

DREDGING

Lake Summerset, one of our closest neighboring lakes, has been dredging. We met with the owner of the service they use Tim Petitgout (Frentress Lake.) He provided a contact who is coordinating the Lake Summerset project; board member, Bob Page 815 248 2196.

I spent two hours with Bob, who is an engineer; he was most helpful. We examined the dam, shoreline, catchment ponds and water quality. Bob is willing to answer any questions we have and provide advice.

LAKE SUMMERSET STATUS

Lake Summerset last dredged 15 years ago. They are planning to modify and improve their catchment pond to increase the time interval to 25years.

They will spend almost \$1 million for hydraulic dredging by Frentress.

LS lease 50+ acres to create a 30+acre settling basin.

DETERMINE VOLUME OF MUCK TO REMOVE

Professional hydrographic survey to determine volume of muck, physical and chemical composition.

Sonar charts.

Establish drilling grid. Use GPS.

When lake is frozen drill holes in ice.

Use probe to detect muck surface and depth.

DREDGING TECHNOLOGY

	REMOVAL	TRANSPORT	PROBLEM
Mechanical	Crane or backhoe on barge	Truck on barge	Slow
		Truck on bank	Very slow

Since our lake bottom is shallow, this might be the best method for Willow Lake?

May be easier to satisfy the EPA water quality requirements?

	PUMP TO	DIS-CHARGE	DEBRIS	PROBLEMS
Hydraulic	Settling basin	To lake	Truck	Suspended solids
	Back yards	To lake	Level/seed	Suspended solids
	Geo tube	To lake	Truck	Suspended solids
		In lake	Create islands	

Suspended solids EPA limit 10 - 15mg/Litre. Lake Summerset submits a lab sample x2/wk.

The fundamental problem with hydraulic technology is that the slurry is 85% water. This means that the excess water must drain out of whatever method of retention used. This takes time; thus the process is - dredge - wait to drain - dredge again.

If a professional dredge is used, idle time costs are incurred.

DO IT YOURSELF

Piranha Mini Dredges.



Apple River Canyon purchased their own dredge.
Owning or leasing a dredge avoids down-time costs.



Dino6 Dredge.

Enviro tubes/Geotubes come in various mesh sizes. A fine mesh catches more material and would be required to approach the EPA limit for suspended solids. A coarse mesh drains faster.

Estimated cost to dredge using a Geotube is \$8.40/cu yd

LAKE SUMMERSET NUMBERS

- 285 ACRE LAKE
- 40 FT. MAX DEPTH
- 4800 ACRE FEET VOLUME
- 825 ELEVATION ABOVE SEA LEVEL
- 1025 ELEVATION ABOVE SEA LEVEL OF HIGH POINT IN WATERSHED
- 8500 ACRE FEET ANNUAL FLOW THROUGH
- 75% RAIN RUNOFF
- 25% SPRING FLOW
- 6.4 MILES/4100 ACRE TOTAL WATERSHED
- 1600 ACRES IS OWNED OR CONTROLLED BY LSA
- 2500 ACRES OUTSIDE OUR CONTROL
- 2170 ACRE MAJOR WATERSHED OF SOUTH BRANCH OF OTTER CREEK
- 4300 TONS/4.4 ACRE FEET/YEAR OF SILT FROM MAJOR WATERSHED
- 3 DREDGING CYCLES, MID 70'S, 1988, 1992
- 100,000 PLUS CUBIC YARDS REMOVED
- TWO MILLION DOLLARS SPENT IN 2007 DOLLARS

CONTACTS

NRCS Ag. Office	Jim Ritterbush.	It is possible that we can get some funding.
Montgomery & Assoc	Cottage Grove, WI	Water management experts.
Press Rentals	Evans, GA 30809	Dino6
Fehr Graham	Freeport	Used by LS to prepare permit application.
Pirana	Albuquerque, NM	Mini dredges.