



Company Name: PLM Lake & Land Management Corp.
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Chain of Custody: eCOC20300

Report Date: 12/5/2025
Sample Collection Date: 11/17/2025
Waterbody Name: East Twin
Project Name: East Twin
Size (ac.): 829
Average Water Depth (ft): 5
Calculated Osgood Index: 0.8

Sample Name	Site Depth (ft)	Loosely-Bound P (mg-P/kg)	Iron P (mg-P/kg)	Organic P (mg-P/kg)	Aluminum P (mg-P/kg)	HCl-P (mg-P/kg)	Residual P (mg-P/kg)	Total P (mg-P/kg)
West Twin 9	5	12	6	*	6	35	*	58
East 1	5	1	10	14	12	57	227	321
East 3	5	118	109	*	149	77	*	453
East 5	5	3	1	*	5	24	31	63

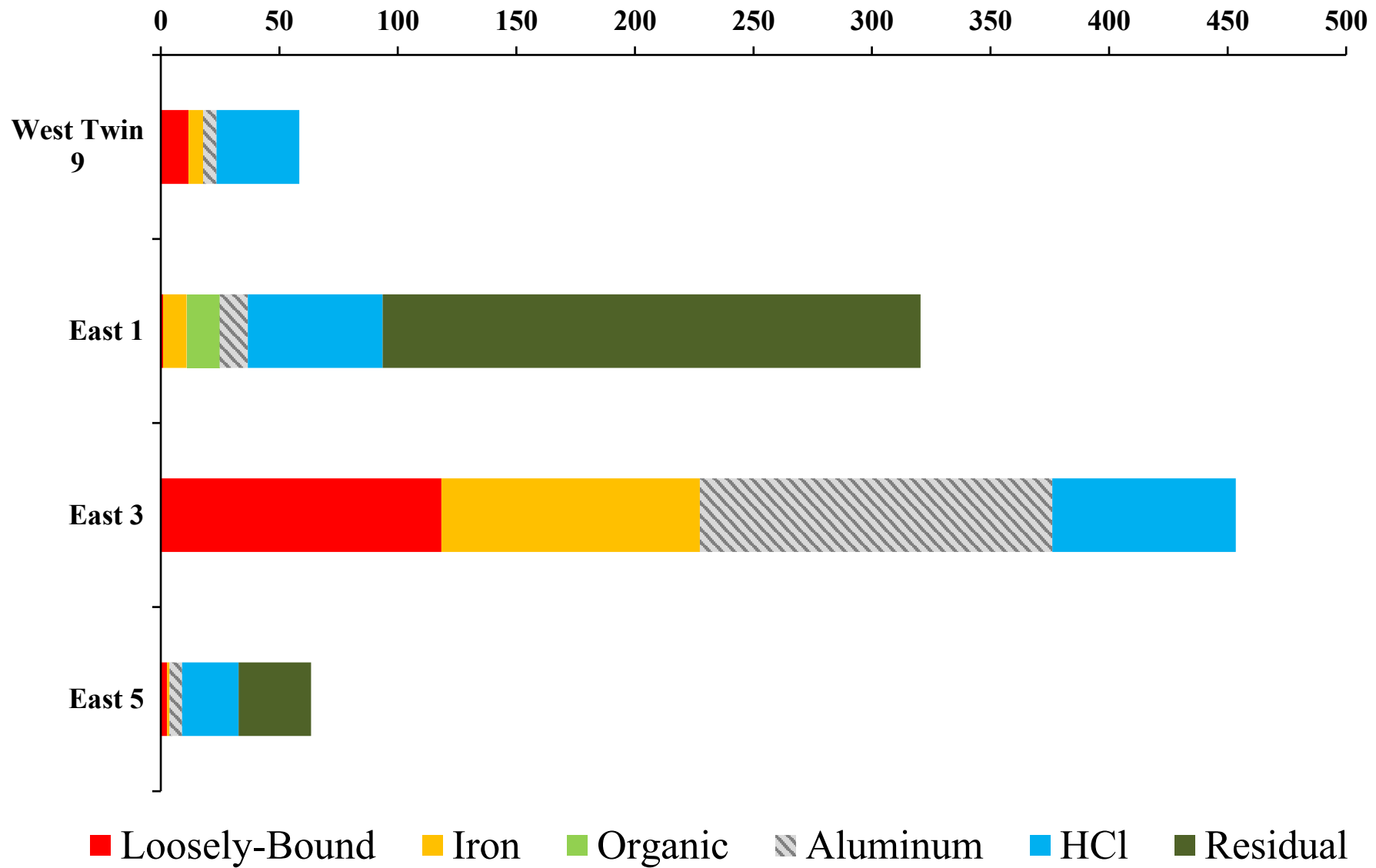
^All concentrations reported in dry weight (mg/kg)

