

# RDI

## Range Data, Inc.

### PROFESSIONAL Cellular Monitoring and Alarm System



*Proudly Made in USA*

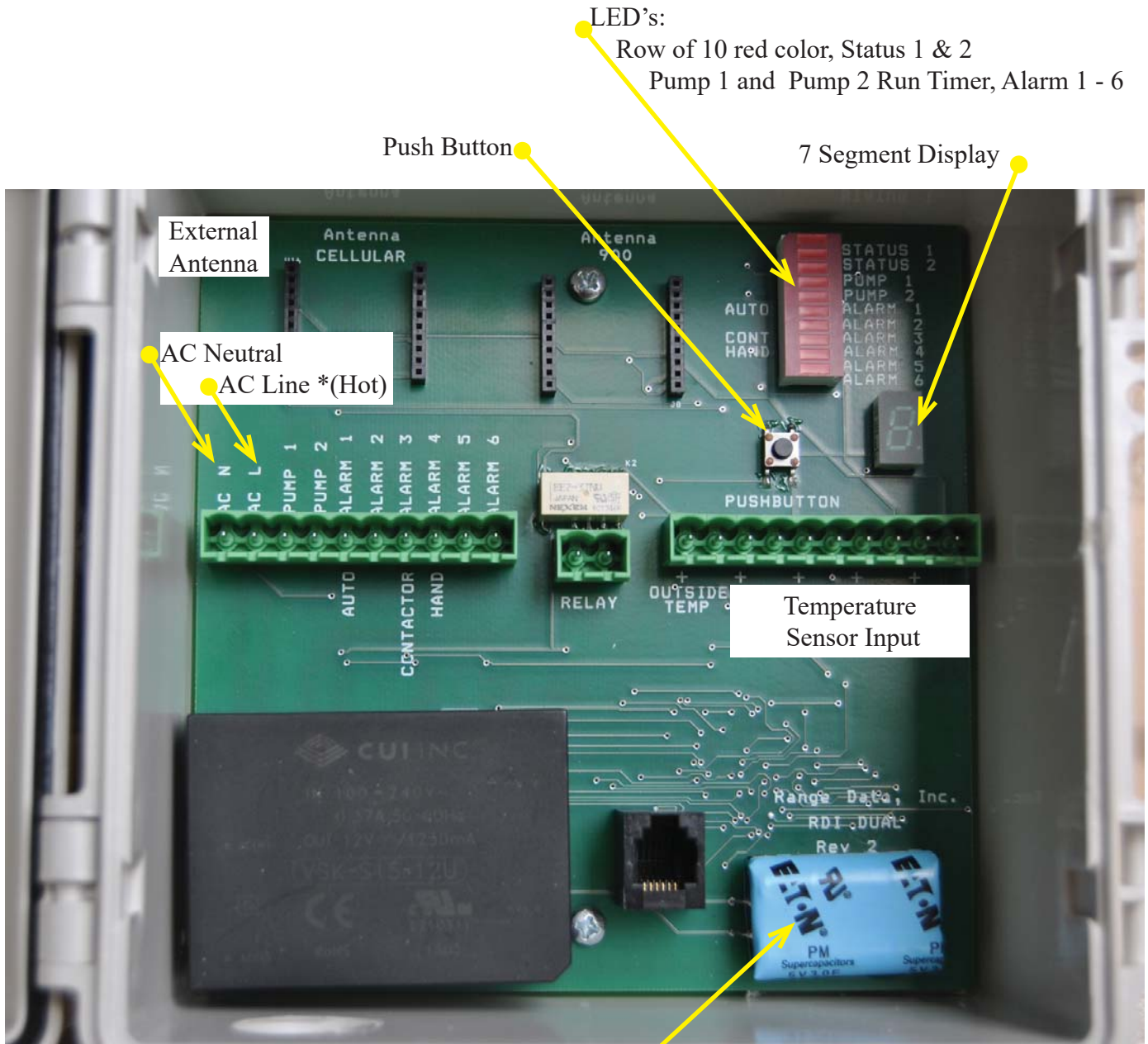
Congratulations on your new professional S2C device and welcome to the RDI family! This product was designed with you in mind by our hometown team based in North Dakota and Minnesota

Wireless S2C (SCADA 2 Cellular) monitors wastewater pump systems for lift stations and freshwater pumps. It provides remote alarm monitoring and runtime data loggers. This S2C unit will collect run time data, check temperatures and monitor alarms. S2C sends the updated data to the Cloud for you to view from anywhere in the world!

