



11.19.19

# Altrac Story



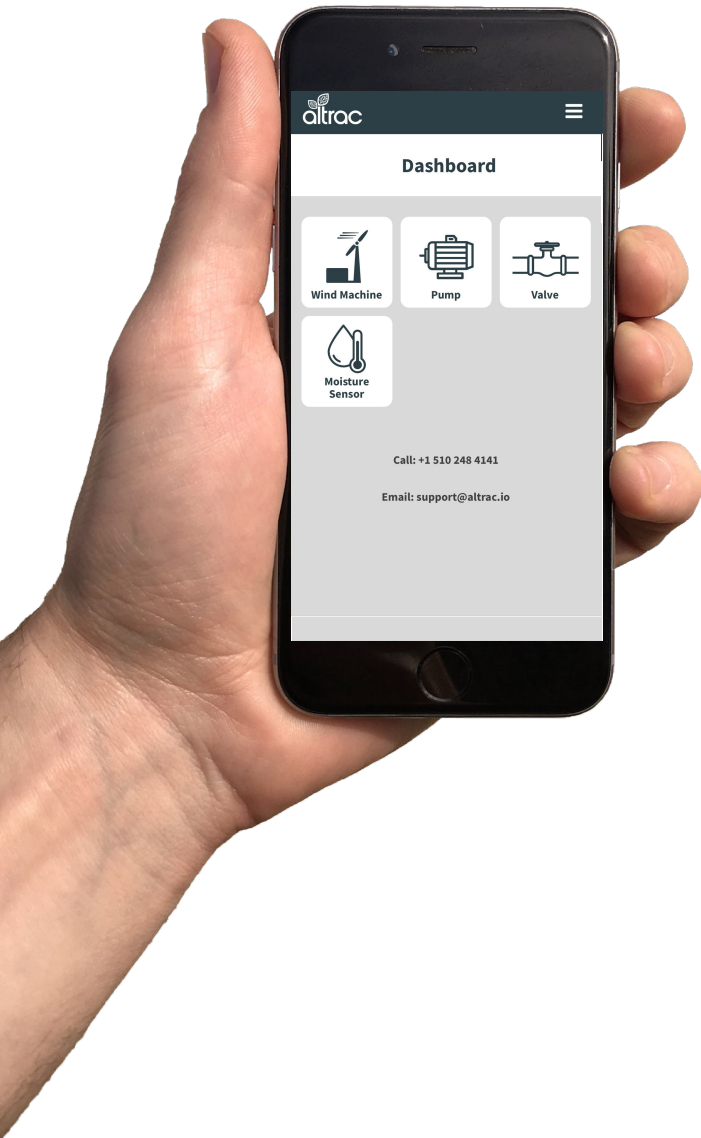
- Founded at Blue Heron Vineyard in 2015
- We make outdoor-ready, LTE connected devices to remotely control equipment
- Works with any make/model of equipment
- Simple to install and master
- NO SUBSCRIPTION FEES!

# Partners



- 7 employees
- Distributors
  - Amarillo, Vamco, Wenatchee Wind, HF Hauff, Blue Line, Western Ag and Turf, Garton, Gar Bennett, etc.
- Accounts
  - Agricare, Wonderful Citrus, Limoneira, Zirkle Fruit, Monson Fruit, Agriculture Capital, Fowler Packing

