



## Agrilectric Profix™ for Heavy Metals Removal Applications

Profix™ from Agrilectric Research Company is a filter aid product designed for heavy metals removal and fixation. It combines Agrilectric low crystalline silica, highly porous “micro filter” structured amorphous silica with a proprietary ingredient to provide high efficient filtration and metals sequestration in one step. The “Profix + Filter Press” technology was demonstrated in EPA’s Superfund Innovative Technology Evaluation (SITE) program in 1990 to 1991, and has been successfully applied to treat heavy metal contaminated wastewater and ground waters. Case histories from the EPA demonstration, existing applications, and recent lab and field tests results are listed below. It is shown that “Profix + filter press” effectively remove TSS, lead, zinc, copper, nickel, chromium from 90% to 99.98% at a high filtration capacity. Treated liquids meet discharge limits at a high filtration capacity and filter cakes all pass TCLP test.

### Case #1: Electronics Manufacturing Plant Wastewater

Property	Untreated Water	Treated Water	% removal	Discharge Limit
Turbidity, NTU	2,400	0.43	99.98	-
TSS, ppm	5,500	1.0	99.98	20
Lead, ppm	2,300	0.18	99.99	0.7
Capacity, gpd	2,000	11,000	-	-

### Case #2 Chemical Plant Ground Water

Property	Untreated Water	Treated Water	% removal	Discharge Limit
Turbidity, NTU	100	0.17	99.83	-
TSS, ppm	80	0.3	99.62	20
Fe, ppm	40	<0.1	>99.75	-
Cr, ppb	45	<10	>77.78	150
Ni, ppb	50	<5	>90.0%	130
Zn, ppb	300	<10	96.66	250
Cake Pass TCLP	No	Yes		Yes

### Case #3 Ground Water Lead Removal

Property	Untreated Water	Treated Water	% removal	Discharge Limit
Turbidity, NTU	<10	0.1	99%	-
TSS, ppm	120	<0.2	>99.83	30
Lead, ppb	20,000	<10	>99.95	50
Cake Pass TCLP	No	Yes		Yes

**MAXFLO™ FILTRATION**  
 PO BOX 3716  
 LAKE CHARLES 70602  
 1-337-421-6375  
[WWW.MAXFLOFILTRATION.COM](http://WWW.MAXFLOFILTRATION.COM)

#### **Case #4 A Chemical Plant Waste Water**

Property	Untreated Water	Treated Water	% removal	Discharge Limit
Turbidity, NTU	>100	0.06	>99.4	<0.2
TSS, ppm	100	<0.2	>99.8	<1
Copper, ppb	2000	<5	>99.75	15
Lead, ppb	100	<5	>95%	60
Zinc, ppb	3500	<10	>99.71	250
Nickel, ppb	400	<5	>98.75	130
Chromium, ppb	1000	<100	>90%	150
Capacity, gpd	75,000	130,000		
Cake Pass TCLP	No	Yes		Yes

#### **Case #5 Ground Water**

Property	Untreated Water	Treated Water	% removal	Discharge Limit
Turbidity, NTU	160	0.05	99.97	-
TSS, ppm	180	0.03	99.98	30
Fe, ppb	50,000	<100	>99.8	-
Ni, ppb	300	<5	>98.33	130
Zn, ppb	14,000	<10	>99.92	300
Cake Pass TCLP	No	Yes		Yes

#### **Case #6 Mixed Wastewater**

Property	Untreated Water	Treated Water	% removal	Discharge Limit
Turbidity, NTU	<1000	0.2	99.98	-
TSS, ppm	1200	0.4	99.97	20
Fe, ppb	80	<0.1	>99.87	-
Cr, ppb	1800	50	97.22	150
Cu, ppb	1000	<5	>99.5	15
Zn, ppb	14,000	<10	>99.92	250
Cake Pass TCLP	No	Yes		Yes

#### **Case #7 Completion Fluid Zinc Removal\***

Property	Untreated	Treated	% removal
Zn, ppm	2030	22	98.9

#### **Case #8 Chemical Plant Process Water\***

Property	Untreated Water	Treated Water	% removal
Copper, ppb	44	<2	>95.5
Sulfur ppm	173	<5	>97.1
Arsenic, ppb	1000	30	97
Iron, ppm	1.1	<0.072	93.5
Lead, ppb	50	<5	90%

\*Regular MaxFlo® was used in this case. Profix should provide better performance regarding metals removal.

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