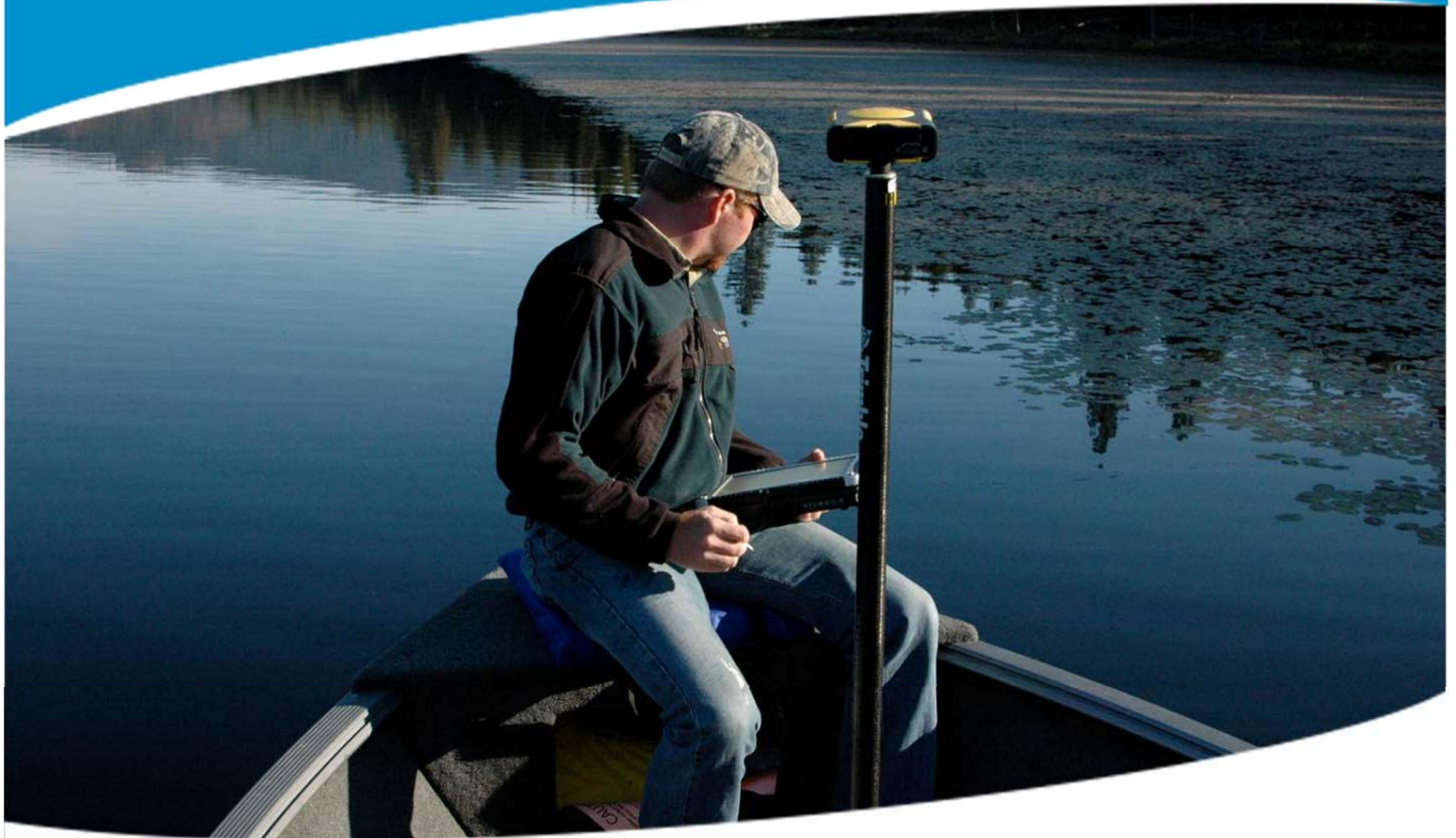


Spring Valley Lake Fall 2016 Baseline Data Collection



Prepared for
Spring Valley Lake Association

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Introduction

Spring Valley Lake Association is in the sixth year of working under a water clarity improvement program and has requested Aquatechnex to perform a number of monitoring tasks to support this work. In continuation of previous mapping projects performed at Spring Valley Lake, a hydroacoustic mapping event was performed on Nov 9th, 2016. In addition, two water sample was analyzed for a number of water quality parameters and algae species identification. This report will summarize these findings.

Hydro-acoustic Mapping

AquaTechnex mobilized a hydro-acoustic mapping vessel to the lake on Nov 9th, 2016 to collect data on the potential presence and distribution of aquatic plant growth in the lake. In the previous spring mapping event, very minimal amounts of aquatic weeds were detected. The mapping vessel traveled across the lake at regular intervals providing complete coverage of the water body. The sensing equipment collects a GPS point linked to hydro-acoustic soundings and this data is processed using algorithms to map bathymetry, aquatic plant bio-volume and sediment hardness. The resulting maps are presented in the following pages.



This image shows the current bathymetry of Spring Valley Lake. Almost no change was detected since the previous mapping earlier this spring.



