

**S&N
AIROFLO**



**The Source for Floating WWT Equipment
Brush Rotors - Mixers - Polishing RBCs**


LAGOONS

AEROBIC DIGESTERS



ACTIVATED SLUDGE BASINS



 products have been utilized in all types of wastewater applications including Activated Sludge Basins, Oxidation Ditches, Aerobic Digesters, EQ Basins, as well as Lagoons.



OXIDATION DITCHES



COLD WEATHER APPLICATIONS

QUESTION

What is a **S&N AIROFLO**  **Floating Brush Rotor?**





Quick & Simple Installation



From This:



To This:



To This:

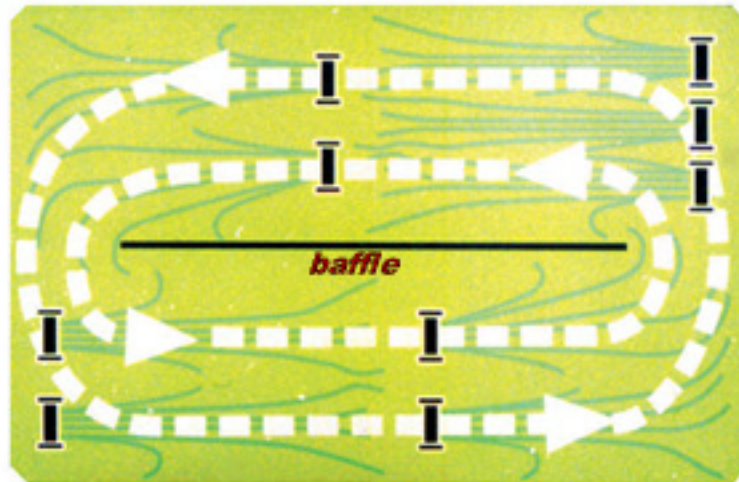
All in a matter of hours, not days

Regulatory Approval



- In 1989, S&N Airoflo requested an approval for the use of its rotors at 4 HP/mg vs. the state standard of 8 HP/mg.
- S&N Airoflo supplied O₂ transfer and mixing tests performed at Auburn University to the Mississippi Department of Natural Resources, who in turn forwarded the information to Region IV Department of Environmental Quality in Atlanta, Ga.
- **S&N Airoflo units approved for 4 hp/mil gal partial mix – one half of the original 8 hp/mil gal.**
- Ruleville, MS – first WW installation. MDEQ suggested S&N equipment. Add 200 households to system.

Placement Effects on Treatment

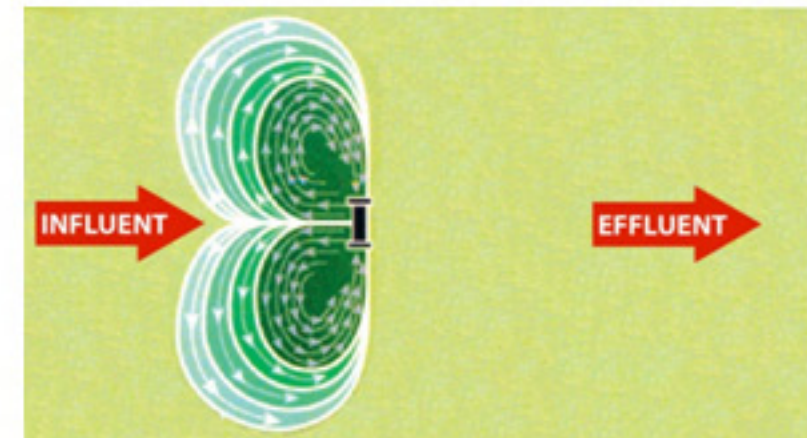


Modified Raceway -

- 7 acre facultative lagoon converted to raceway design

Influence of Placement -

- Eliminates Short-Circuiting
- Completely mixes the influent and exposes it to O₂