* Concentration was less than reportable limits with 99% confidence

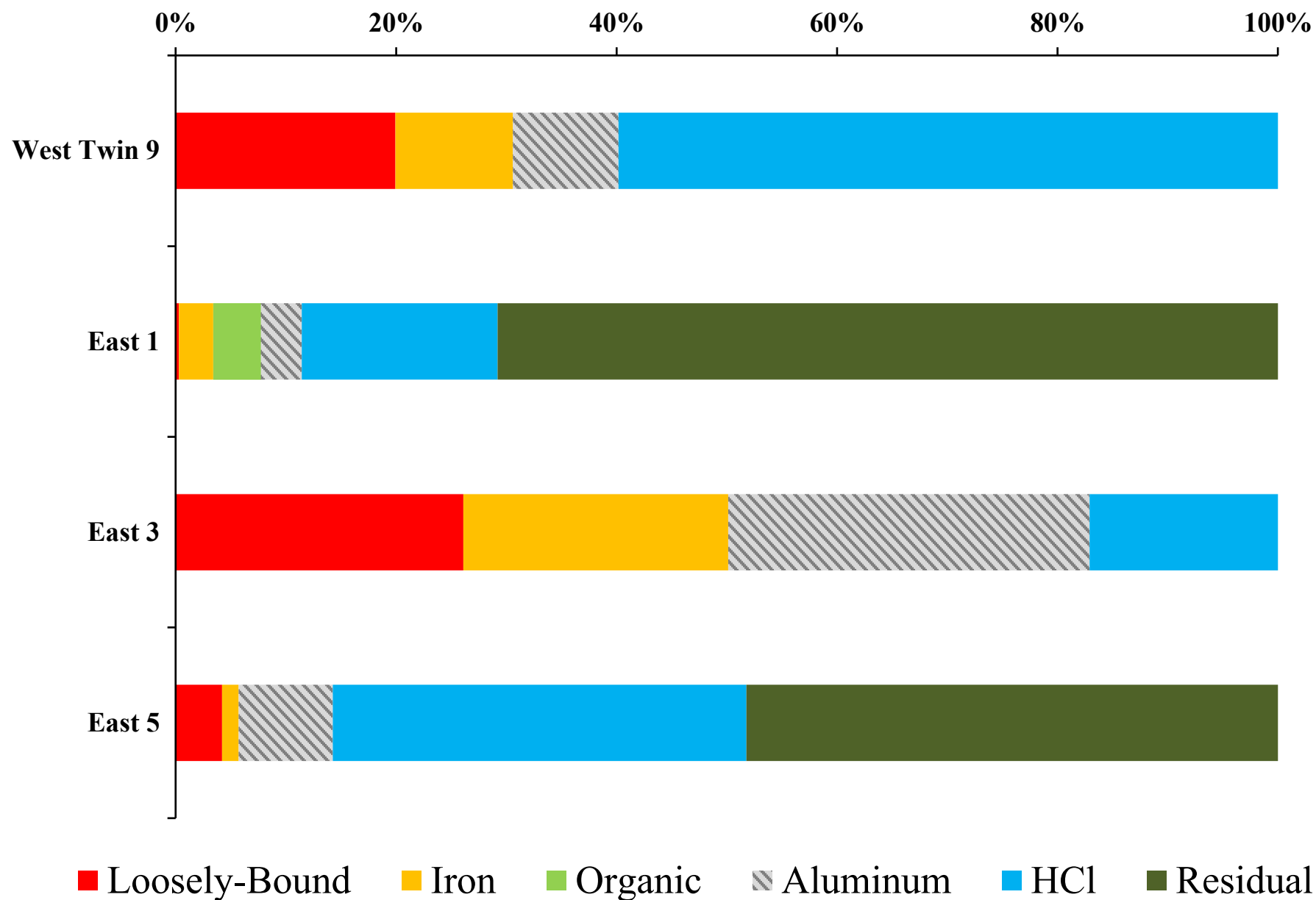
Sample Name	% Solids	Physical Release Potential	Iron Binding Potential	Organic P Releasability	Aluminum Binding Efficiency	HCl-P Formation Potential	Releasable P (mg-P/kg)	% Releasable P
West Twin 9	88%	Low	N/A	Medium	Very High	Very High	18	31%
East 1	86%	Low	N/A	Medium	Very High	Low	19	6%
East 3	3%	High	Very Low	Medium	Very High	Low	227	50%
East 5	85%	Low	N/A	Medium	Very High	High	4	6%