# Products



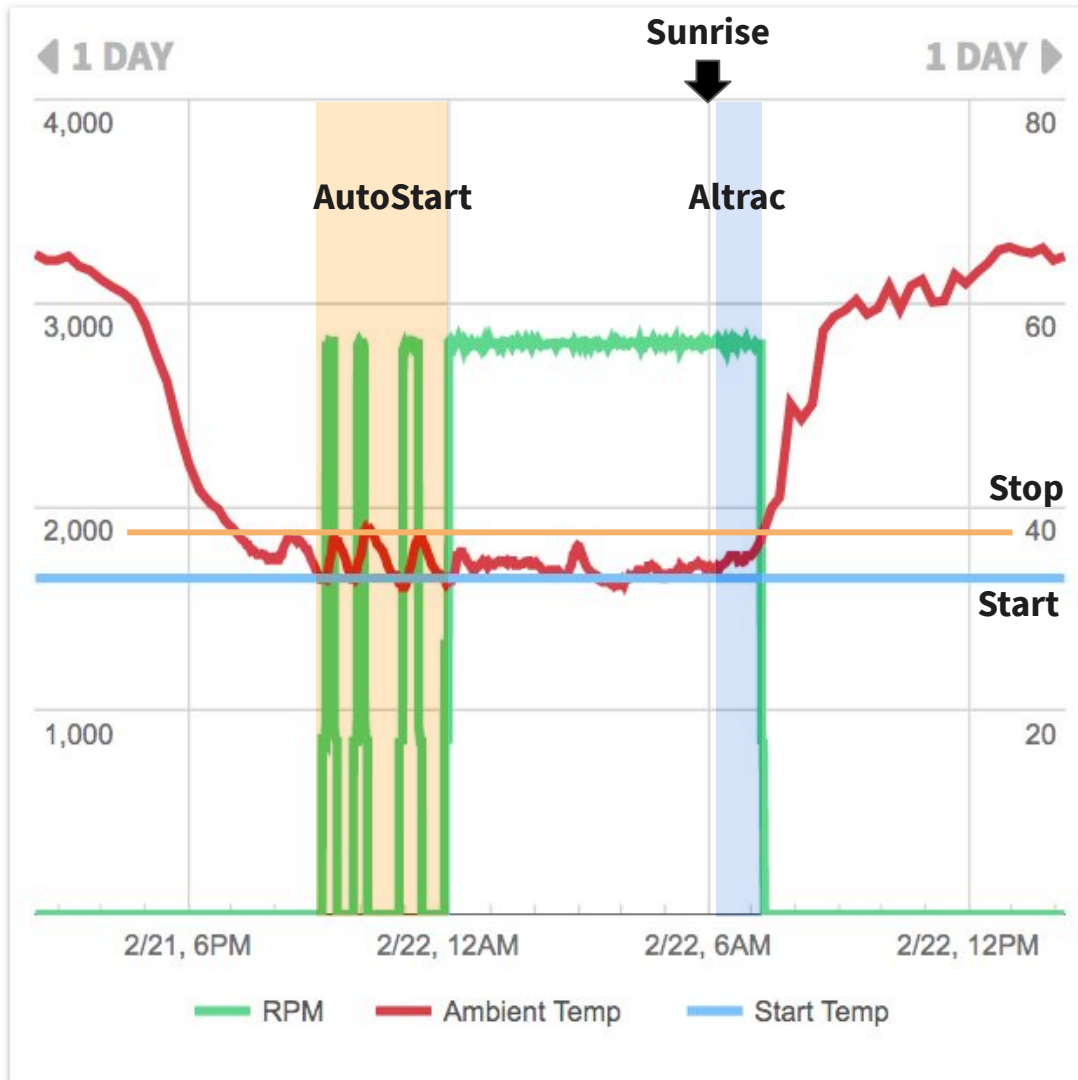
- Control
  - Wind Machine
  - Pump
  - Valve
- Monitor
  - Soil Moisture Probe
  - Weather Station
- Custom Projects
  - Integrate Existing Equipment
  - Develop New Tools

# Wind Machine Station



- Monitor temperature, battery voltage, RPM and fuel level in real-time at each wind machine
- Control wind machine start and stop temperatures; shutdown groups of machines with a click
- Send maintenance people to the right machine when an issue arises
- Send text messages, calls and emails based on rules you create

# Fuel Savings



## AutoStart Savings

- Automatically starts and stops machines @ set temperatures.
- Save \$25/night in fuel.

