

Ag Technology

Tools to protect our environment

Henry's Fork Watershed Council-Annual Watershed Conference

December 12, 2019

Precision Ag

- ▶ Precision is more than just a buzzword.
- ▶ Science requires measurement, typically an exact, accurate measurement.

Farmers are stewards of the land.

- ▶ Farmers don't just produce food, but they care for the land as well.
- ▶ This stewardship doesn't only refer to the soil, or the plants, but also the water.

Safe and sustainable is a challenge

- ▶ Awareness of challenges is increasing.
- ▶ Critical thinking is more vital than ever.
- ▶ Great minds are creating and implementing technologies and techniques to meet these challenges.

Responsible use of inputs

- ▶ Trained, certified, and licensed professionals are available to aid farmers in agronomy inputs.
- ▶ State PAL. Regional and International CCA.
- ▶ Pesticide labels.
- ▶ Labels are the law.

The value of technology

- ▶ Public health is the #1 priority.
- ▶ Food safety, including water, is a constant concern.
- ▶ Human population growth has the most significant environmental impact.
- ▶ As long as people keep eating and making babies, there will be a need for agriculture.
- ▶ Many technological advances have originated with agriculture.

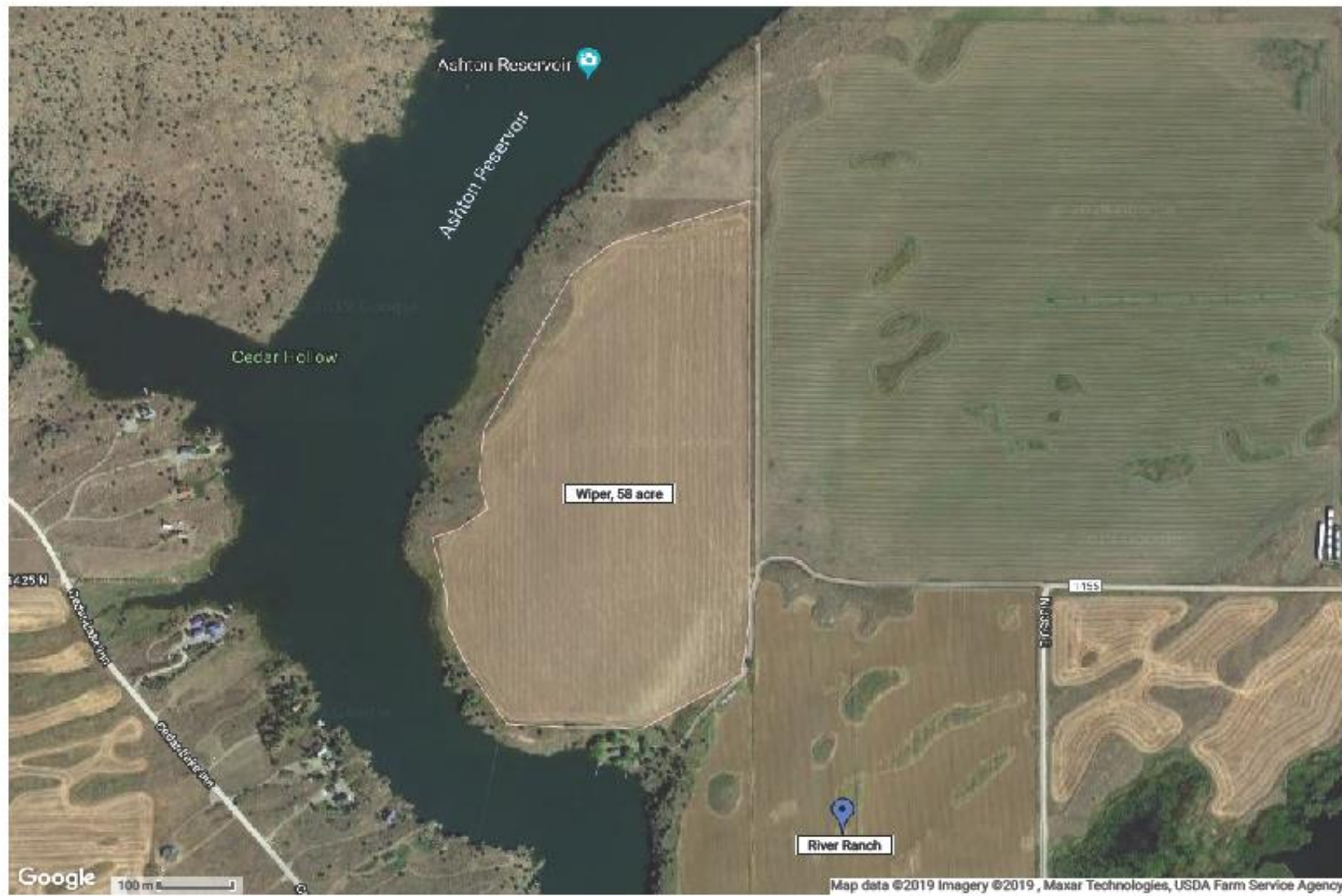
One size does not fit all

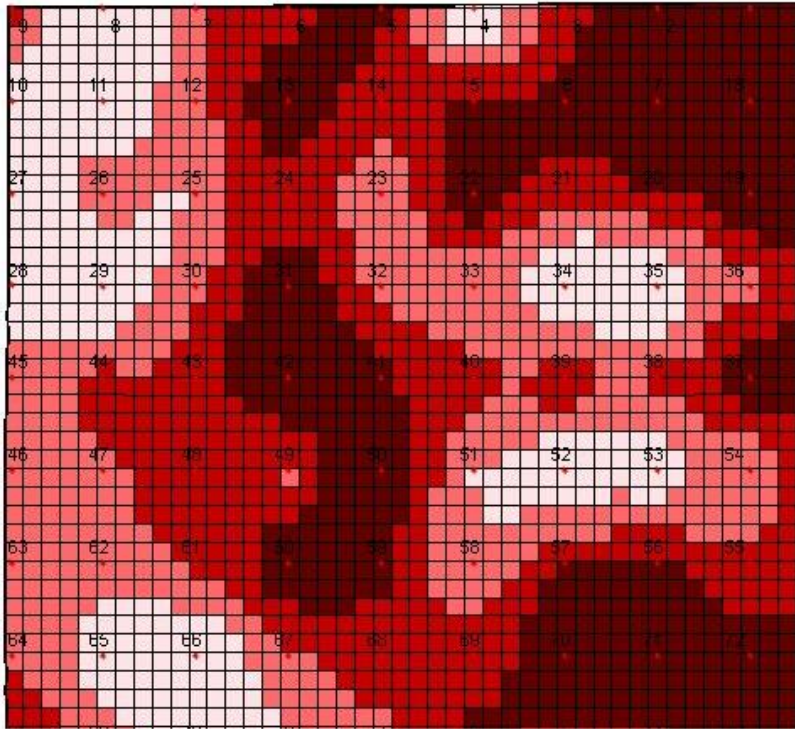
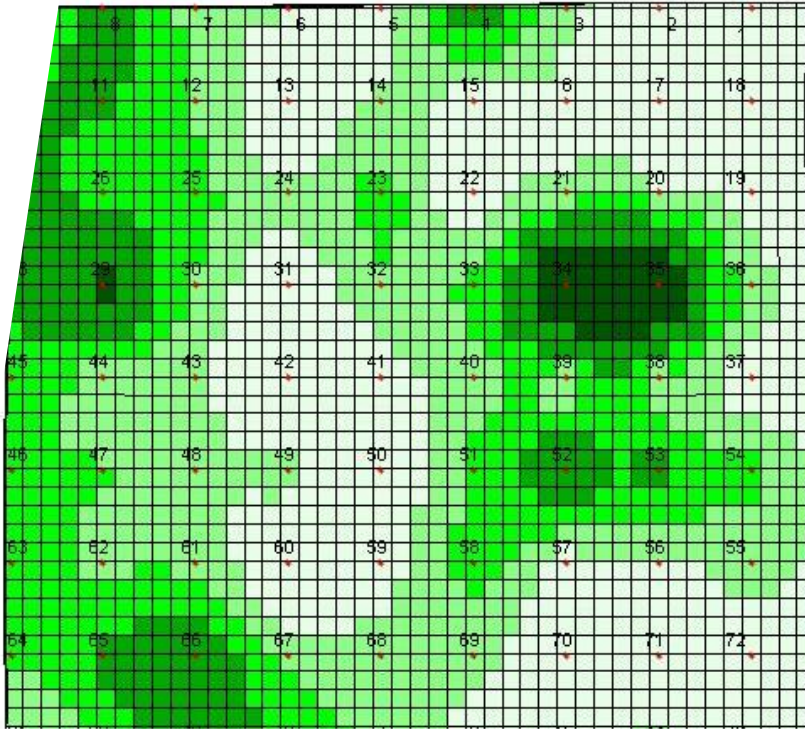
- ▶ Different geographies have different needs.
- ▶ In Fremont County alone, there is a wide variety of soil types, and landscapes.
- ▶ Even with environmental focus, economic impact is a factor.
- ▶ Specialization or adaptability should always be considered.

