



# Minnesota Pollution Control Agency

520 Lafayette Road  
St. Paul, MN 55155-4194

# Lake Arthur, St. Louis County

National Lake Assessment Project (NLAP)

Sample Date: July 17, 2007

**Minnesota Lake ID:** 69-0154

**Area:** 76 acres

**Watershed Area:** 18,038 acres

**Ecoregion:** Northern Lakes and Forests (NLF)

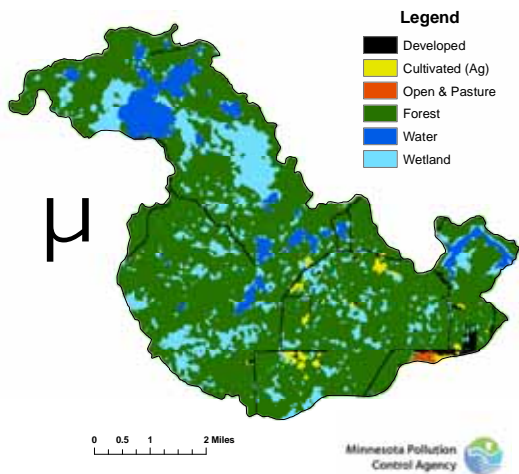
**NLAP ID:** 1342

**Maximum Depth:** 19 ft

**Mean Depth:** 10 ft



Lake Arthur Land Use  
St. Louis County



Land Use	Lake Arthur Land Use %	NLF Typical Land Use %
Developed	2	0 – 7
Cultivated (Ag)	1	<1
Pasture & Open	<1	0 – 6
Forest	74	54 – 87
Water & Wetland	23	14 – 31
Feedlots (#)	0	

Minnesota 2000 Level 1 Landsat Landcover Classification.img University of Minnesota Remote & Geospatial Analysis Lab

**Lake Arthur 2007 as compared to typical range for NLF ecoregion reference lakes. Single NLAP visit based on U.S. Environmental Protection Agency protocol as compared to typical range for summer-means.**

Parameter	Richey Lake	NLF
Number of reference lakes	1	32
Total Phosphorus (µg/L)	12	14 – 27
Chlorophyll-a (µg/L)		4 – 10
Secchi Disk (feet)	4.9	8 -15
(meters)	1.5	2.4 – 4.6
Total Kjeldahl Nitrogen (mg/L)	0.3	0.4 – 0.75
Alkalinity (mg/L)		40 – 140
Color (Pt-Co U)	82	10 – 35
pH (SU)	7.5	7.2 – 8.3
Chloride (mg/L)	0.2	0.6 – 1.2
Total Suspended Solids (mg/L)		<1 – 2
Total Suspended Inorganic Solids (mg/L)		<1 - 2
Conductivity (umhos/cm)	31	50 – 250
TN:TP ratio	23:1	25:1 - 35:1
Microcystin(µg/L)	Near Shore	<10 Low Risk
WHO risk Category*	Index Site	10-20 Moderate Risk
	<0.15	20- 200 High Risk

\* Guidelines for safe recreational water environments (World Health Organization, 2003)

µg/L = micrograms per liter

mg/L = milligrams per liter

umhos/cm = micromhos per centimeter

Pt-Co-U = Platinum Cobalt Units

SU = Standard Units

**Mixing Status: mixed with no temperature layer (polymictic)**

**Temperature and Dissolved Oxygen Profile for Arthur Lake. July 7, 2007.  
Temp. (C) and DO (mg/L)**

