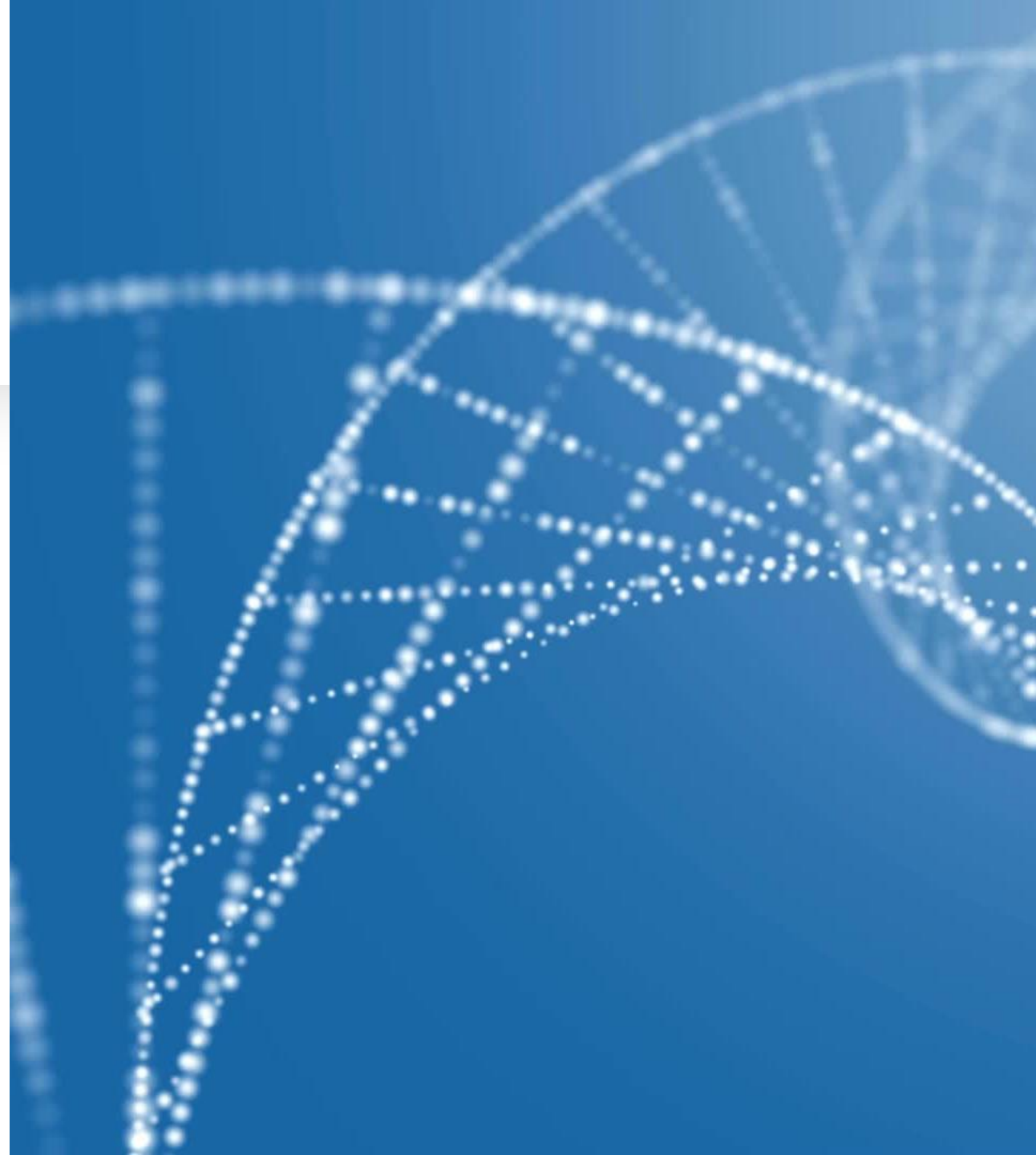


The Digital Future of Vegetation Management

Enhancing Operations, Visibility & Reporting

Agenda

- Introduction to AbaData
- Definition of Digital
- Digitizing a Major Oil & Gas Vegetation Management Program
- Sure Shot Case Study:
Efficiency Gains & Cost Savings
- Future Possibilities in Veg Management
- Q&A