### Instruction Manual Model: S2C

## Inside View of S2C

All alarm inputs senses 120Vac and require just one hot wire per input.



LED's:  
Row of 10 red color, Status 1 & 2  
Pump 1 and Pump 2 Run Timer, Alarm 1 - 6

Push Button

7 Segment Display

External Antenna

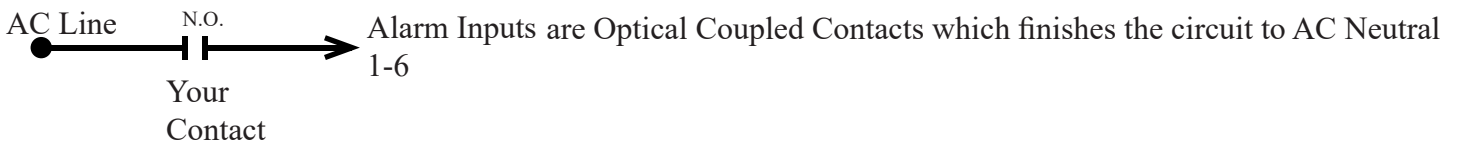
AC Neutral  
AC Line \*(Hot)

Temperature Sensor Input

Solid State Power Backup, provides enough power to transmit up the power failed alarm.

Note: if your alarms are not contacts or 120Vac than you will need to have an electrician add addition hardware to be able handle the input.

Note\*: Alarm and Pump Input accept the Hot Line wire from each of your devices. If your device is a contact then supply the other half with the AC Line (Hot) to complete the circuit. Each input will use the internal AC N (neutral) to complete the path.



## The LED 7 segment display and all its messages during power up.

1. The S2C is powered up by the first sequence ☐ Then All 10 LED illuminate for a second followed by F.B, 1, 2, 3, - (center dash) and last the A1 => This sequence is the count down to display the amount of time needed to boot up the modem - approx 40 seconds.

2. F.B Sequence is checking if the modem is on line. The F.B. is checking for antenna connection. The -. (minus) looking for a cellular tower signal. If the -. quits within 20 seconds that means the S2C is on line and ready.

NOTE: If the -. remains on longer then 20 seconds then it failed. You need to contact us. This is a SIM CARD or modem problem and RDI will fix it for you.

3. You will see 1, 2, 3. The 1. is reading the Inputs and Pump timers. 2. will flash, 3. sends the data to the web site so you will get the A1 -(Acknowledged 1 transmission successful ). This is the result you want to see. The M2C has updated the web site. Now do a refresh on your device to see the current data on the web page.

If it remains stuck on the ( -. ) means unable to contact Cell site. Please unplug the unit. You need to call RDI and report the error.

Our support number is 701-352-4696 Opt 1 for Engineering.

Correct Sequence is

☐. ALL 10 LED'S 1, 2, 3 Flashes A1. This is the result you want to see. If it Flashes F.B. this means S2C not setup on web site or F.B. means the antenna is not connected, you need to call RDI .

The flashing STATUS 1 is the pulse or heart beat of the S2C indicating it is working.

## Now the S2C is up and running what does the Push Button do?

**The 1 Button Push:** All the data is sent up to Cloud per the pre selected transmit times. Flashes a 1. (1 button push), 1,2,3. then flashes A1 the (A1 means acknowledging a 1 button push). If you get F.B then the S2C has not been setup on the web page.

**The 3 Button Push:** Sends up the raw data for engineering to use in problem solving. Flashes an 3 2 1 (3 button push) 1,2,3. then flashes A3 the (A3 is acknowledging an 3 button push.)

**The 4 Button Push:** Shows the signal strength for the Cellular tower connection. Flashes a 3 2 1 then 1,2,3. next a number between ☐ and 5 flashes. Getting ☐ you will need to add a directional antenna. A1 is low and may need to add a directional antenna (we have had sites close to AT&T towers that have required us to install directions antenna) or switch providers. Any thing above 2 to 6 (highest) is the level that we are looking for.