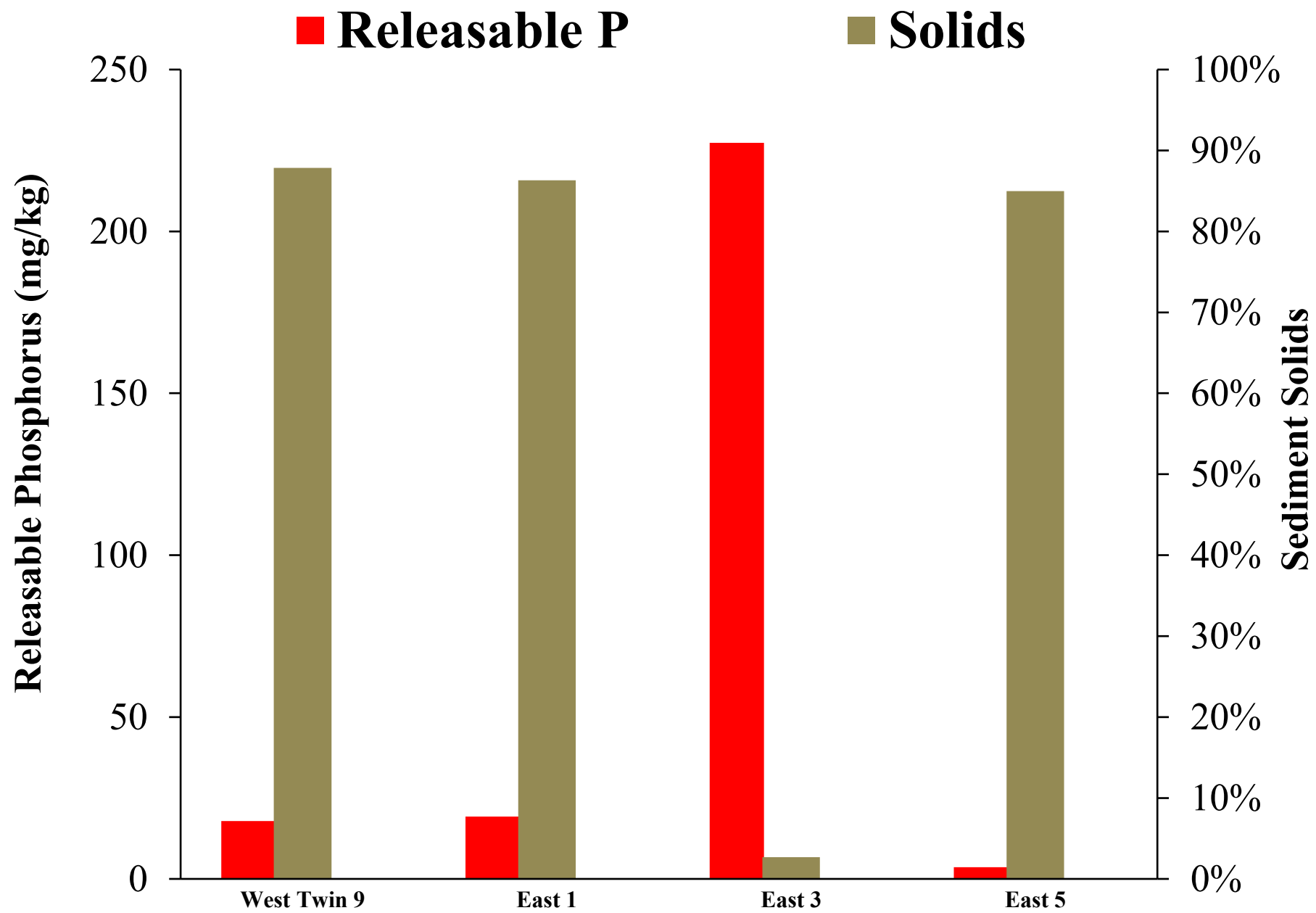
Phosphorus Fractionation Results

(mg/kg, dry weight)



Fractions as a Percent of Total Phosphorus





Geochemical Enrichment and Physical Properties

Sample Name	Depth (ft)	% Solids	Dominant Sediment Cation	Lake Specific Enrichment Factors				
				Extracted Iron	Organic Matter	Extracted Aluminum	Extracted Calcium	Total P
West Twin 9	5	88%	Calcium	1.0	1.0	1.0	2.2	1.0
East 1	5	86%	Calcium	9.1	5.6	5.8	6.6	5.5
East 3	5	3%	Aluminum	5.1	87.1	69.2	1.4	7.8
East 5	5	85%	Calcium	1.5	1.2	3.2	1.0	1.1

