

Date: May 26, 2011

To: Upper South Long Lake Association  
Dan Martonik  
9999 Leisure Lane  
Brainerd, MN 56401

Subject: May 25, 2011 Aerial Curley Leaf Pondweed Detection Overflight

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## **Introduction**

AWRL conducted a detection overflight of Upper South Long Lake on May 25, 2011. This flight was done to detect possible infestation areas of the invasive aquatic plant species Curly-leaf Pondweed (*Potamogeton crispus*).

The following data collection methods used were:

1. Vertical digital photography with an 8.0 mega pixel camera system,
2. Vertical hyperspectral videography

The digital flight videos were transferred to still images for the report. The raw image data was also archived on CD. A special computer software program was used to replay and resize the flight data.

## **Flight Information**

**Date:** May 25, 2011

**Time:** 9:00 AM

**Air Temperature:** 52.0 °F

**Dew Point:** 37.9 °F

**Humidity:** 59%

**Visibility:** 10 miles

**Wind Speed/Direction:** 10.4 mph, NE

**Sky Conditions:** Clear to Scattered

## **Analysis Criteria**

The recorded flight data and high-resolution photographs for each lake were processed, analyzed, and the results compiled into this report. The following report format contains:

1. A visible digital image of the area of possible curly leaf pond weed infestation
2. The corresponding hyperspectral images captured from the video
3. A summary table containing all site numbers, lake names, lat/long, and estimated area.
4. An overall map showing detected locations.

