

THE LAKE SPRINGFIELD VLMP PROGRAM: WHERE DO OUR DATA GO?

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Certified Lake Manager



ILLINOIS VOLUNTEER LAKE MONITORING PROGRAM

The Illinois Volunteer Lake Monitoring Program (VLMP) was established in 1981 by the Illinois Environmental Protection Agency (IEPA) as a cost-effective method of gathering fundamental information on Illinois inland lakes. The VLMP utilizes funds provided by the federal Clean Water Act to achieve the following objectives:

- Increase citizen knowledge and awareness of the factors that affect lake quality and useability so they can better understand the lake/watershed eco-system and make informed decisions regarding lake use, protection and enhancement.
- Encourage development and implementation of sound lake protection and management plans to improve lake quality for current and future use.
- Encourage local involvement in problem solving by promoting local self-reliance and implementation through local resources, and to support these initiatives in lake protection/management and nonpoint source pollution control.
- Enlist and develop local "grass roots" support for environmental programs and foster cooperation among citizens, organizations and various units of government.
- Provide historic data to help document water quality impacts, support lake management decision-making, target resources to solve identified problems and trigger further investigations; as well as to evaluate the effectiveness of lake protection/management procedures implemented.

- Provide an initial screening tool for guiding the implementation of lake protection/restoration techniques and a framework for a technical assistance program for cooperative lake and watershed management projects.

After selecting a lake of their interest, volunteers are trained to measure water clarity using a Secchi disc. A Secchi disc is a weighted metal plate, eight inches in diameter, painted black and white in four alternate quadrants. The Secchi disc, attached to a calibrated rope, is lowered into the water. The depth at which the disc becomes no longer visible is then recorded.

Other data recorded by the volunteers includes field observations such as water color, suspended algae and sediment, aquatic weeds and odor. Weather conditions on the day of sampling as well as during the prior week are also recorded, along with recent lake management activities or other factors which could impact the lake. Volunteers are requested to monitor three or more sites on the lake a minimum of twice per month from May through October.

Year	Volunteers	Lakes
1981	141	87
1982	235	128
1983	206	126
1984	209	145
1985	183	137
1986	156	145
1987	204	150
1988	225	163
1989	225	160
1990	231	164

These figures represent an 84% increase in the number of lakes and a 60% increase in the number of volunteers involved.



VOLUNTEER QUOTES

"I enjoy being in the program. I'm the water superintendent for the city of Coulterville and I've learned quite a bit. This helps me in my work. You've got a good crowd of people involved here."

Jim Aitken
Coulterville, IL
Randolph Lake

"I think it's a good program. We have a 72 acre lake that was built back in the early 1900's. We use it for drinking water here and the study of it really helps us. It's really going to do us some good, because you've got to have a good lake for the drinking water. You're better off with a good lake and this program is going to help us in the future."

