SIS Results

June 21, 2017

Agenda

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Results

Key Stats

Sampling

Analysis

Field Work

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There is 0.5% difference in water use between SIS fields and all fields

The study had a robust sample

Sample Size: Goal vs Achieved

Field Study Category	Estimated Population Percentage	Estimated Sample Size to Meet Sample Design	Actual Sample Size
SIS Program	17.9%	44	1,286
SIS Non-Program	9.3%	23	40
Non-SIS	72.9%	183	182
Total	**100.0%**	**250**	**1,508**

All field study types used less than the water requirement, on average

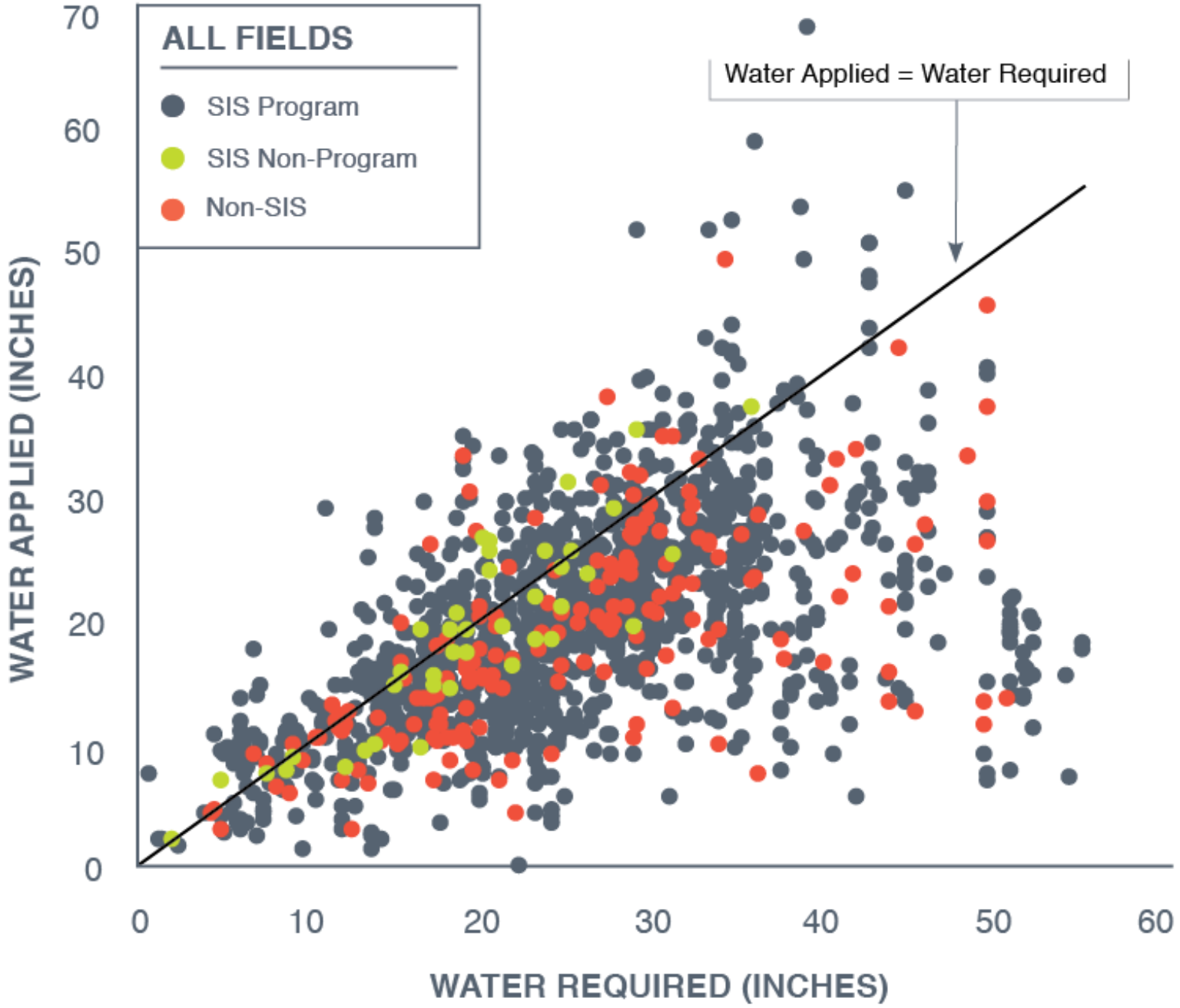
and
Non-SIS fields used the least amount of water, on average

Field Study Category	Water Use Ratio
SIS Program	0.760
SIS Non-Program	0.945
Non-SIS	0.730
General Market	0.755

Results by Field Study Category

Everyone used less water than the requirement, and looked similar to each other

Metric	SIS Program	General Market
Water Use Ratio	0.760	0.755
% Water Reduction	0.5%	
Absolute Precision	± 2.53%	
90% Confidence Bounds	-2.1%	3.0%


ALL FIELDS
SIS Program
SIS Non-Program
Non-SIS
Water Applied = Water Required
WATER APPLIED (INCHES)
WATER REQUIRED (INCHES)
0
10
20
30
40
50
60
70

We have high confidence in the results

90%

CONFIDENCE LEVEL

+/- 2.53%

ABSOLUTE PRECISION

Fields not using SIS used 68% of the water requirement for high management, and 76% for low/medium management

	Low/Medium Management	High Management
Category	Water Use Ratio	Water Use Ratio
SIS Program	0.791	0.727
SIS Non-Program	0.844	1.040
Non-SIS	0.760	0.683
Total	**0.772**	**0.731**

Which is why there isn't much of a difference

Category	Low/Medium Management		High Management	
	SIS Program	General Market	SIS Program	General Market
Water Use Ratio	0.791	0.772	0.727	0.731
% Water Reduction	1.9%		0.5%	
Absolute Precision	± 3.84%		± 3.77%	
90% Confidence Bounds	-2.0%	5.7%	-3.3%	4.2%

We sliced and diced the data numerous ways and the answer never changed.