Introduction

Who are we

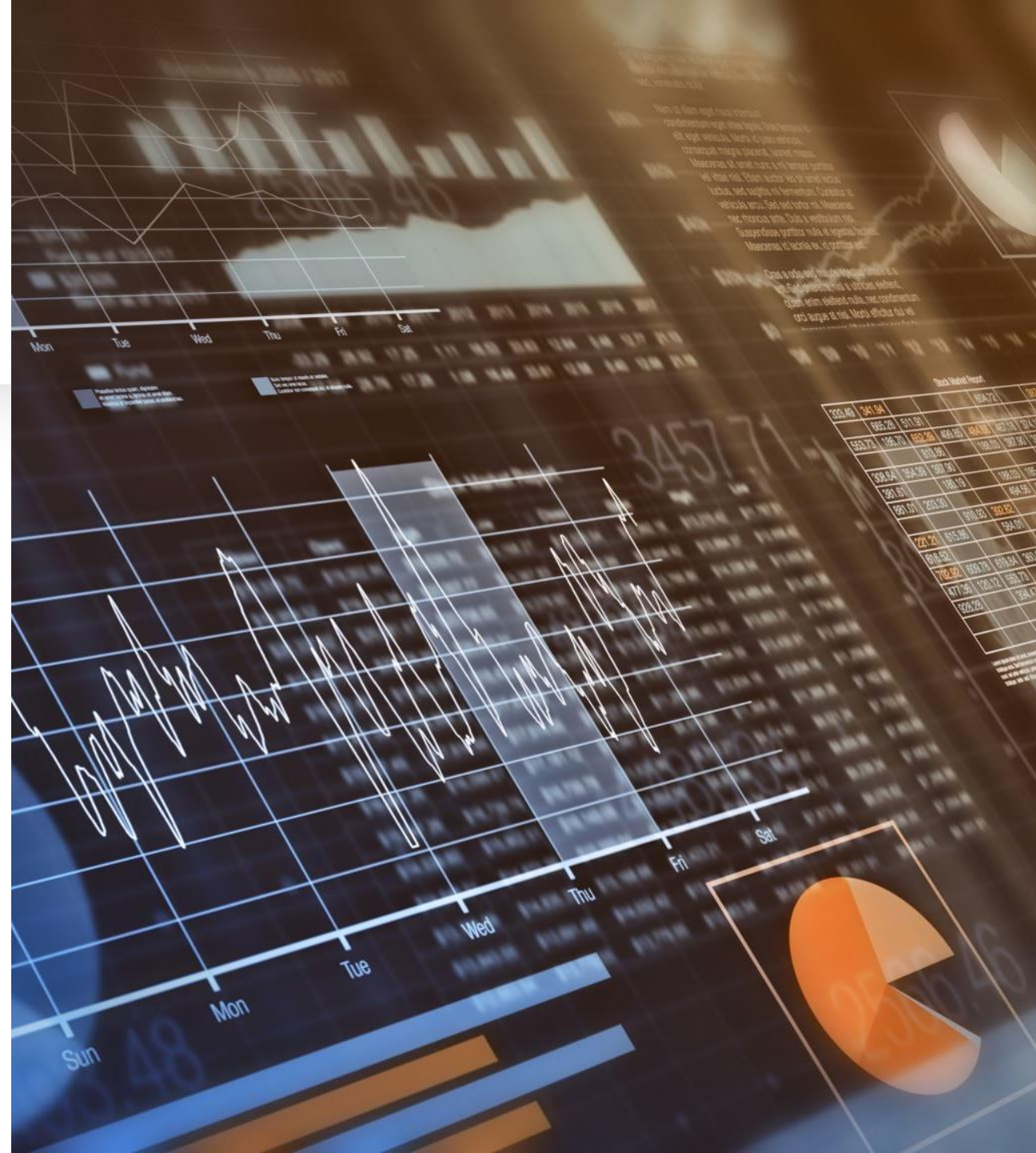
What is our history

Where are we located

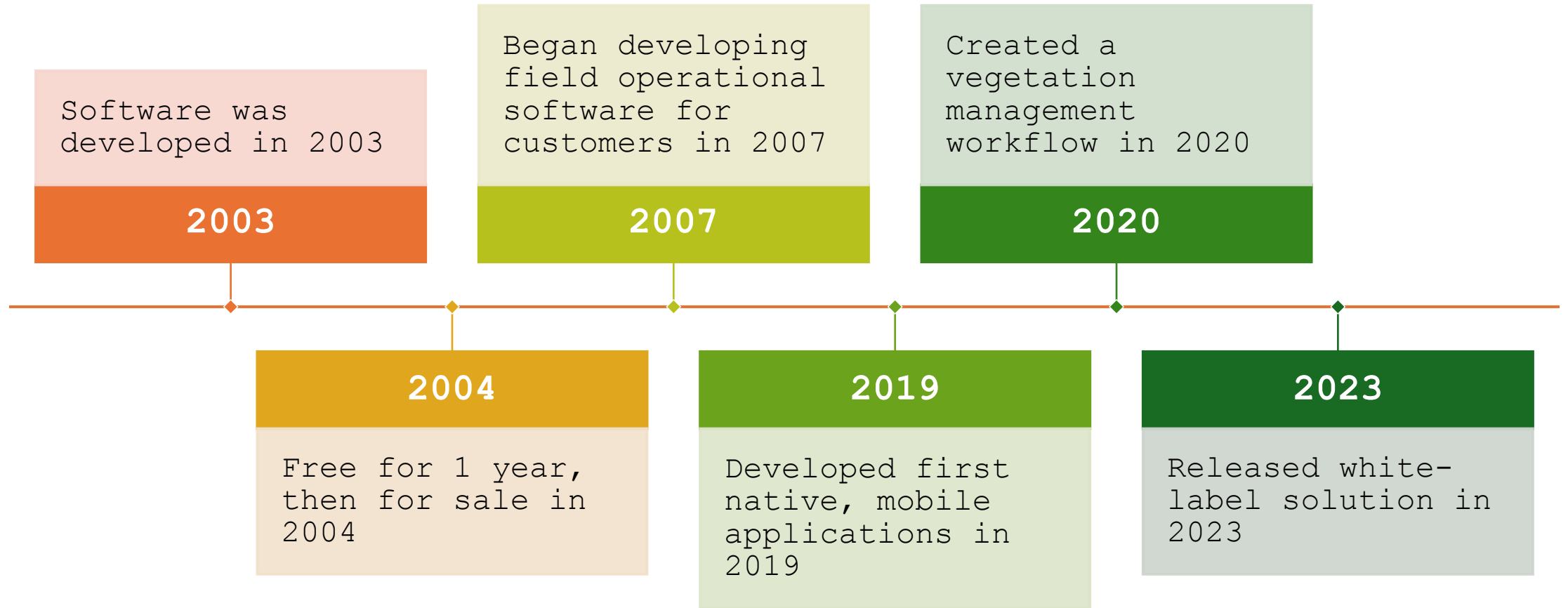
What makes us different

Who are we

- Western-Canada based software development company that specializes in creating software for field operations
- Focused largely on Oil & Gas industry
- Born out of Abacus Datagraphics Ltd. a pipeline locating company founded in 1992



What is our history



Where are we located

- Founded in Lacombe, AB
- Relocated to Red Deer, AB office still in use
- Headquartered in Calgary, AB
- Development office in Regina, SK
- Acquired opLYNX location in Edmonton, AB

What
makes
us
different

Large software development company
with a high ratio of technical people
compared to non-technical people

High development tenure with company

CEO with a technical background

Small, involved ownership group

Leadership



Amit Vadan
COO



Jason Toews
CEO



Kurtis Poettcker
Founder & CTO

The shifting role of digital technology

- **Automating:**

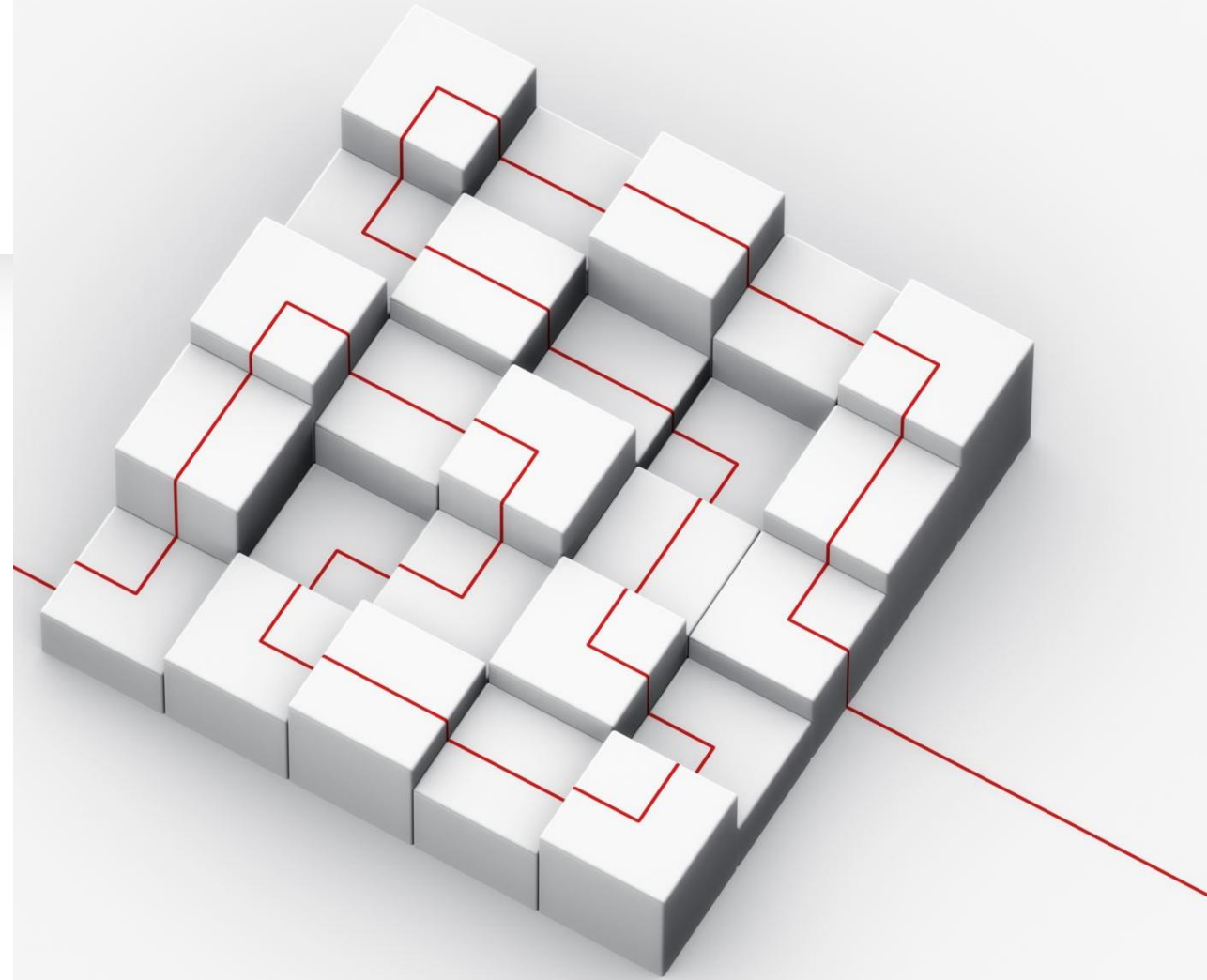
- Automating existing paper-based processes
- Replacing human labour in certain routine-type business processes

- **Informing**

- Providing information to upper and lower echelons
- Solving problems and supporting decisions
- Increasing efficiency and effectiveness at work

- **Transforming:**

- Redefining organizations, i.e., their structure and how they work
- Transforming industries and business ecosystems
- Helping organizations collaborate and engage with their customers



Why is
digital
technology so
influential?

- The incorporation of digital technologies has lasting effects on many aspects of an organization, including design, production, distribution, organizational partnerships, fields and industries.

