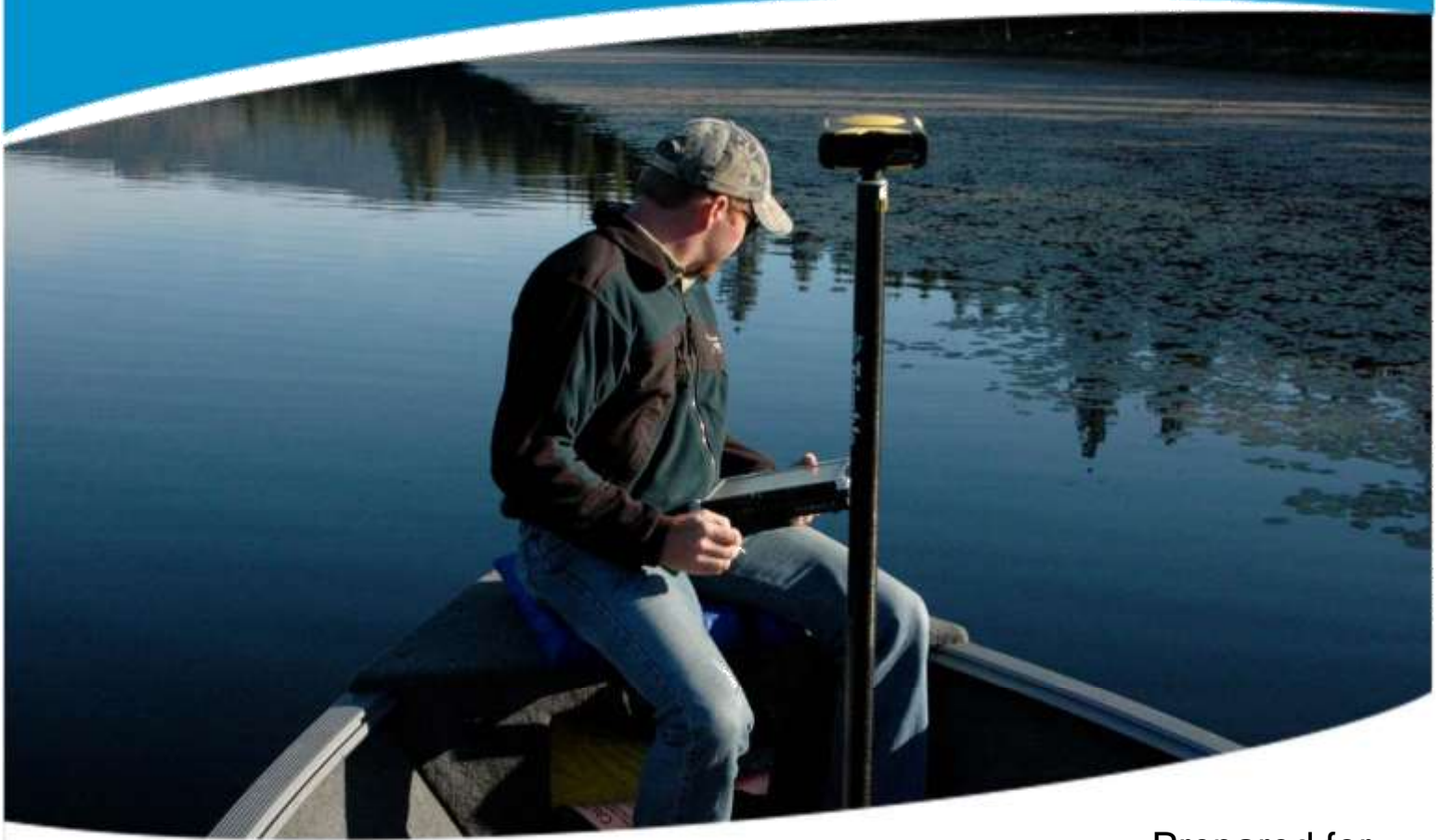




Spring Valley Lake Fall 2014 Baseline Data Collection



Prepared for
Spring Valley Lake Association

AquaTechnex,
LLC

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Headquarters
Bellingham, WA 98228
360-527-1271

