

# Pro-SealECCO® Fly Ash Stabilization Leachate Encapsulation & Control



Keeping it Green

Environmentally Sound, Seamless,  
Primary and Secondary Containment for Fly Ash

- ESG Guidelines Compliant
- GO Green Certified Compliant
- Red Line Certified Compliant
- NSF Certified Compliant
- USEPA Compliant
- Contains RCRA 8 Metals  
At Newest EPA ppb  
Requirements
- USFDA Compliant
- USACE ASTM Compliant
- LARR Compliant
- CSI Compliant
- LEED Compliant

# Pro-SealECCO® Fly Ash Stabilization Leachate Encapsulation & Control



Pro-SealECCO additive can make your fly ash stable, controlling airborne particles such as (dust), mud, and control erosion, while encapsulating toxic leachates such as, RCRA 8 metals, PFOS, and PFAS. It can be formulated to offer a stabilization or semi-structural to structural final product.



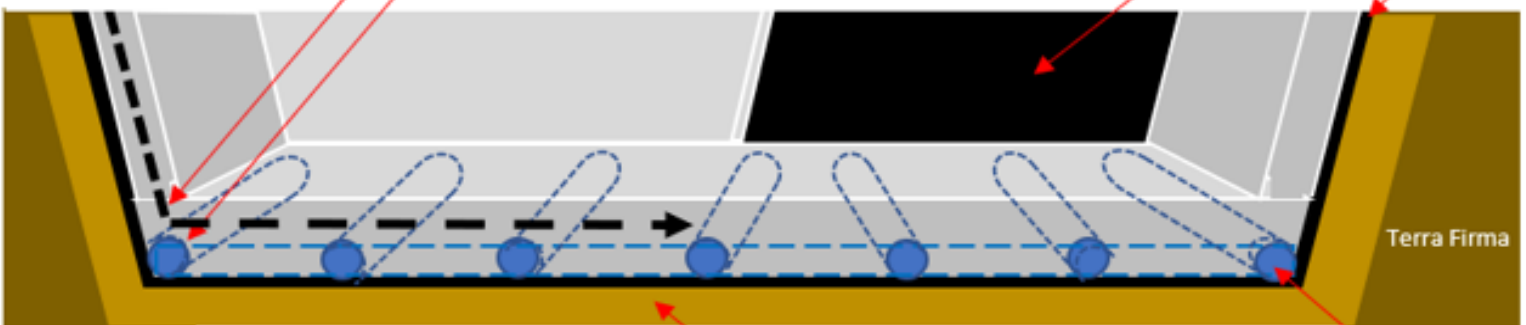
Pro-SealECCO additive when creating your containment and collection basins can be formulated to allow Pro-Seals FlexSystem II, spray applied, seamless, elastomeric, chemical resistant membrane to replace welded/glued rubberized plastic sheets. No more leaks due to weld or glue failures. No more time consuming gluing or welding. Save time, save money, with Pro-SealECCO green Systems.

## Fly Ash Primary and Secondary Containment Basin Construction Basics

Gravel filter layer with drain tile grid for greywater or other fluids.

Geotextile filter fabric maybe placed over aggregate and covered with protective soil layer as required.

**Pro-Seal FlexSystem II** is sprayed directly onto semi-structurally stabilized site soil. This creates a seamless, monolithic, impermeable, and elastomeric primary containment liner.



**Pro-SealECCO System** is hydrophobic. It is in situ blended into site soil as a semi-structural stabilization material. The stabilized base performs as secondary containment once it is covered with the spray applied **Pro-Seal FlexSystem II** seamless, monolithic, and elastomeric primary containment liner.

Greywater contaminant fluids collection system. Fluids to be sent and/or pumped to treatment facility.