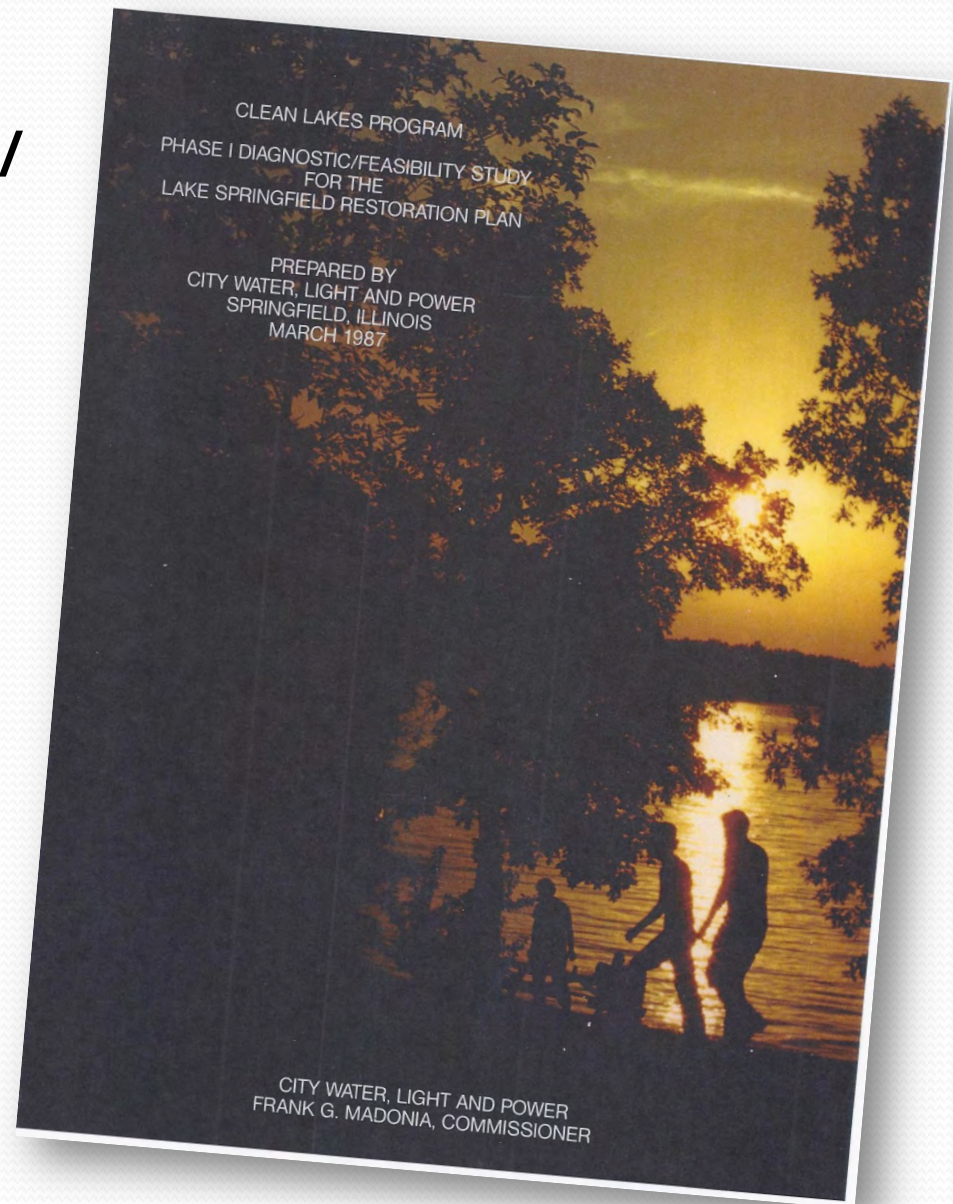
Jack Hendrick
Salem, IL
Salem City Reservoir



Lake Springfield Water Quality Monitoring

- Lake Data since 1971: Burns & McDonnell Lake Springfield Study
- 1975 Betz Environ Engineer Lake Springfield Study
- 1979- IEPA Ambient Lake Monitoring Program
- 1983- **VLMP**
- 1989 - Michelle Bodamer Nicol becomes VLMP
- 1994 - Secchi Dip-In