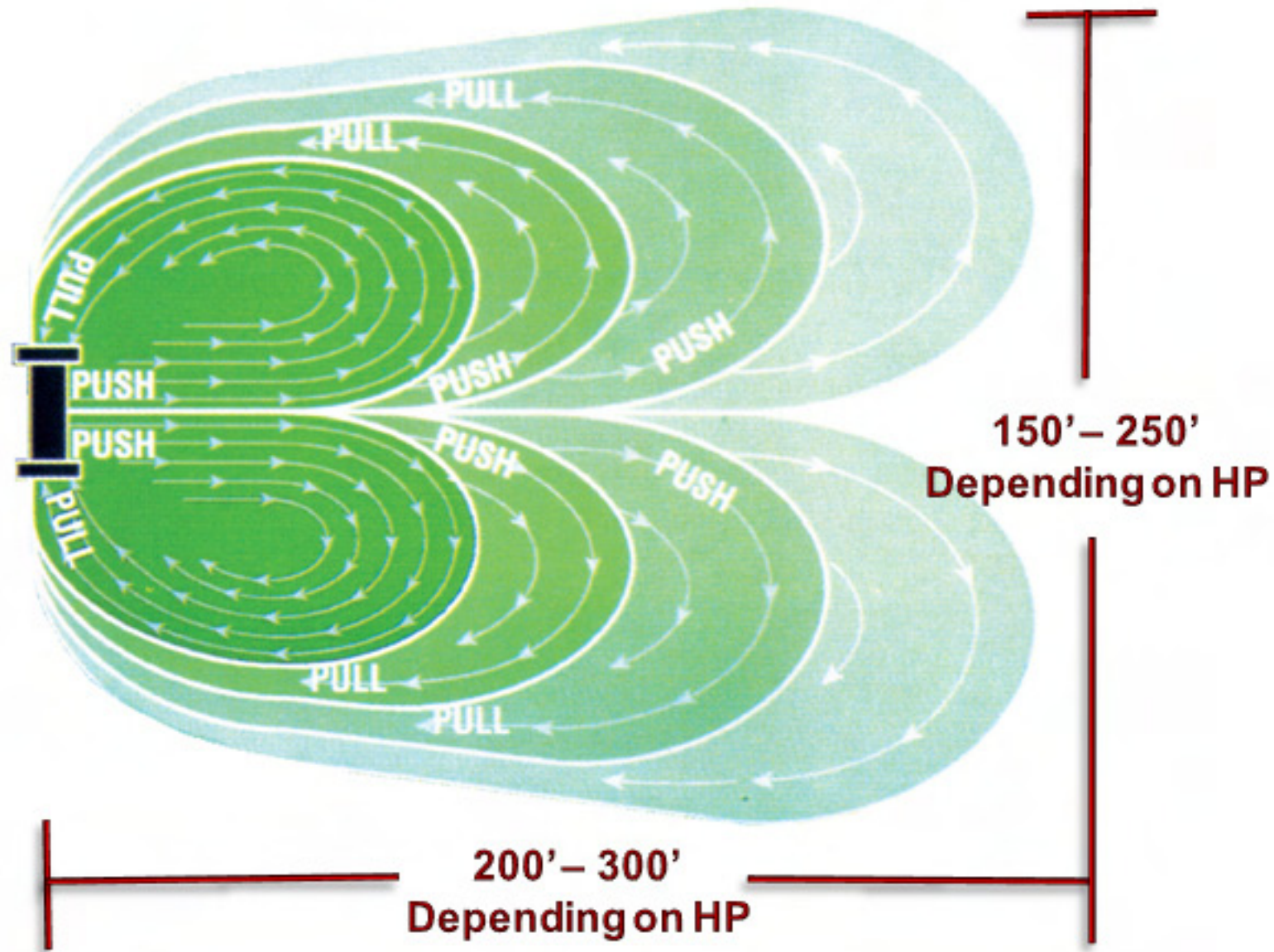


Serpentine Flow Pattern -

- Water moves from unit to unit
- Independent Mixing Zones
- Creates separate zones of mixing and treatment
- Prevents Short-Circuiting