## Altrac Savings

- Auto shutdown machines at sunrise, if conditions permit ~30-60mins / frost event
- Save \$15/night in fuel.

# Frost Night Data (2017-2018 Season)

Name	Total Frost Nights	Total Runtime (Hr)	Total Cycles	Runtime/Night (Hr)	Cycles/Night	Runtime/Cycle (Hr)	Runtime After Sunrise (Hr)	Runtime After Sunrise
BLK 1 N	32	127	68	4.0	2.1	1.9	14.3	11.3%
BLK 1 S	24	66	45	2.8	1.9	1.5	10.8	16.3%
BLK 2 N	31	87	79	2.8	2.5	1.1	10.0	11.5%
BLK 2 S	30	79	100	2.6	3.3	0.8	8.0	10.2%
BLK 3 NE	28	92	88	3.3	3.1	1	11.7	12.7%
BLK 3 NW	29	91	78	3.2	2.7	1.2	13.3	14.5%
BLK 3 SE	28	90	70	3.2	2.5	1.3	10.7	11.8%
BLK 3 SW	32	100	99	3.1	3.1	1	14.8	14.7%
BLK 4 NE	35	144	106	4.1	3.0	1.4	16.5	11.4%
BLK 4 NW	23	66	51	2.9	2.2	1.3	8.8	13.3%
BLK 4 SE	31	102	91	3.3	2.9	1.1	13.8	13.5%
BLK 4 SW	41	171	120	4.2	2.9	1.4	19.4	11.3%
BLK 23 NE	34	94	61	2.8	1.8	1.5	10.0	10.6%
BLK 23 NW	35	106	73	3.0	2.1	1.5	13.5	12.7%
BLK 23 SE	32	89	76	2.8	2.4	1.2	11.1	12.6%
BLK 23 SW	26	67	44	2.6	1.7	1.5	7.7	11.4%
<b>Grand Total</b>	<b>491</b>	<b>1,572</b>	<b>1,249</b>				<b>194.4</b>	<b>12.40%</b>



# Fuel Savings

<b>Fuel Cost</b>	<b>\$2.50</b>				
<b>Gallons/HR</b>	<b>13.50</b>				
<b>Name</b>	<b>Total Runtime (Hr)</b>	<b>Runtime After Sunrise (Hr)</b>	<b>Gallons After Sunrise</b>	<b>Cost of Fuel</b>	
<b>BLK 1 N</b>	<b>127</b>	<b>14.3</b>	<b>193.2</b>	<b>\$483.10</b>	
<b>BLK 1 S</b>	<b>66</b>	<b>10.8</b>	<b>145.5</b>	<b>\$363.66</b>	
<b>BLK 2 N</b>	<b>87</b>	<b>10.0</b>	<b>135.4</b>	<b>\$338.59</b>	
<b>BLK 2 S</b>	<b>79</b>	<b>8.0</b>	<b>108.4</b>	<b>\$271.00</b>	
<b>BLK 3 NE</b>	<b>92</b>	<b>11.7</b>	<b>157.7</b>	<b>\$394.27</b>	
<b>BLK 3 NW</b>	<b>91</b>	<b>13.3</b>	<b>179.0</b>	<b>\$447.49</b>	
<b>BLK 3 SE</b>	<b>90</b>	<b>10.7</b>	<b>143.8</b>	<b>\$359.54</b>	
<b>BLK 3 SW</b>	<b>100</b>	<b>14.8</b>	<b>199.2</b>	<b>\$498.00</b>	
<b>BLK 4 NE</b>	<b>144</b>	<b>16.5</b>	<b>222.9</b>	<b>\$557.24</b>	
<b>BLK 4 NW</b>	<b>66</b>	<b>8.8</b>	<b>119.1</b>	<b>\$297.85</b>	
<b>BLK 4 SE</b>	<b>102</b>	<b>13.8</b>	<b>186.8</b>	<b>\$466.93</b>	
<b>BLK 4 SW</b>	<b>171</b>	<b>19.4</b>	<b>261.6</b>	<b>\$653.96</b>	
<b>BLK 23 NE</b>	<b>94</b>	<b>10.0</b>	<b>135.3</b>	<b>\$338.25</b>	
<b>BLK 23 NW</b>	<b>106</b>	<b>13.5</b>	<b>181.7</b>	<b>\$454.30</b>	
<b>BLK 23 SE</b>	<b>89</b>	<b>11.1</b>	<b>150.5</b>	<b>\$376.16</b>	
<b>BLK 23 SW</b>	<b>67</b>	<b>7.7</b>	<b>103.9</b>	<b>\$259.76</b>	
<b>Average</b>	<b>98</b>	<b>12.1</b>	<b>164.0</b>	<b>\$410.01</b>	
<b>Grand Total</b>	<b>1,572</b>	<b>194.4</b>	<b>2624.0</b>	<b>\$6,560.11</b>	