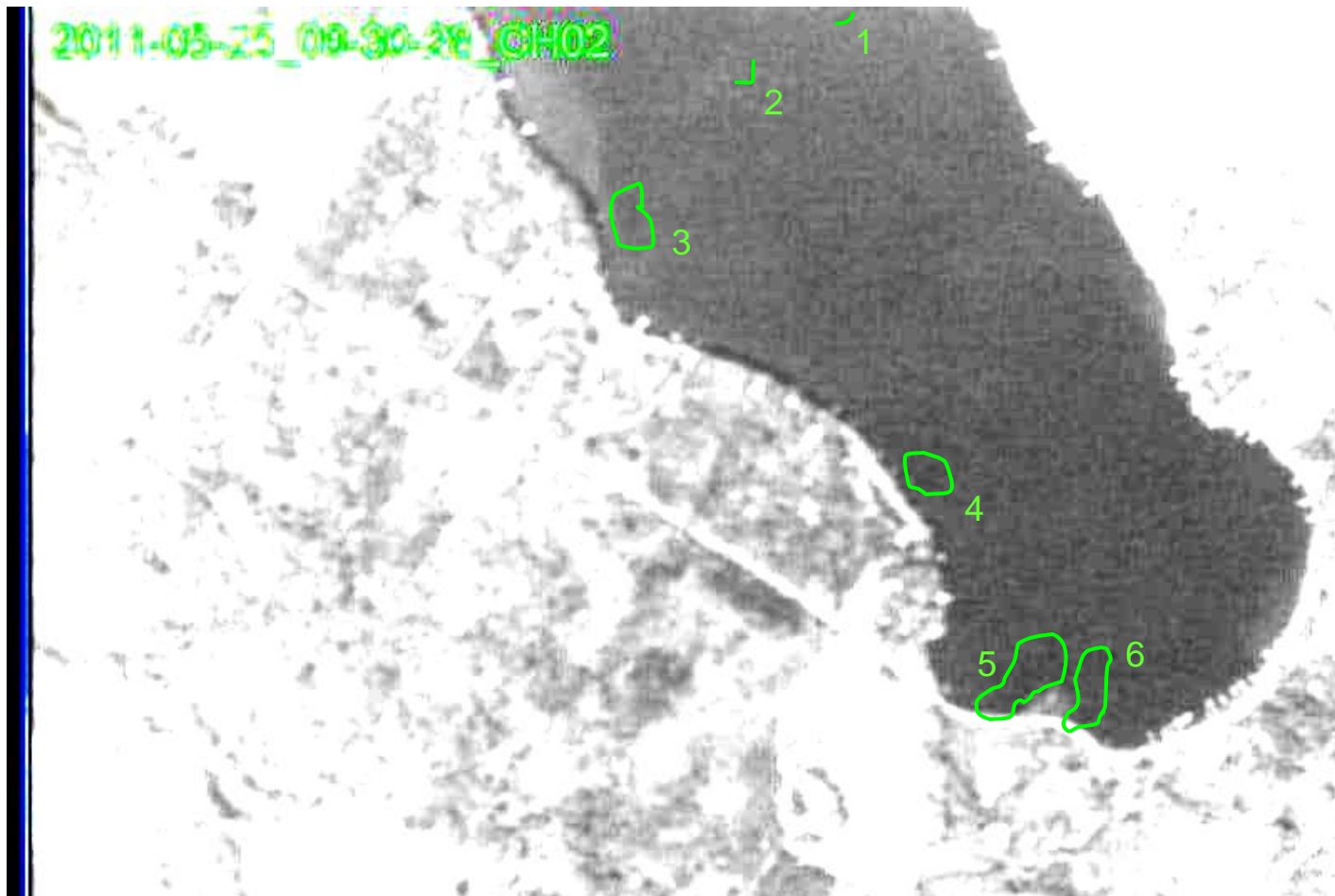
**DATA**



Visible



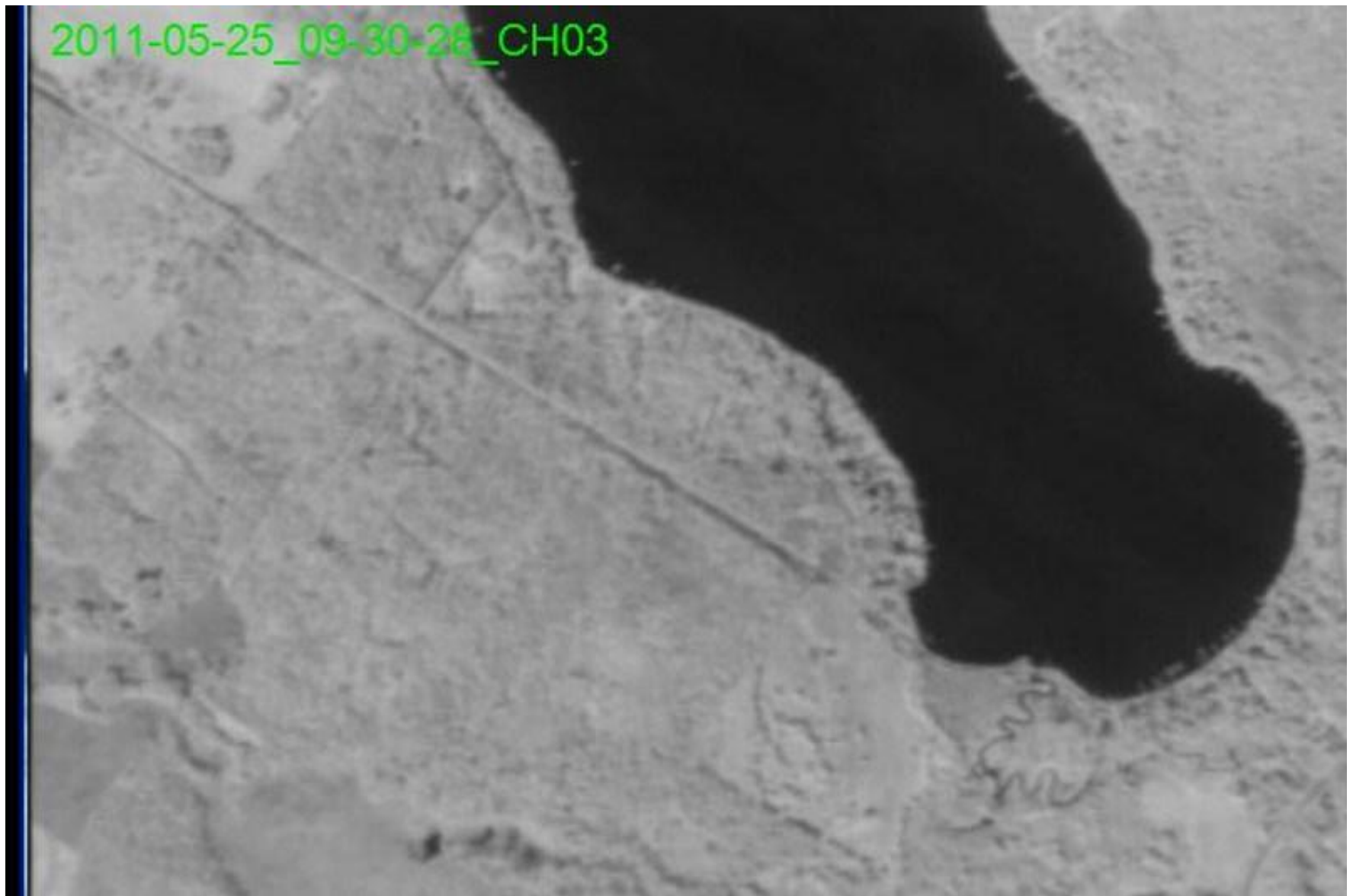
Thermal



Chlorophyll a

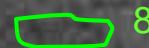


2011-05-25\_09-30-28\_CH03



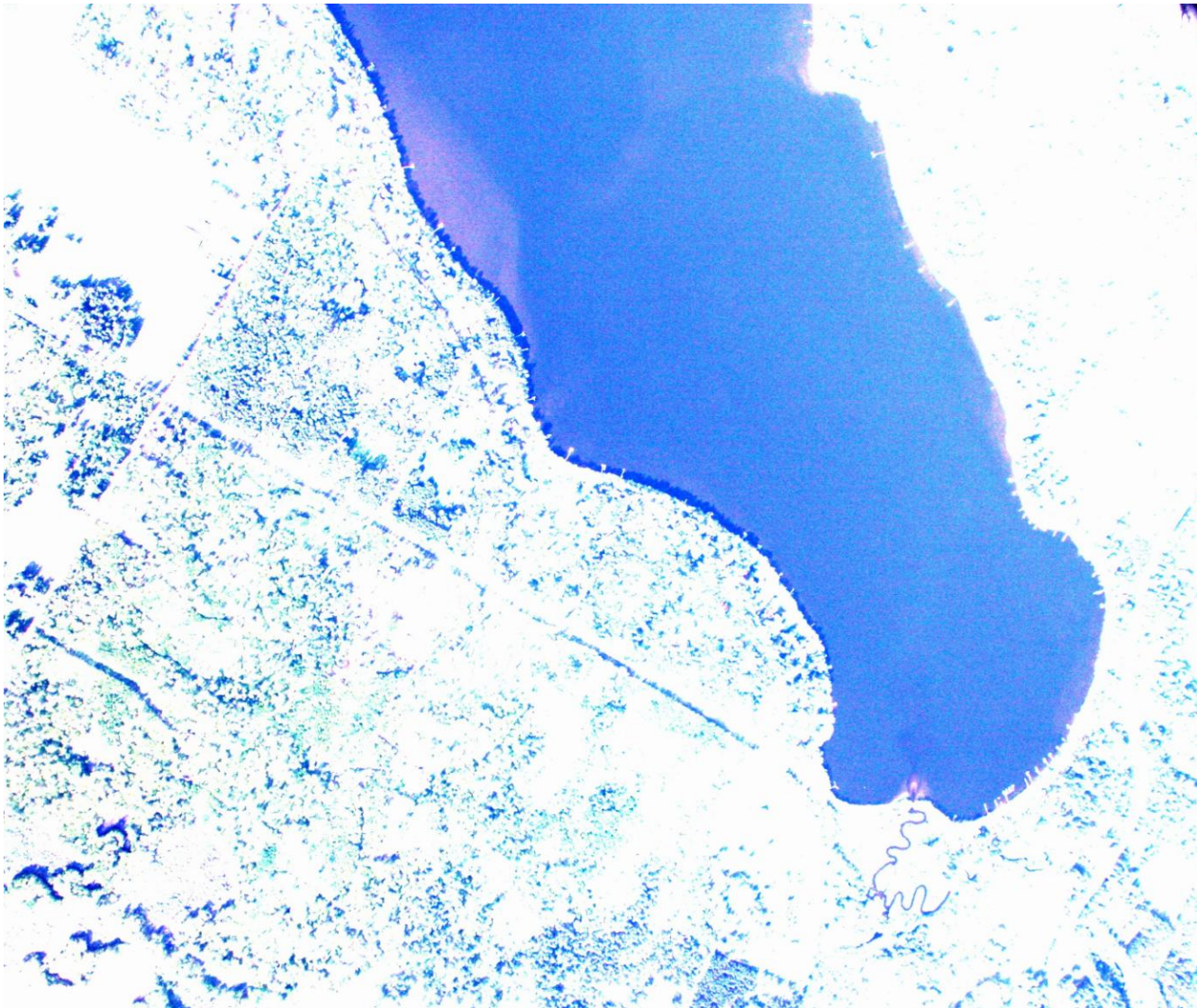
Water Absorbing

2011-05-25\_09-30-28\_CH04