Active Mixing Zone in Open Basis or Lagoon





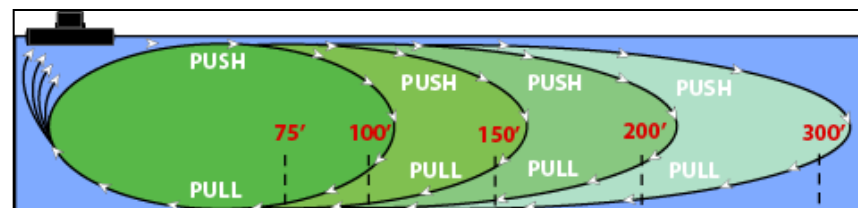
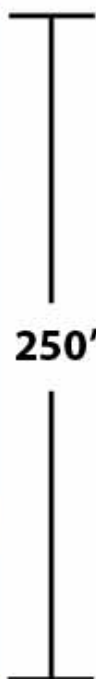
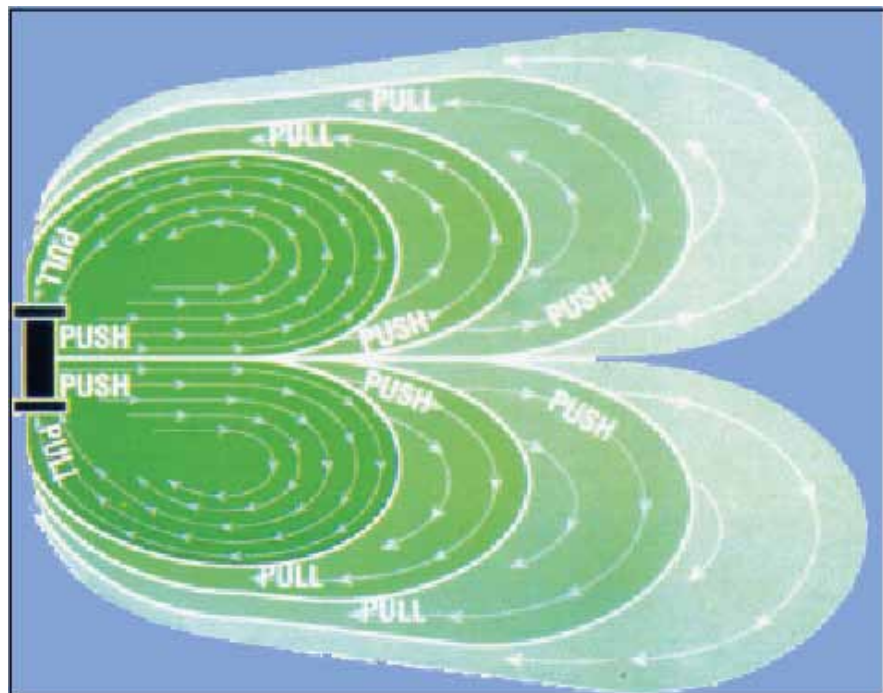
Verification of Increased DO Readings Establishes the Size of the Active Mixing Zone

15 HP Floating Brush Rotor @ 83 RPM

* Average Depth of Lagoon – 7 feet

Plan View

Elevation View