**9 Button Push: This will update special parameters, RDI will instruct you to preform this step.**

# Specifications

## Power

AC Line is Regulated Converter

- Wide input range 85-305Vac
- Full load temperature range: -40°C to +65°C (-40°F to 149°F)
- Ultra-high efficiency over entire load range
- No external components necessary
- International EMC compliant
- 140% Peak load capability

## Dimensions

- Size / Dimension: 5.900" L x 5.900" W (149.86mm x 149.86mm)
- Height: 3.540" (89.92mm)
- Design: Hinged Door, Lid Material: Plastic, ABS
- Color: Gray
- Thickness: 0.115" (2.92mm)
- Features: PCB Supports, Non-Metallic Hinges
- Ratings: IP66, NEMA 1,2,4,4X,12,13
- Material Flammability Rating: UL94 HB
- Weight :1.11 lb (503.49g)

## Temperature Sensor

- Measures Temperatures from -40°C to +65°C (-40°F to 149°F)
- ±0.5°C Accuracy from -10°C to +85°C

## Cellular

- USA: Verizon Wireless, AT&T Wireless
- Canada: All Wireless systems
- Includes VPN (virtual private network) Protection
- Contains FCC ID:RI7CE910-DUAL This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interferences, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## Inputs

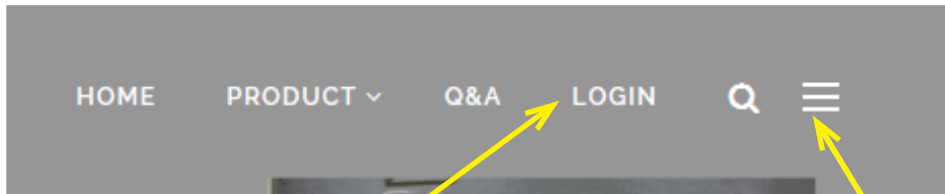
- Alarm Inputs 1-6 and Pump 1-2 Run Timers are 120Vac optically isolated inputs.

Note: Inputs completes a path to Neutral

- Circuits for safe protective separation against electrical shock according to safety class II (reinforced isolation): - for appl. class I to IV at mains voltage ≤ 300 V - for appl. class I to III at mains voltage ≤ 600 V

## AGENCY APPROVALS

- **UL1577, file no. E76222**
  - **CSA 22.2 bulletin 5A, double protection**
  - **BSI IEC 60950; IEC 6006**



**1. Login to the web site**



**2. Clicking here will give you a side menu**

**3. Enter your email address and password**

You will receive a separate email for our password requirements.

The remember me check box will allow you to bookmark the site and bypass the welcome screen.

A screenshot of the login page. At the top right is a 'Log in' link. Below it is the heading 'Log in.' followed by the text 'Use a local account to log in.' There are two input fields: 'Email' and 'Password'. Below the password field is a checkbox labeled 'Remember me?'. At the bottom is a 'Log in' button and a link for 'Forgot your password?'.

# Home Screen

Home Location Sites Device Add or Change Users Hello test@rangedata.net! Log off

### Bois Forte Sites Data

	Site Name	Tx Time	Ac Power	Alarm1	Alarm2	Alarm3	Alarm4	P1 Today's Hrs	P2 Today's Hrs	P3 Today's Hrs	P4 Today's Hrs	P1 Gal Today	P2 Gal Today	P3 Gal Today	P4 Gal Today	P1 Meter Hrs	P2 Meter Hrs
History Reports	Tibbets Trail	06/09/18 07:01 AM	ON	OK	OK	OK	OK	0.069	0.081	0.000	0.000	0.00	0.00	0.00	0.00	1,922.222	1,874.258
History Reports	Whiskey Point	06/09/18 08:19 AM	ON	OK	OK	OK	OK	0.401	0.761	0.000	0.000	0.00	0.00	0.00	0.00	2,000.112	1,998.216
History Reports	Main Lift	06/09/18 11:57 AM	ON	OK	OK	OK	OK	0.794	0.717	0.000	0.000	14,297.13	14,231.35	0.00	0.00	3,173.753	396.888
History Reports	Lift B Community Center	06/09/18 03:26 AM	ON	OK	OK	OK	OK	0.609	0.525	0.000	0.000	0.00	0.00	0.00	0.00	5,961.371	5,649.385

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## 4. Click on the Site Name

### Details Screen

<b>A1 Descr</b>	High Water	<b>Alarm1</b>	<input type="checkbox"/>
<b>A2 Descr</b>	Flasher	<b>Alarm2</b>	<input type="checkbox"/>
<b>P1 Meter Hrs</b>	3,129.977	<b>P2 Meter Hrs</b>	357.429
<b>P1 Today's Hrs</b>	0.805	<b>P2 Today's Hrs</b>	0.681
<b>P1 GPMcal</b>	300	<b>P2 GPMcal</b>	331
<b>P1 Gal Today</b>	14,497.96	<b>P2 Gal Today</b>	13,533.16
<b>Ac Power</b>	<input checked="" type="checkbox"/>	<b>Tx Repeat Time</b>	36
<b>Relay</b>	<input type="checkbox"/>		
<b>Alarm Time in Seconds (10-65535)</b>	20		