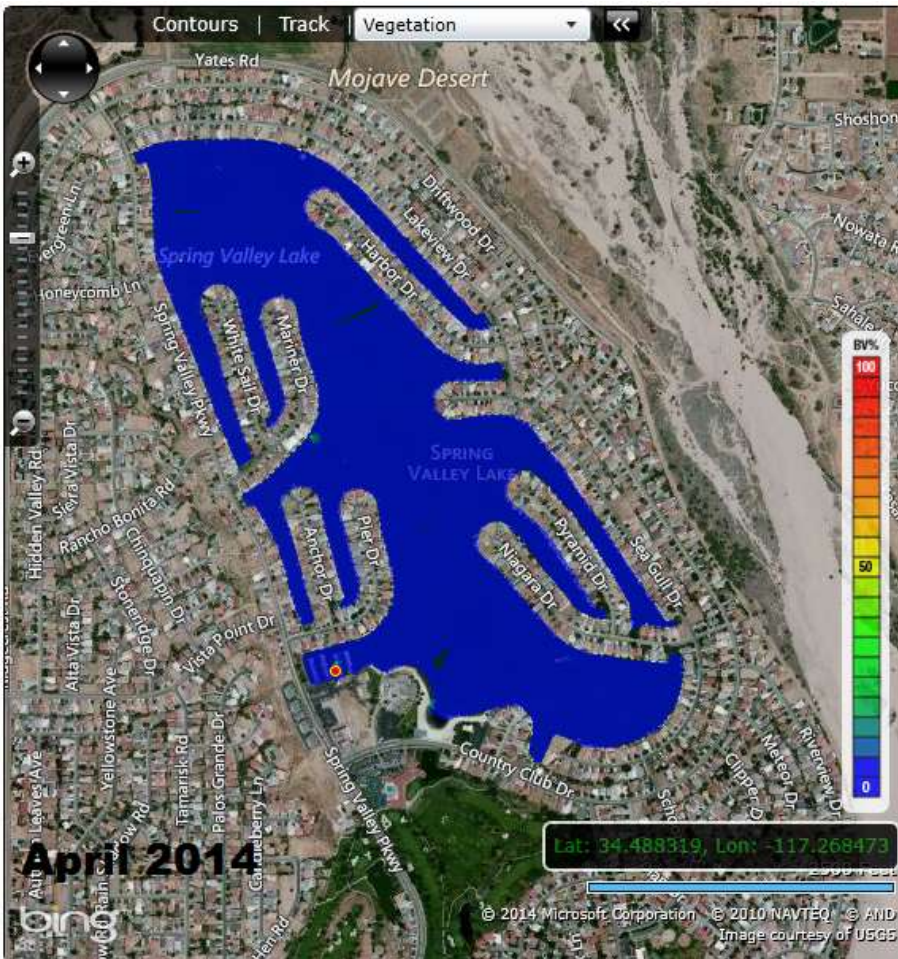
Regional Office
Santa Ana, CA 92705
760-272-5842

Introduction

Spring Valley Lake Association is in the fourth year of working under a water clarity improvement program and has requested we perform a number of monitoring tasks to support this work. After baseline data was collected in April 2014, another subsequent data collection was performed in Oct 18, 2014. The objective was to map areas of aquatic plant coverage as well as sampling water for algae identification and enumeration. This report will summarize these findings.