LOCATION:	centerline	centerline	centerline	centerline	centerline
02/27/2008 WITHOUT AERATOR: (mg/L)	.72	.82	.91	1.04	1.08
02/28/2008 WITH AERATOR: (mg/L)	3.49	3.22	3.09	3.54	1.67
02/29/2008 WITH AERATOR: (mg/L)	3.42	3.14	3.20	3.47	1.36



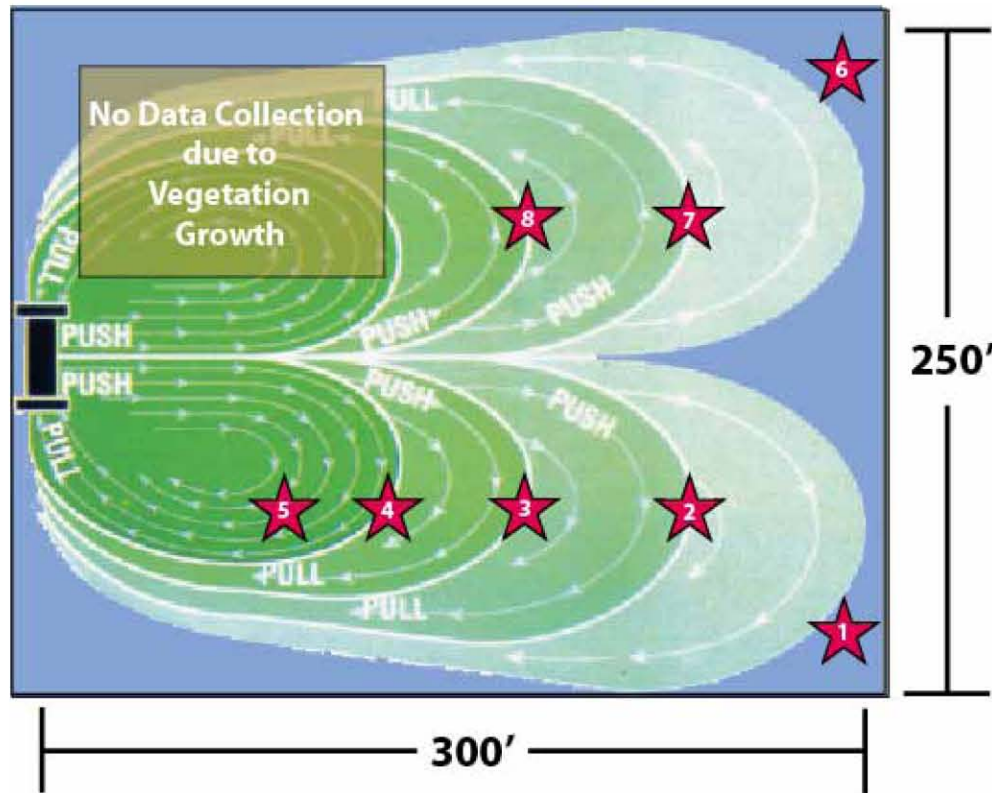
* Testing performed by AquAeTer, Brentwood, TN, at a large paper mill.