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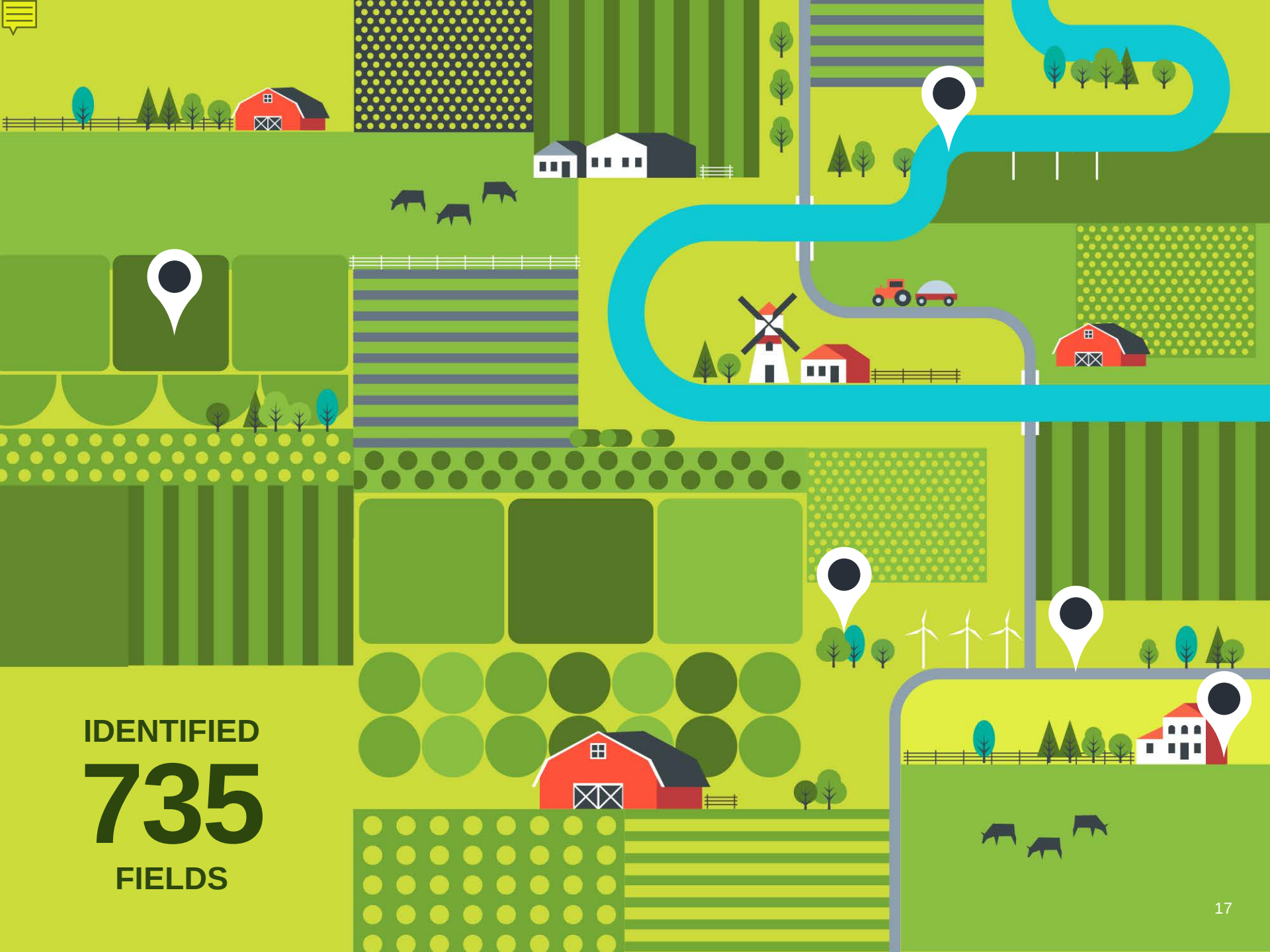
How we defined the SIS region

How we generated a random sample within the boundary


IDENTIFIED
735
FIELDS

Consultants identified contact information for 719 fields

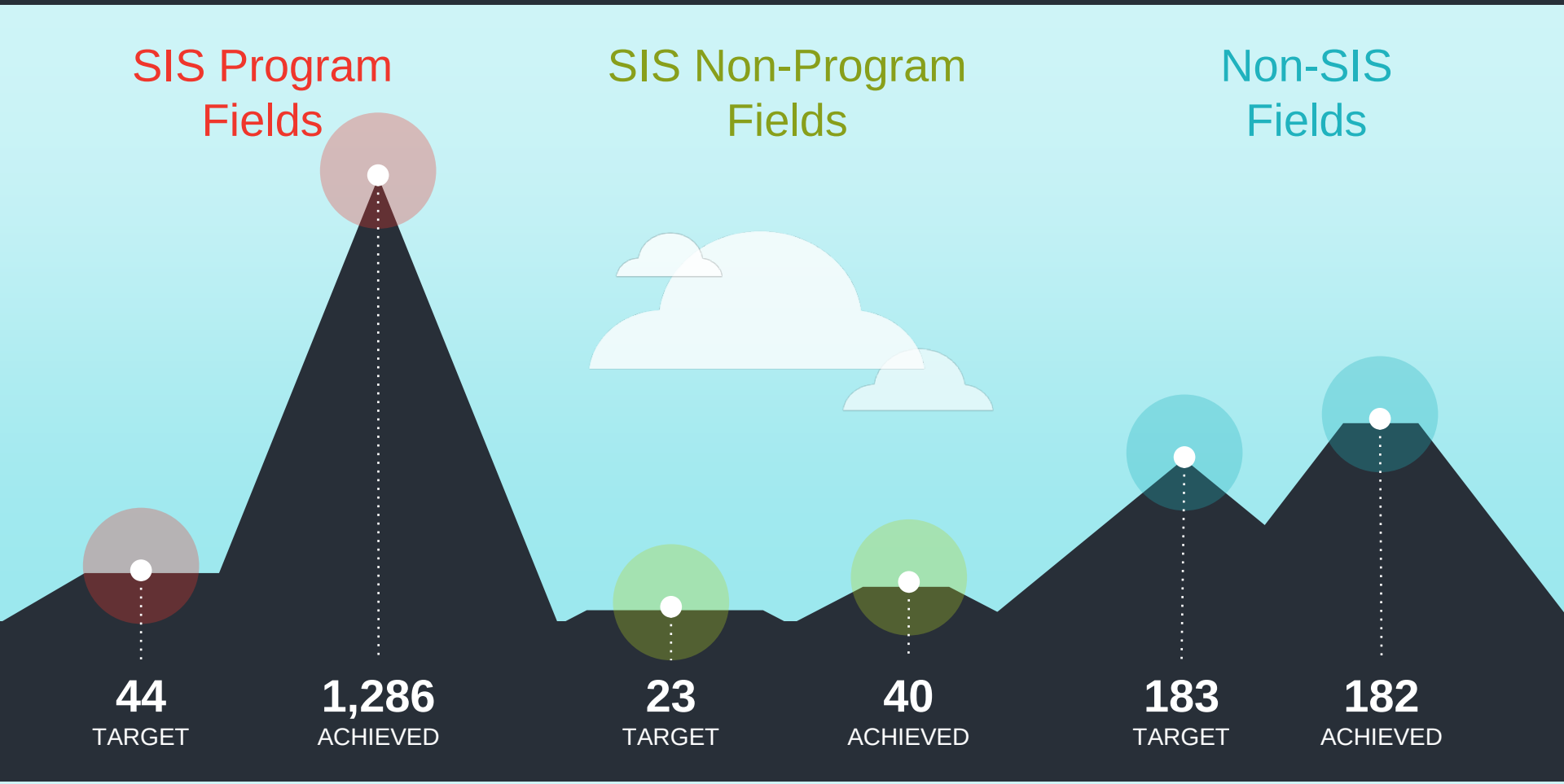
Categorized the 719 fields into 3 groups:

SIS Program

SIS Non-Program

Non-SIS

The sample size of each group was…



250 FIELDS TARGETED

1,508 FIELDS ACHIEVED

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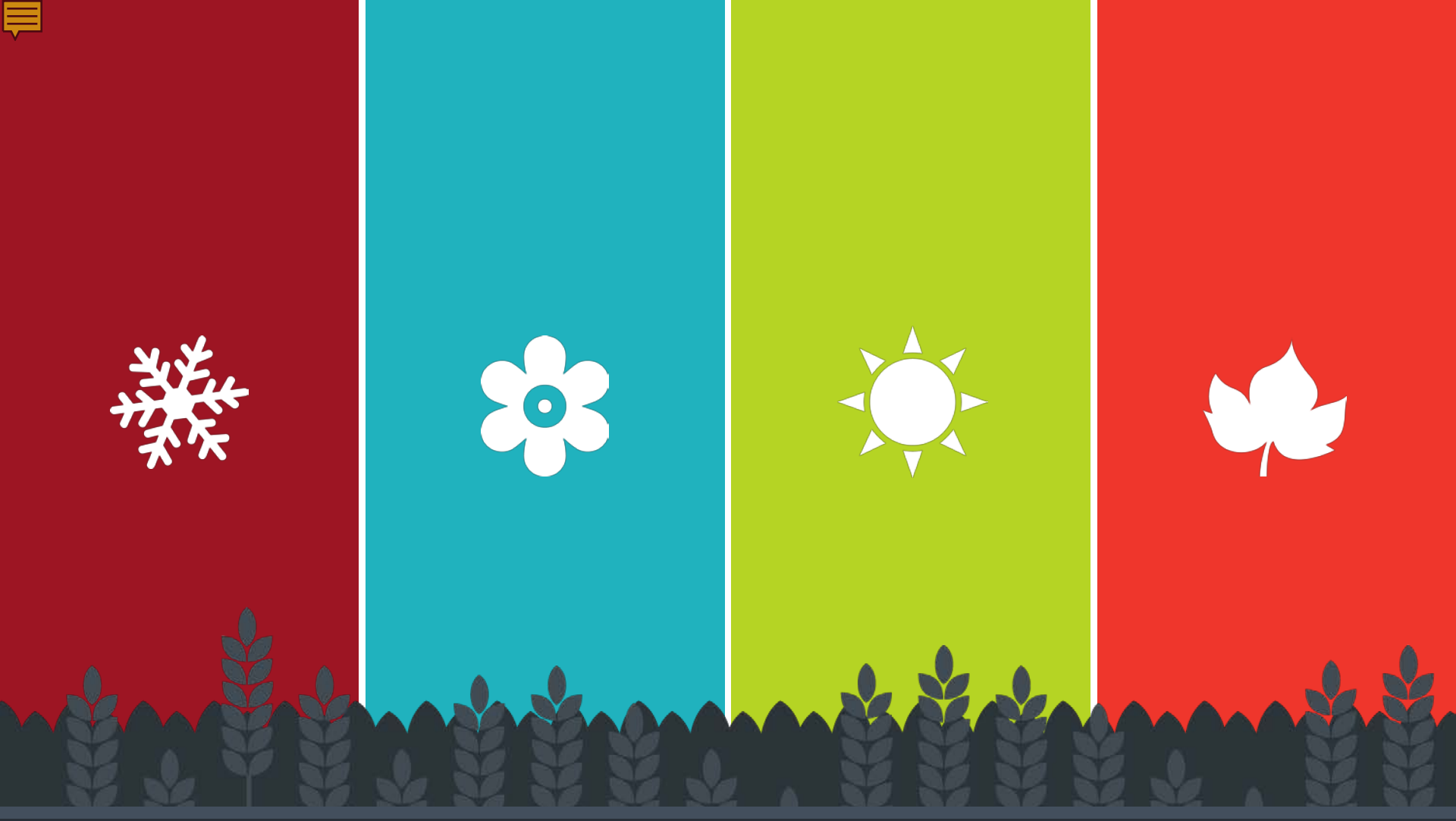
How Data was Collected

SIS Program

SIS Non-Program

Non-SIS



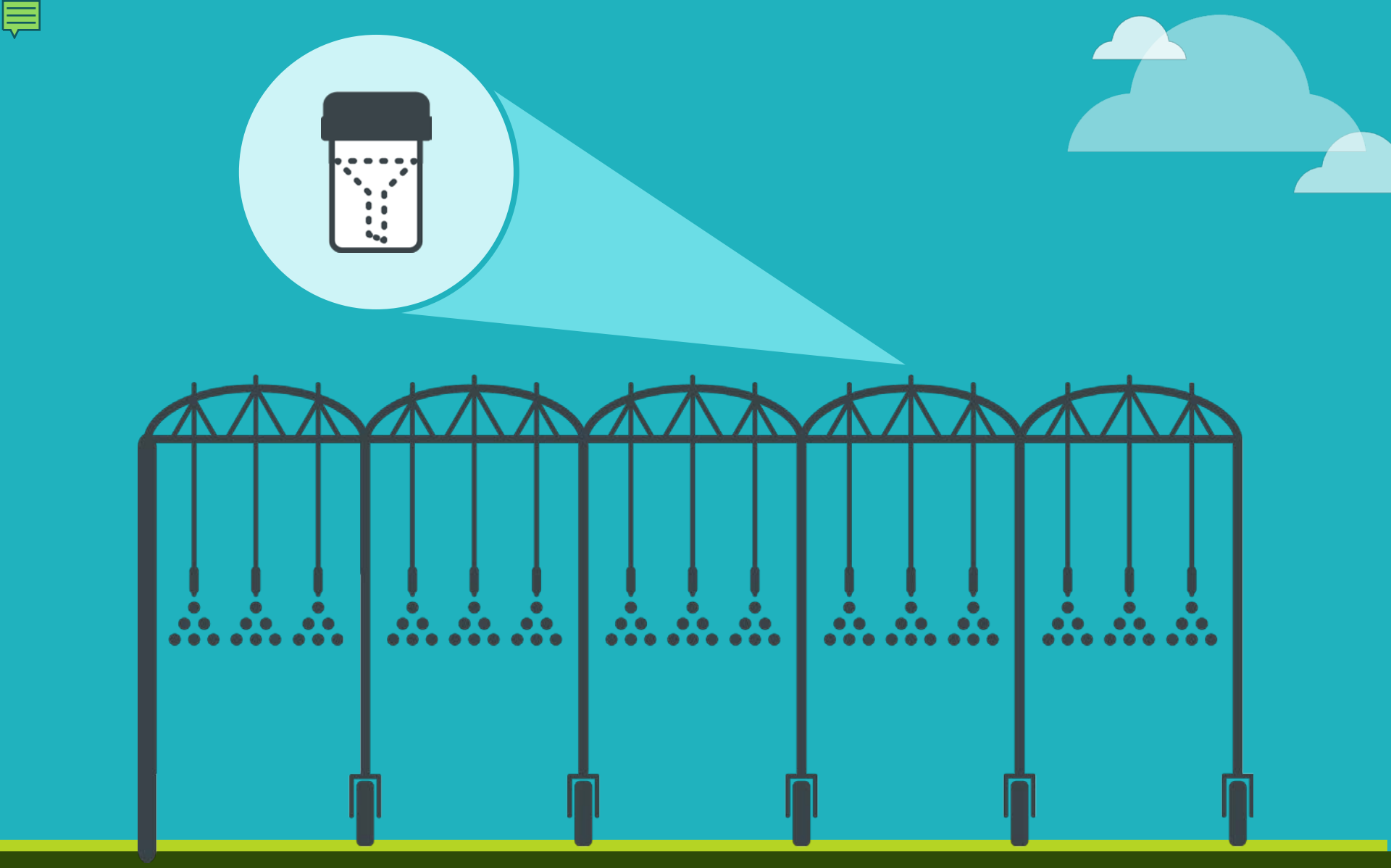
Collecting water applied data for the entire growing season was crucial