Water Penetrating





Multi Spectral



Visible



2011-05-25\_09-30-35\_CH01



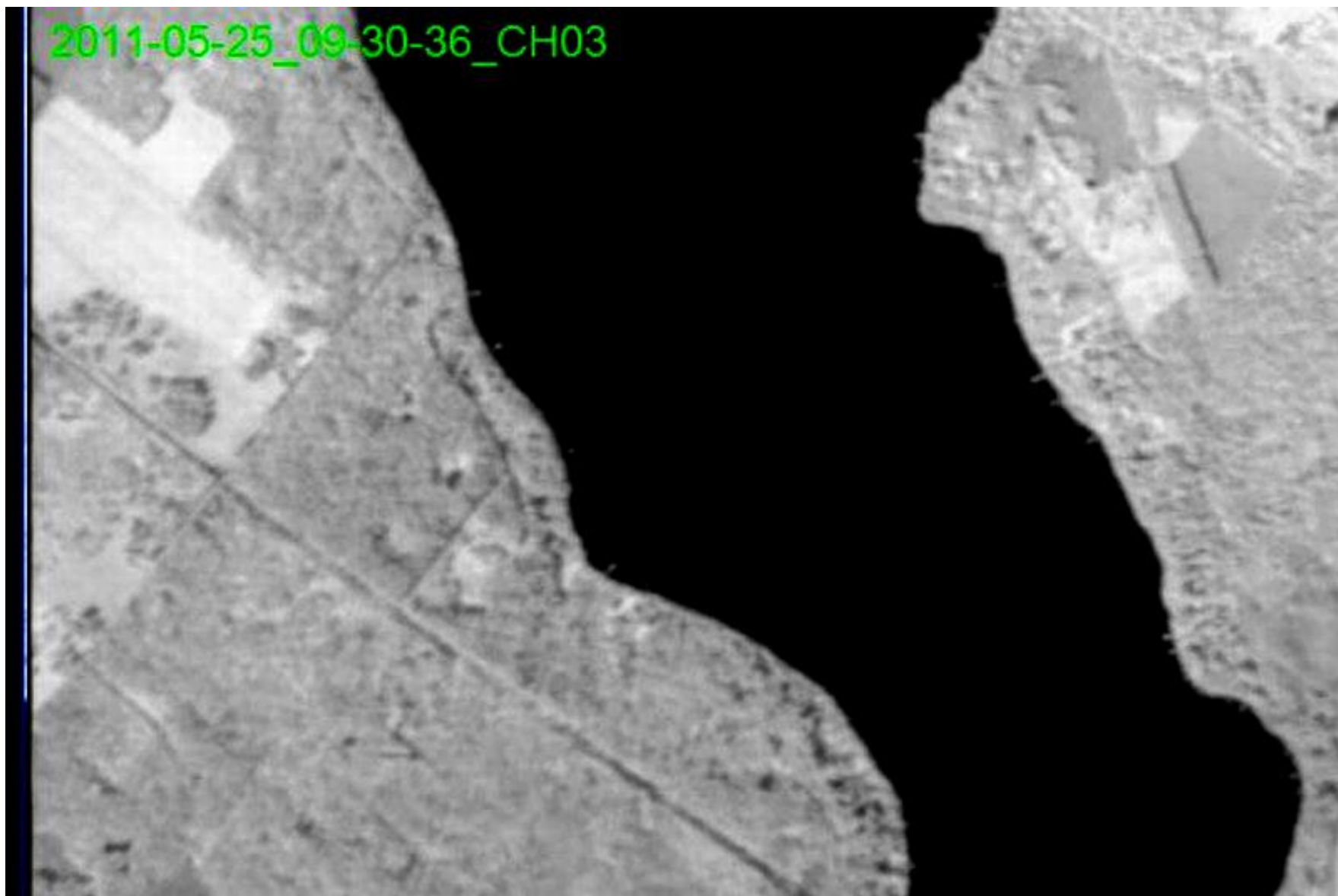
Thermal

2011-05-25\_09-30-36\_CH02

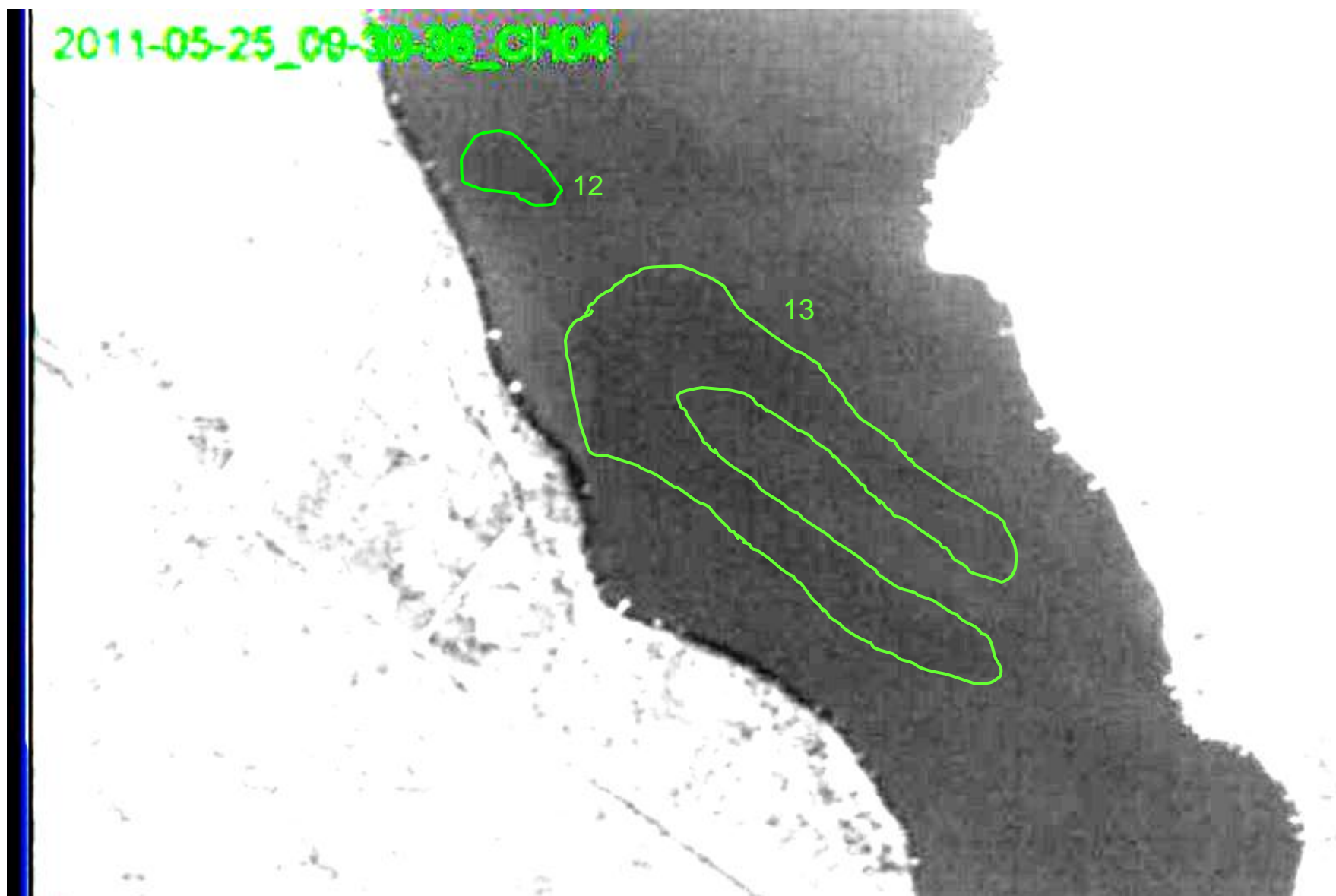
11

Chlorophyll a

2011-05-25\_09-30-36\_CH03

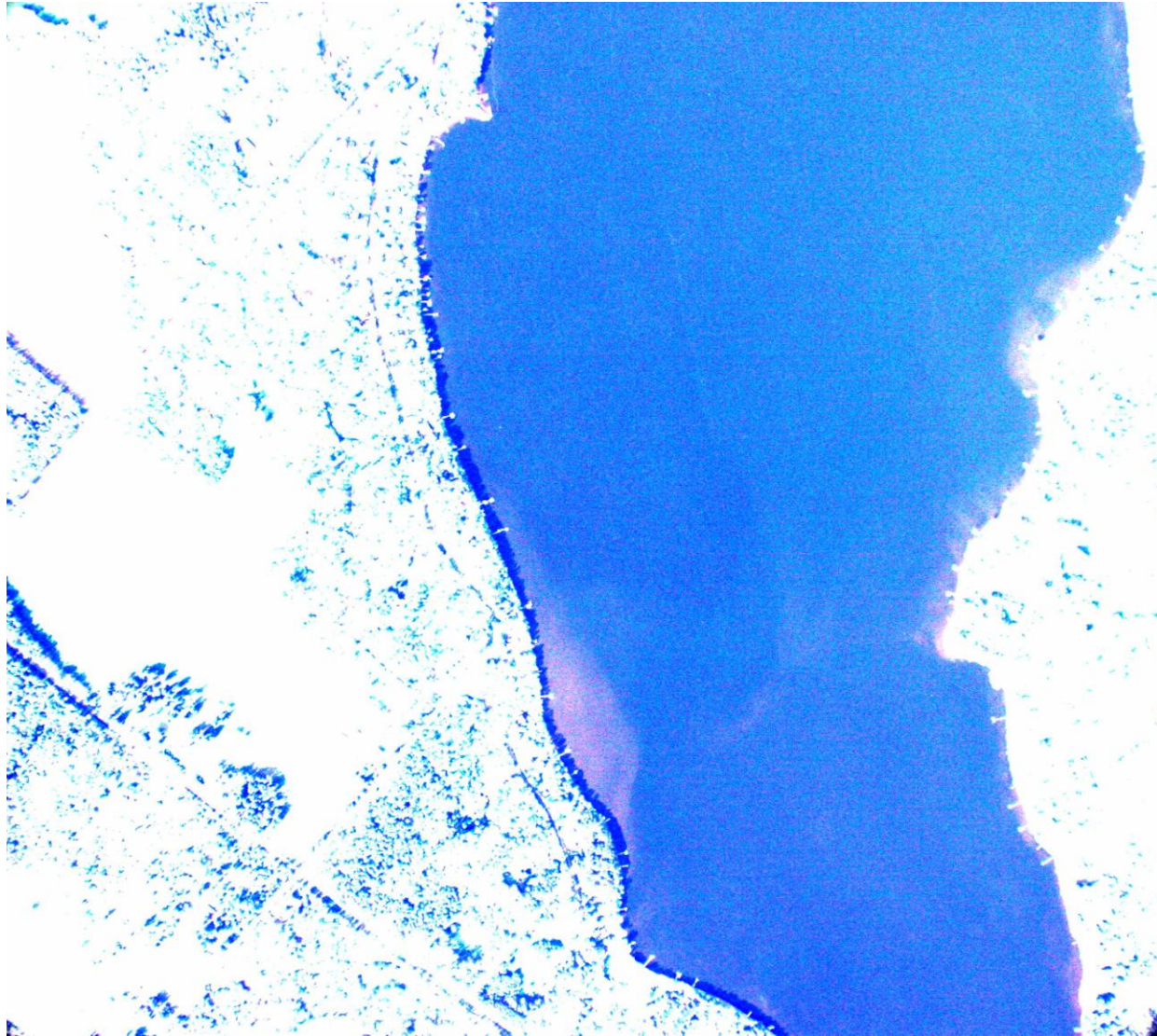