A shopping cart of options

- ▶ Mapping-satellite, zone, grid, EC, Rx, Yield, Moisture
- ▶ Soil sampling-Composite, grid, zone
- ▶ VR application-soil amendments, fertilizer, seeding, irrigation, pesticides
- ▶ In season imagery-satellite, aerial (plane or drone)
- ▶ In season tissue testing
- ▶ Precision soil moisture monitoring

RIVER RANCH ENTERPRISE | 2019



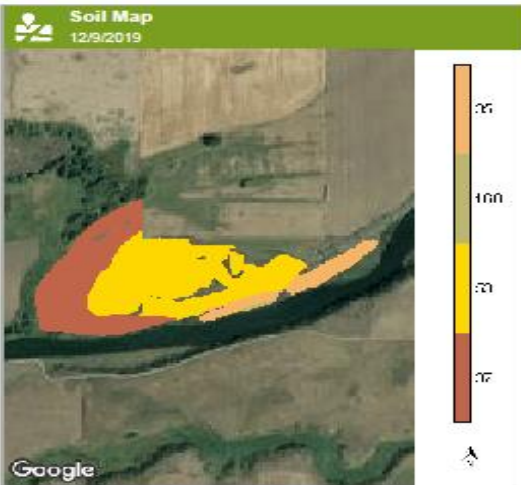
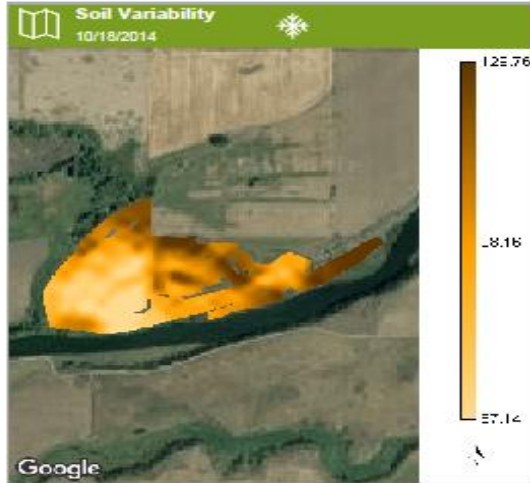
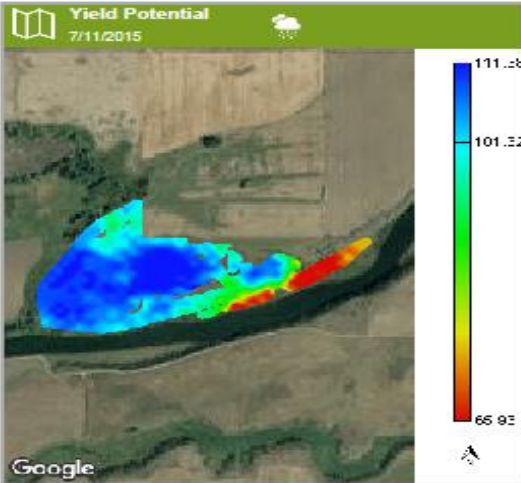


Grid soil sample map

pH map on the left-Lime recommendation map on the right

Grower REX BAUM
Farm Name Baum Farm
Farm Size 66.99 acres
Field Name Alwyns SE
TRS T9N, R42E, Sec32