Digitization

- The conversion of analogue information into binary digits, which can then be used to automate and inform processes

Digitalization

- The use of digital technologies to transform a business model and provide new revenue and value-producing opportunities by adjusting existing or creating new products and services

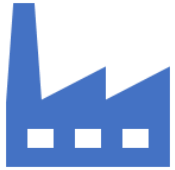
Digital innovation

- The concerted orchestration of new products, processes, services, platforms or even new business models in a given context

Digital transformation

- The combined effects of several digital innovations, bringing about novel actors, structures, practices, values and beliefs that change, threaten, replace or complement existing rules of the game within organisations, ecosystems, industries or fields

Case Study – Digitizing a Major Vegetation Management Program



Context:

An oil & gas producer with 10+ vendors and varied report formats

Approximately 25,000 well sites



Old Process:

Multiple protocols

- One email per site
- Multiple sites per email
- Compressed attachments
- FTP delivery

Five-person management team



Challenge:

Inconsistent data and inefficient processes

Veg Management

←

→

↑

↺

🖥️

>

This PC

>

Local Disk (C:)

>

Veg Management

Search Veg Management

🔍

+

New ▾

✂️

📄

📁

📄

📄

🗑️

↕️ Sort ▾

☰ View ▾

⋮

📄 Details

🖥️ Desktop ➦

📁 Downloads ➦

📄 Documents ➦

🖼️ Pictures ➦

🎵 Music ➦

🎬 Videos ➦

📁 Logos ➦

📁 Display ➦

📁 Screenshots ➦

📁 Veg Managemer ➦

> 📁 OneDrive

▾ 🖥️ This PC

> 🖥️ Local Disk (C:)

📁

Name

^

📁

SprayReports.zip

📄

Site 1.pdf

📄

CC482098.pdf

📄

Route 141 Sites.xlsx

📄

01-20-025-20W4MSprayReport.pdf

📄

Route 112 - 10-21-49-1-4.pdf

📄

Spray Report.docx

📄

📄

📄

Date modified

2025-02-24 8:48 PM

2025-02-24 8:48 PM

2025-02-24 8:49 PM

2025-02-24 8:49 PM

2025-02-24 8:49 PM

2025-02-24 8:50 PM

2025-02-24 8:50 PM

2025-02-24 8:51 PM

2025-02-24 8:51 PM

2025-02-24 8:52 PM

Type

Compressed (zipped)...

Chrome PDF Docum...

Chrome PDF Docum...

Microsoft Excel Work...

Chrome PDF Docum...

Chrome PDF Docum...

Microsoft Word Doc...

Chrome PDF Docum...

Microsoft Excel Work...

Chrome PDF Docum...

Size

📁

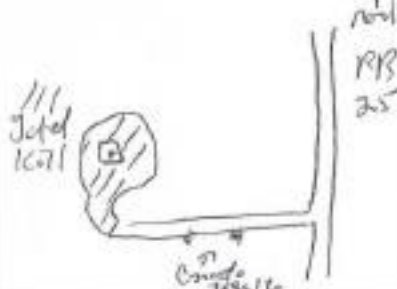
Veg Management (10 items)

📘

Select a single file to get more information and share your cloud content.

SPRAY APPLICATION RECORD

0161

[Redacted] [Redacted] Olds, Alberta T4H 1W2 [Redacted] Pesticide Service Registration Number 232127-01-00	Husky Oil Operat. Location: Sylvan Lake Plant Date of Application: 11 July, 20 Site: 100107-19-0038-02W5 Within 30 m of open water? Yes ☐ No ☒																												
Applicator [Redacted] Cert. Pest. Applicator: #LCA19938 Cell: 403 586-7000 Purpose of Application Control spread of weeds and undesirable plants; reduce the fire hazard on oil and gas leases and right of ways.	<table border="1"> <thead> <tr> <th>Target Pest</th> <th>Low</th> <th>Med</th> <th>High</th> </tr> </thead> <tbody> <tr> <td>Quackgrass</td> <td></td> <td></td> <td>☒</td> </tr> <tr> <td>Dandelion</td> <td></td> <td></td> <td>☒</td> </tr> <tr> <td>Canada Thistle</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Tall Buttercup</td> <td></td> <td></td> <td>☒</td> </tr> <tr> <td>Field Horsetail</td> <td></td> <td></td> <td>☒</td> </tr> <tr> <td>Dog Mustard</td> <td></td> <td></td> <td>☒</td> </tr> </tbody> </table>	Target Pest	Low	Med	High	Quackgrass			☒	Dandelion			☒	Canada Thistle				Tall Buttercup			☒	Field Horsetail			☒	Dog Mustard			☒
Target Pest	Low	Med	High																										
Quackgrass			☒																										
Dandelion			☒																										
Canada Thistle																													
Tall Buttercup			☒																										
Field Horsetail			☒																										
Dog Mustard			☒																										
Total Vegetation Control Area Pesticide: Weathermax PCP # 27487 Rate: 1.50 L/Ha Pesticide: MCPA Amine 600 PCP #31327 Rate: 1.80 L/Ha Pesticide: Milestone PCP # 28517 Rate: 0.27 L/Ha Area: 2100 m2 Spray Applied: 30 Litres Equipment: Kubota Dual Spray/hand gun Start: 12:45 pm; End 1:15 pm	Environmental Conditions Wind Speed 4 kms/hr; Direction SE Sun ☒ Partial Cloud ☐ Full Cloud ☐ Temperature 24 C Humidity 60% Surrounding Crops North Hay East " South " West "																												
Preserve the Grass Area Pesticide: MCPA Amine 600 PCP #31327 Rate: 1.80 L/Ha Pesticide: Milestone PCP # 28517 Rate: 0.27 L/Ha Area: m2 Spray Applied: Litres Start: : ; End : [Signature] Date: 11 July, 20																													
Comments: Spot sprayed a few small patches of Canada Thistle on access road with MCPA																													



Husky Wildmere

01C-18-047-04W4

Date Sprayed	Time	Temp. (°C)	Humidity %	Wind Speed (km/h)	Wind Direction
Aug 10, 2020	8:50	14	67	20	W
Applicators		Supervisor	Application Method		Application Rate (L/ha)
Taylor		LAC23228/13748	Hose & Hand Gun		400
Soil Type	Target Species		Weed Density	Weed Stage	
Sandy Clay	Quackgrass		1%	Mature	
Downhole Billing Locations					
1C0/01-18-047-04W4					
#	Tank Mix			Vol. (L)	Area (m2)
1	Flaxten @0.5L/ha-PCP26277,OctTain@2L/ha-PCP30077,VM480@5L/ha-PCP26840			5	125
Current Year Comments					
Shut in Spot sprayed site Lease is surrounded by Pastureland No water on site No ferns					



A large orange circle is positioned on the left side of the slide, partially overlapping a solid blue vertical bar that runs along the far left edge.

The Transforma tion

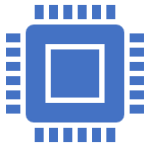
- Before
 - High Administrative Burden
 - Data Entry Errors
 - Inconsistent Reporting
 - Risk of Missed Sites and Duplicated Sites
 - Lack of Data-Driven Decision Making
 - Delayed Reporting
 - Slow Billing
 - No Data Availability
- 
- Four thick, hand-drawn style blue curved lines are located in the bottom right corner of the slide, arranged in a roughly diagonal pattern from bottom-left to top-right.



