



UNMANNED OPERATOR

PIPELINE INSPECTIONS & MAPPING

MEET “MATRICE”... OUR FLAGSHIP DRONE

- THE DJI MATRICE 300 RTK IS THE WORKHORSE OF OUR OPERATION. IT IS MORE CAPABLE, SAFER, AND MORE ADAPTABLE THAN ANY DRONE ON THE MARKET.
- PAIRED WITH THE DJI ZENMUSE P1 CAMERA WE CAN CREATE CRYSTAL CLEAR MAPS 6X FASTER THAN ANY CONSUMER DRONE ON THE MARKET. THE 35MM SENSOR BOASTING 45 MEGAPIXELS IS IN A CLASS OF ITS OWN.
- TIME OVER TARGET IS REDUCED BY 6X MEANING LESS RISK TO YOUR OPERATION.
- ROTOR LOSS MID FLIGHT? NOT A PROBLEM, THE M300 CAN SAFELY LAND WITH ONLY 3 ROTORS.



THE PROCESS

- PRE-FLIGHT PLANNING
- MAPPING MISSION/FLIGHT
- MAP CREATION
- INSPECTIONS
- TOOLS
- EXPORTS
- REPORTS



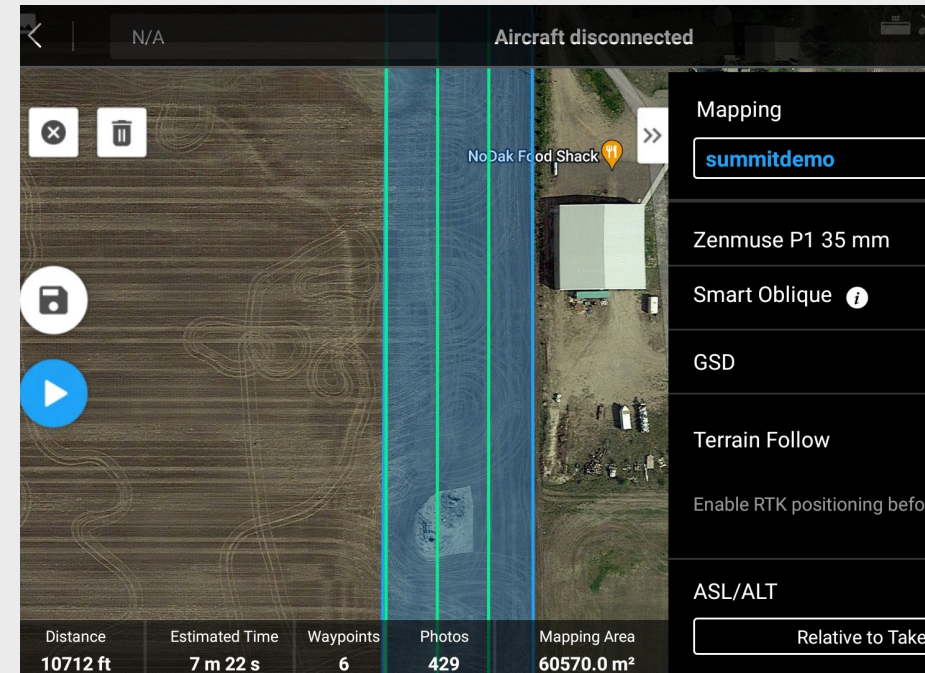
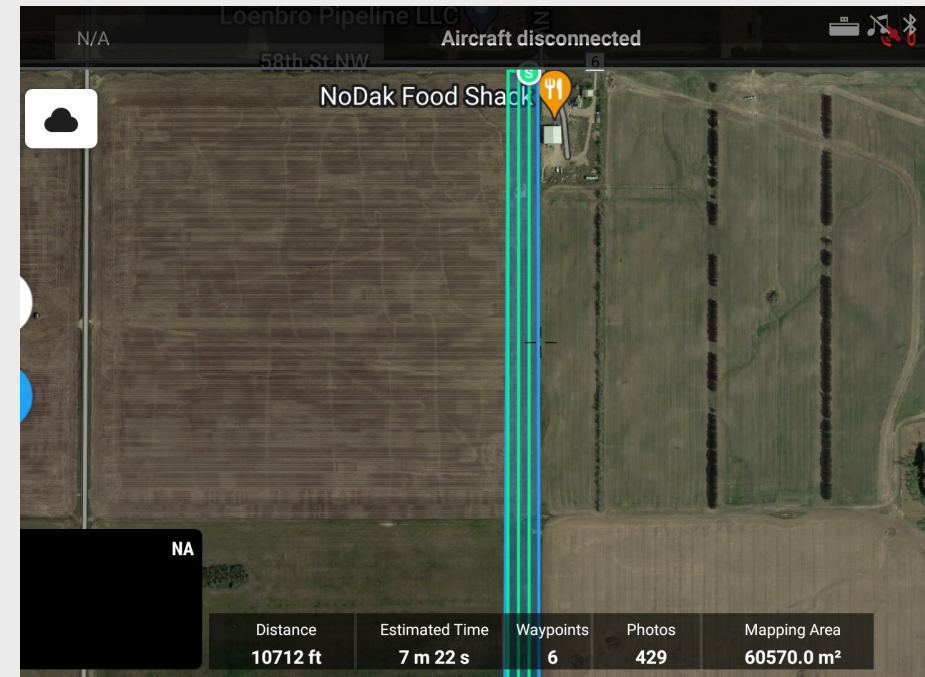
Apr 4, 2022