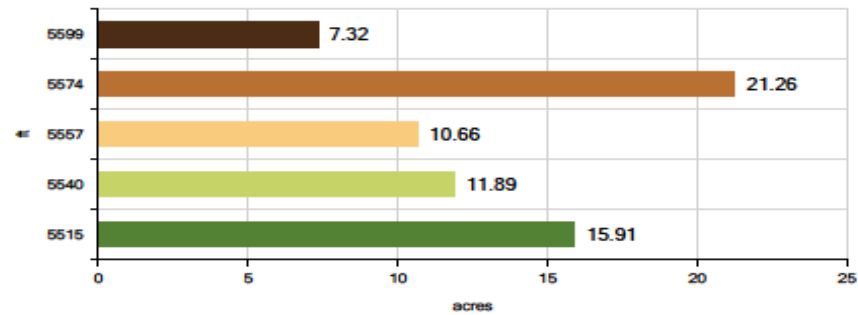
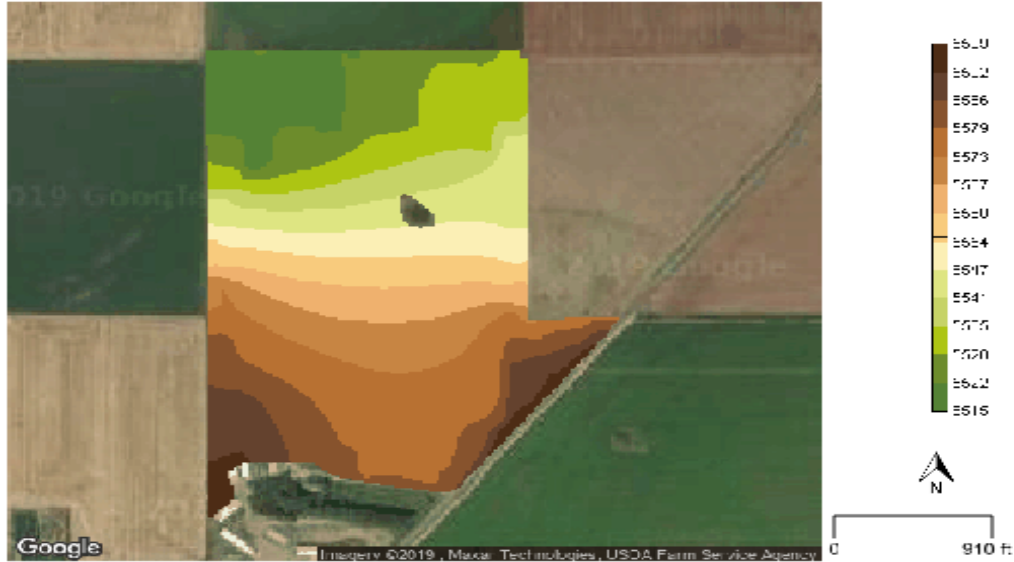
Field Size 66.99 acres
Crop Barley
Product



 Elevation
11/8/2019

Grower THOMAS HOWELL
Farm Name Home
Farm Size 67.04 acres
Field Name Jason North
TRS T9N, R43E, Sec23

Field Size 67.04 acres
Crop Not provided
Product





Rx Map Lime

10/14/2019

Grower THOMAS HOWELL
Farm Name Home
Farm Size 67.04 acres
Field Name Jason North
Task Name Copy of VRT Lime
TRS T9N, R43E, Sec23