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The tables (below) display the leach limits in ppm/ppb of materials after a thirty-day exposure to the pH 3.0 sulfuric acid leaching medium. Dr. J. Lee CO School of Mining, formerly U of A, modified the TCLP to more stringent leaching medium, more tumbling and longer exposure limits to reflect industrial site working conditions. These extreme modifications far exceed the 18 hour acetic acid pH 3.4 leaching exposure limits

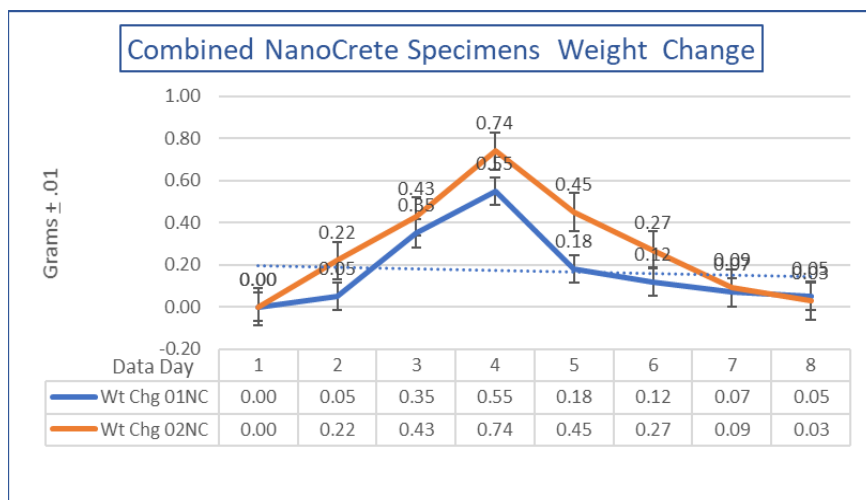
parameters of the standard TCLP testing required by the EPA. The laboratory results are published here for review. Modified: All Soils specimens mixed with Pro-Seal additives, cured 30 days, tumbled 30 days, in 3.0 pH sulfuric acid, sampled, after initial 72 hours, every 24 hours and analyzed.

Contaminant (in each soil samples before treatment w/ Nano Novel Matrix Material)	PHOS	PFHxS	PFHxA	PFOxA			
% of total PFAS/PFOS by type	79	16	3	2			
Total PFAS/PFOS pbb:	3478	2738	555	111	74		
Soil Type	Soil %	Additive %	Leachate Results pbb				
Silty Sand	Additive All Specimens' 24%	76	24	0.0110	0.0070	0.0001	0.0000
Sandy Clay				0.1070	0.0074	0.0001	0.0000
Fatty Clay	NanoCrete Systems	76	24	0.0105	0.0071	0.0001	0.0000

Fe tailings and treated tailings tested for RCRA 8 metals content results in parts per billion, results.

Tailings Type	ICP-EOS Analysis Leach Results From Nanocrete, Nano technology polymerized Fe Tailings								
	In ppb	Ag	As	Ba	Cd	Cr	Hg	Pb	Se
Fe Raw Tailings		1.00	1.32	100.10	0.11	2.10	0.00	2.30	1.20
Fe 12% NanoCrete additives were mixed into all specimens		0.0140	0.0500	0.0330	0.0100	0.0068	0.0000	0.0150	0.0020
% Change		99%	96%	100%	91%	100%	N/A	99%	100%
Change +/-		+	+	+	+	+	N/A	+	+

Above results ICP-EOS Analysis Leach Results From Pro-SealECCO Stabilization Leachate Binding Technology



