | <b>0</b>       | <b>1,500,000</b>     | <b>4,042,000</b> | <b>0</b>         | <b>1,500,000</b>      | <b>5,245,765</b>         | <b>Gal</b> |

### 6.10. Fertilizer Material Annual Summary

| Product Analysis | Plan Period       | Product Needed<br>Oct - Dec | Product Needed<br>Jan - Sep | Total Product<br>Needed | Units |
|------------------|-------------------|-----------------------------|-----------------------------|-------------------------|-------|
| 82-0-0           | Oct '12 - Sep '13 | 111,797                     | 0                           | 111,797                 | Lbs   |
| 82-0-0           | Oct '13 - Sep '14 | 165,158                     | 0                           | 165,158                 | Lbs   |
| 82-0-0           | Oct '14 - Sep '15 | 86,795                      | 0                           | 86,795                  | Lbs   |
| 82-0-0           | Oct '15 - Sep '16 | 161,459                     | 0                           | 161,459                 | Lbs   |
| 82-0-0           | Oct '16 - Sep '17 | 82,107                      | 0                           | 82,107                  | Lbs   |

## 6.11. Plan Nutrient Balance (Manure-spreadable Area)

|   | N<br>(Lbs)  | P <sub>2</sub> O <sub>5</sub><br>(Lbs) | K <sub>2</sub> O<br>(Lbs) |
|---|-------------|--|---------------------------|
| Total Manure Nutrients on Hand at Start of Plan <sup>1</sup>                                | 49,000      | 47,100                                 | 44,850                    |
| Total Manure Nutrients Collected <sup>2</sup>   | 403,071     | 387,744                                | 367,702                   |
| Total Manure Nutrients Imported <sup>3</sup>  | 0           | 0                                      | 0                         |
| Total Manure Nutrients Exported <sup>4</sup>  | 42,300      | 43,500                                 | 27,150                    |
| Total Manure Nutrients Gained/Lost in Transfer <sup>5</sup>                                 | -48,375,000 | -57,150,000                            | -899,999                  |
| Total Manure Nutrients on Hand at End of Plan <sup>6</sup>                                  | 101,791     | 97,618                                 | 94,090                    |
| Total Manure Nutrients Applied <sup>7</sup>   | 260,270     | 235,839                                | 290,186                   |
| Available Manure Nutrients Applied (Utilized by plan's crops) <sup>8</sup>                  | 208,588     | 227,271                                | 285,156                   |
| Available Manure Nutrients Applied (Not utilized by plan's crops) <sup>9</sup>              | 7,582       | 8,568                                  | 5,030                     |
| Commercial Fertilizer Nutrients Applied (Utilized by plan's crops) <sup>10</sup>            | 407,782     | 0                                      | 0                         |
| Commercial Fertilizer Nutrients Applied (Not utilized by plan's crops) <sup>11</sup>        | 0           | 0                                      | 0                         |
| Available Nutrients Applied (Manure and fertilizer; utilized by plan's crops) <sup>12</sup> | 616,370     | 227,271                                | 285,156                   |
| Nutrient Utilization Potential <sup>13</sup>  | 968,457     | 316,694                                | 357,380                   |
| Nutrient Balance of Spreadable Acres <sup>14*</sup>   | -352,087    | -89,423                                | -72,224                   |
| Average Nutrient Balance per Spreadable Acre per Year <sup>15*</sup>                        | -61         | -15                                    | -12                       |