EDIT BACK TO LIST 1-BUTTON TURN ON RELAY WHO WROTE HISTORY

## 5. Click on the Edit

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### Edit Screen

Home Location Sites Device Add or Change Users Hello test@rangedata.net! Log off

### Edit Device

Description:  Alarm Time in Seconds (10-65535):

P1 Meter Hrs: <input type="text" value="3173.75297916667"/>	P2 Meter Hrs: <input type="text" value="396.887664351852"/>	P3 Meter Hrs: <input type="text" value="0"/>	P4 Meter Hrs: <input type="text" value="0"/>
P1 GPMcal: <input type="text" value="300"/>	P2 GPMcal: <input type="text" value="331"/>	P3 GPMcal: <input type="text" value="0"/>	P4 GPMcal: <input type="text" value="0"/>
A1 Descr: <input type="text" value="High Water"/>	A3 Descr: <input type="text"/>	A5 Descr: <input type="text"/>	
A2 Descr: <input type="text" value="Flasher"/>	A4 Descr: <input type="text"/>	A6 Descr: <input type="text"/>	
High Temp: <input type="text" value="90"/>			
Low Temp: <input type="text" value="41"/>			
Temp Hysteresis (1-10): <input type="text" value="1"/>			

Save [Back to List](#)

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Click Save then click on UpDate Prams to complete the changes. You are able to name your alarms, correct the run timers and adjust the Gallons Per Minute calibration. Temperature set-points and hysteresis (1-10). Transmissions times are set by RDI typically 4 times daily. If three transmission are missed we will send out an alarm.

## Edit or Change Users Screen

[Home](#) [Location](#) [Sites](#) [Device](#) [Add or Change Users](#)

Hello test@rangedata.net! [Log off](#)

### Users List

[Create New](#)

	Full Name or Nick Name	Email	PhoneNumber	Text Alarm Message	Email Alarm Message
Edit	xxx Test	test@rangedata.net	7-555-10	<input type="checkbox"/>	<input type="checkbox"/>
Edit	[REDACTED]	[REDACTED].gov	2-555-54	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Edit	[REDACTED]	[REDACTED].n.gov	2-555-90	<input type="checkbox"/>	<input type="checkbox"/>

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This is where you are able to change or add new user. When you click on Edit you can enable or disable who get emails or text messages for alarms.

## Who Wrote History

[Home](#) [Location](#) [Sites](#) [Device](#) [Add or Change Users](#)

Hello test@rangedata.net! [Log off](#)

[Create New](#)

Number	Data	TxTimeStamp	Email	DeviceId
5	Sent up Parameter	6/9/2018 4:07:08 PM	[REDACTED]@net	21
1	1 Button Push	5/9/2018 11:57:45 AM	[REDACTED]@net	21
1	1 Button Push	5/9/2018 11:50:03 AM	[REDACTED]@net	21
1	1 Button Push	5/6/2018 9:27:50 AM	[REDACTED]@net	21
1	1 Button Push	5/2/2018 7:55:12 AM	[REDACTED]@net	21
1	1 Button Push	4/26/2018 9:30:26 AM	[REDACTED]@net	21
9	Firmware Update	4/22/2018 2:32:55 PM	[REDACTED]@net	21

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The Who Wrote History will record all changes to the S2C device Listing the users email address and what function was preformed.

## History

### BOIS FORTE, LAKE VERMILION, MAIN LIFT, LIFT STATION, HISTORY DETAILS

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TxDate	Alarm1	Alarm2	Pump 1 Hrs	Pump 2 Hrs	AcPower
05-12-18 11:57.590 PM	OK	Ok	0.9050856	0.8283912	ON
05-12-18 11:58.075 AM	OK	Ok	0.8129931	0.7792407	ON
05-11-18 11:57.567 PM	OK	Ok	0.7792269	0.7356968	ON
05-11-18 11:57.580 AM	OK	Ok	0.6712593	0.6291134	ON
05-10-18 11:58.039 PM	OK	Ok	0.7798657	0.7154861	ON
05-10-18 11:58.084 AM	OK	Ok	0.7803773	0.7549213	ON
05-09-18 11:58.030 PM	OK	Ok	0.8415718	0.8140903	ON
05-09-18 11:58.007 AM	OK	Ok	0.0116644	0.0116620	ON
05-09-18 11:50.128 AM	OK	Ok	0.1150000	0.0994329	ON
05-09-18 10:20.197 AM	OK	Ok	0.0000000	0.0111088	ON

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1	2	3	4	5	6	7	8	9	10	...	»	»»
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All transmissions are stored from April 1 of this year to April 1. Of next year. An email with the year of data in an excel spread sheet will be sent to you if you request it from us.