# Labor Savings



- Eliminate 50% of your labor cost
- Manage more machines per person
- Instantly recognize issues
- Alerts via phone or text

# Pump Control



## Control

- Variable Frequency Drives (VFDs)
- Relay Driven Pumps
- Fertigation or Sulfur Burner

## Monitoring

- VFD vitals through Modbus
- Two pressure switches/transducers
- Flow meter

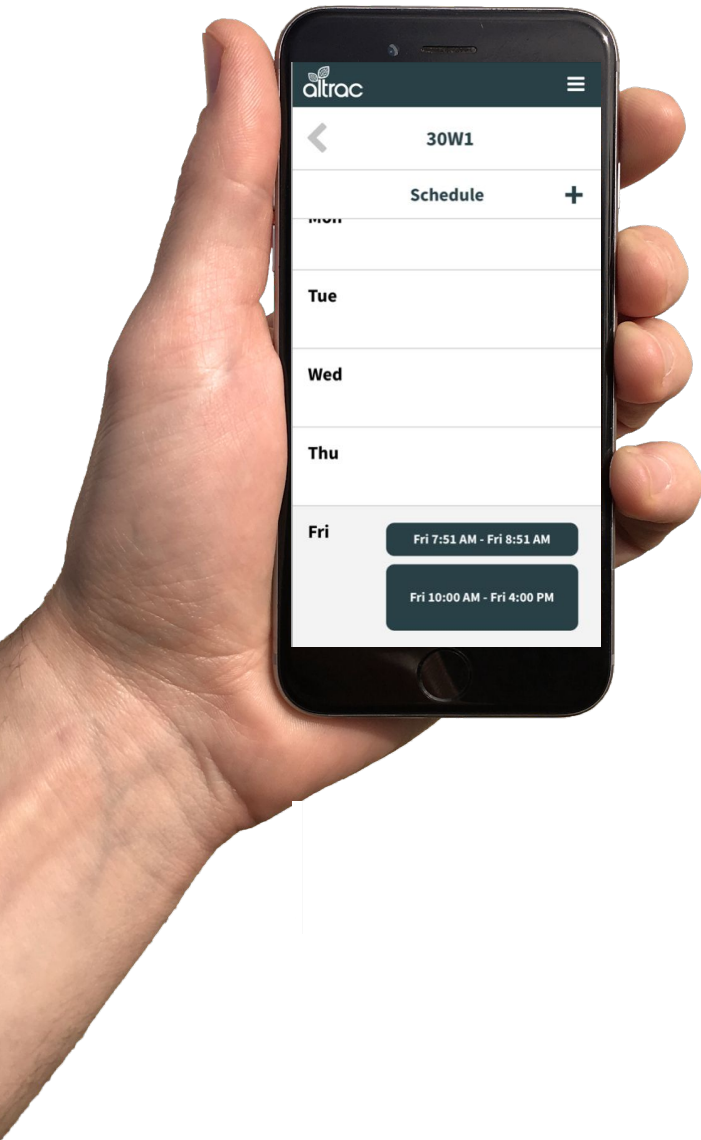
## Alerts

- Pump shuts off unexpectedly

## Reporting

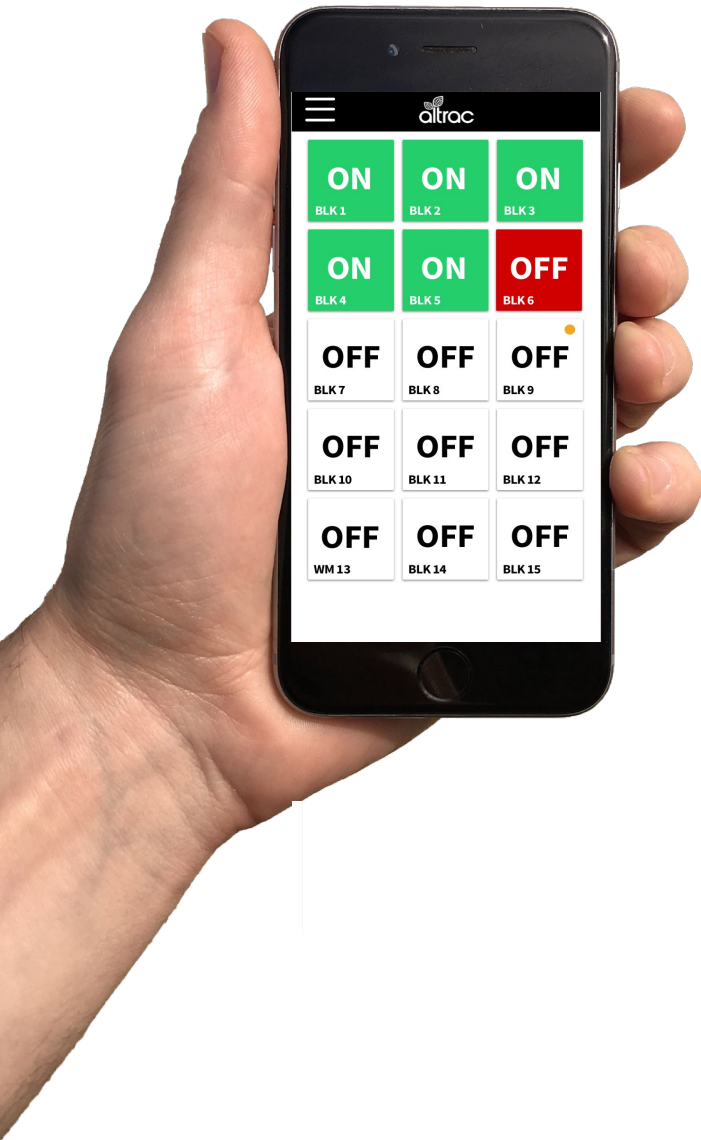
- Pump runtime and power consumption

# Pump Scheduling



- Schedule your pump remotely
- Avoid Time-of-use electricity fees
- Get a notification when pump is not running.

# Valve Control (Beta)



## Control

- Two latching solenoid valves

## Monitoring

- Two pressure switches/transducers
- Soil moisture sensor

## Alerts

- Receive an alert when valves do not open correctly.

## Reporting

- Definitive answer to: Are irrigators actually watering according to schedule?

