



Predictive

Solution Report

[Links to Helpful Information](#)

Client: Larry Martin
4143 Red Tail Run
Efland, NC 27243

Advisor: Orange CES - House
306 E Revere RD
Hillsborough, NC 27278

Sampled County : Orange

Sampled: 07/06/2017

Received: 07/11/2017

Completed: 07/13/2017

Farm: ELG

PALS #: 422516

PALS #: 450520

Sample Information		Nutrient Measurements											Other Results		
		<i>N (ppm)</i>	<i>P (ppm)</i>	<i>K (ppm)</i>	<i>Ca (ppm)</i>	<i>Mg (ppm)</i>	<i>S (ppm)</i>	<i>Fe (ppm)</i>	<i>Mn (ppm)</i>	<i>Zn (ppm)</i>	<i>Cu (ppm)</i>	<i>B (ppm)</i>	<i>Mo (ppm)</i>	<i>Na (ppm)</i>	<i>Cl (ppm)</i>
Sample ID : 1															
Solution Code : FP		<i>Inorganic N</i>	0.83	0.01	0.71	4.05	1.84	0.31	0.11	0.00	0.00	0.00	0.01	2.37	4.02
		<i>NH4-N</i>	0.46	Other Results (continued)											
Solution Description : Fish Production/Recreation		<i>NO3-N</i>	0.36												
		<i>Organic N</i>		<i>SS</i> (10 ⁻⁵ S/cm)	<i>EC</i> (mS/cm)	<i>pH</i>	<i>CO3</i> (meq/L)	<i>HCO3</i> (meq/L)	<i>Total Alkalinity</i> (ppm CaCO3)	<i>Acid Requirement</i> (oz/100 gal)	<i>Hardness</i> (ppm CaCO3)	<i>SAR</i>			
		<i>Urea</i>		6	0.06	6.41	0	0.37	18.5	0.41	17.7	0.24			
Comments:			Other Results (continued)												
			<i>Cd (ppm)</i>	<i>Pb (ppm)</i>	<i>Ni (ppm)</i>	<i>As (ppm)</i>	<i>Cr (ppm)</i>	<i>Se (ppm)</i>	<i>Al (ppm)</i>	<i>Li (ppm)</i>					
										0.00					

Agronomist's Comments:

Water pH and alkalinity are below the desired range for fish ponds. Low pH and alkalinity increase water turbidity and soluble metals. Liming will raise the pH of the pond and increase alkalinity to levels suitable for aquatic life. I recommend that you collect a soil sample from the bottom of the pond to determine the appropriate lime rate. Once the soil has been collected, let it dry out, then submit that sample with the Soil Sample Information form (available at www.ncagr.gov/agronomi/pdf/soil.pdf) to the NCDA&CS Soil testing section for analysis. Please use crop code 069 on the soil sample information form. The general desired ranges for aquaculture/fish pond water are (acceptable ranges in parentheses): pH 6.5-9.0 (5.5-10.0); alkalinity 50-150 ppm CaCO₃ (20 - 400 ppm); hardness 50-150 ppm CaCO₃ (>20); EC 6-100 10⁻⁵ S/cm (3-500); Ca > 20 ppm (>5); Fe 0-0.1 ppm (fry) or 1.0 ppm (general fish); Mn 0-0.01 ppm (<1); Cl < 100 ppm for catfish; NO₃ <90 ppm; P 0.01-3.0 ppm. Note where the results vary from these desired ranges or the recommended ranges for your application. Please contact me if you have any questions. Kristin A. Hicks 7/13/2017 1:17 PM



Reprogramming of the laboratory-information-management system that makes this report possible is being funded through a grant from the North Carolina Tobacco Trust Fund Commission.

Thank you for using agronomic services to manage nutrients and safeguard environmental quality.

- Steve Troxler, Commissioner of Agriculture.

Understanding the Solution Report * - *additional information:* www.ncagr.gov/agronomi/pdffiles/usoln.pdf

This report provides data on chemical properties relevant to use of water or nutrient solutions for a specific agricultural purpose such as crop, livestock & poultry production, aquaculture or pond management and indicates whether they pose a concern for that use. If you need to identify microorganisms, pesticides or organic chemical contaminants, contact a commercial laboratory or the county health department.

SS (soluble salts) & **EC** (electrical conductivity) are both measures of salinity, or total dissolved salts (ions) in solution, expressed in different units; **pH** is a measure of basicity/acidity; **Total Alkalinity** is measure of carbonates & bicarbonates; **Acid Requirement** is the amount of battery acid (35% sulfuric acid) needed to neutralize alkalinity by 80%; **Hardness** is calculated from Ca & Mg levels and indicates tendency to form scale or salt deposits; **SAR** (sodium adsorption ratio; no units) indicates relative balance among Ca, Mg & Na ions, which can predict tendency for Na to accumulate in substrates or on surfaces. The designations **VL**, **L**, **M**, **H** & **VH** indicate Very Low, Low, Medium, High & Very High, respectively.

* **ppm** = parts per million; **S** = siemens; **mS** = millisiemens; **CaCO₃** = calcium carbonate; **meq/L** = milliequivalent per liter