From Recruitment to Field Work

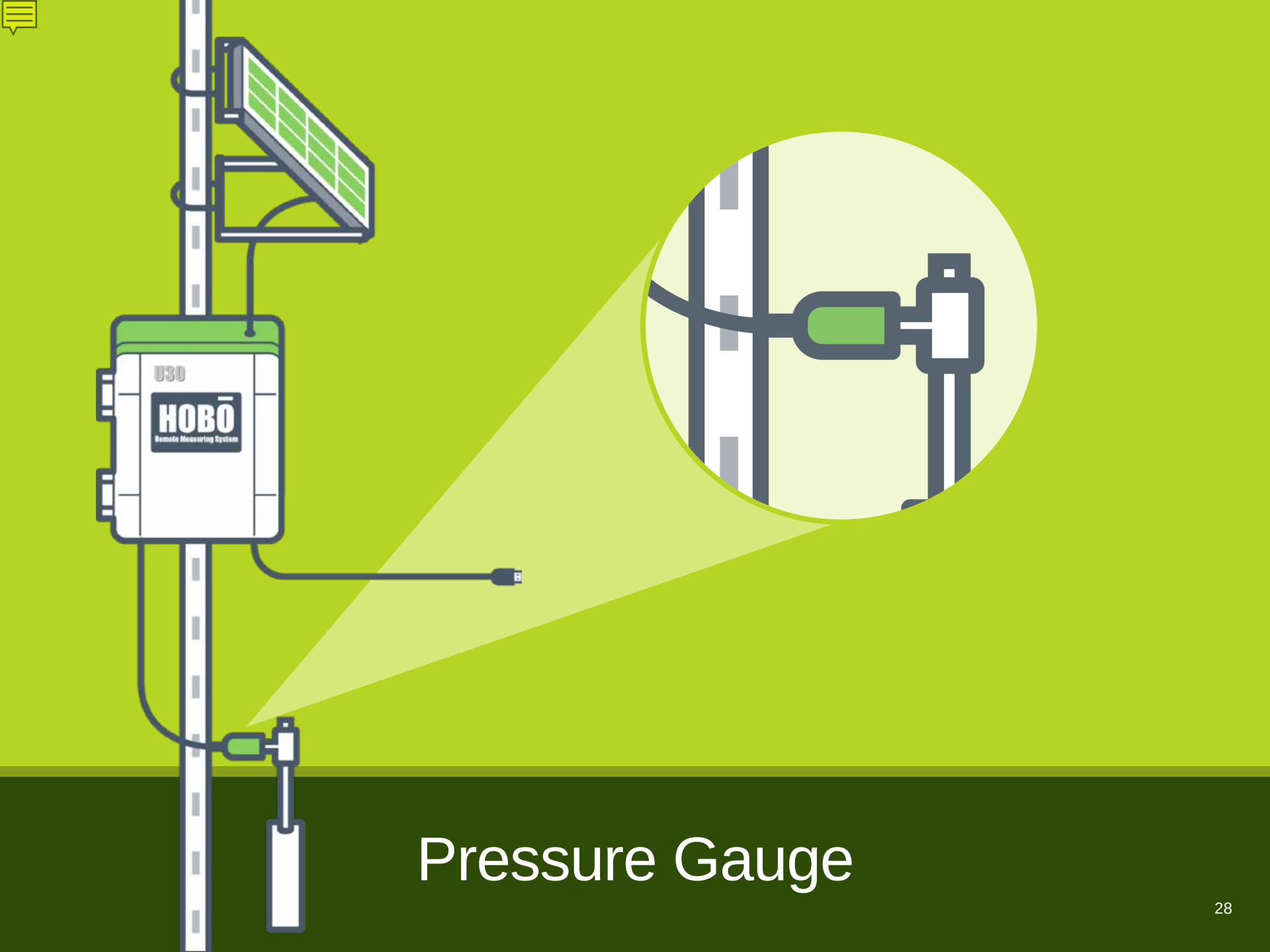
Category	Sample Points
Fields identified on irrigated land	735
Fields with contact information	719
Fields recruited and confirmed in study (installed, non-SIS fields only)	206
Fields with usable data (non-SIS fields only)	182