Hydro-Acoustic Mapping

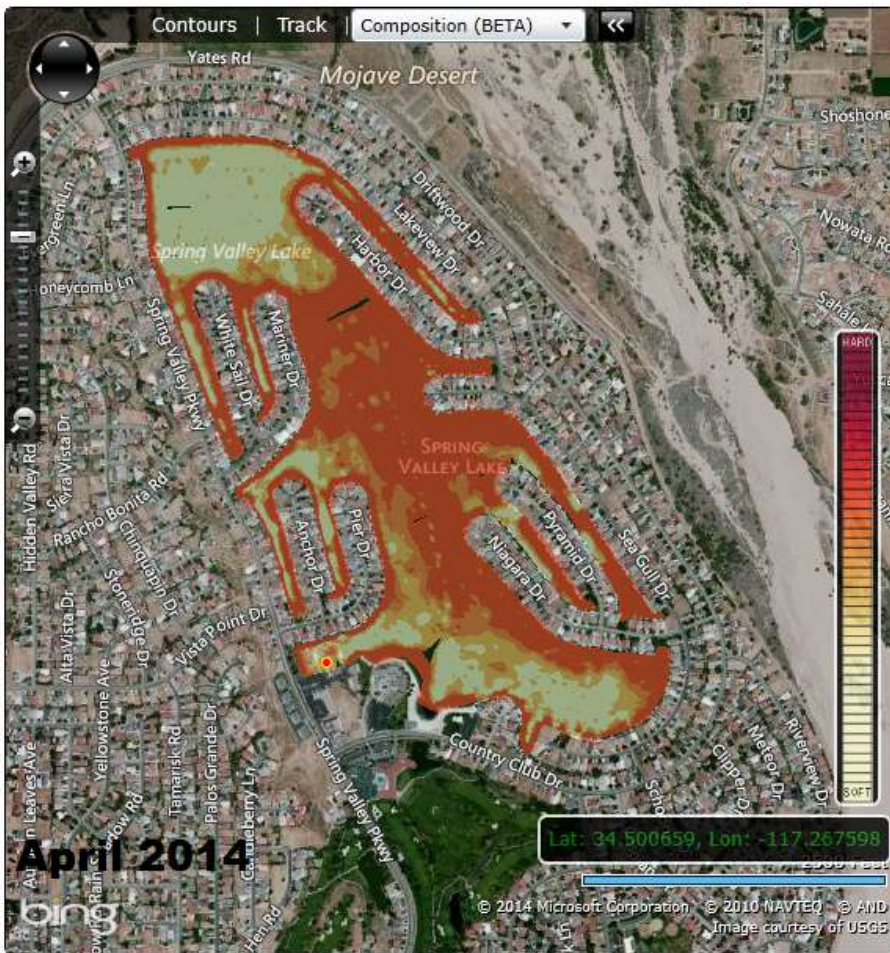
AquaTechnex mobilized a hydro-acoustic mapping vessel to the lake on October to collect data on the potential presence and distribution of aquatic plant growth in the lake. The mapping vessel traveled survey transects across the lake at regular intervals providing near-complete coverage of the water 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 produced below, with this previous year's result for side by side comparison.



Vegetation

At the time the hydro-acoustic mapping was performed, there was light coverage throughout Spring Valley Lake. Nearly all plant growth is observed near the shoreline, with the densest areas located on the North and South Shores. The density of vegetation in the fingers varied.