Field Size 67.04 acres
Crop Not provided
Product



0 1000 ft

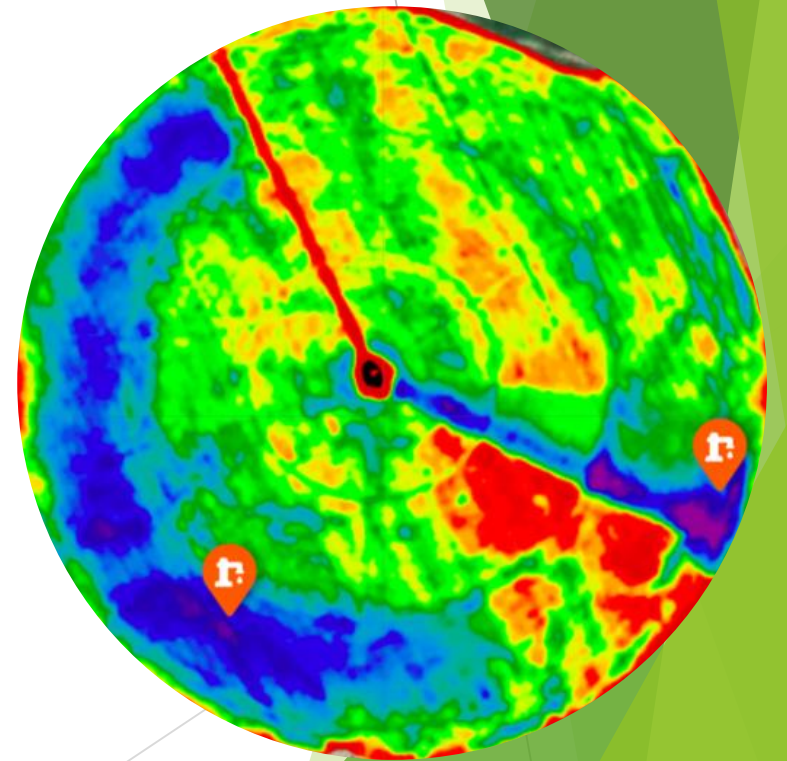
Product

Zone	1	2	3	4	
Lime (lb/ac)	6,000.00	4,000.00	12,000.00	8,000.00	Average: 6,198.83
Acres	19.54	20.9	1.71	22.2	Total: 64.36