Water Absorbing



Water Penetrating





Multi Spectral

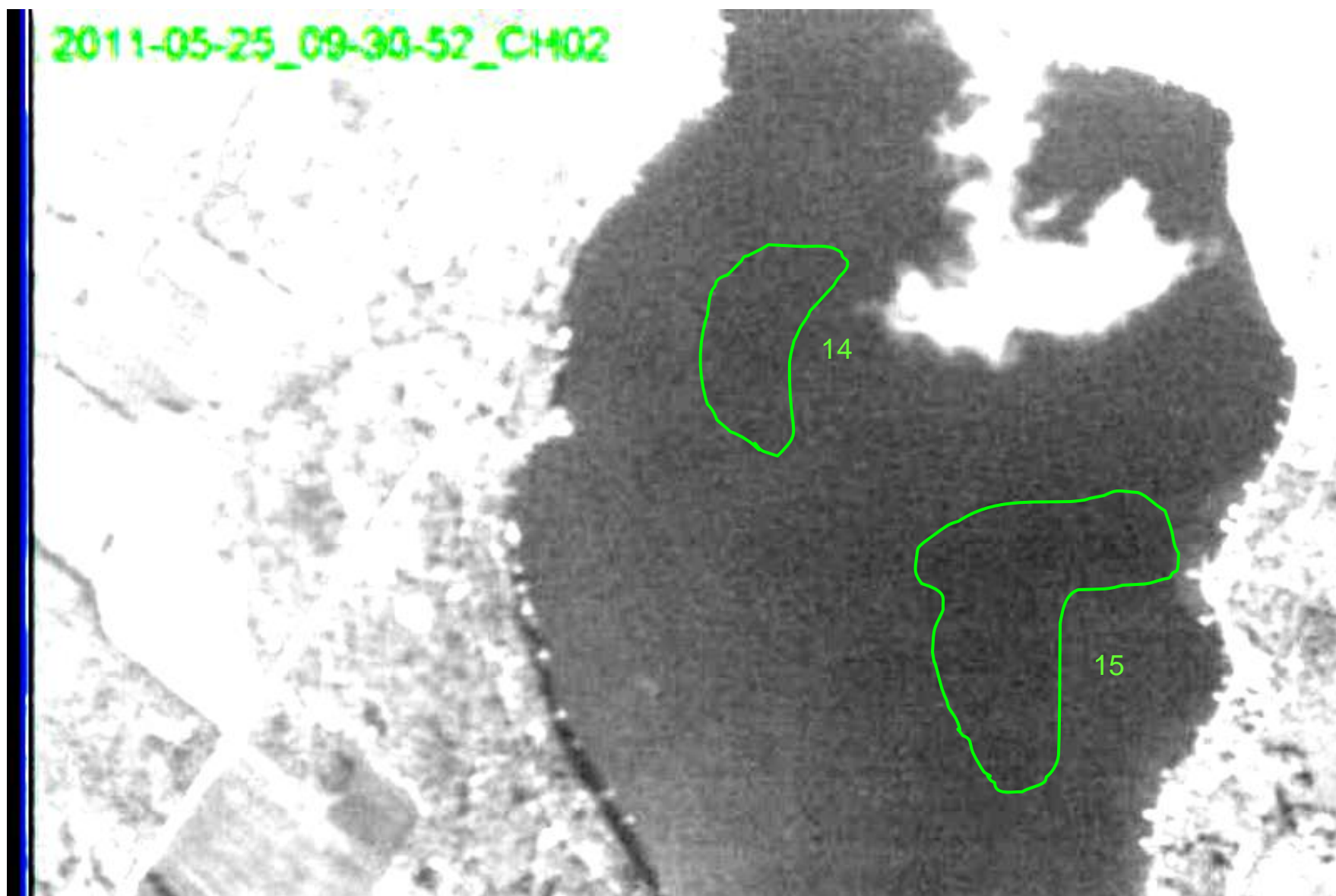


Visible

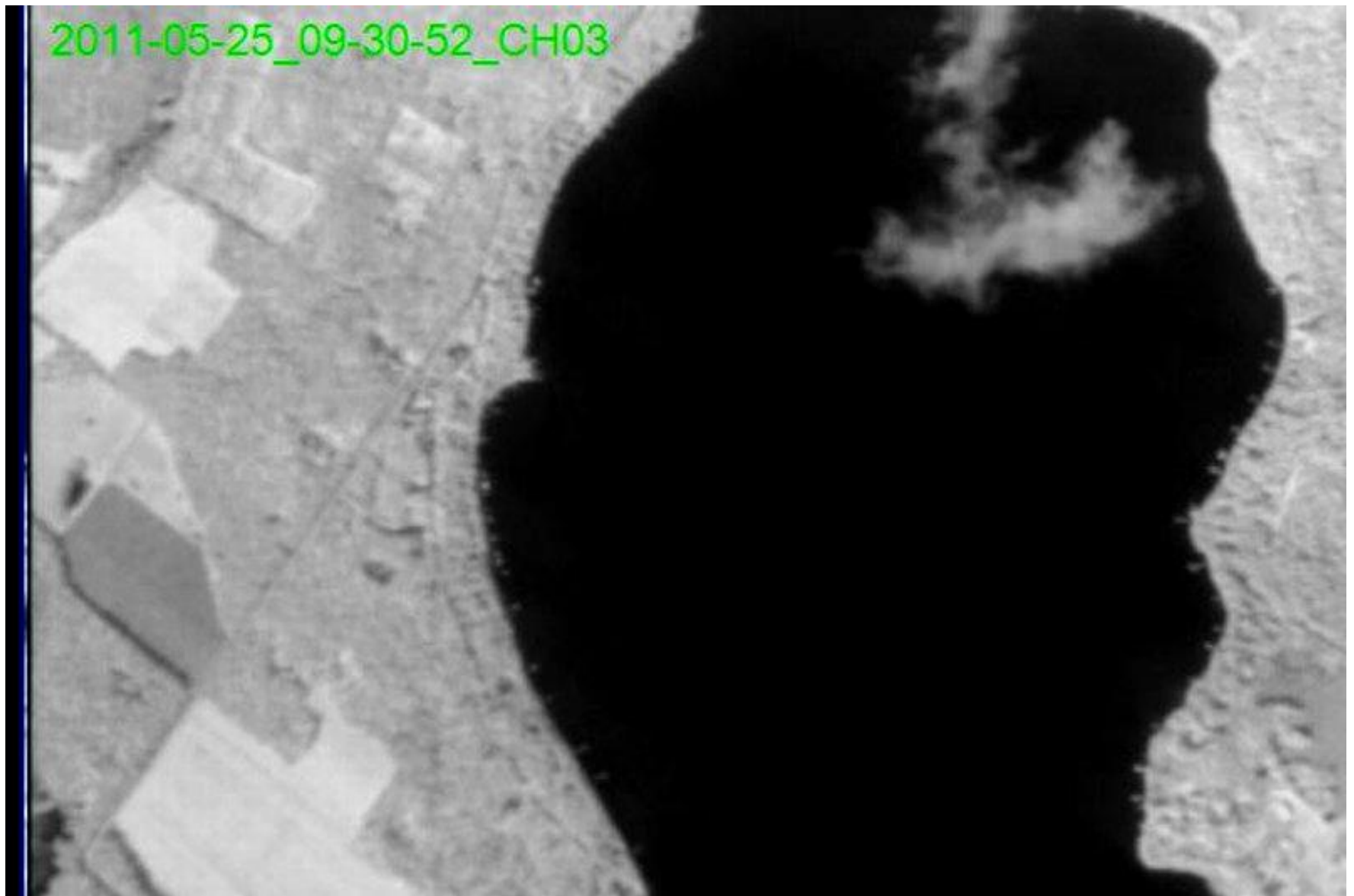




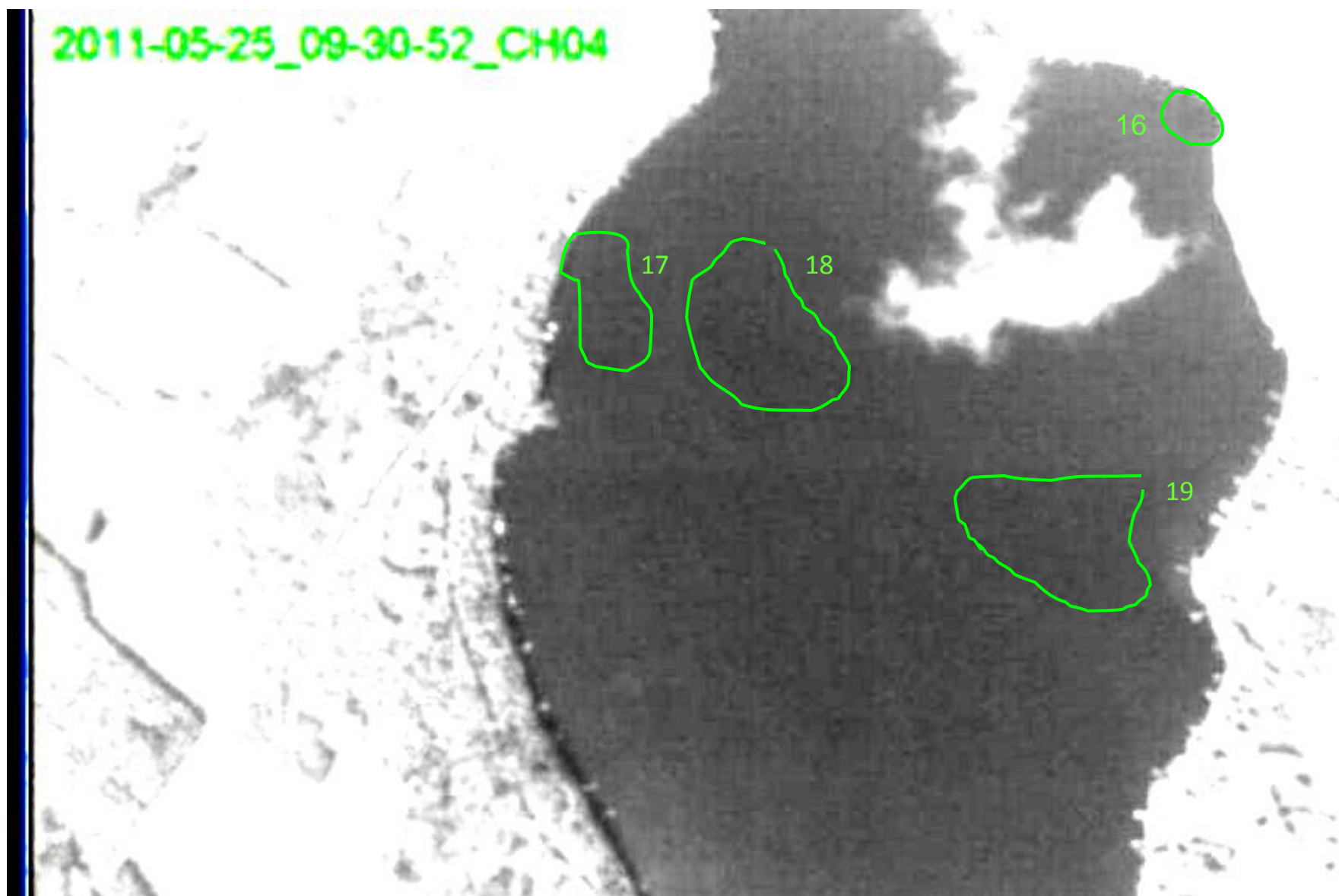
Thermal



Chlorophyll a



Water Absorbing



Water Penetrating





