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Lab No. 195977
 Sampled 10/2/2013
 Submitted 10/3/2013
 Submitted by Mark Holler
 Reported 10/11/2013
 Job/Ranch/Site Crouse Vineyards
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Identification Grape Harvest

No.	Description	2% Acetic Acid Extract			Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Extract
		mg/kg	mg/kg	%	%	%	%	mg/kg	mg/kg	%	mg/kg	%	%	mg/kg	mg/kg	%	
		NO ₃ -N	PO ₄ -P	K	N	P	K	Zn	Mn	Na	B	Ca	Mg	Fe	Cu	Cl	
		Methods	B3.10	B3.10	B3.10	B2.20	B4.20	B4.20	B4.20	B4.20	B4.20	B4.20	B4.20	B4.20	B4.20	B3.10	
1	Crouse Blk 6 Rows 12, 32	16			0.41	0.06	2.32	21	731	0.02	25	1.13	0.55	68	3	0.5	

	Nitrate-N		Nitrogen	Phos.	Potassium	Zinc	Manganese	Sodium	Boron	Calcium	Magnesium	Iron	Copper	Chloride
Deficient	N/A		<0.4	<0.1	<1.50	<26	<20	N/A	<25	<1.0	<0.4	N/A	<3	N/A
Low to adequate	N/A		.4-0.49	.1-.14	1.5-2.49	26-59	20-24	N/A	26-34	1.0-1.19	0.4-0.49	N/A	3-7	N/A
Normal - Optimum	N/A		0.5-0.8	.15-0.5	2.5-3.5	60-100	25-100	<0.5	35-50	1.2-2.0	0.5-0.8	N/A	8-50	<0.5
High to Excessive	1000+		0.8+	0.50+	3.5+	100+	1000+	0.5+	100-150+	2.0+	0.8+	N/A	50+	0.5+

- Optimum ranges are different from and slightly higher than critical levels to account for possible field and sampling variability, and to have a margin of safety, especially for zinc and boron which affect fruit set.
- High, excessive and potentially toxic levels are not well defined for most nutrients with the exception of boron.
- Boron toxicity can be confirmed by leaf blade analysis.
- High magnesium levels can be an indication of soil mineral imbalances which can inhibit adequate potassium uptake.
- Total-N: For high density vineyards, levels should be at the lower end of this range, while split canopy vineyards should be at the upper end of this range