


Understanding Your Lab Reports

What are my lab reports telling me?

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19-177-9441

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LAGOON PUMPING & DREDGING INC
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Nutrient Land Application
 For: (18364) LAGOON PUMPING & DREDGING INC
 MIDWEST FEEDERS
 INGALS KS

Sample ID: NE2 - 1:1 MIX Lab Number: 10150966

| Parameter | Analysis As Received | Pounds of Nutrient AR | | Est. First Year Availability lbs per 1000 gal | Method | Reviewer-Date |
|-------------------------------|----------------------|-----------------------|-------------|---|-------------------|--------------------------|
| | | per 1000 gal | per acre-in | | | |
| Ammonium nitrogen (total) | 0.06 % | 5.1 | 135 | 3 | AOAC 2001.11 | tat9 2019-06-26 14:22:23 |
| Organic nitrogen | 0.22 % | 18.6 | 496 | 7 | Calculation | Auto 2019-06-26 14:22:23 |
| Total Kjeldahl nitrogen (TKN) | 0.28 % | 23.7 | 631 | 9 | AOAC 2001.11 | tat9 2019-06-26 14:22:23 |
| Phosphorus (as P2O5) | 0.23 % | 19.4 | 519 | 14 | AOAC 985.01 (mod) | Auto 2019-06-26 14:22:23 |
| Potassium (as K2O) | 0.29 % | 24.5 | 654 | 22 | AOAC 985.01 (mod) | Auto 2019-06-26 14:22:23 |
| Sulfur (total) | 0.05 % | 4.2 | 113 | 2 | AOAC 985.01 (mod) | tat9 2019-06-26 14:22:23 |
| Calcium (total) | 0.78 % | 65.9 | 1760 | 46 | AOAC 985.01 (mod) | tat9 2019-06-26 14:22:23 |
| Magnesium (total) | 0.14 % | 11.8 | 316 | 8 | AOAC 985.01 (mod) | tat9 2019-06-26 14:22:23 |
| Sodium (total) | 0.03 % | 2.5 | 67.6 | 2 | AOAC 985.01 (mod) | tat9 2019-06-26 14:22:23 |
| Copper (total) | 12 ppm | 0.10 | 2.71 | 0.07 | AOAC 985.01 (mod) | tat9 2019-06-26 14:22:23 |
| Iron (total) | 2990 ppm | 25.3 | 674 | 17.7 | AOAC 985.01 (mod) | tat9 2019-06-26 14:22:23 |
| Manganese (total) | 90 ppm | 0.76 | 20.3 | 0.53 | AOAC 985.01 (mod) | tat9 2019-06-26 14:22:23 |
| Zinc (total) | 71 ppm | 0.60 | 16.0 | 0.42 | AOAC 985.01 (mod) | tat9 2019-06-26 14:22:23 |
| Moisture | 78.9 % | | | | SM 2540 G-(1997) | tat9 2019-06-26 14:22:23 |
| Total solids | 21.10 % | 1780 | | | Calculation | Auto 2019-06-26 14:22:23 |
| Total salts | 1.30 % | 110 | 2930 | | Calculation | Auto 2019-06-26 14:22:23 |
| pH | 7.8 S.U. | | | | EPA 9045C * | tat9 2019-06-26 14:22:23 |

First year availability of nitrogen is calculated based on pre-plant application with incorporation. Nitrogen available from previous year's application not considered. Total manure salts should not exceed 500 lbs/acre. Less than 500 lbs/acre if annual rainfall is less than 25 inches and/or the soil CEC is less than 12 meq/100g. Soil contributions from commercial fertilizer applications must also be considered. Soil test yearly to monitor phosphorus levels, organic matter, pH, and micronutrients. Spring soil test for residual nitrate - make accurate sidedress recommendations! Nitrogen availability will vary with methods of application and field conditions. The nitrogen availability values used on a manure management plan must comply with state regulations. These regulations vary from state to state.

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

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Pictured above is a typical certified lab report from Midwest Labs

How are the Values Reported?

The values reported are pounds of nutrients per 1000 gallons of manure slurry applied. If you are applying 20,000 GPA, then you will need to multiply this value by 20 to get the actual number of pounds or units applied to your parcel of land.

Column Headings

The results are reported in four different ways:

- 1) As Received – This is the results in a percentage (%) or parts per million (ppm) The only value that we utilize is the percent of solids. This number is used to help us determine how difficult it will be to pump. The greater the % solids the more friction loss we have in the hoses. With higher % solids it will take longer to pump or will need more booster pumps to maintain the GPM we want.

- 2) Pounds per 1000 Gallons - This column show the total pounds of nutrients that are in the slurry. You will notice that not all of the Nitrogen is available the first year. You can use this column to determine the TOTAL value of the nutrients delivered.

- 3) Pounds per Acre Inch – This column is hardly every used as it reports the nutrients per 27,450 gallons which is an acre inch of slurry application. In the pumping world, the number we go by is the values per 1000 gallons applied.
- 4) Estimated First-Year Availability – This is the column that pumpers and farmers should be most interested in. It shows the amount of nutrients that are plant available the first-year it is applied. These are the pounds of nutrients that should be considered when determining the first-year value of the manure slurry.

Nitrogen

This is the nutrient of greatest worth to most farmers. It is probably the determining factor when deciding what the *Agronomic Application Rate* should be. Since the manure slurry is at a fixed ratio, when applying at the desired Nitrogen rate you are probably overapplying Phosphorus. Phosphorus is not lost and sticks with the soil, so this nutrient can be considered banked for future utilization by the crop.

The *Ammonium Nitrogen* is the most fragile and easiest lost. It needs to be incorporated into the ground as soon as possible so it is not lost to the atmosphere. Most manure slurry applications are already incorporated so nothing needs to be done. However, the tool bar has to be raised out of the ground when doing a turn around on the end rows; this area should be disced in within a few days after application.

Organic Nitrogen is a slow release of a good nutrient. Approximately 50% of the Organic Nitrogen will be plant available the first year, 25% will be available the second year and the balance of it available the third year. Only the first year available

Phosphorus

In some areas of the country the soil is deficient of Phosphorus and then Phosphorus becomes a valuable nutrient worth purchasing.

When buying exported manure slurry from a manure producer, the Phosphorus uptake from the next crop is often considered. While your soil may have sufficient levels of some nutrients in fairness to the manure producer it is not unreasonable to be willing to pay for the crop uptake of Phosphorus.

Potassium

Potassium is the last of the macro nutrients utilized by most crops. While it very useful, the crop yield response is rarely worth the cost. So Potassium it is rarely considered in the cash value when purchasing exported manure slurries.

Sodium

This is a bad ion and is considered detrimental to crop growth. When too much Sodium is in the soil it can cause yield reduction. Low levels of Sodium is considered normal in a manure slurry and is usually leached out of the soils by rain and irrigation water.