# HISTORY REPORTS

- 2018
  - [May \(28\)](#)
  - [April \(154\)](#)
  - [Quartly Report](#)
  - [March \(200\)](#)
  - [February \(182\)](#)
  - [January \(201\)](#)
  
- 2017
  - [Quartly Report](#)
  - [December \(207\)](#)
  - [November \(497\)](#)
  - [October \(757\)](#)
  - [Quartly Report](#)
  - [September \(726\)](#)
  - [August \(740\)](#)
  - [July \(422\)](#)
  - [Quartly Report](#)

History Reports by month or by quarterly  
 The number (x) is the quantity of data recorded for that month.

## History Reports By Month

[Home](#) [Location](#) [Sites](#) [Device](#) [Add or Change Users](#)

Hello test@rangedata.net! [Log off](#)

Created Excel file

[DOWNLOAD EXCEL FEDERAL MONTH REPORT](#)

[CHART HOURS](#)

### BOIS FORTE, AT LAKE VERMILION, MAIN LIFT, LIFT STATION, FEBRUARY, 2018 PUMP INFO BY DAY

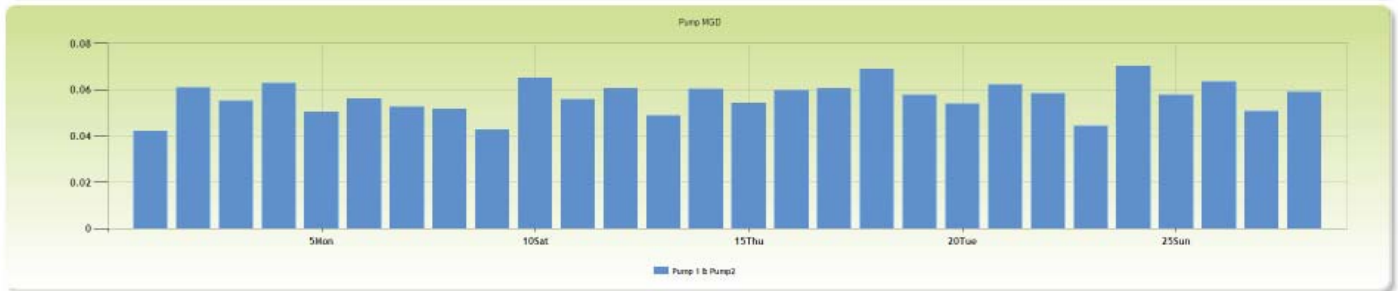
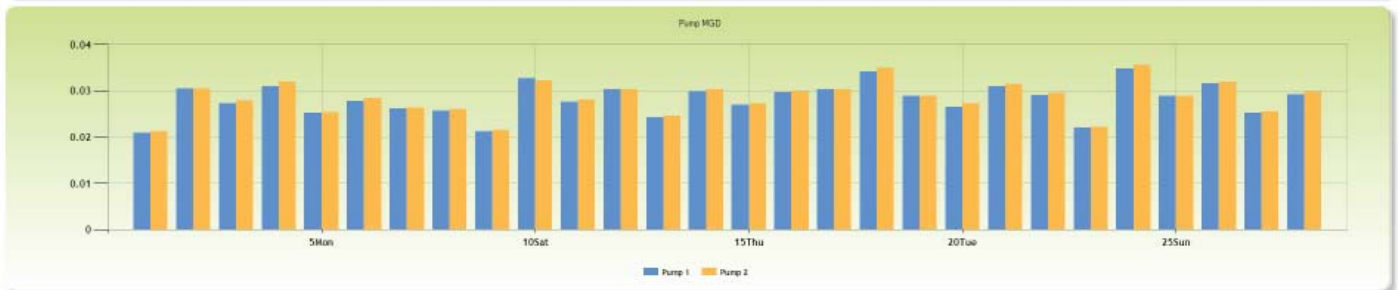
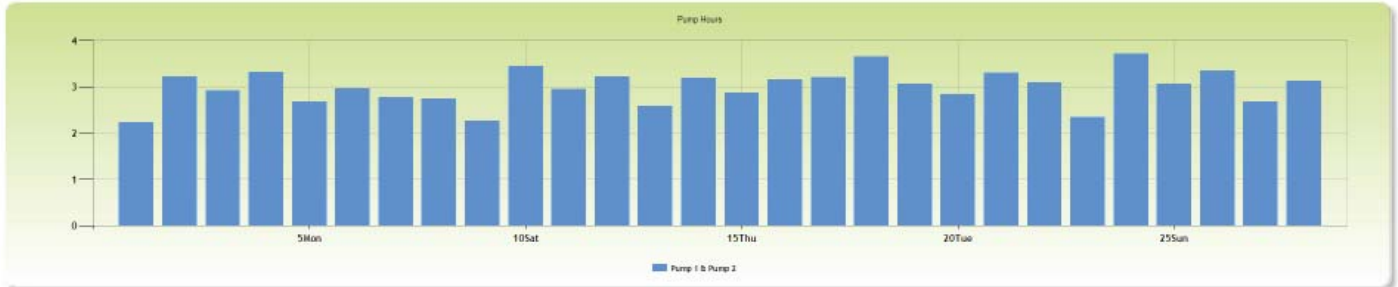
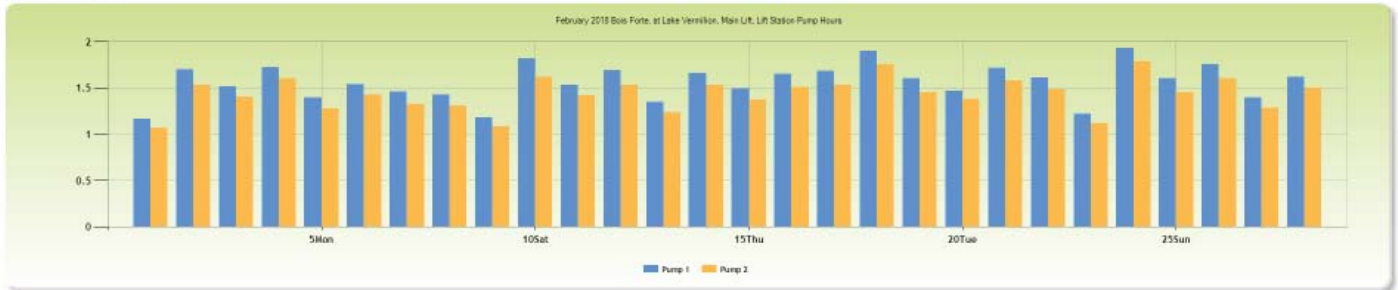
Date (dd-day)	Pump 1 Hrs	Pump 1 MGD	Pump 2 Hrs	Pump 2 MGD	Total Hrs	Total MGD
01-Thursday	1.164	0.021	1.068	0.021	2.232	0.042
02-Friday	1.698	0.031	1.531	0.030	3.228	0.061
03-Saturday	1.520	0.027	1.405	0.028	2.924	0.055
04-Sunday	1.720	0.031	1.607	0.032	3.327	0.063