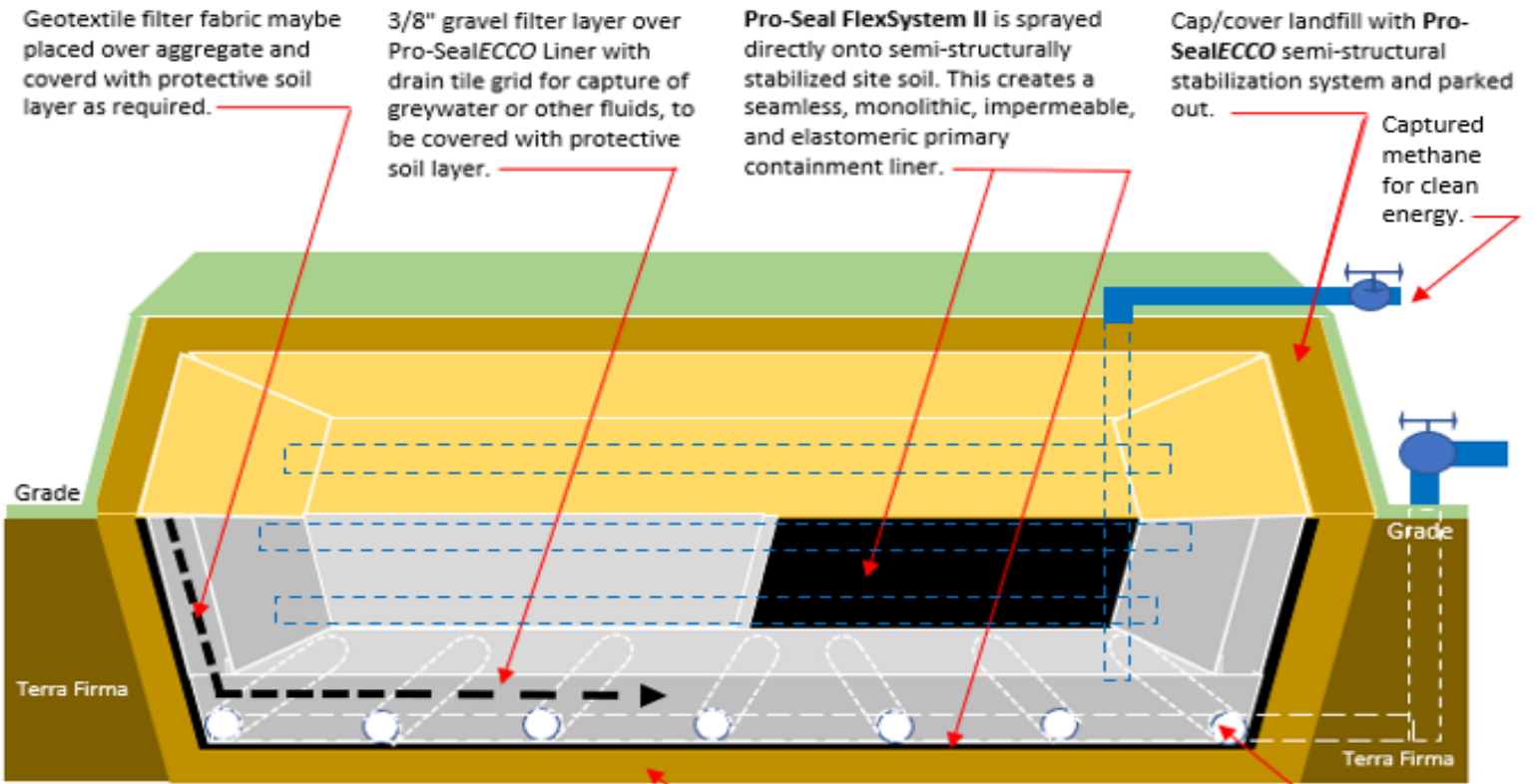
Left table demonstrates the water gain and loss over the initial eight days of cure. Note that on day four moisture uptake peaked at .74g and over the next for days the water was expelled reducing gain of moisture to <.05g with a downward trend. This indicates that the Pro-SealECCO NanoCrete additive system a Nano Novel Matrix material is hydrophobic and therefore will maintain its stability and allow the site water to be controlled for treatment.



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## Capping Fly Ash Primary and Secondary Containment Basin Construction Basics



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Greywater contaminant fluids collection system. Fluids to be sent and/or pumped to treatment facility.