Verification of Increased DO Readings Establishes the Size of the Active Mixing Zone

15 HP Floating Brush Rotor @ 83 RPM

Plan View



	LOCATION:	02/27/2008 WITHOUT AERATOR: (mg/L)	02/28/2008 WITH AERATOR: (mg/L)	02/29/2008 WITH AERATOR: (mg/L)
★ 1	150' west of 300' centerline	1.02	1.62	1.75
★ 2	75' west of 200' centerline	.86	3.26	3.18
★ 3	75' west of 150' centerline	.80	3.43	3.33
★ 4	75' west of 100' centerline	.68	3.23	3.26
★ 5	75' west of 75' centerline	.64	3.18	2.82
★ 6	150' east of 300' centerline	.97	1.64	1.35
★ 7	75' east of 200' centerline	1.13	2.31	2.96
★ 8	75' east of 150' centerline	1.06	2.57	3.02

* Testing performed by AquAeTer, Brentwood, TN, at a large paper mill.



Multi-Cell Facility: Soft Drink Plant

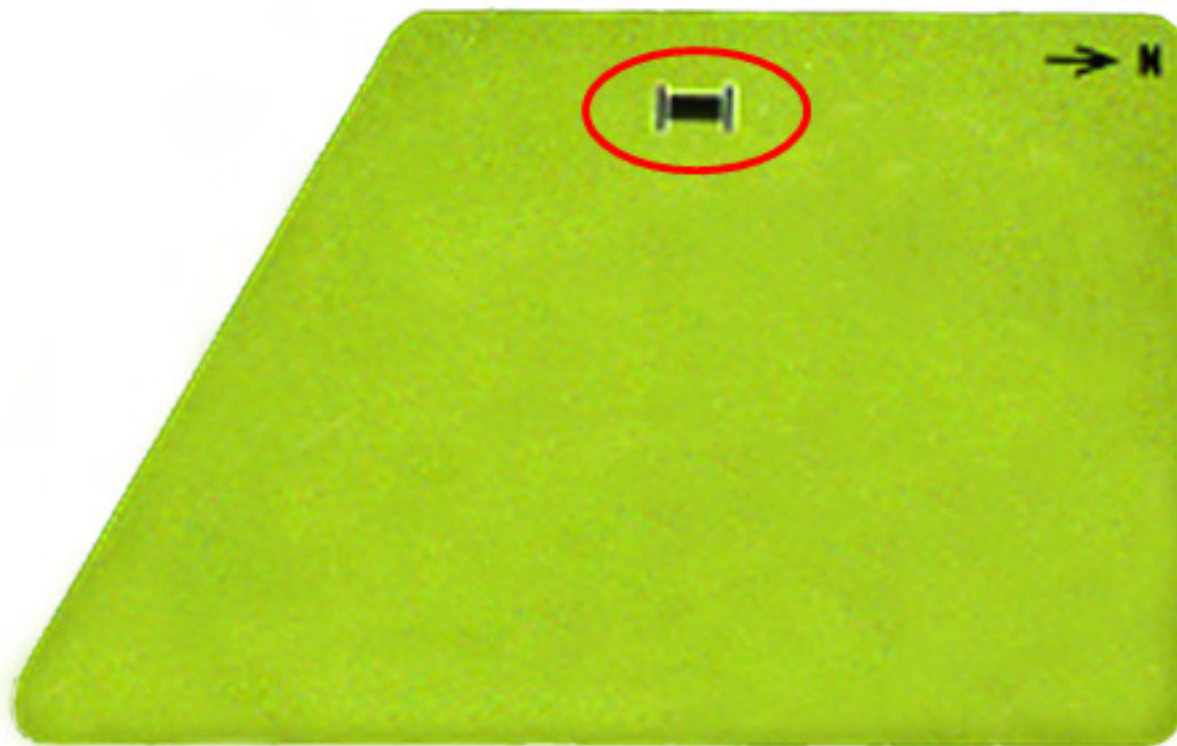
Gulf State Cannery, Inc. - Clinton, MS



Velocity Test

Performed by:

Dennis D. Truax, PhD., P.E., D.E.E.
Department of Civil Engineering
Mississippi State University



- One 10 HP unit operating.
- Approx. 0.4 surface acres (0.7 mil gal @ 14HP/mg)
- Approx. 7 ft at deepest point.
- Velocity & sludge accumulation measured.
- Collected at 7 points by two people in a rope-stabilized boat using a digital velocity meter.

Test Results:



1

Water Depth: 5 feet
Sludge Accumulation: None

Distance below surface	Velocity (fps)
0.2 ft.	2.5
1.0 ft.	2.1
2.0 ft.	1.5
3.0 ft.	1.1
4.0 ft.	0.5

Average Velocity: 1.54 fps

2

Water Depth: 4 feet
Sludge Accumulation: None

Distance below surface	Velocity (fps)
0.2 ft.	0.5
1.0 ft.	0.6
2.0 ft.	0.4
3.0 ft.	0.5

Average Velocity: 0.50 fps

3

Water Depth: 5.3 feet
Sludge Accumulation: None

Distance below surface	Velocity (fps)
0.2 ft.	0.6
1.0 ft.	0.5
2.0 ft.	0.6
3.0 ft.	0.5
4.0 ft.	0.6

Average Velocity: 0.50 fps

Test Results:



4

Water Depth: 4.5 feet
Sludge Accumulation: 0.5 feet

Distance below surface	Velocity (fps)
0.2 ft.	0.5
1.0 ft.	0.5
2.0 ft.	0.6
3.0 ft.	0.4

Average Velocity: 0.50 fps

5

Water Depth: 5.5 feet
Sludge Accumulation: 0.25 feet

Distance below surface	Velocity (fps)
0.2 ft.	0.7
1.0 ft.	0.6
2.0 ft.	0.5
3.0 ft.	0.5
4.0 ft.	0.5

Average Velocity: 0.50 fps

6

Water Depth: 6.8 feet
Sludge Accumulation: 0.75 feet

Distance below surface	Velocity (fps)
0.2 ft.	0.5
1.0 ft.	0.5
2.0 ft.	0.5
3.0 ft.	0.4
4.0 ft.	0.5

Average Velocity: 0.48 fps

Test Results:



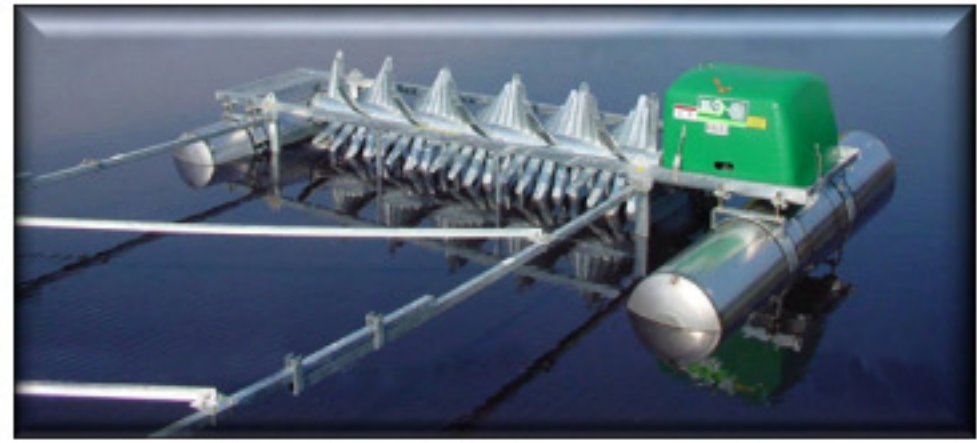
7

Water Depth: 6.8 feet

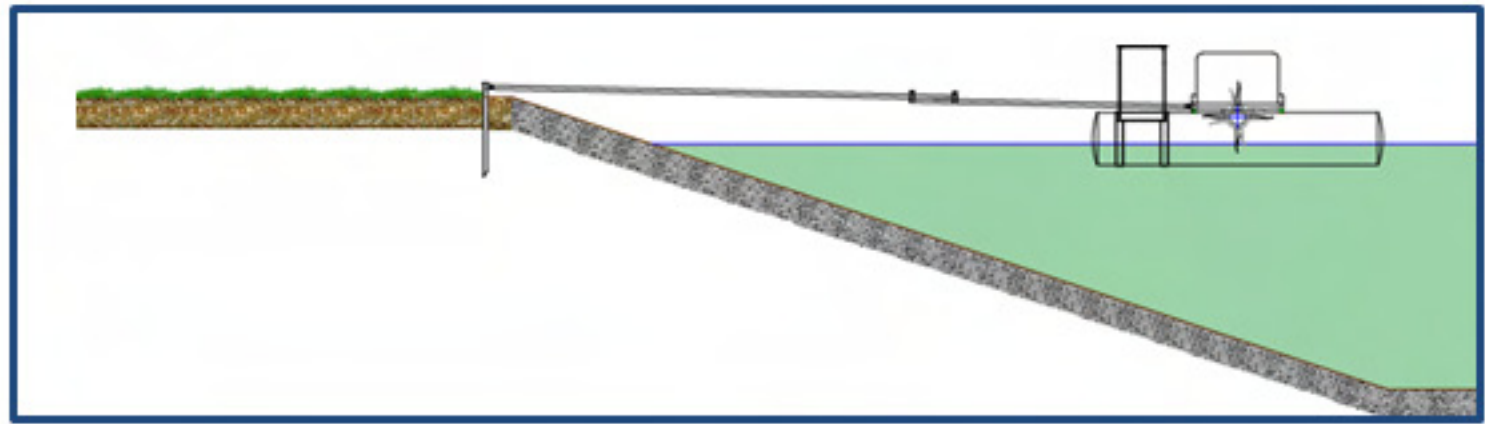
Sludge Accumulation: 0.75 feet

Current direction constantly changing.
Velocities above sludge varied between 0.1
and 0.5 fps, with higher values near
surface.