05-Monday	1.399	0.025	1.278	0.025	2.677	0.051
06-Tuesday	1.544	0.028	1.427	0.028	2.971	0.056
07-Wednesday	1.457	0.026	1.326	0.026	2.783	0.053
08-Thursday	1.431	0.026	1.306	0.026	2.737	0.052

Provides you with pump daily hours, Million Gallons per Day and monthly totals

# Chart Hours

## MONTHLY REPORT

[Back to Monthly Report](#)



[Back to Monthly Report](#)

# Excel Reports

	A	B	C	D
1		Fri		0.059959
2		Sat		0.071183
3		Sun		0.071196
4		Mon		0.059891
5		Tue		0.060216
6		Wed		0.058215
7		Thu		0.056194
8		Fri		0.056356
9		Sat		0.062357
10		Sun		0.02856
11		Total		0.584128
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

# S2C Features

Supervisory Control and Data Acquisition (SCADA)  
to  
Cellular Online Monitoring and Notification System

- Track station flows
- Pump failures
- Station tamper or vandalism
- Power failure
- High Water, Low Water Alarms
- Real-Time Text and/or Email alerts
- Handles Thousands of Sites
- Up to Two Pump Run Timers
- Cabinet Temperature High/Low Alarm
- Up to Six Alarm Points
- Input Alarms are 120Vac Optically Isolated
- NEAM 4x Rated
- Mount Internally or Externally
- Operates from -40°C to +65°C (-40°F to 149°F)
- This is Your Data Site we do not share or sell any information to any one.