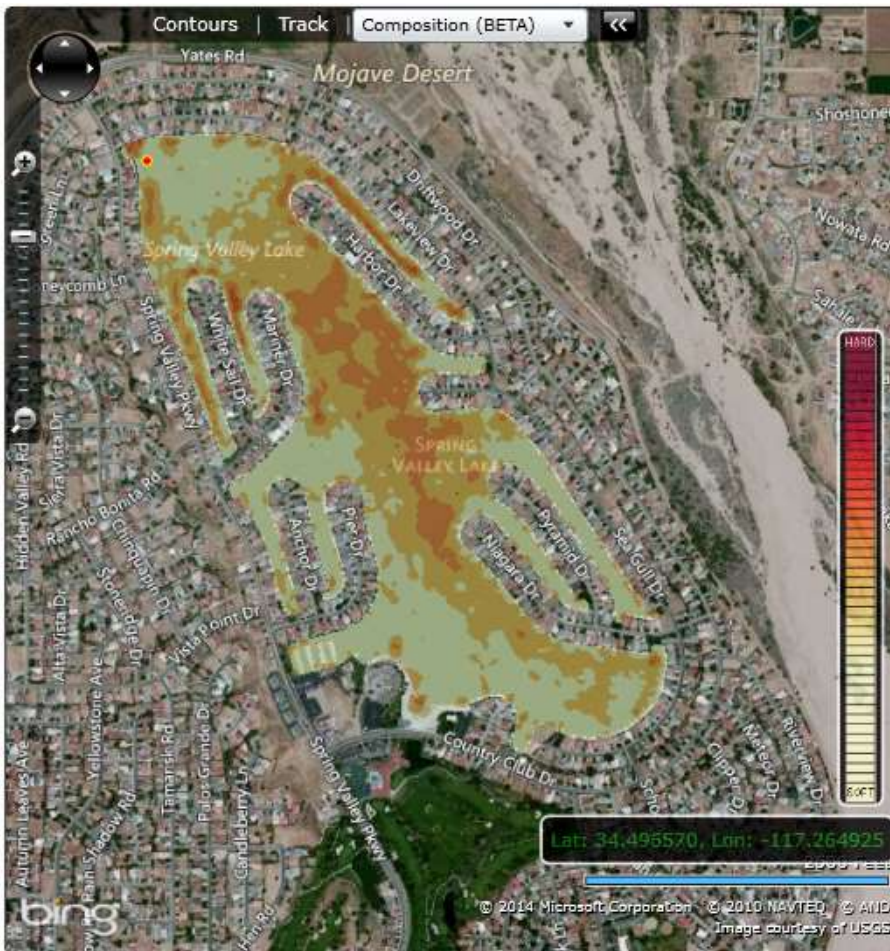




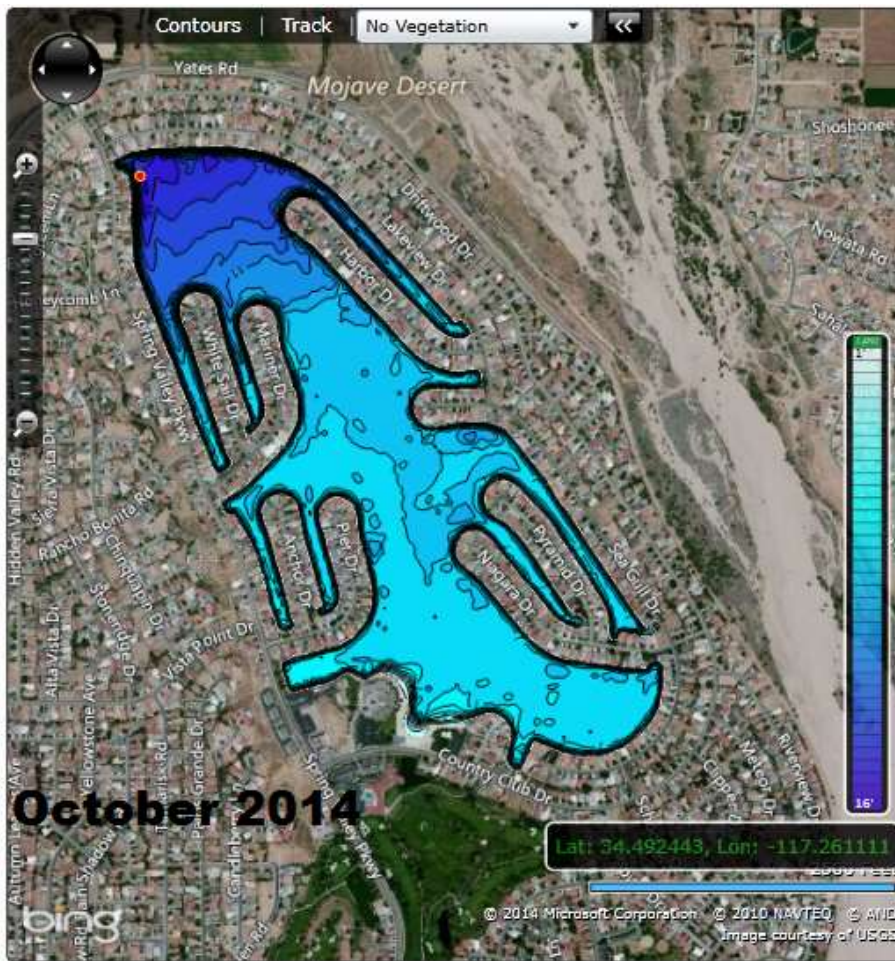
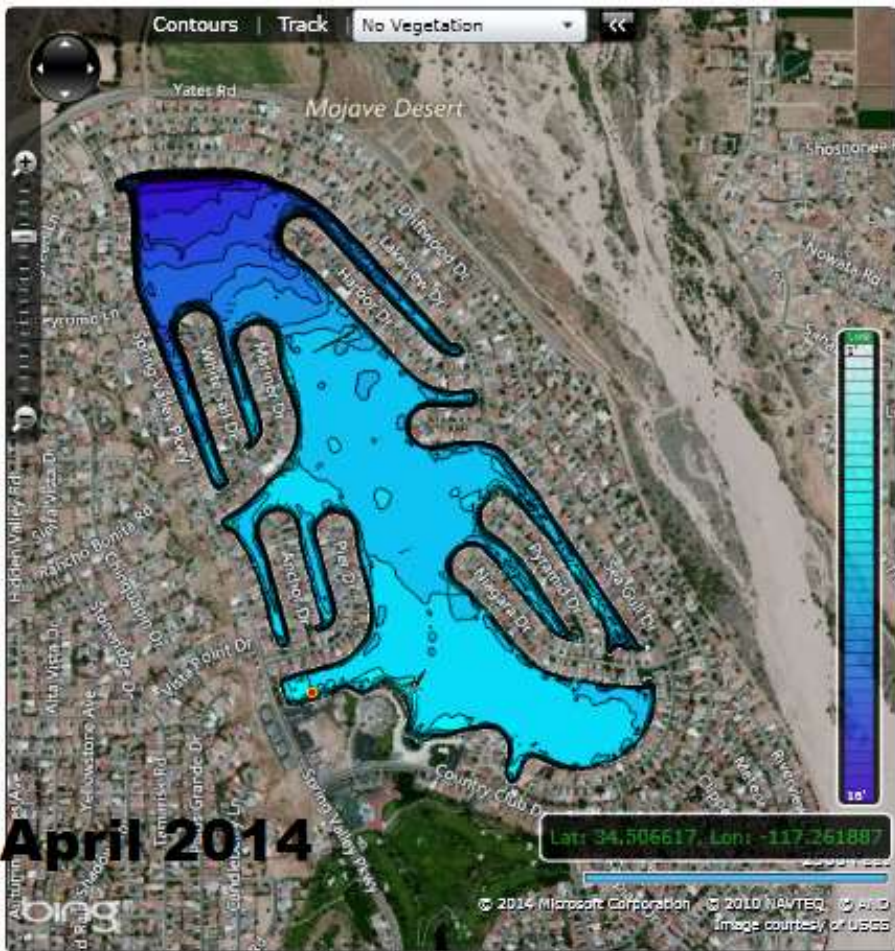
Hardness