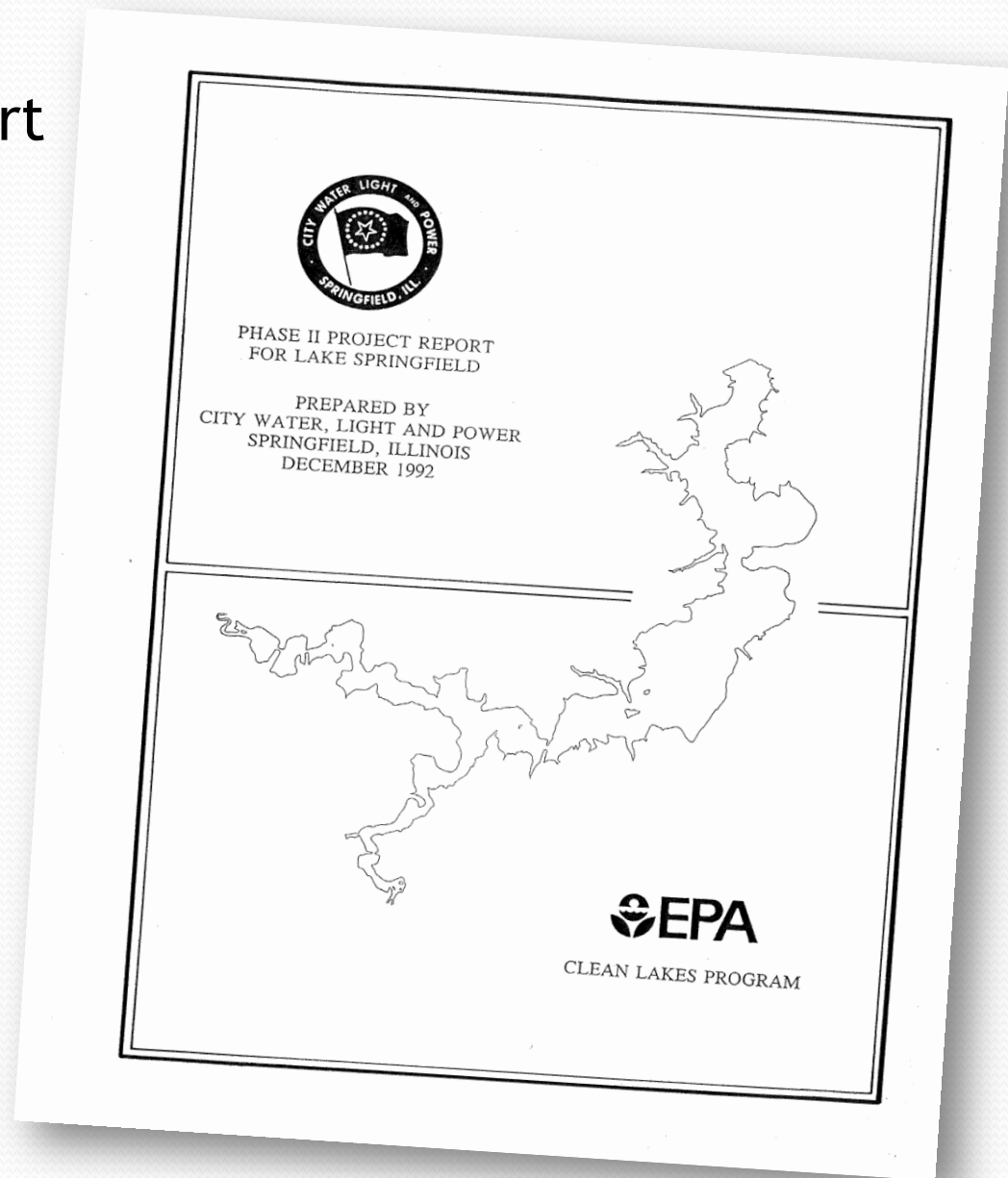
The 1987 Phase I Diagnostic/ Feasibility Study



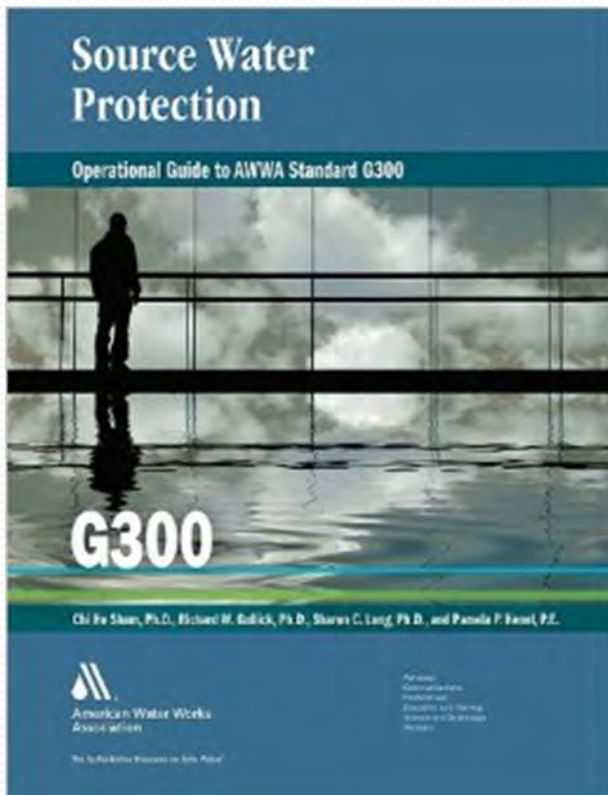
This study identified sedimentation, nutrients and shoreline erosion as major problems