# Valve Run Report



## Valve Run Report

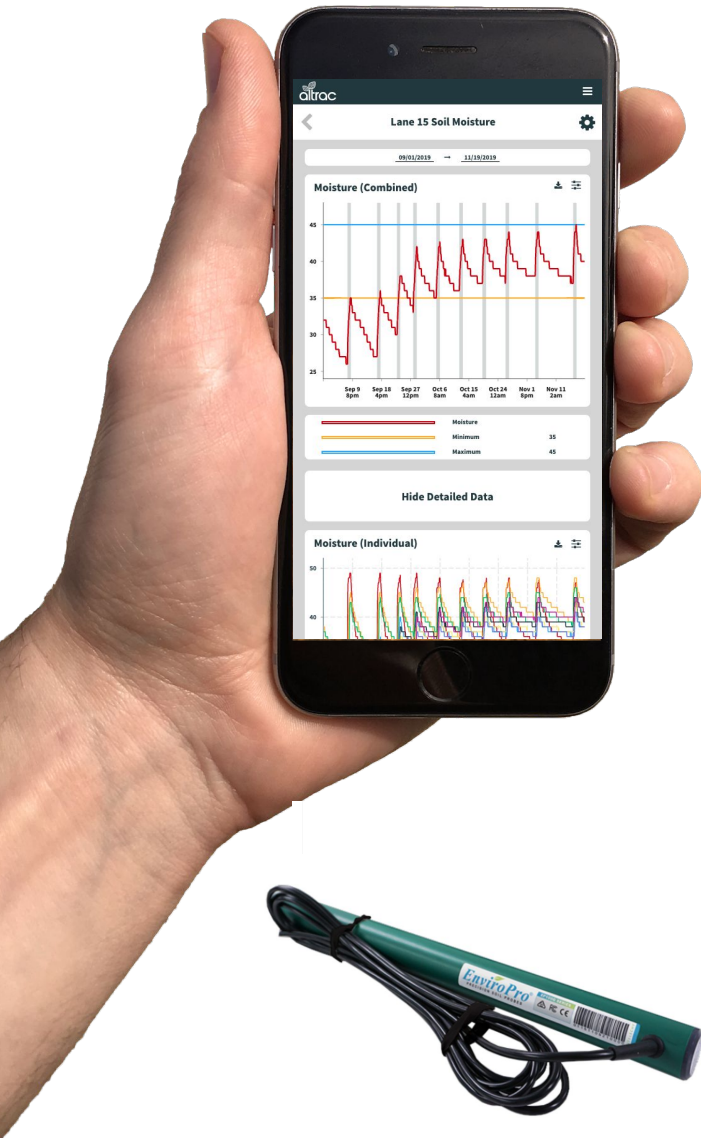
Blue Heron Vineyards

June 28, 2019

Group	Device Name	Scheduled Time	Solenoid Time	Solenoid Time %	Pressure Time	Pressure Time %	Addl Time Needed
Valves	31	6 h, 0 min	5 h, 54 min	98%	5 h, 54 min	98%	0 h, 5 min
Valves	32	6 h, 37 min	6 h, 37 min	100%	6 h, 37 min	100%	0 h, 0 min
Valves	33	6 h, 0 min	5 h, 45 min	96%	5 h, 45 min	96%	0 h, 14 min
Valves	34	6 h, 0 min	5 h, 49 min	97%	5 h, 49 min	97%	0 h, 10 min
Valves	35	6 h, 0 min	5 h, 42 min	95%	5 h, 42 min	95%	0 h, 17 min
Valves	36	6 h, 0 min	6 h, 0 min	100%	6 h, 0 min	100%	-
Valves	51	6 h, 0 min	5 h, 36 min	93%	5 h, 36 min	94%	0 h, 23 min
Valves	52	6 h, 7 min	5 h, 0 min	82%	4 h, 59 min	82%	1 h, 7 min
Valves	53	6 h, 7 min	-	0%	-	0%	6 h, 7 min



# Soil Moisture Probe



- Monitor soil moisture to decrease electricity and water consumption
- Use existing Altrac Stations for connectivity and power
- Sentek/EnviroPro Probe
  - 16”, 32”, 48”, 64” Lengths
  - 5 year warranty



# Temperature/Weather Station



- 12 Sensors include: Temp, Humidity, Wind Speed and Direction, Solar Radiation, Precipitation, Pressure, etc.
- Use our remote power unit to supply solar power at any location.
- Campbell Scientific/Meter Equipment
  - 1 year warranty on all hardware.





# Contact Information

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