Inspect Set View

PRE-FLIGHT PLANNING

PLANNING OF AUTONOMOUS MISSIONS INCLUDES:

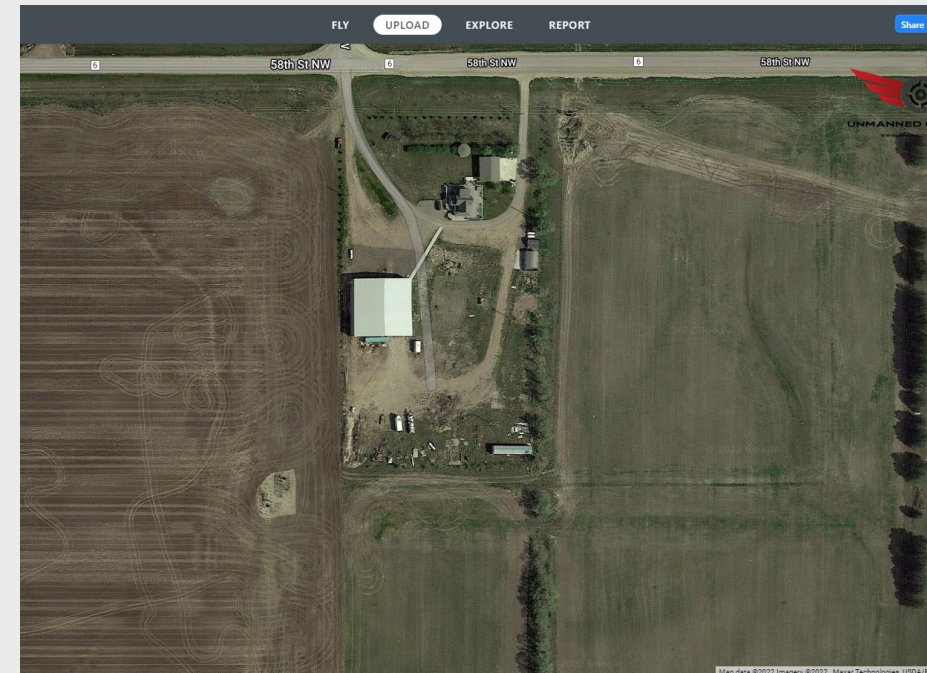
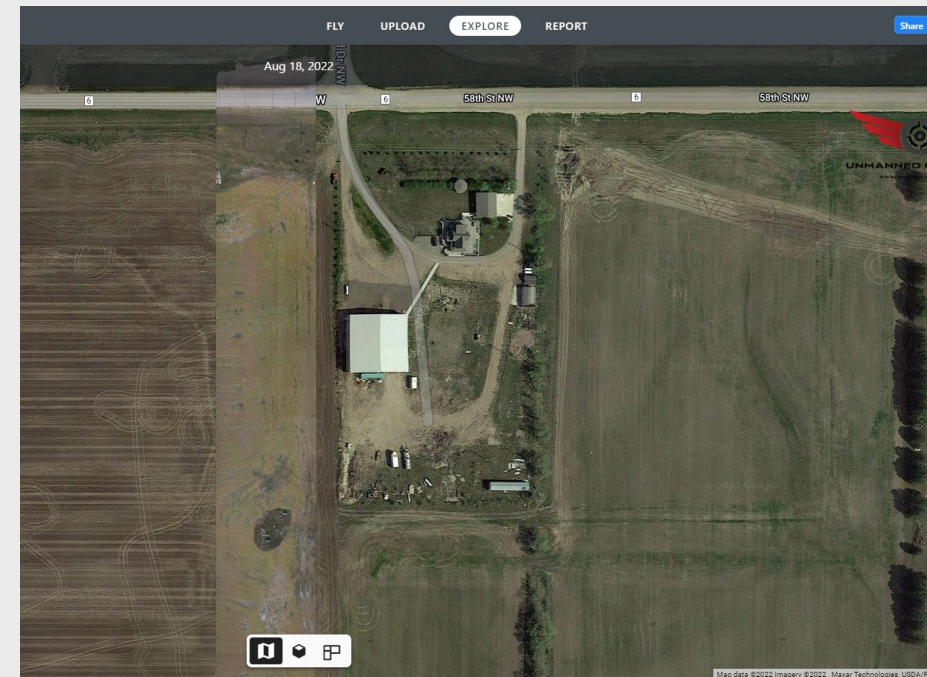
- CREATING FLIGHT ROUTES EITHER MANUALLY OR BY UPLOADING KML/KMZ FILES TO THE CONTROLLER
- DETERMINING THE SIZE OF THE TARGET ROW AND PREFERRED OUTSIDE MARGINS
- CHECKING AIRSPACE FOR ANY FAA NOTAM'S RELEVANT TO THE MISSION AREA
- PREFLIGHT SAFETY CHECKLIST



MAPPING MISSION/FLIGHT

OUR MAPPING MISSIONS ARE DESIGNED TO CREATE THE BEST POSSIBLE PRODUCT FOR OUR CLIENTS.