The Transforma tion

- After
 - 75% Reduction in Administrative Time
 - Enhanced Reporting Accuracy & Consistency
 - Real-Time KPIs
 - Data-Driven Decision Making
 - Faster Reporting & Invoice Approvals
 - Improved Access to Data Within Organization
- 

The Solution



Management:

Digital site management
achieved through AbaData
Sites assigned to vendors



Field Data Collection:

Mobile data collection
achieved through dedicated
native application
Vendors only see sites
assigned to them



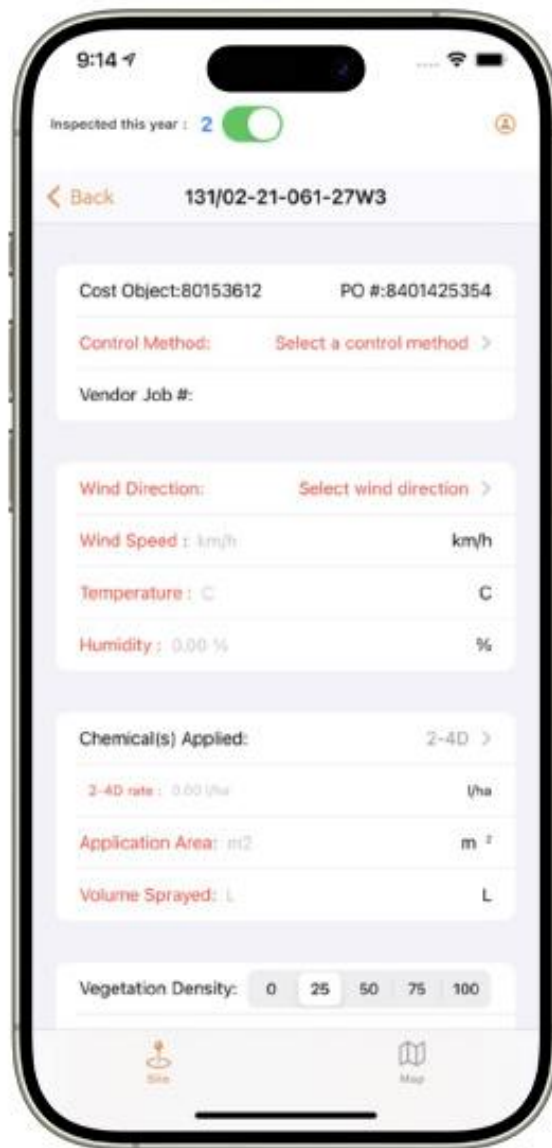
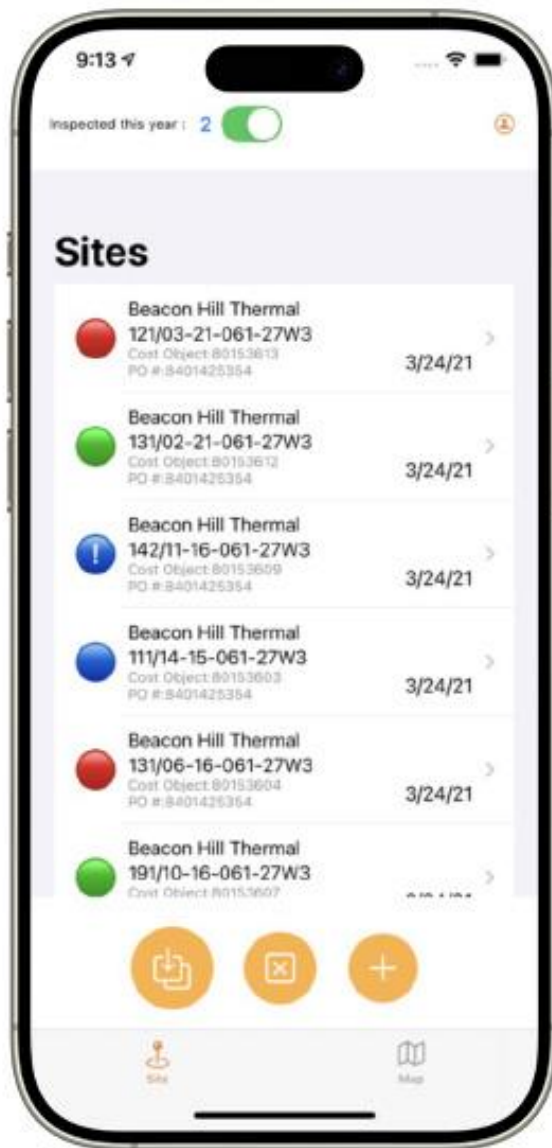
Job Tracking:

Dashboard reporting on
entire scope of project and
current status
All company users able to
see site inspections after
vendor upload



Reporting:

Single-click reporting of
any field collected in
device including equipment
used, chemical sprayed and
hours spent



Information

More Info

Attachments

Lease Inspections

Lease Photos

Vegetation Management

Equipments

SWPO Inspections

SWPO Photos

Comments

VEGETATION MGMNT FOR WELL : 111 / 15-33-050-22 W3 / 0

☐	Date	Vendor	Submitted By	Cost Object	Control Method	Comments
☐	JULY 8, 2024			CC 80045911	Weed Whacking	
☐	JULY 4, 2024			CC 80045911	Mowing	
☐	JULY 4, 2024			CC 80045911	Spot Spraying	Spot sprayed lease for reemerging weeds. Tax audit inspection done earlier this year.
☐	JUNE 9, 2024			CC 80045911	Blanket Spray	
☐	AUGUST 22, 2023			CC 80045911	Weed Whacking	
☐	AUGUST 17, 2023			CC 80045911	Mowing	
☐	AUGUST 17, 2023			CC 80045911	Spot Spraying	Spot sprayed Kochia and other minor broadleaves.
☐	MAY 26, 2023			CC 80045911	Blanket Spray	
☐	SEPTEMBER 7, 2022			CC 80045911	Mowing	
☐	AUGUST 8, 2022			CC 80045911	Blanket Spray	Spot spray as per farmer request
☐	MAY 26, 2022			CC 80045911	Mowing	
☐	MAY 26, 2022			CC 80045911	Blanket Spray	
☐	SEPTEMBER 29, 2021			CC 80045911	Handpicking	Inspection: Clean all dead

Print

Close

Tools

Select

Pan

Measure

Zoom In

Zoom Out

Zoom To

Find Nearest

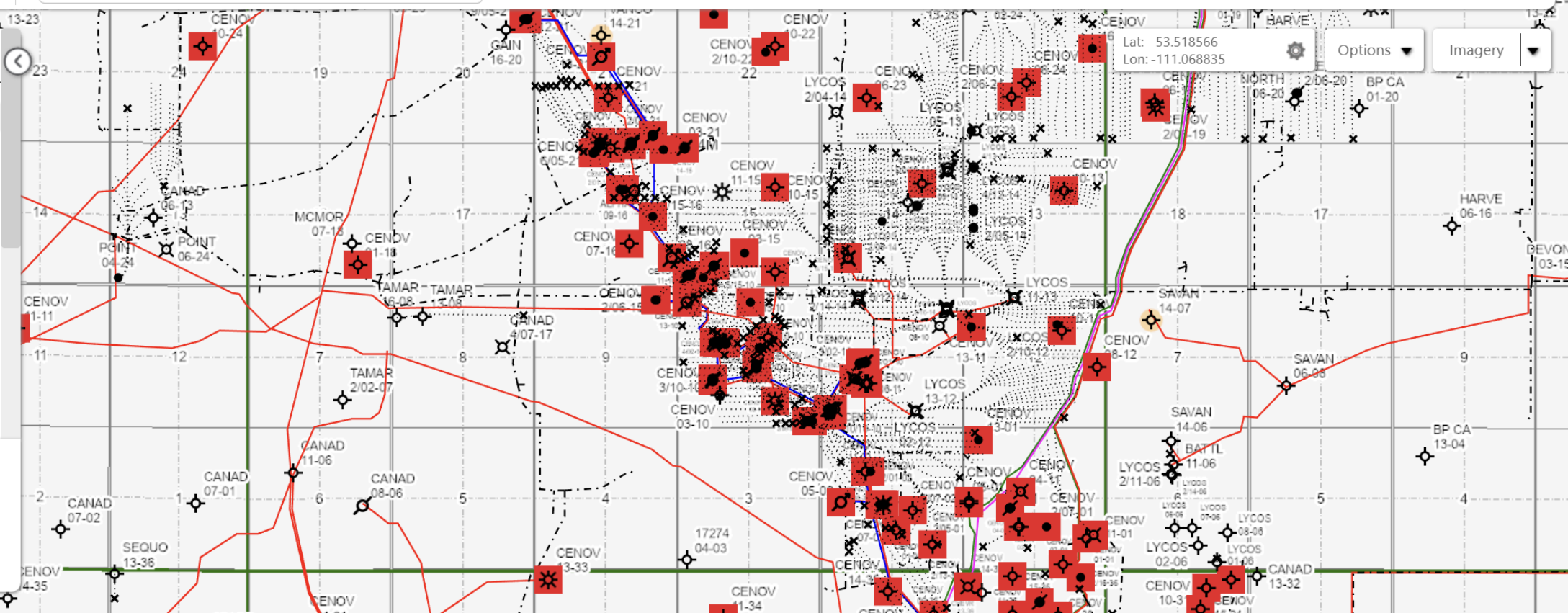
Get Directions

Road Map

Clear Selection

User Guide

Contact Us



Non-Compliant: 11

Coming Due: 0

Compliant: 0

Total: 11



Wells Pipelines Facilities Swpo Op Rounds Tanks Trucks Standards Saba/Scba Misc Tasks Forms Manuals Midstream