What We Did Onsite

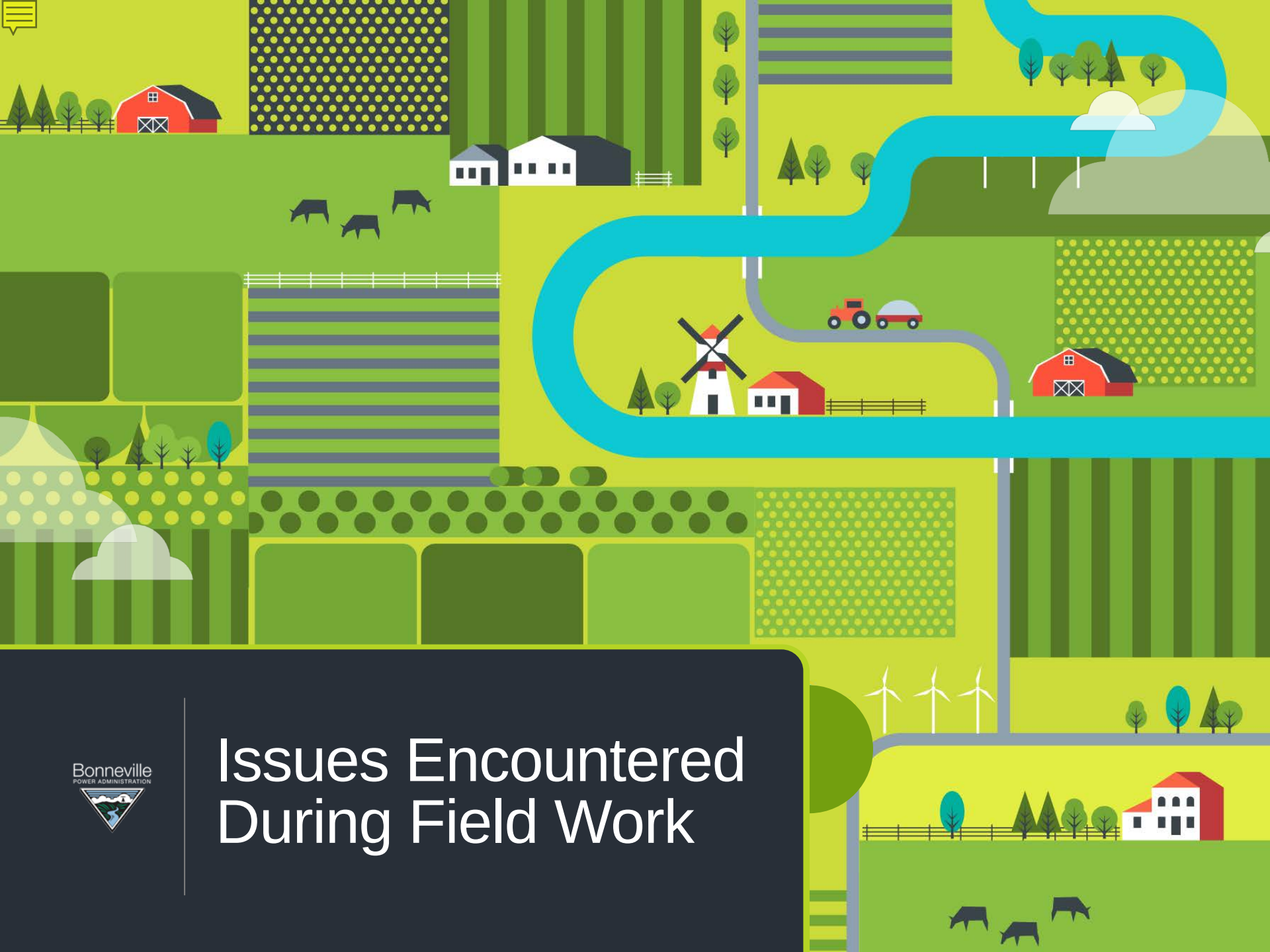
Methods of Collecting Data



Tipping Rain Gage

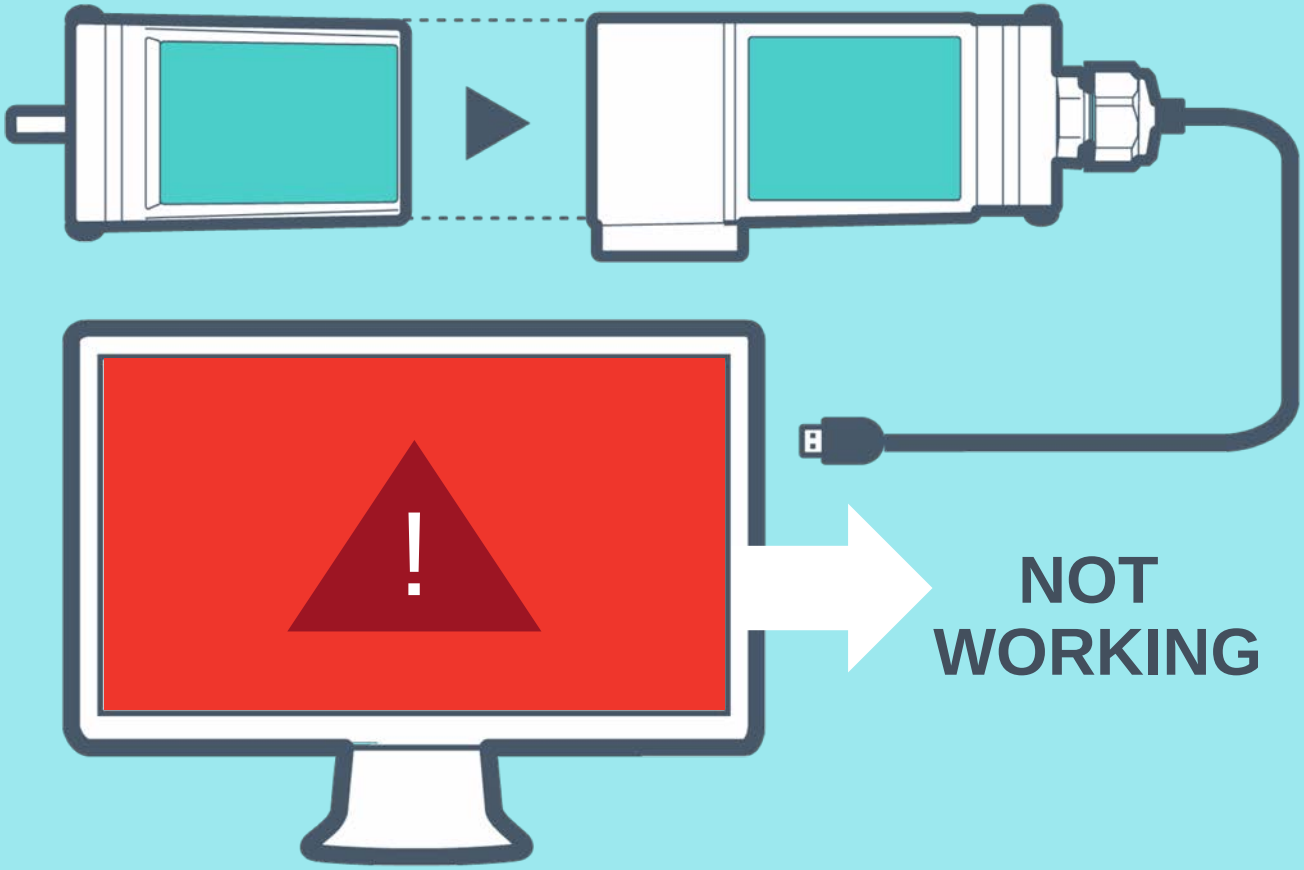


Pressure Gauge

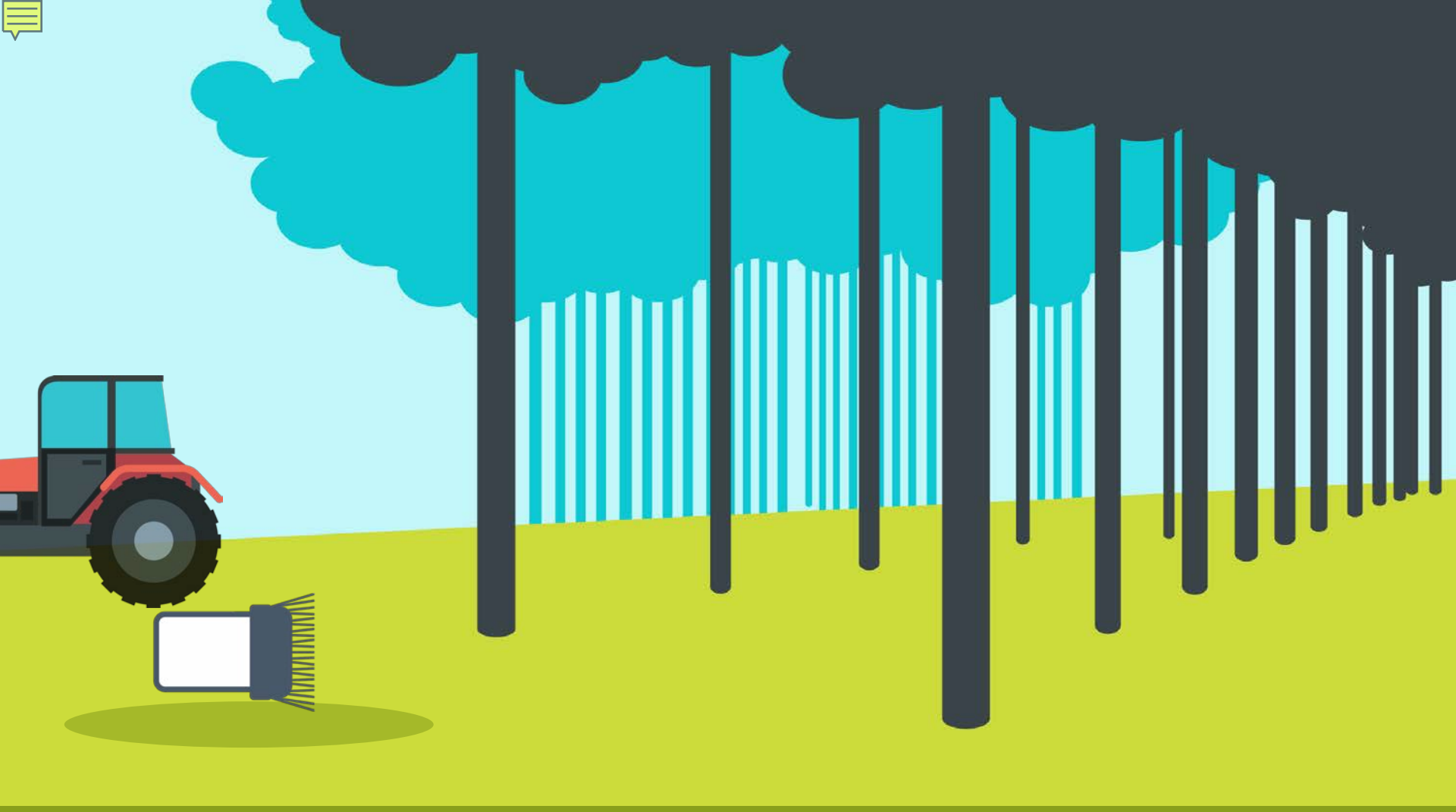


Bonneville
POWER ADMINISTRATION