Lime (lb)	117,240	83,600	162,000	177,600	Total: 399,000.00



Water Management

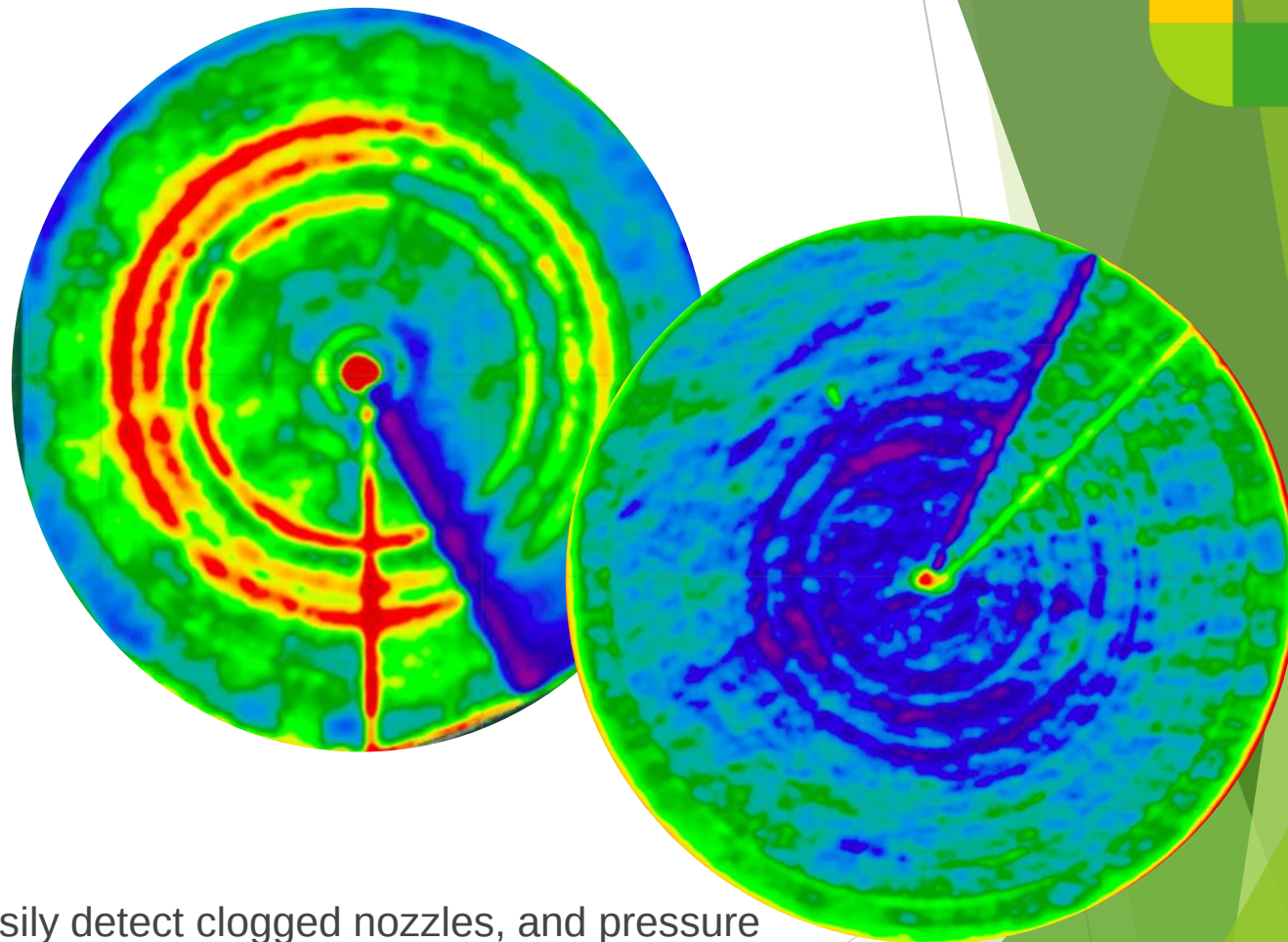
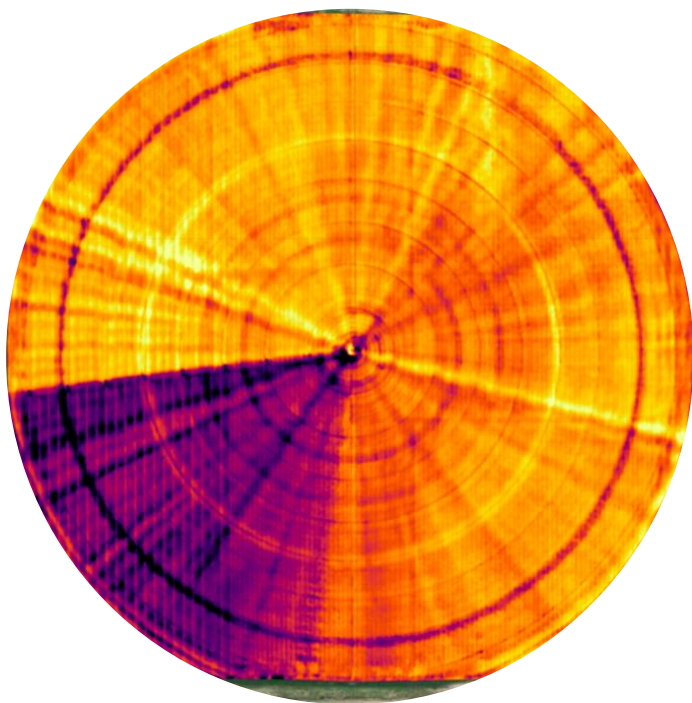
- Detect subtle issues the naked eye can't see.
- Prevent over & underwater watering
- Improve sustainability.