Sample Name	Depth (ft)	Dominant P-Binding Mechanism	Phosphorus Specific Enrichment Factors					
			Releasable P	Fe-P	Org-P	Al-P	HCl-P	Residual P
West Twin 9	5	Calcium	4.9	6.5	N/A	1.0	1.5	N/A
East 1	5	Residual	5.3	10.4	1.0	2.2	2.4	7.4
East 3	5	Aluminum	62.7	113.9	N/A	27.5	3.3	N/A
East 5	5	Residual	1.0	1.0	N/A	1.0	1.0	1.0

Sample Name	Physical Release Potential	Physical Releasability Parameters						
		Diffusion				Disturbance & Sediment Stability		
		Wet Bulk Density (g/cm ³)	Dry Bulk Density (g/cm ³)	Porosity	% Solids	Total Organic Matter	Particle Density (g/cm ³)	Site Specific Osgood Index
West Twin 9	Low	1.78	1.56	24%	88%	1%	2.06	0.8
East 1	Low	1.28	1.11	46%	86%	5%	2.04	0.8
East 3	High	1.10	0.03	98%	3%	70%	1.76	0.8
East 5	Low	1.64	1.40	44%	85%	1%	2.48	0.8

Oxygen, Iron and Organic-P Cycling

Sample Name	Oxygen Depletion Rate	Oxygen Depletion Potential			Mixing Potential		
		Bioavailable Organic Matter	% Dissolved Manganese	Porosity	Depth (ft)	Site Specific Osgood Index	Water Column Mixing Potential
West Twin 9	Very Low	0%	14%	24%	5	0.8	Very High
East 1	Low	3%	14%	46%	5	0.8	Very High
East 3	Very High	59%	25%	98%	5	0.8	Very High
East 5	Very Low	0%	33%	44%	5	0.8	Very High

Sample Name	Fe-P as a % of Total P	Iron Speciation						
		Iron-Binding Potential	Redox Fe to P Molar Ratio	Loosely-Bound P (mg/kg)	Total Relevant Iron (g/kg)	% Labile Iron	% Redox Sensitive Iron	% Metal Oxide Iron
West Twin 9	11%	N/A	N/A	12	0.05	1%	95%	5%
East 1	3%	N/A	N/A	1	0.44	0%	89%	11%
East 3	24%	Very Low	1	118	0.24	5%	70%	25%
East 5	2%	N/A	N/A	3	0.07	1%	65%	34%

Sample Name	Org-P as % of Total P	Organic P Release						Residual P as % of Total P
		Organic P Release Potential	Site Depth (ft)	Total Carbon to Org-P Ratio	Labile Carbon to Org-P Ratio	% Refractory Organic Matter	Residual P to Org-P Ratio	
West Twin 9	N/A	Medium	5	N/A	N/A	88%	N/A	0%
East 1	4%	Medium	5	733	484	66%	16.4	71%
East 3	N/A	Medium	5	N/A	N/A	84%	N/A	0%
East 5	N/A	Medium	5	N/A	N/A	52%	N/A	48%

Aluminum Binding Insights					
Sample Name	Al-P as % of Total P	Aluminum Binding Factors			
		Aluminum Binding Efficiency	Site Depth (ft)	Al to P Molar Ratio	Sediment pH
West Twin 9	10%	Very High	5	3	7.0
East 1	4%	Very High	5	8	7.2
East 3	33%	Very High	5	7	7.0
East 5	9%	Very High	5	9	7.3

SeSCRIPT*
Analysis

SePRO Research & Technology Campus
16013 Watson Seed Farm Road, Whitakers, NC,

Stable Phosphorus Minerals							
Sample Name	HCl-P as % of Total P	Stable Mineral Formation					
		HCl-P Formation Potential	% Organic Matter	Extracted Ca Content (g/kg)	% Labile Ca	HCl Ca to P Molar Ratio	Lanthanum Content (mg/kg)
West Twin 9	60%	Very High	1%	13.1	1%	288	1
East 1	18%	Low	5%	39.6	8%	497	1
East 3	17%	Low	70%	8.8	85%	14	0
East 5	38%	High	1%	6.0	4%	189	1

General Interpretation Guide	
Enrichment Factors	demonstrate where compounds are enriched within the lake compared to the minimum value (1.0)
Physical Release Potential	is based on diffusion, susceptibility to disturbance, and settling rate of the sediment.
Iron Binding Potential	is based on the Redox Fe to P ratio and reactive iron-oxide saturation
Organic P Releasability	is based on site depth, the extent of the organic matter degradation, and residual P formation potential.
Aluminum Binding Efficiency	is based on the Al to P ratio compared to the SRTC database (> 100 samples)
HCl-P Formation Potential	is based on the abundance of HCl-P at the site compared to the SRTC database
For more information and deeper insight, contact your EutroPHIX Technical Specialist	