1992 Phase II Project Report

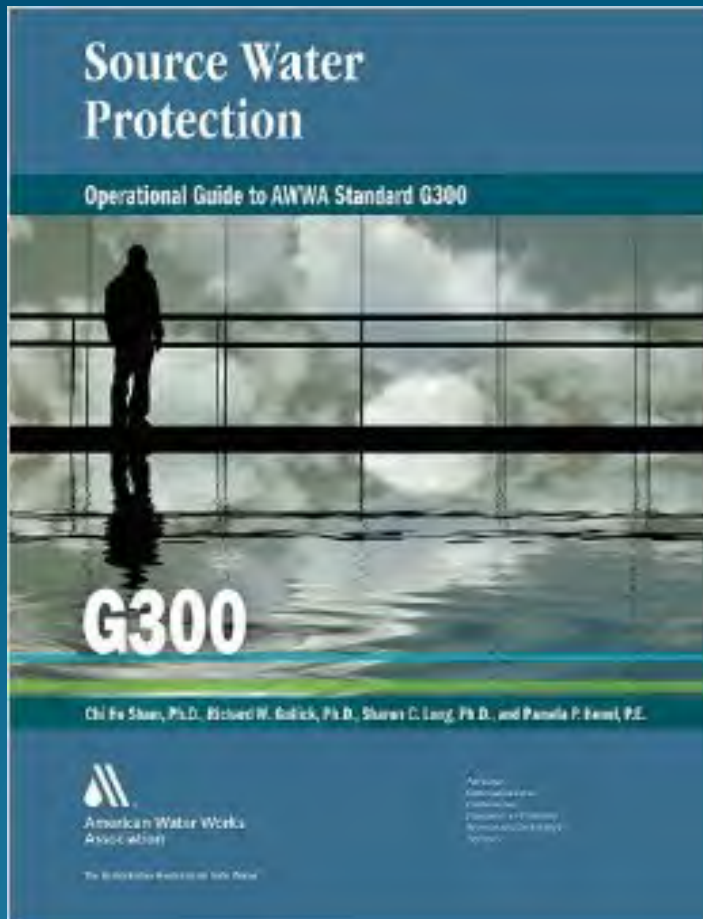


Lake Springfield Source Water Protection Plan



- Vision
- Characterization of Source Water
- Goals
- Action Plan
- Program Implementation
- Evaluation and Revisions

Lake Springfield Source Water Protection Plan



Vision

- 
- **Develop and Apply a Comprehensive Watershed-Based Action Plan for the Lake Springfield Watershed**



The Lake Springfield Watershed-Based Plan Contains

- Problem Statement, Goals, Objectives
- Identify and Assess Use Impairments
- Causes and Source of Impairments
- Site Specific and Watershed-Wide BMPs



2017 Lake Springfield Watershed-Based Plan

Watershed Characterization

74% cropland, 5% Forest, 4% Grassland, 11% HEL

Nutrient and Sediment Loading

Annual P load - 194,762 lbs or 1.15 lbs/ac

Annual N load - 2,281,826 lbs or 13.51 lbs/ac

Annual Sediment load - 153,892 tons or 0.92 tons/ac

Identify Sources and Quantities

Load Reductions and Best Management Practices

No-Till, Cover Crops, Filter Strips, Saturated Buffers, Wetlands,
Bioreactors, Grassed Waterways, Detention



No Till

- Recommended on 109,000 acres
- Annual N reduction = 599 lbs
- Annual P reduction = 50,000 lbs
- Annual Sediment reduction = 58.1 tons

Cover Crops

- Recommended on 14,000 acres
- Annual N reduction = 51,000 lbs
- Annual P reduction = 3,000 lbs
- Annual Sediment reduction = 2,700 tons

Filter Strips

- 324 ac recommended (440,200ft)
- Annual N reduction = 54,000 lbs
- Annual P reduction = 9,300 lbs
- Annual Sediment reduction = 9,700 tons

Saturated Buffer

- Recommended for 9,000 ac
- Annual N reduction = 51,000 lbs
- Annual P reduction = 3,000 lbs
- Annual Sediment reduction = 2,700 tons