Equipment Issues

Water Stress/Thermal

- Automatic Detection
- Detect prior to NDVI
- Prevent yield loss



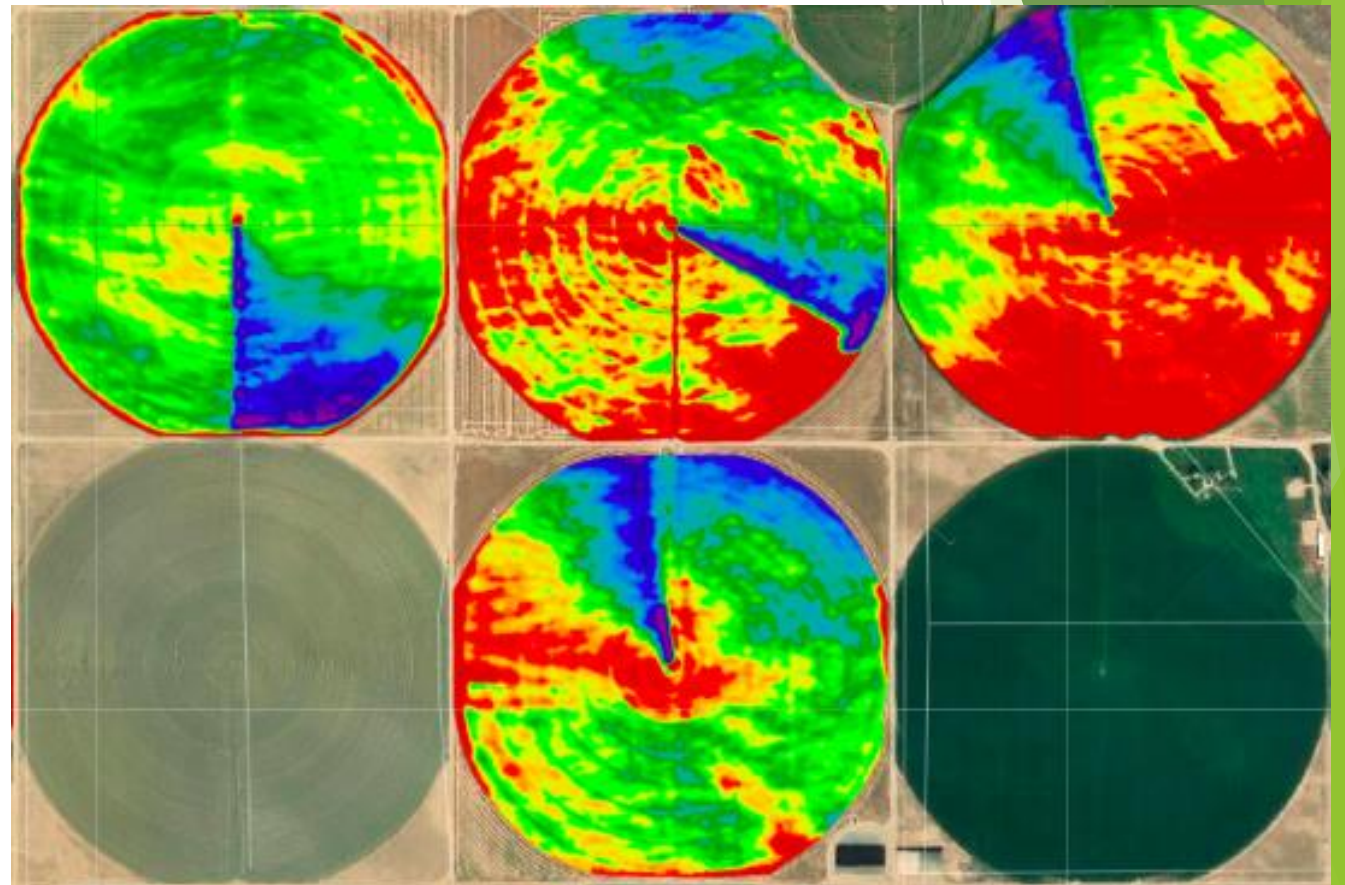
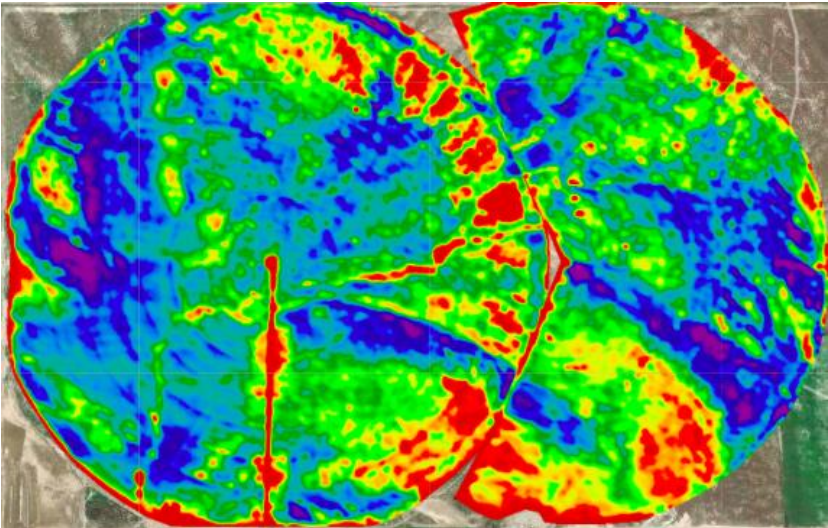
Easily detect clogged nozzles, and pressure issues before yield is lost.



Irrigation Uniformity

Water Stress

- Field benchmarking
- Increase uniformity
- Prevent stress



[https://youtu.be/aEUxBCU-](https://youtu.be/aEUxBCU-hg)
[hg](https://youtu.be/aEUxBCU-hg)

Playing the long ball-Sustainability

- ▶ Investing in the future is the definition of sustainability.
- ▶ Using tools available and considering better methods and technologies, will not only increase opportunities for profitability now, but will increase the value of the land and resources vital to our farms, our communities, and our families.

Thank you!