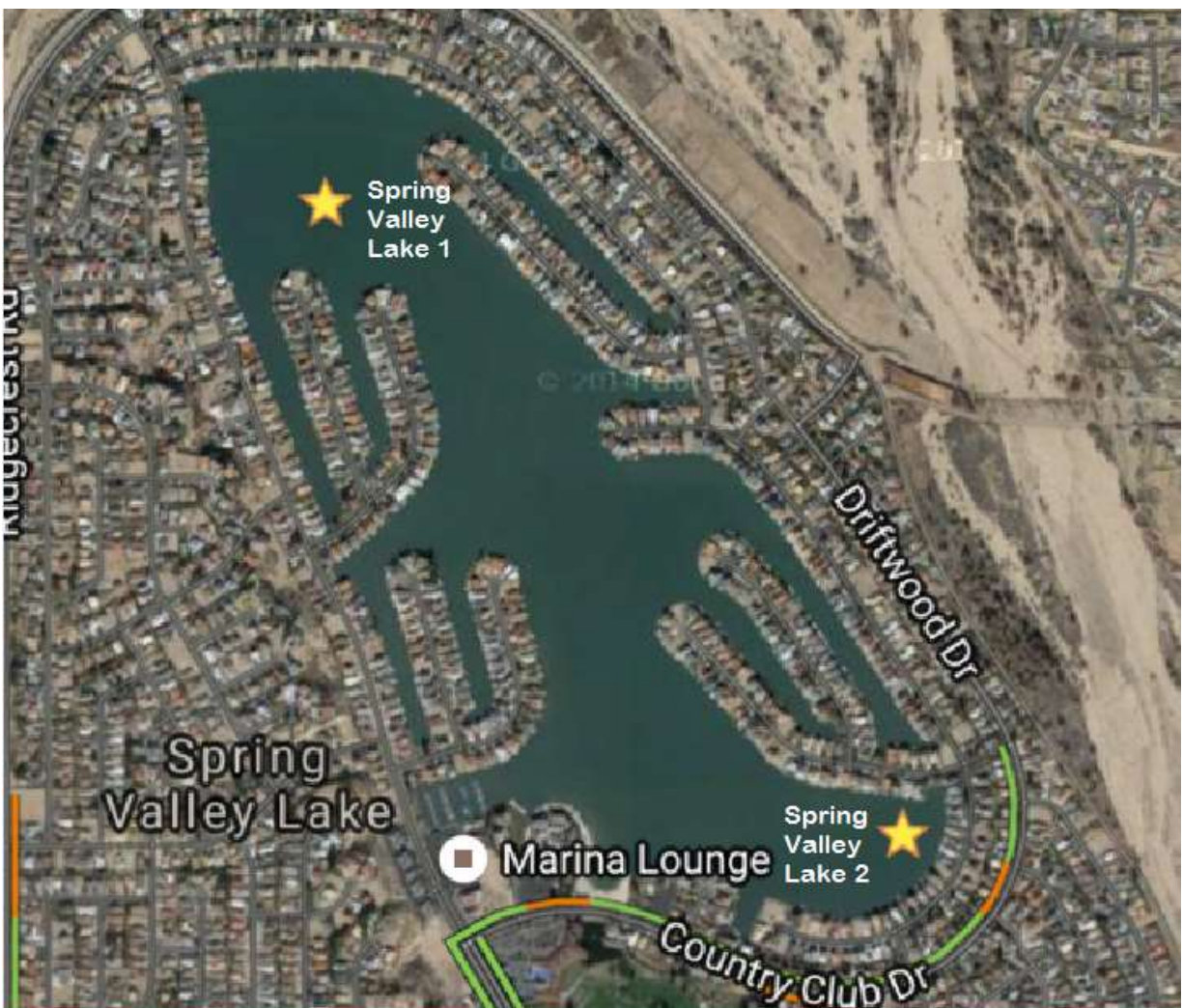
This map shows the current bottom hardness present in the lake. The legend bar on the right shows the graduated scale.

At this point in the Fall of 2016, the aquatic plant coverage in Spring Valley Lake is very low. Most of the Plant growth was detected in the back of the finger between Harbor Drive and Lakeview Drive. There were a few other fingers with very minimal plant growth. The past few years have shown this type of sparse growth pattern. This pattern is not unusual with Spring Valley Lake. Water clarity can limit light penetration into the lake bottom and plants have a hard time establishing.

Water Quality Data

Two water samples were collected around 1PM on 11/9/16. Samples were collected in the North and South portions of the lake indicated on the map below. The samples were analyzed for a variety of water quality data and algae identification. Below is a summarization of the data.

There was little to no change in the water samples taken earlier this Spring to the samples taken in Fall. Both samples taken this fall showed very similar results. Spring valley lake exhibits a good level of clarity, which is measured by turbidity. Chlorophyll *a* has been low as well, indicating a low overall algal composition. Phosphorous levels are still in the eutrophic range. Free Reactive Phosphorous has increased from past year in both samples. We would have thought the phosphorus levels would have been down after the Spring Alum treatment.



Above: map showing sample locations and sample name