Issues Encountered During Field Work

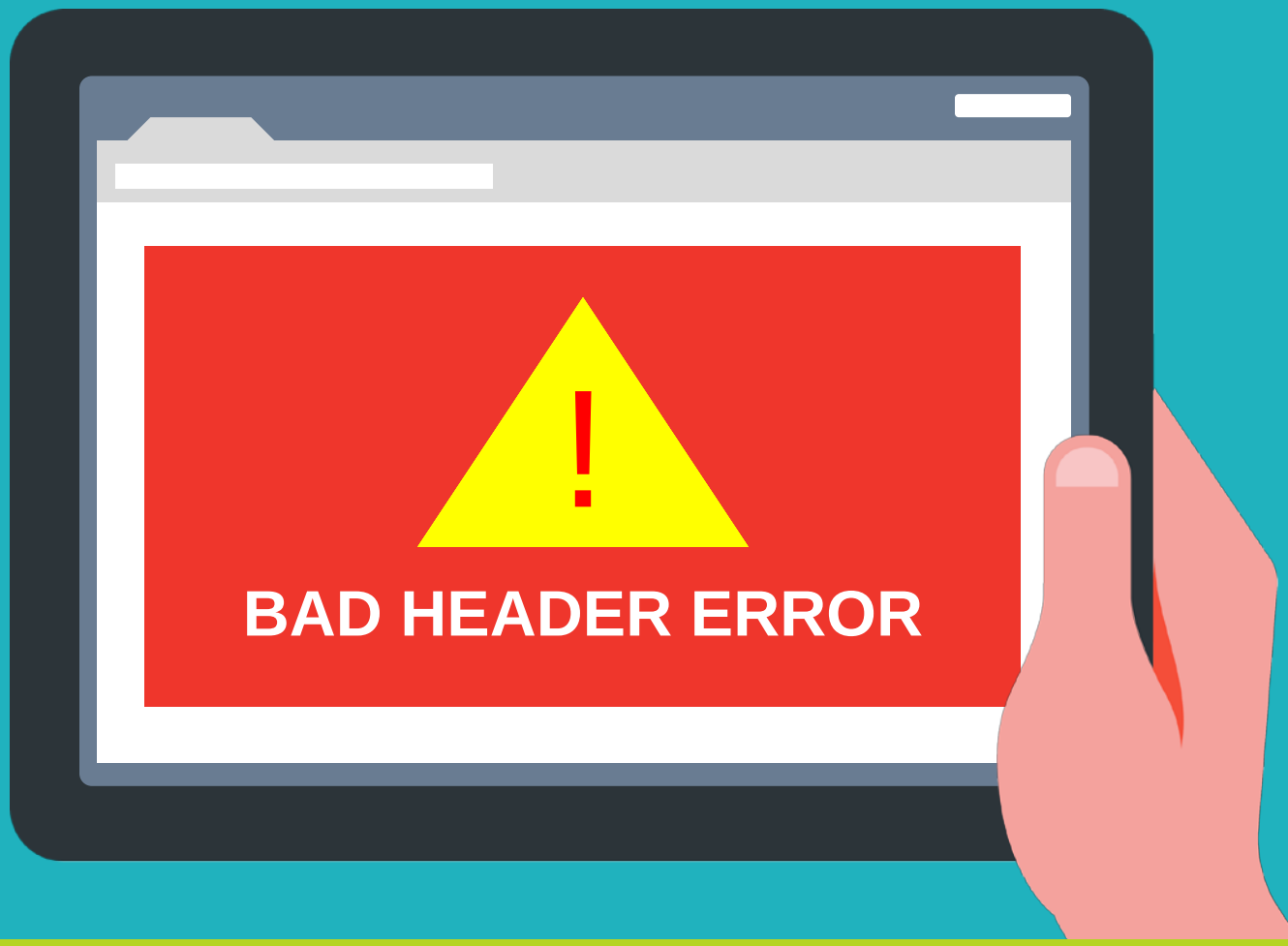


Tipping rain gauge base stations weren’t working

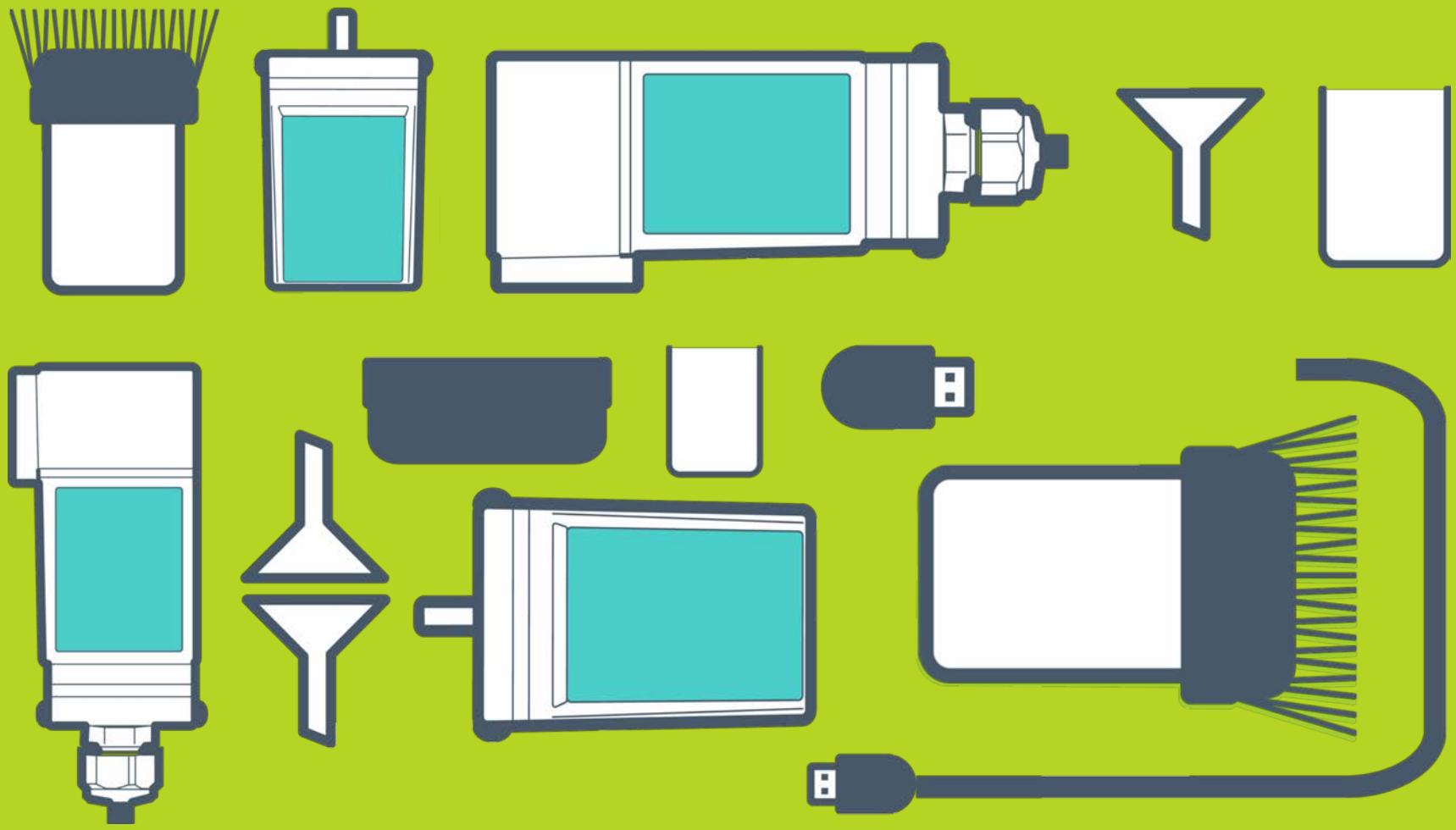


Tipping rain gauges knocked over and destroyed

Grower tampered with equipment