Watershed-Based Plan

Final Draft is Under Review by IEPA

Stage 3 Draft Report For Public Review



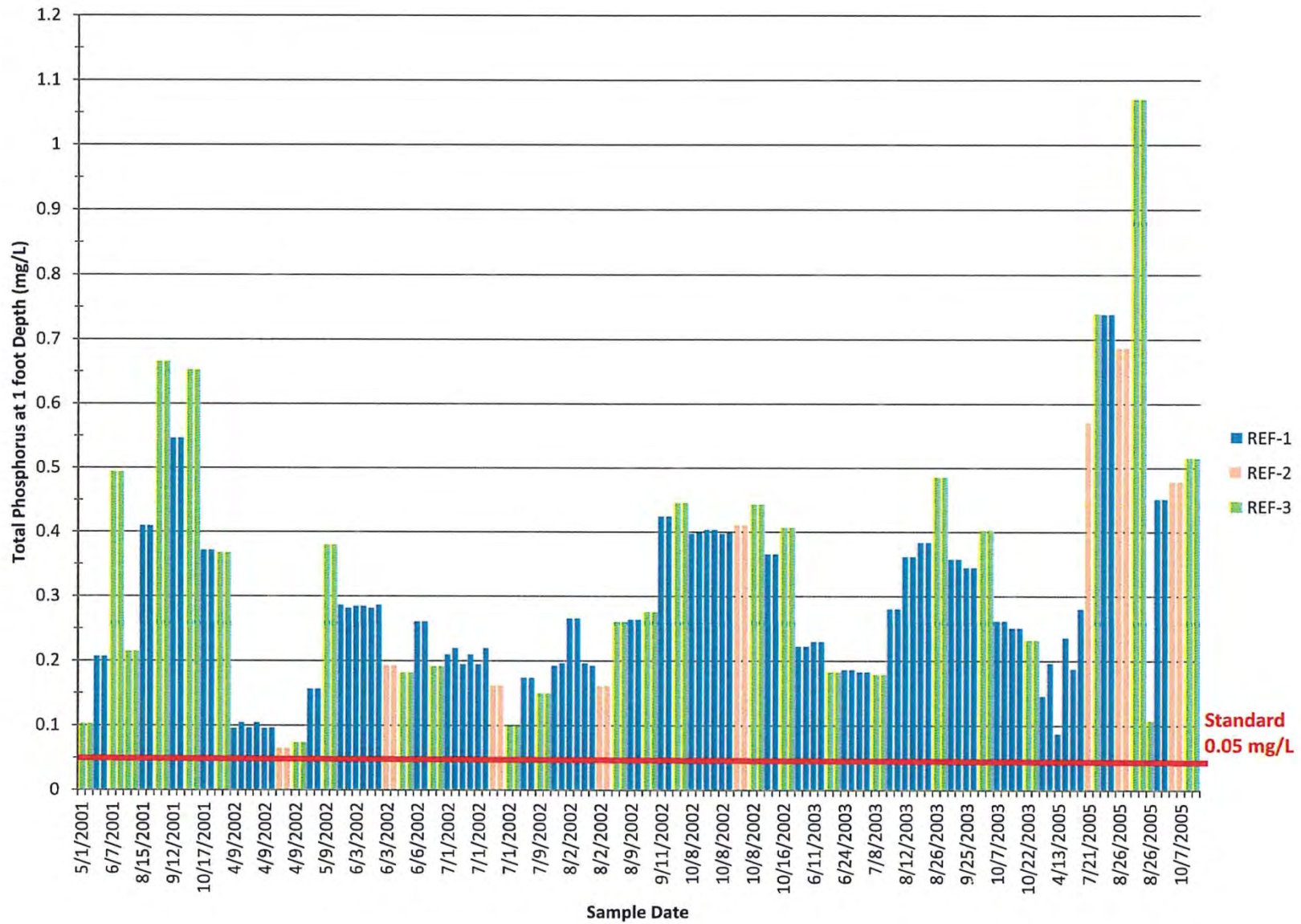


Figure 5-4
 Total Phosphorus at 1-Foot Depth
 Lake Springfield (REF)