Multi Spectral

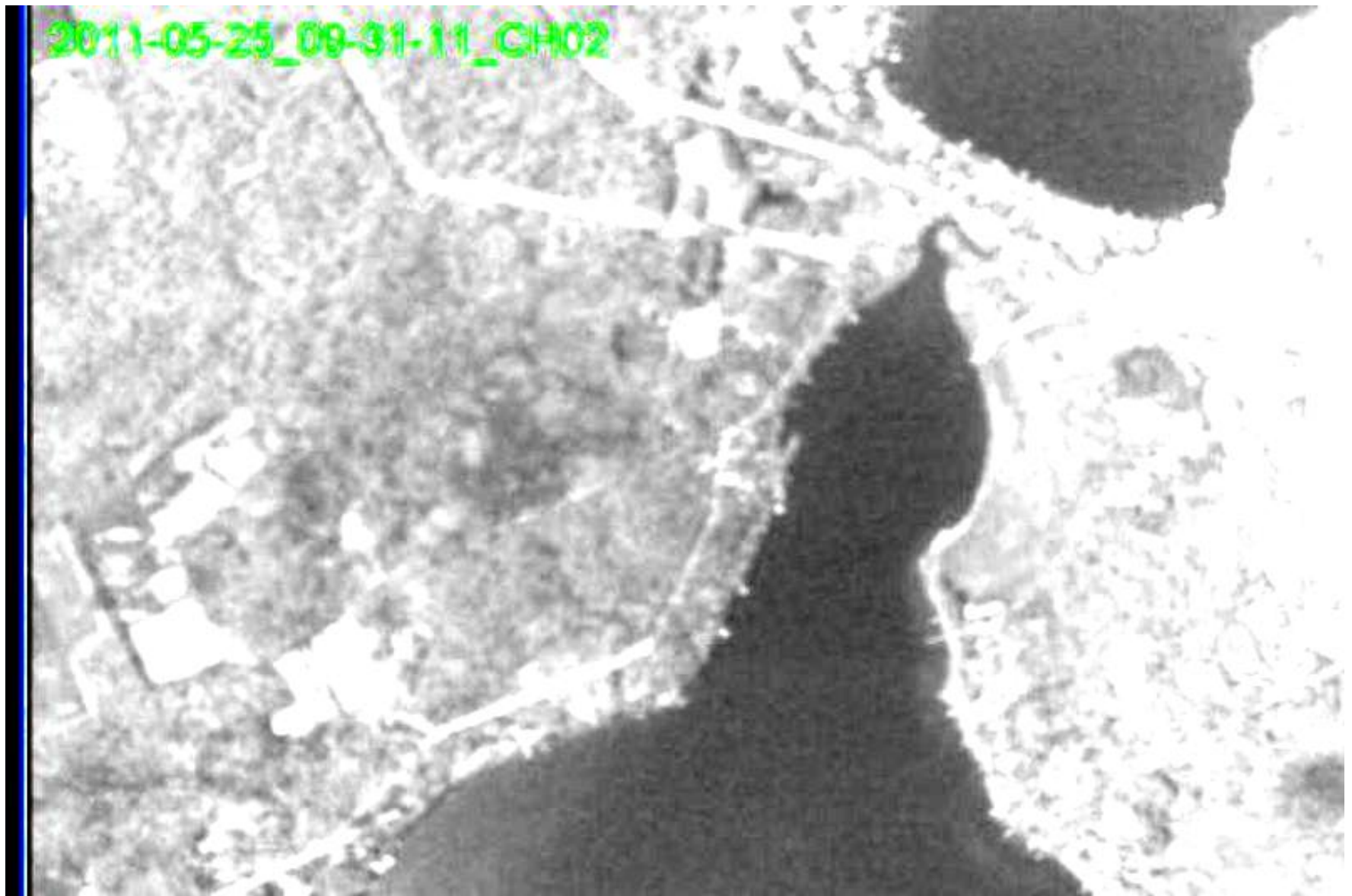


Visible





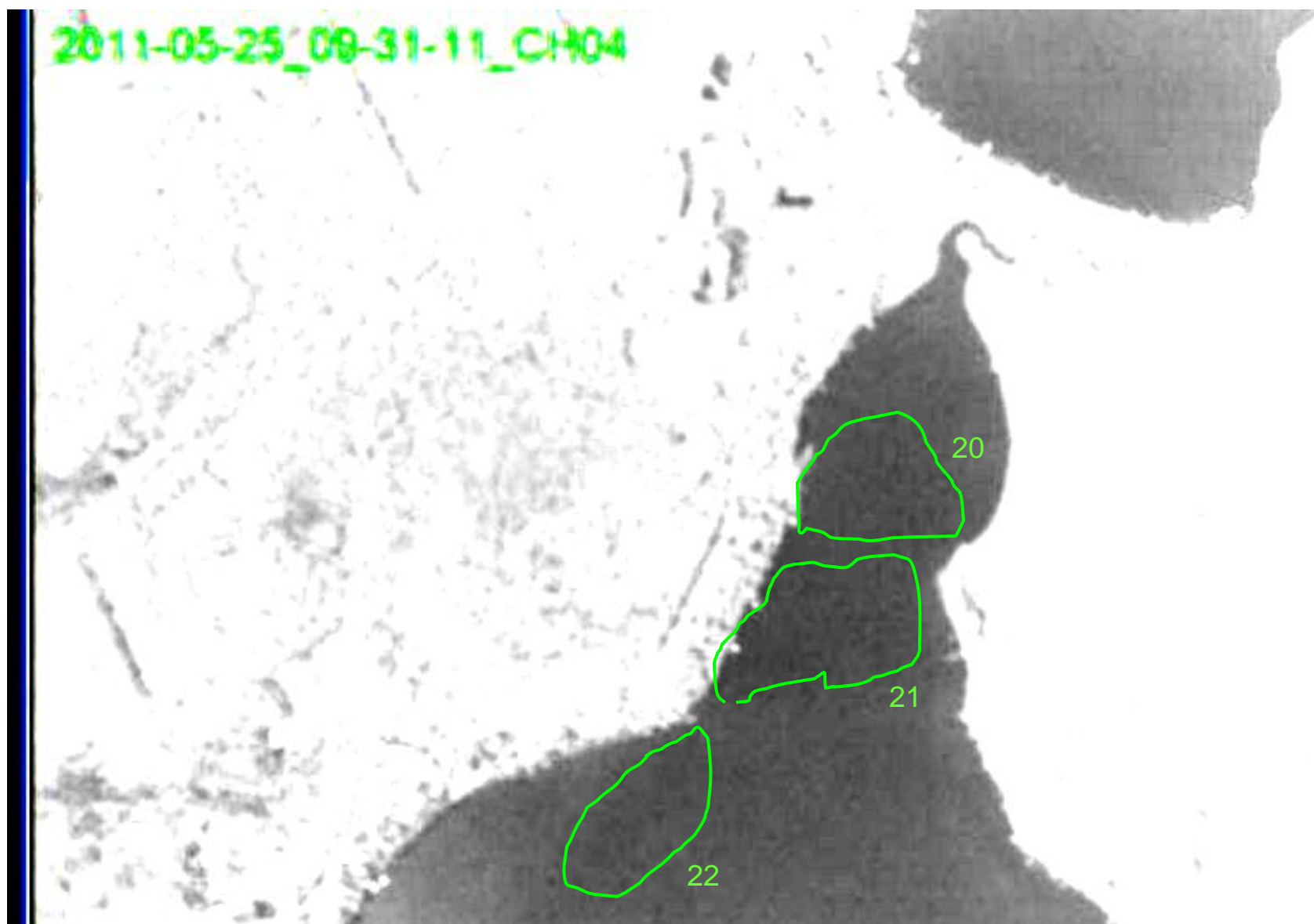
Thermal



Chlorophyll a

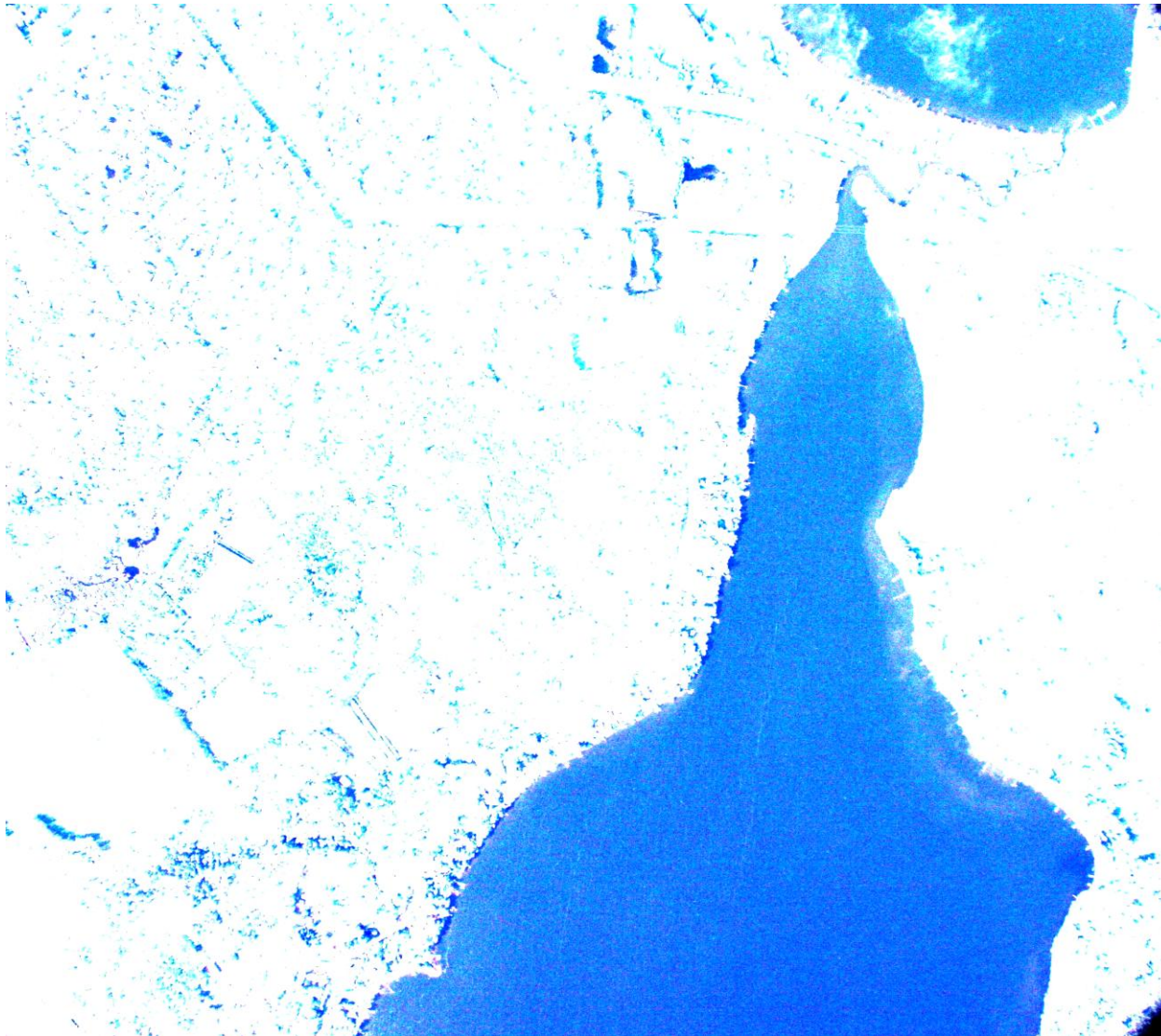


Water Absorbing



Water Penetrating





Multi Spectral

### Summary Table

Site	Lat/Long	Estimated Acres