Many issues with loggers resulted in data loss



Equipment went missing

Real-time QC

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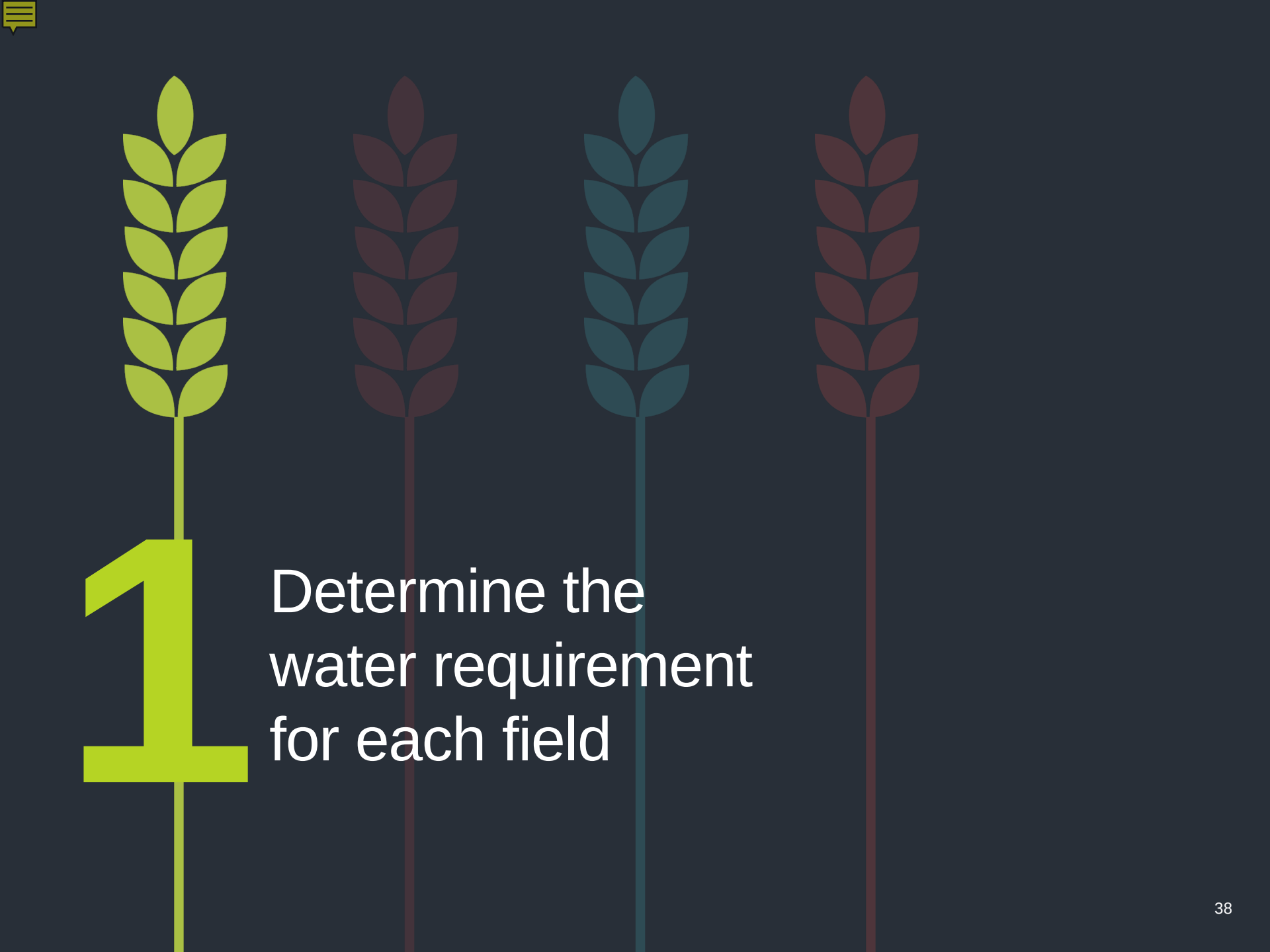
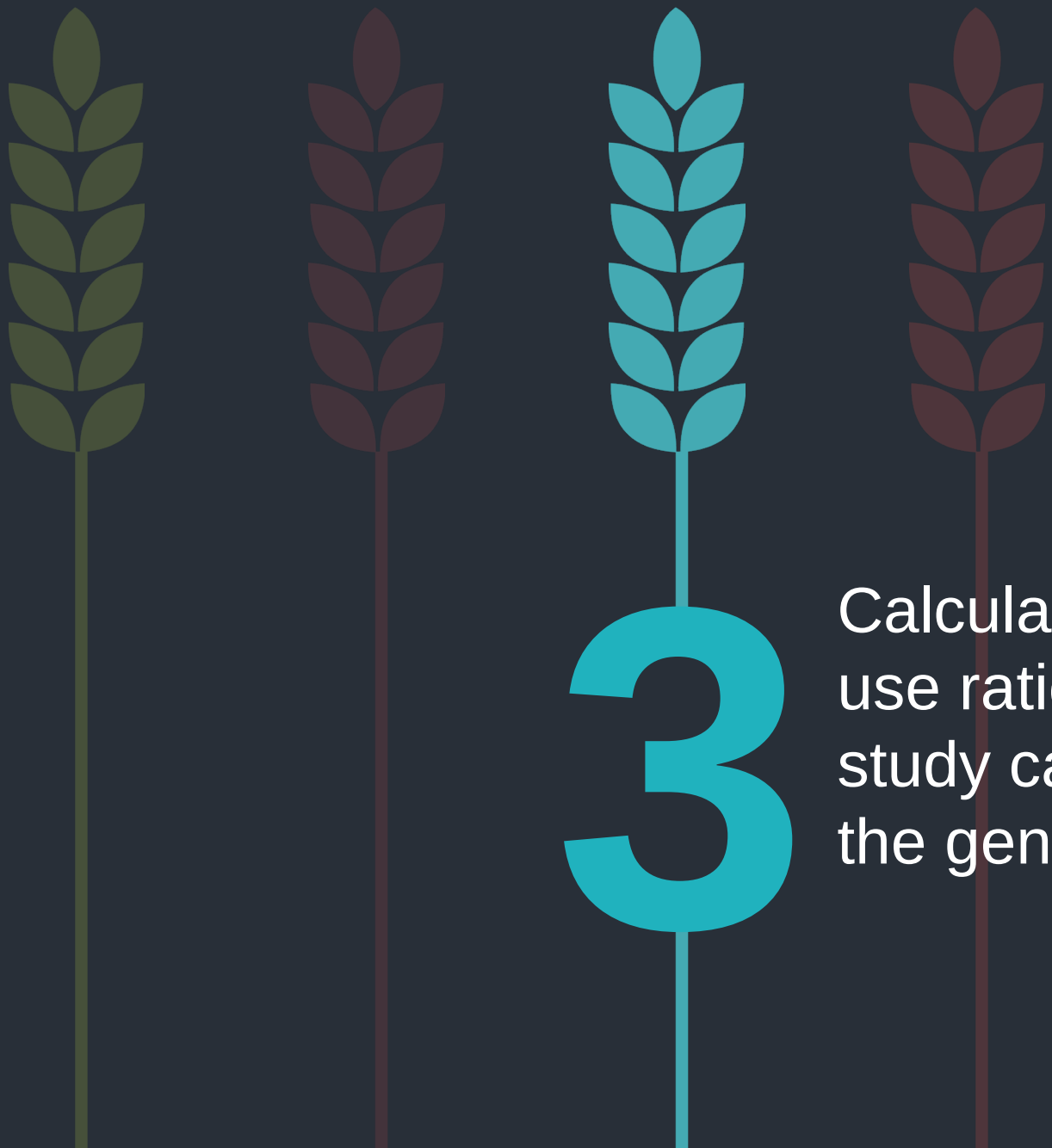
4 Steps to Analyzing Data