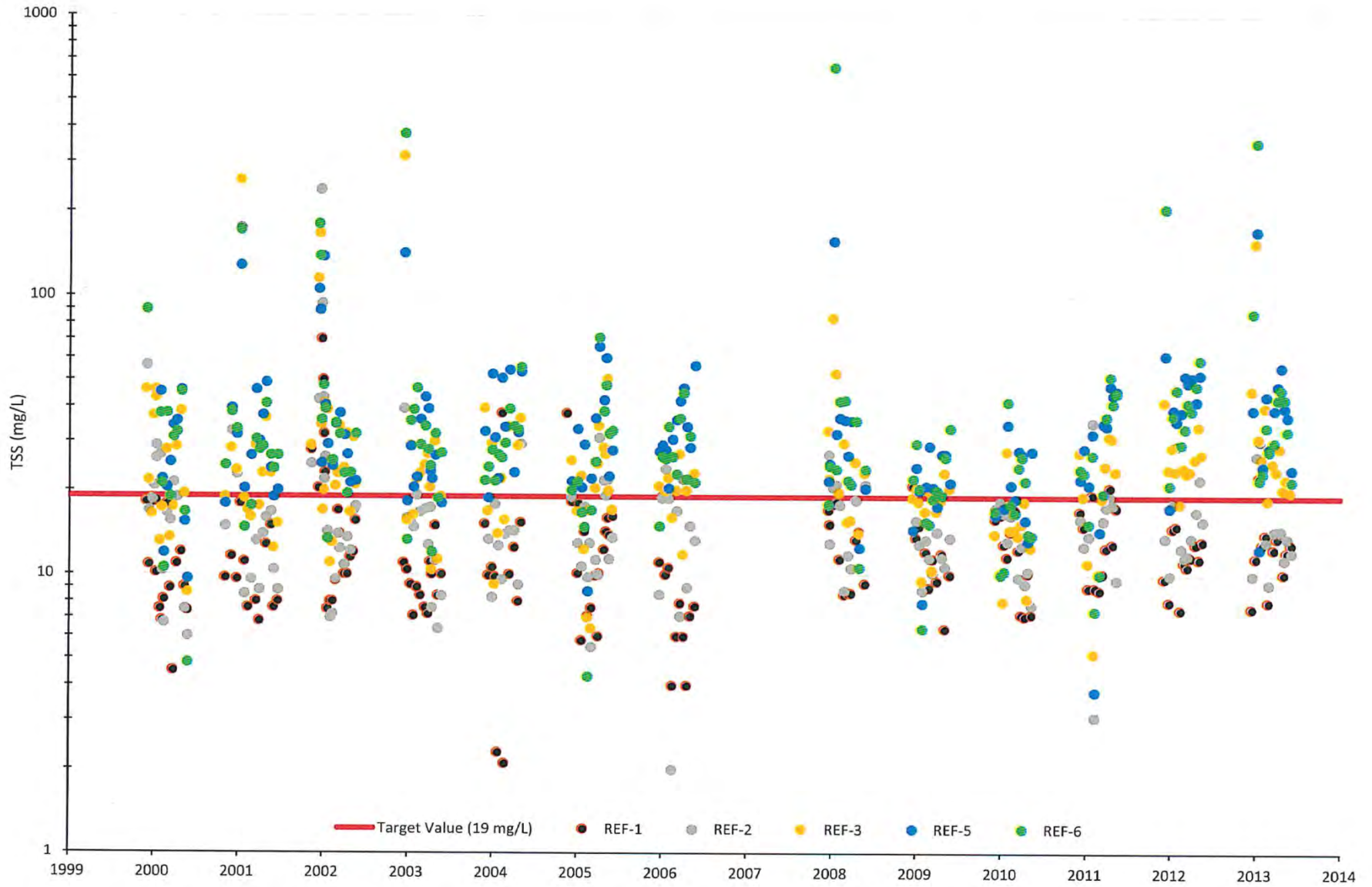


Figure 5-5
 Total Suspended Solids (TSS)
 Lake Springfield



REF -Lake Springfield

Phosphorus (Total)	TMDL	0.05 mg/L
TSS	LRS	19 mg/L
Aquatic Algae L TP ₂	TMDL for TP	0.05 mg/



IF INTERESTED IN JOINING VLMP:

Please contact:

Greg Ratliff, Statewide VLMP Coordinator
(217)782-3362

VLMP Website:

<http://www.epa.state.il.us/water/conservation/vlmp/index.html>



THANK YOU