1	46°18'50.03"N, 94° 2'1.67"W	0.05
2	46°18'46.92"N, 94° 1'52.09"W	0.1
3	46°18'46.20"N, 94° 1'34.95"W	1.4
4	46°19'10.83"N, 94° 1'29.25"W	0.8
5	46°19'21.50"N, 94° 1'18.67"W	1.5
6	46°19'24.27"N, 94° 1'20.37"W	0.7
7	46°18'50.39"N, 94° 1'36.61"W	5.4
8	46°19'1.41"N, 94° 1'36.19"W	0.98
9	46°19'6.31"N, 94° 1'36.14"W	7.1
10	46°19'22.92"N, 94° 1'22.55"W	3.5
11	46°18'41.53"N, 94° 1'42.74"W	1.3
12	46°18'27.96"N, 94° 1'52.97"W	3.7
13	46°18'42.28"N, 94° 1'45.83"W	49.0
14	46°18'16.05"N, 94° 2'27.83"W	13.2
15	46°18'34.61"N, 94° 2'25.53"W	30.5
16	46°18'29.45"N, 94° 3'7.05"W	2.2
17	46°18'9.57"N, 94° 2'23.14"W	4.7
18	46°18'16.25"N, 94° 2'29.43"W	15.9
19	46°18'37.04"N, 94° 2'30.10"W	14.6
20	46°17'57.47"N, 94° 3'11.78"W	11.0
21	46°18'2.94"N, 94° 3'2.71"W	10.8
22	46°18'8.35"N, 94° 2'43.57"W	13.0
<b>Estimated Total Acres</b>		<b>191.43</b>



## Site Map