Determine the water requirement for each field

2
Determine the water applied for each field



3

Calculate the water use ratio for each field study category and the general market

Calculate the savings between the general market and the SIS program fields

4

SIS savings = water use ratio for the general market – water use ratio for the SIS program fields

1

Identified Outliers in the Data

2

Identified Missing Data

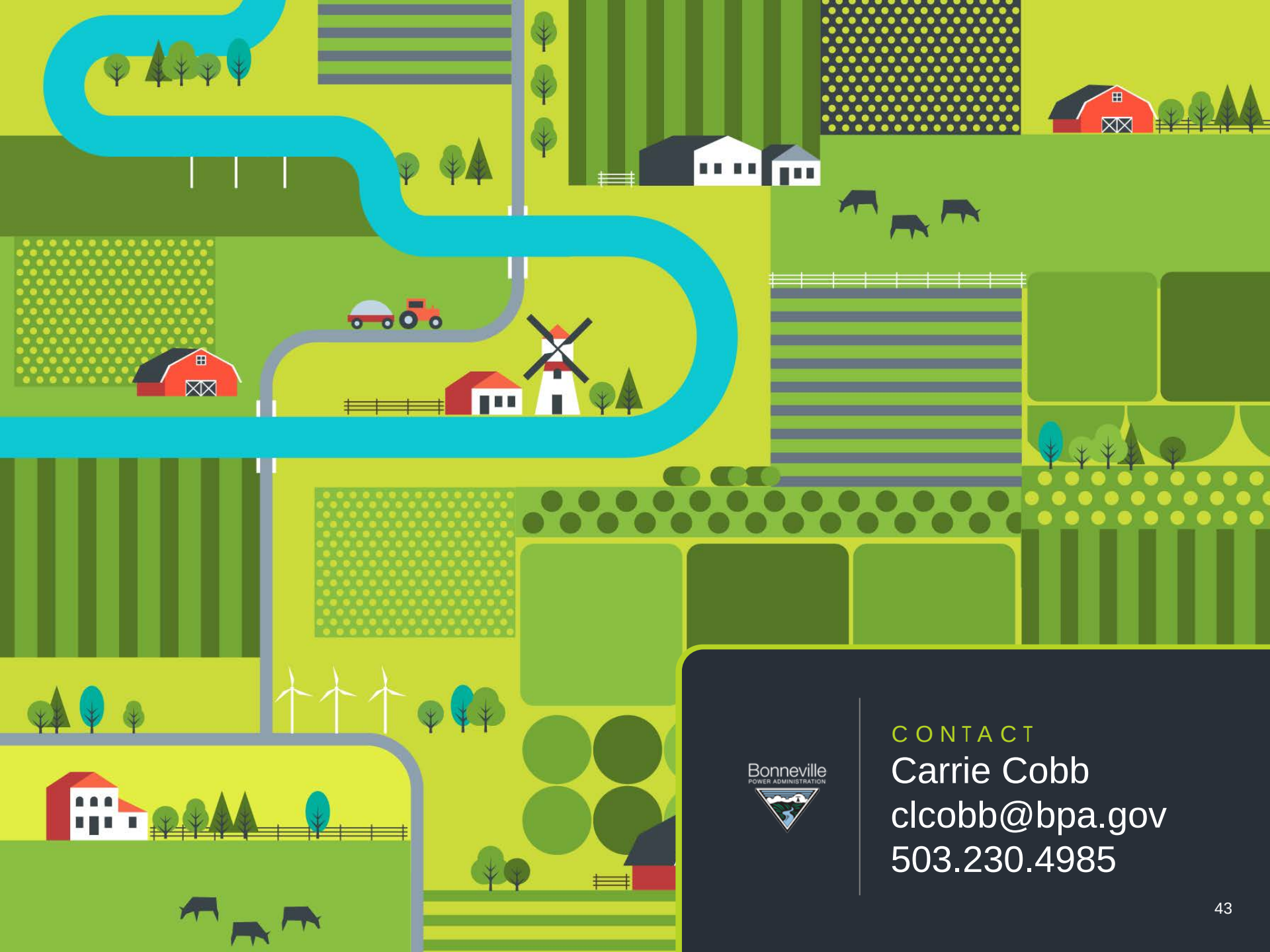
3

Compared Data to Ensure Consistency

4

Verified Assumptions

QC Process



CONTACT

Carrie Cobb

clcobb@bpa.gov

503.230.4985