Well Management

FILTER BY: AMU

Route 12D - New Drills

☐ Unable to Visit

Filter

Clear

Lease Inspections

Spray Inspections

Mow Inspections

Lease Inspection Summary

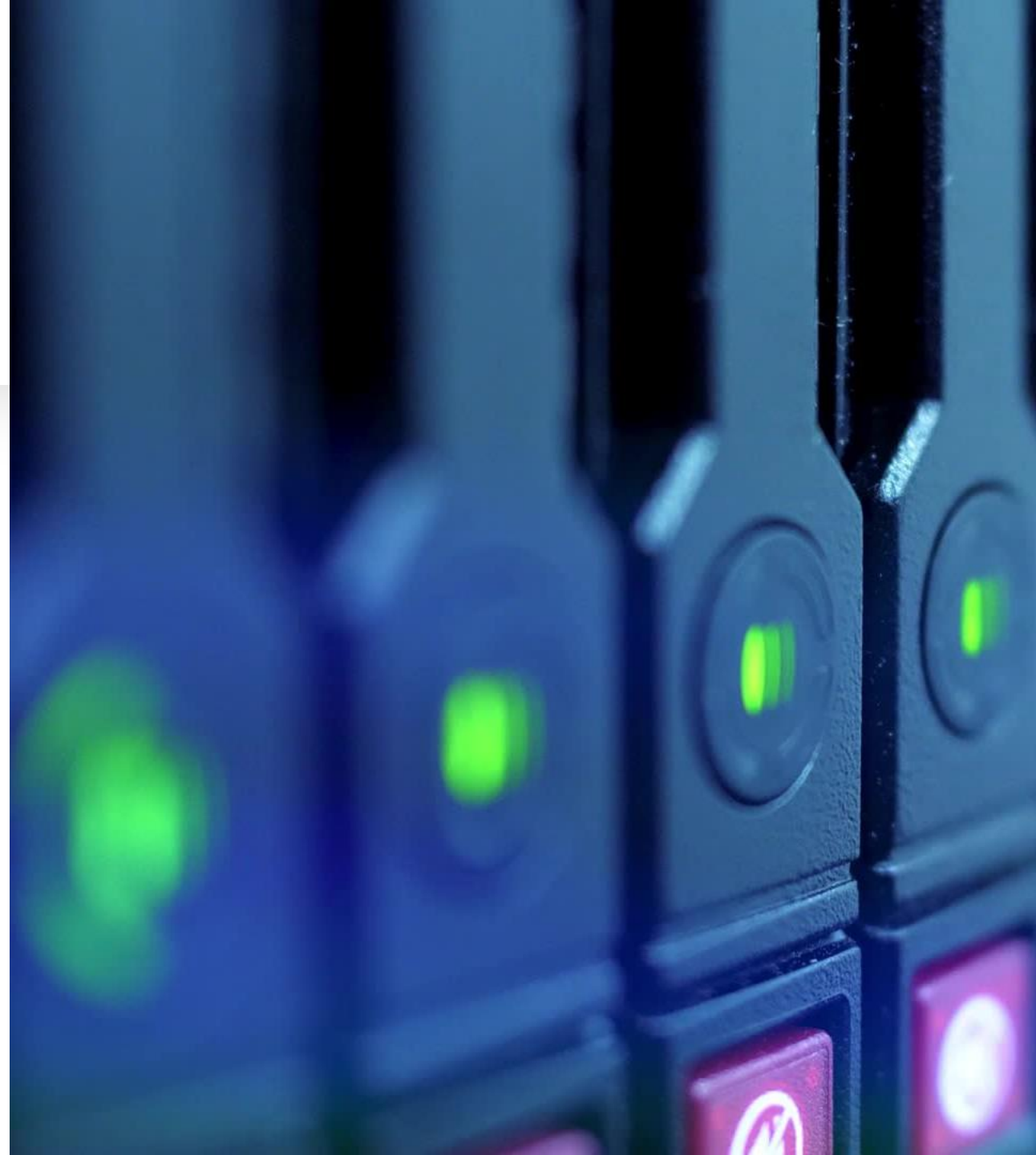
Vegetation Management

Veg Mgmt Vendors

Well ID	Amu	Office	District	Well License	Area	Cost Object #	PO #	Vendor	Date	Control Method	Submitted By	Comments
100/05-10-052-07W4M	Route 12D - New Drills	HOG AB North	HOG	0509733	Route 12D - New Drills	CC 80155984		KNIGHTS SPRAYING INC	JULY 22, 2024	Blanket Spray	Lawson Mackenzie-Clyke	
102/12-10-052-07W4M	Route 12D - New Drills	HOG AB North	HOG	0509734	Route 12D - New Drills	CC 80155985		KNIGHTS SPRAYING INC	JULY 22, 2024	Blanket Spray	Lawson Mackenzie-Clyke	
102/03-10-052-07W4M	Route 12D - New Drills	HOG AB North	HOG	0509732	Route 12D - New Drills	CC 80155983		KNIGHTS SPRAYING INC	JULY 22, 2024	Blanket Spray	Lawson Mackenzie-Clyke	
102/04-10-052-07W4M	Route 12D - New Drills	HOG AB North	HOG	0512425	Route 12D - New Drills							

Lessons Learned from Implementation

- **Not a Perfect Rollout:**
 - Early challenges with low-quality devices
 - Struggled with syncing over 3G/LTE connections
- **Data Overload:**
 - An unanticipated number of attachments and data delivery requirements
- **Key Takeaway:**
 - These hurdles drove us to develop more robust, offline-first capabilities and better data management practices for field operations



Results & Impact

- **Key Benefits:**

- Consolidated reporting reduces errors
- Access to reports through AbaData allows everyone to quickly access
- Faster data consolidation leads to quicker invoicing
- Lower operational overhead
- Reduction of admin staff from 5 to 1
- Offloading administration of reporting to the cloud
- Uniform data collection allows for statistical analyses and pattern identification



Sure Shot Environmental Ltd. Case Study - Introduction



- **About Sure Shot:**

- Sure Shot Environmental Ltd. is an Alberta-based company providing vegetation management solutions to clients across various industries, including utilities, gravel pits, and solar farms. As a small to mid-sized company, they specialize in Patrol/Consenting, ROW Brush Herbicide Applications, Bareground Facility Herbicide Applications, Noxious Weed Control, and Utility Tree Work
- Embraced our Field Ops tool in 2024 to boost efficiency

- **Client Quote:**

- *"I do know that as a year-over-year comparison, we saw a 7.75% reduction in our costs per site from 2023 to 2024. Our client was happy to see this - obviously."*

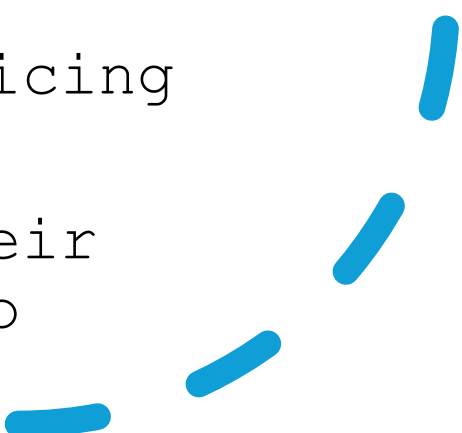


The Transforma tion

- Before
 - Excessive Travel Time
 - High Administrative Burden
 - Risk of Data Entry Errors
 - Inconsistent Reporting
 - Risk of Missed Sites
 - Inefficient Work Plan Changes
 - Lack of Data-Driven Decision Making
 - Delayed Reporting
 - Slow Billing
- 



The Transforma tion

- After
 - Reduction in Travel Time & Cost
 - 80% Reduction in Administrative Time
 - Enhanced Reporting Accuracy & Consistency
 - Improved Planning & Site Management
 - Data-Driven Decision Making
 - Real-Time Visibility & Increased Productivity
 - Faster Reporting & Invoicing
 - Business Growth
 - More Time Doing What Their Customers Pay Them To Do
- 

The Solution



Management:

Digital site management
achieved through AbaData



Field Data Collection:

Mobile data collection
achieved through dedicated
Sure Shot Environmental
native application on BYOD
platform



Job Tracking:

Dashboard reporting on
entire scope of project and
current status



Reporting:

Single-click reporting of
any field collected on
device, including equipment
used, chemical sprayed and
hours spent



Tools

☒ Select

☐ Pan

☐ Measure

☐ Zoom In

☐ Zoom Out

☐ Zoom To

☐ Find Nearest

 Lat: 52.008618
 Lon: -115.55804


Options

Imagery

Field Ops

Sure Shot Environmental Ltd.