1. Values indicate total manure nutrients present in storage(s) at the beginning of the plan.
2. Values indicate total manure nutrients collected on the farm.
3. Values indicate total manure nutrients imported onto the farm.
4. Values indicate total manure nutrients exported from the farm to an external operation.
5. Values indicate changes in total manure nutrients due to internal transfers between storage units with differing analyses.
6. Values indicate total manure nutrients present in storage(s) at the end of plan.
7. Values indicate total nutrients present in land-applied manure. Losses due to rate, timing and method of application are not included in these values.
8. Values indicate available manure nutrients applied on the farm based on rate, time and method of application. These values are based on the total manure nutrients applied (row 7) after accounting for state-specific nutrient losses due to rate, time and method of application. Nutrients which will not be utilized by crops in the plan (row 9) are excluded from these values.
9. Values indicate manure nutrients applied that will be utilized by crops outside the plan.
10. Values indicate nutrients applied as commercial fertilizers and nitrates contained in irrigation water. Nutrients that will not be utilized by crops in the plan (row 11) are excluded from these values.
11. Values indicate nutrients applied as commercial fertilizer which will be utilized by crops outside the plan.
12. Values are the sum of available manure nutrients applied (row 8) and commercial fertilizer nutrients applied (row 10).
13. Values indicate nutrient utilization potential of crops grown. For N the value generally is based on crop N recommendation for non-legume crops and crop N uptake or other state-imposed limit for N application rates for legumes. P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O values generally are based on fertilizer recommendations or crop removal (whichever is greatest).
14. Values indicate available nutrients applied (row 12) minus crop nutrient utilization potential (row 13). Negative values indicate additional nutrient utilization potential and positive values indicate over-application.
15. Values indicate average per acre nutrient balance. Values are calculated by dividing nutrient balance of spreadable acres (row 14) by the number of spreadable acres in plan and by the length of the plan in years. Negative values indicate additional average per acre nutrient utilization potential and positive values indicate average per acre over-application.

\* Non-trivial, positive values for N indicate that the plan was not properly developed. Negative values for N indicate additional nutrient utilization potential which may or may not be intentional. For example, plans that include legume crops often will not utilize the full N utilization potential for legume crops if manure can be applied to non-legume crops that require N for optimum yield. Positive values for P<sub>2</sub>O<sub>5</sub> and/or K<sub>2</sub>O do not necessarily indicate that the plan was not developed properly. For example, producers may be allowed to apply N-based application rates of manure to fields with low soil test P values or fields with a low potential P-loss risk based on the risk assessment tool used by the state. Negative values for P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O indicate that planned applications to some fields are less than crop removal rates.

## Plan Nutrient Balance (Non-manure-spreadable Area)

|  | N<br>(Lbs) | P <sub>2</sub> O <sub>5</sub><br>(Lbs) | K <sub>2</sub> O<br>(Lbs) |
|--|------------|--|---------------------------|
| Commercial Fertilizer Nutrients Applied <sup>1</sup> | 90,411     | 0                                      | 0                         |

|   | N<br>(Lbs) | P <sub>2</sub> O <sub>5</sub><br>(Lbs) | K <sub>2</sub> O<br>(Lbs) |
|---|------------|--|---------------------------|
| Nutrient Utilization Potential <sup>2</sup>                             | 96,911     | 48,668                                 | 52,858                    |
| Nutrient Balance of Non-spreadable Acres <sup>3*</sup>                  | -6,500     | -48,668                                | -52,858                   |
| Average Nutrient Balance per Non-spreadable Acre per Year <sup>4*</sup> | -7         | -51                                    | -55                       |

1. Values indicate nutrients applied as commercial fertilizers and nitrates contained in irrigation water.
2. Values indicate nutrient utilization potential of crops grown based on crop fertilizer recommendations.
3. Values indicate commercial fertilizer nutrients applied (row 1) minus crop nutrient utilization potential (row 2). Negative values indicate additional nutrient utilization potential and positive values indicate over-application.
4. Values indicate average per acre nutrient balance. Values are calculated by dividing nutrient balance of non-spreadable acres (row 3) by number of non-spreadable acres in plan. Negative values indicate additional average per acre nutrient utilization potential and positive values indicate average per acre over-application.

\* Non-trivial, positive values for N indicate that the plan was not properly developed. Negative values for N indicate additional nutrient utilization potential which may or may not be intentional. Positive values for P<sub>2</sub>O<sub>5</sub> and/or K<sub>2</sub>O do not necessarily indicate that the plan was not developed properly. For example, multiple year applications may have been planned during the final plan year(s) and these nutrients will not be utilized by crops in the current plan. Negative values for P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O indicate that applications to some fields may have been delayed to allow the producer to apply the nutrients in accordance with their fertilization schedule.