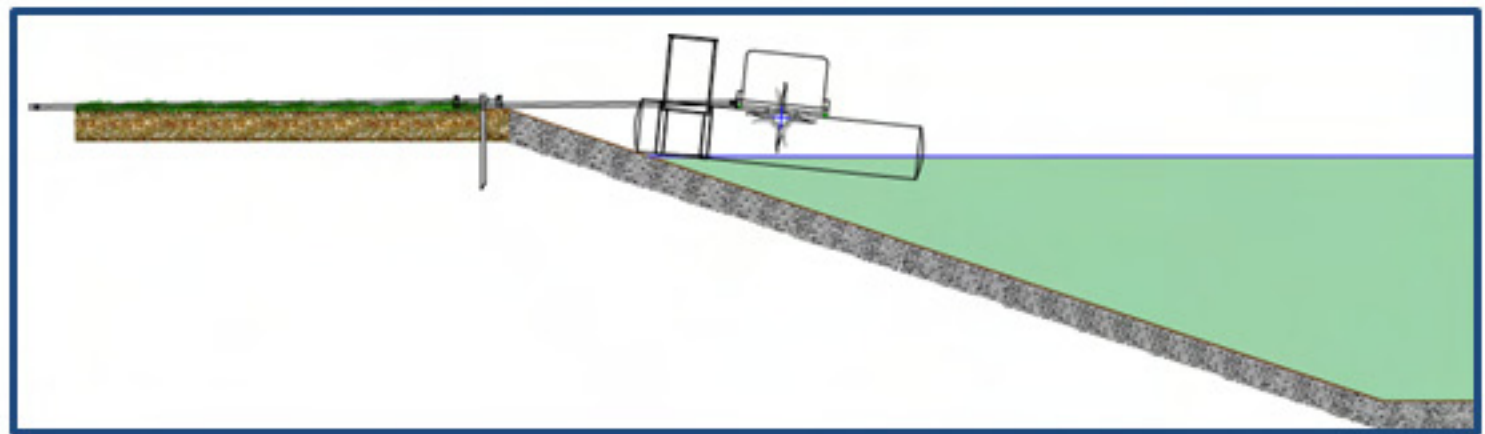
Levee Anchoring System



operating position

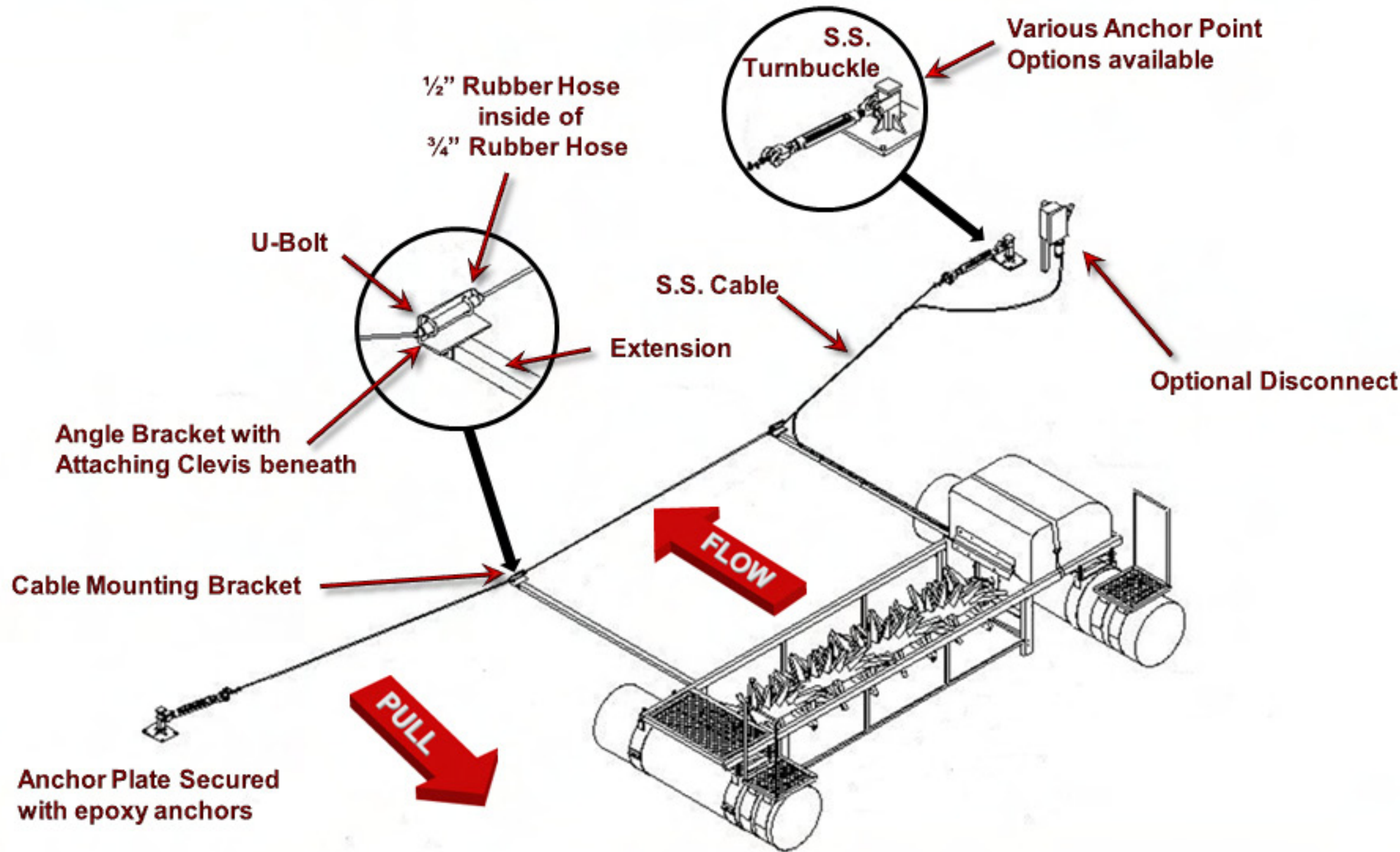


maintenance position





Cable Anchoring System



Levee Anchoring System