Assignment

Set Filter



ATCO Gx/Calgary



Show On Map



Clear Map Filter



Vegetation Management

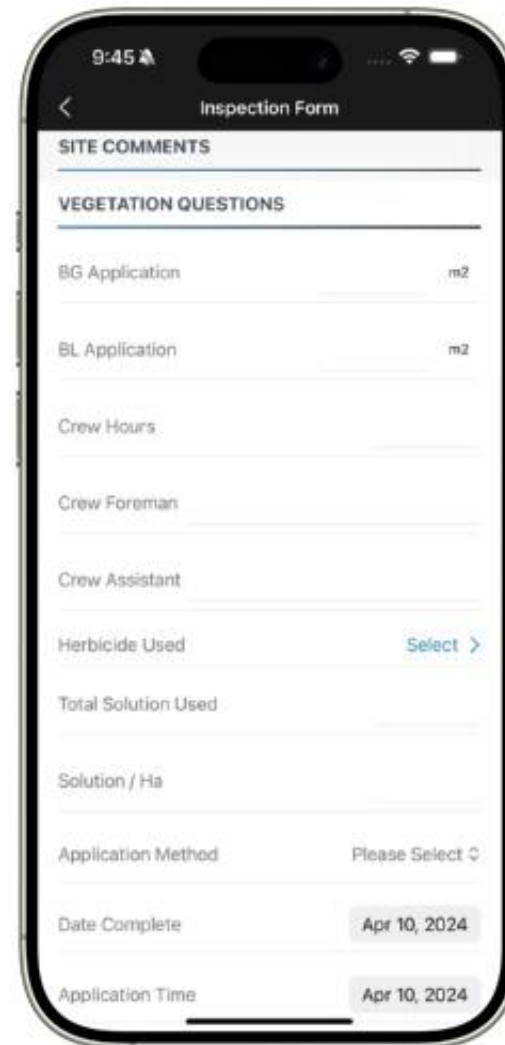
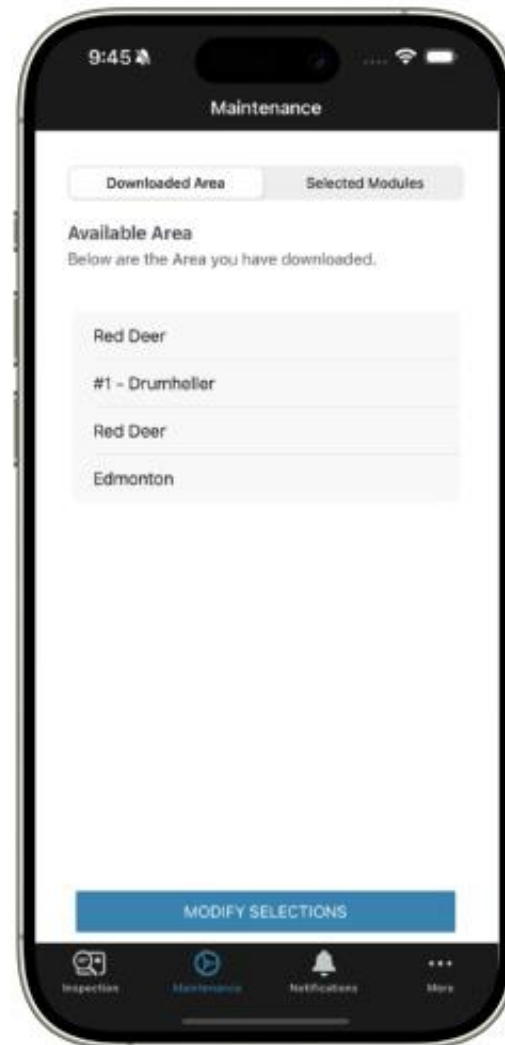
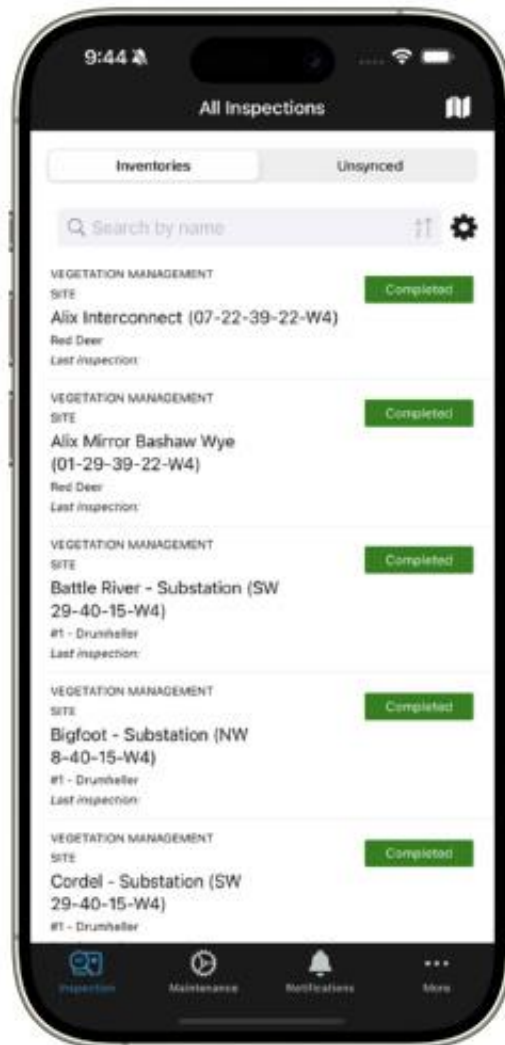
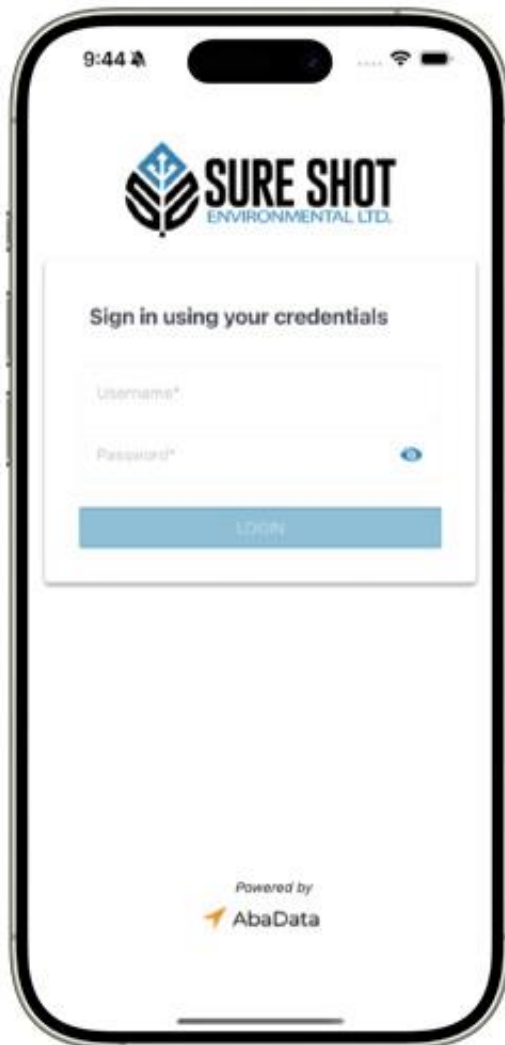
Inventory Type

Site





☐	Inventory Name	Contract	Area	Vendor Name	Priority	Comments	Schedule	Sub Area
☐	South Okotoks Poultry Gate Station	ATCO Gx	Calgary	Dwight Stemmer			MIOW	
☐	South Calgary Control Gate	ATCO Gx	Calgary				Spray	
☐	Somerset Gate Station 10712	ATCO Gx	Calgary	Cameron Kohlman			Spray	



 Dashboard

 Management

 Assignment

 Inspection

 Reports

Dashboard

Set Filter 

17 July, 24 

All Modules

Vegetation Management

Completed

...