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

As you can see, there appears to be differences between the April and October. Those differences happened because we replaced our old transducer with a newer model in October, which may have been calibrated differently.



Regardless, the patterns remain the same. In the Northwest section of the lake, the bottom is softer, in the middle, the sediment is generally harder, and in the southern portion, the sediment is softer on the southern shore. While quantitative output is different, the qualitative output shows the same general trends throughout different regions of this lake.



Contour

Between the two mapping events, we can see that sedimentation has occurred. In the middle section, you can see the deposition of sediment spreading from the east towards the center. In the north basin, slight changes have also been observed.

October 2014 Vegetative Map



SeSCRIPT Analysis Report: *Spring Valley Lake*

Company: AquaTechnex, LLC

Project Name: Spring Valley Lake

Address: P.O. Box 30824, Bellingham, WA 98228

Surface Area: 350 acres

Contact Person: Benjamin Chen

Average depth: 8.5 feet

Phone: 760.272.5842

Date Sample Received: 10/23/14

Email: ben@aquatechnex.com

SeSCRIPT Analysis Performed: Algae Analysis

Algae ID Results Spring Valley Lake

Identification	Classification	Description	Density (cells/mL)
<i>Pediastrum</i> sp. (low density)	Chlorophyta- Green algae	Colonial, planktonic	480
<i>Didymocystis</i> sp. (low density)	Chlorophyta- Green algae	Colonial, planktonic	440
<i>Oscillatoria</i> sp. (low density)	Cyanophyta- Blue-green algae	Filamentous, planktonic, potential toxin/ taste and odor producer	320
<i>Coelastrum</i> sp. (low density)	Chlorophyta- Green algae	Colonial, planktonic	280

Other algae in the sample, at lower densities, include: *Cosmarium*, *Tetraspora*, *Staurastrum*, *Closterium*, *Scenedesmus*, *Monoraphidium*, *Oocystis*, *Elakatothrix* (Chlorophyta); *Aulacoseira*, *Synedra*, *Fragilaria*, *Gomphonema*, *Cyclotella*, *Stephanodiscus* (Bacillariophyta); *Eulgena* (Euglenophyta)

Algae Pictures