3037

85.45%

Mow Pending

...

67

1.89%

Spray Pending

...

284

7.99%

Respray due to
Kochia

...

36

1.01%

Site Assessment
Pending

...

18

0.51%

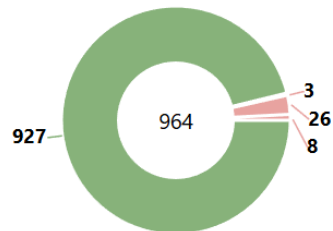
Respray

...

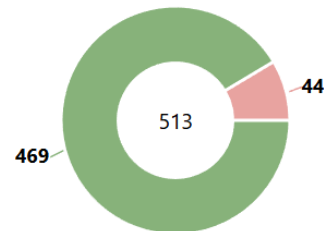
112

3.15%

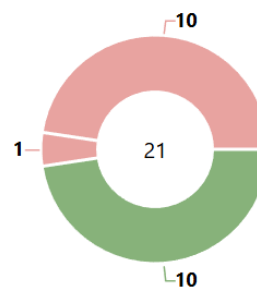
ATCO Px



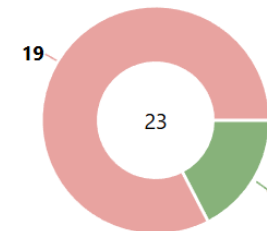
BRPC



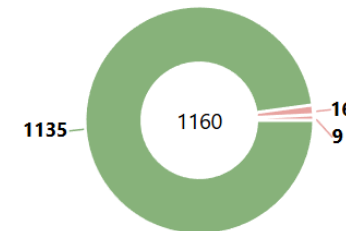
ATCO Tx ROW NE



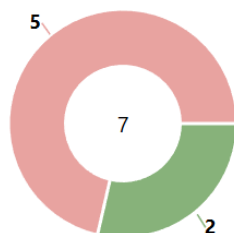
ATCO Tx ROW SE



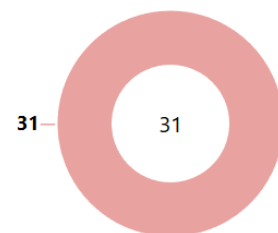
ATCO Gx



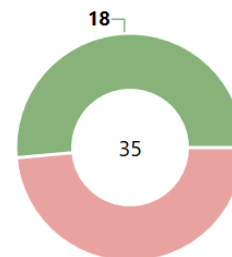
ATCO Tx ROW PR



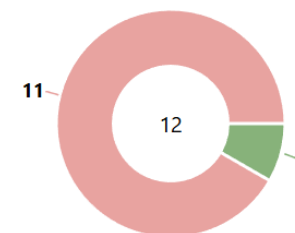
ATCO Tx ROW GP



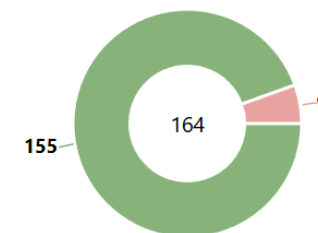
ATCO ROW Dx NE O&M



Ralph Nay



ATCO Dx



-  Dashboard
-  Management
-  Assignment
-  Inspection
-  **Reports**

Report

Set Filter 

ATCO Gx/Calgary 

Clear Map Filter 

Vegetation Management

Generate Report

Select Report

Custom Reports

-  Invoice for sites
-  Sites and Inspections
-  Sites and Inspections Grouped
-  Timesheet Report
-  Right of way
-  Inspections Print
-  Invoice for inspections
-  Site Report

General Reports

-  Inventories And Inspections
-  EventLogs
-  Inventories and Upcoming Status
-  Inventories

Report Parameters for: Invoice for sites

Area

ATCO Gx, Calgary

Report Title

Herbicide Activities

ControlMethod

9 selected

InventoryType

Site, Right of Way

Site Status

6 selected

Vendor

Ignore

Date Inspection From

yyyy-mm-dd

Date Inspection To

yyyy-mm-dd

Detailed Improvements



Key Process Improvements:

Reduced Travel Time: Optimized routing leads to saved hours

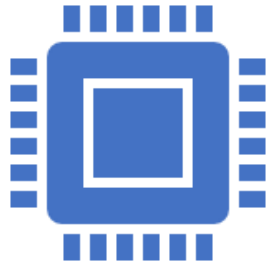
Streamlined Paperwork: Consistency that eases invoicing and reduces errors

Crew Flexibility: Easier to transition crews across projects



Future Collaboration: Plans to scale up and further reduce costs

The Digital Future of Vegetation Management



Digital Transformation Opens Doors:

Automated route planning and
dispatch

Integration with real-time
weather monitoring

Smart scheduling for crew
management



What's Next:

Future trends like predictive
analytics and digital twins

Preparing for next-gen capabilities

Automated Route Planning & Dispatch



Optimizing Routes:

Incorporating water station locations
Aligning chemical capacity of units with per-site requirements



Smart Scheduling:

Scheduling potential customer meetings before starting and after the day
Balancing service efforts across multiple clients



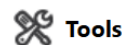
Outcome:

Improved operational efficiency and better resource allocation



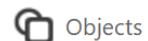
Remain Flexible:

Anything can happen on any given day

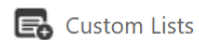


Tools

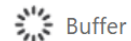
- Select
- Pan
- Measure
- Zoom In
- Zoom Out
- Zoom To
- Find Nearest
- Get Directions
- Road Map
- Print Coords
- Location Select
- Risk Analysis



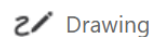
Objects



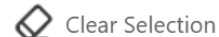
Custom Lists



Buffer



Drawing



Clear Selection



User Guide



Contact Us

Driving Directions



LSD: 10-20-025-20W4

3.5 km - approx 4 mins

1. Head **south** toward **Range Rd 205** 0.8 km
2. Turn **right** onto **Range Rd 205** 2.7 km



LSD: 01-31-025-20W4

11.7 km - approx 10 mins

1. Head **north** on **Range Rd 205** toward **AB-564 W** 1.4 km
2. Turn **right** at the 1st cross street onto **AB-564 E** 4.9 km
3. Turn **right** onto **Range Rd 202** 5.5 km



LSD: 11-14-025-20W4

5.5 km - approx 6 mins

1. Head **north** on **Range Rd 202** toward **Township Rd 254** 2.0 km
2. Turn **right** onto **Township Rd 254** 1.7 km
3. Continue onto **Range Rd 201** 59 m
4. Turn **right** to stay on **Range Rd 201** 1.8 km



LSD: 13-13-025-20W4

2.4 km - approx 3 mins

1. Head **north** on **Range Rd 201** 1.0 km
2. Turn **right** 1.4 km



LSD: 01-25-025-20W4

Integrating Real-Time Weather Monitoring



6-Hour Forecast Intervals:

Collect wind and rain predictions regularly



Optimized Spraying Schedule:

Plan spraying activities based on wind conditions

Analyze each site's wind shelter to schedule sheltered sites during windier parts of the day



Rain Predictions & Planning:

Forecast which sites will experience rain and when

Schedule visits to avoid adverse conditions

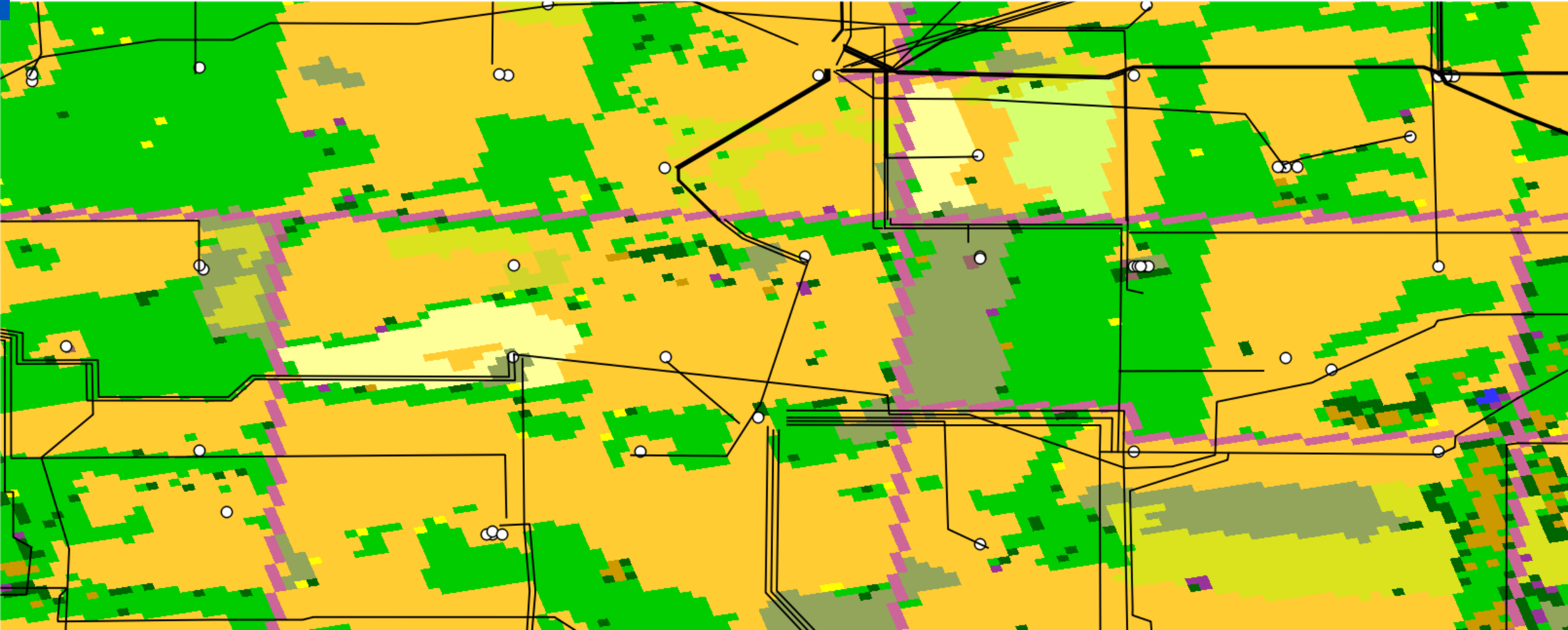


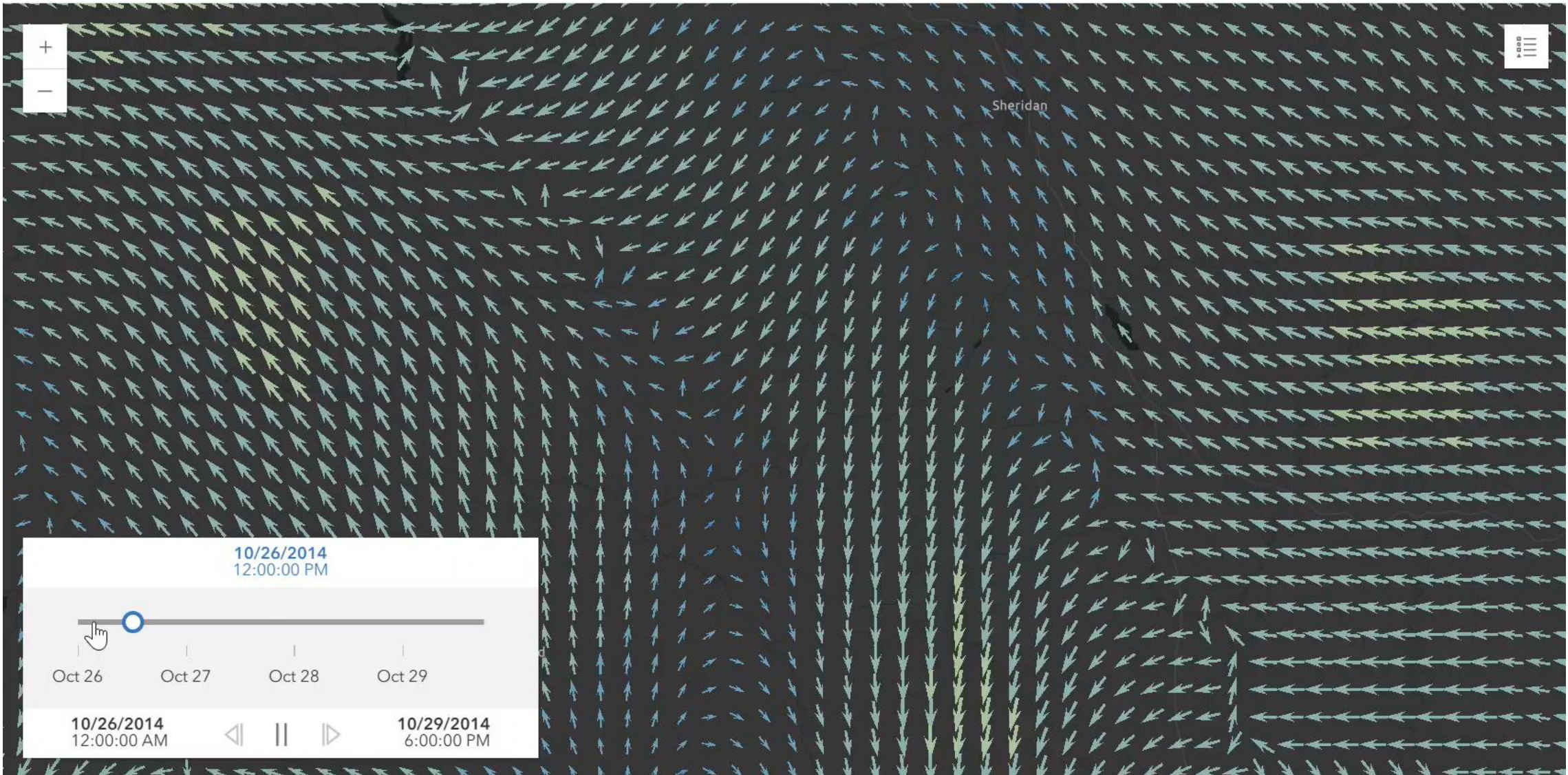
Adaptive Operations:

Adjust plans on the fly as new weather data becomes available

Legend

- Coniferous
- Broadleaf
- Forest fire/burnt area
- Urban/developed
- Water
- Pasture
- Corn
- Canola
- Wheat





Summary

- **Why digitize?**

- Professionalism
- Efficiency
- Uniformity
- Ease of reporting and invoicing
- Less administration
- Prepare for future enhancements



Implementation Options



Hire development team
internally



Contract third party
development team



Purchase off the
shelf solution

Hire Development Team

Advantages

- Get exactly the solution you want
- Total control over development timeline

Disadvantages

- Expensive
- Solution will need maintenance long term

Contract Software Shop

Advantages

- Likely find an experienced team with history of working together
- If design is properly developed prior to commencing you will get what you are looking for

Disadvantages

- Expensive
- Maintenance may be difficult
- Any design deviations will generate change orders

Buy A Solution

Advantages

- Economical
- Proven, stable product
- Take advantage of other user's ideas

Disadvantages

- Less customizable
- At the mercy of the developing company

Things To Look For



Experience,
experience,
experience



Mobile first
application



Understanding
of field
operations



Company growth
stage



People make
the difference



Make sure you
own your data



Things will
not go
perfectly

Contact



www.abadata.ca