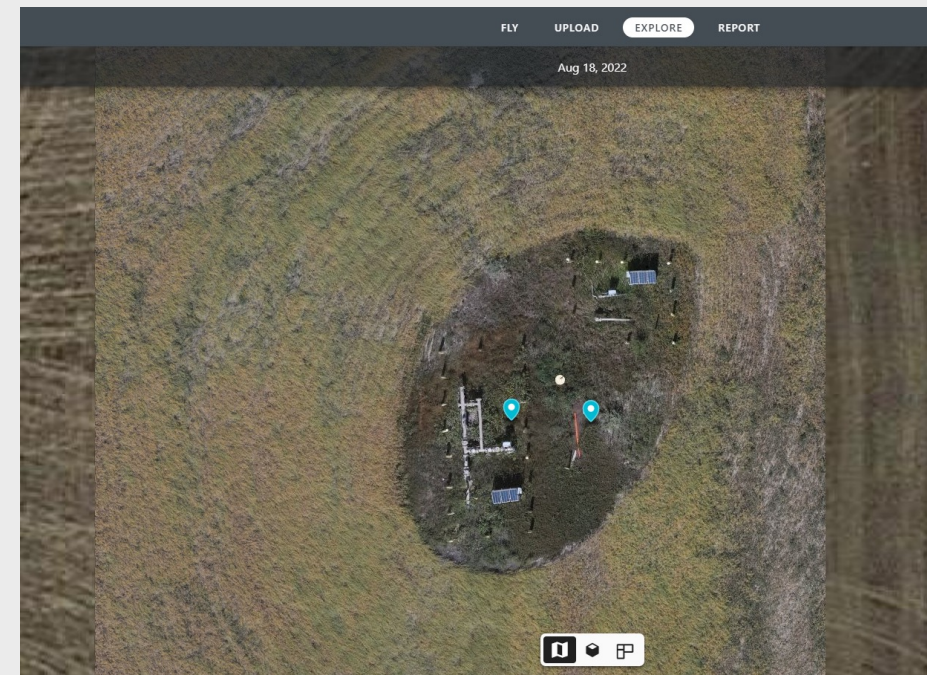
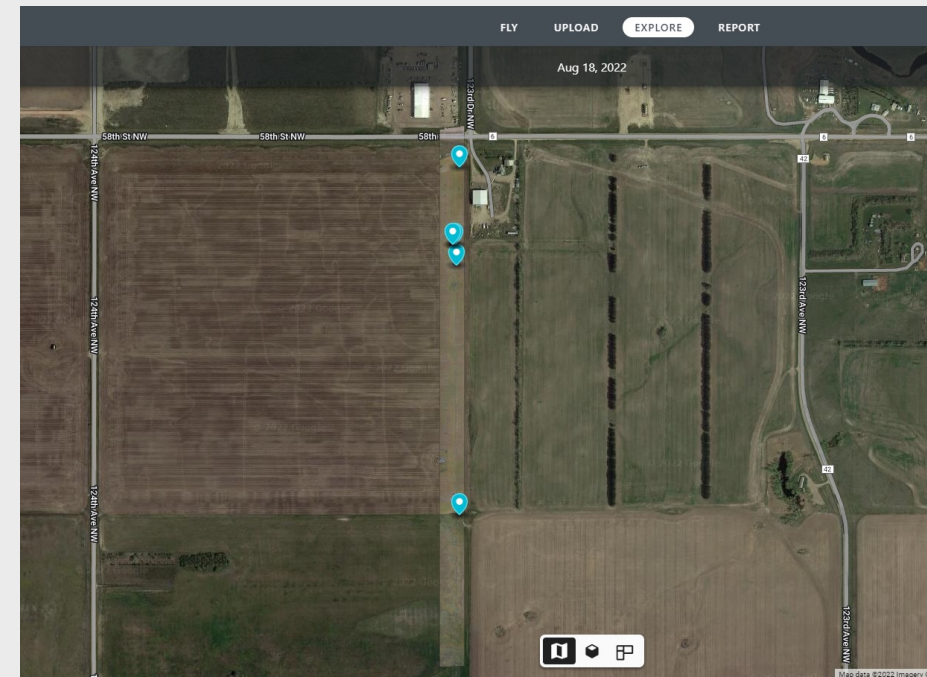
- MISSIONS ARE FLOWN WITH PROPRIETARY SETTINGS TO MAXIMIZE EFFICIENCY.
- WE CAN EFFICIENTLY CREATE 2D AND 3D MAPS WITH A DUAL PASS METHOD.



MAP CREATION

WE USE THE SOFTWARE PLATFORM DRONE DEPLOY TO CREATE THE MAPS FROM THE DATA WE COLLECT DURING THE MAPPING MISSION.

THE SOFTWARE USES A PROCESS CALLED PHOTOGRAMMETRY. THIS IS BEST DESCRIBED AS MULTIPLE PICTURES STITCHED TOGETHER TO FORM A MUCH LARGER PICTURE OR MAP. THE COMPLETED MAP IS CONSIDERED AN “ORTHOMOSAIC” MAP.



Mar 31, 2022

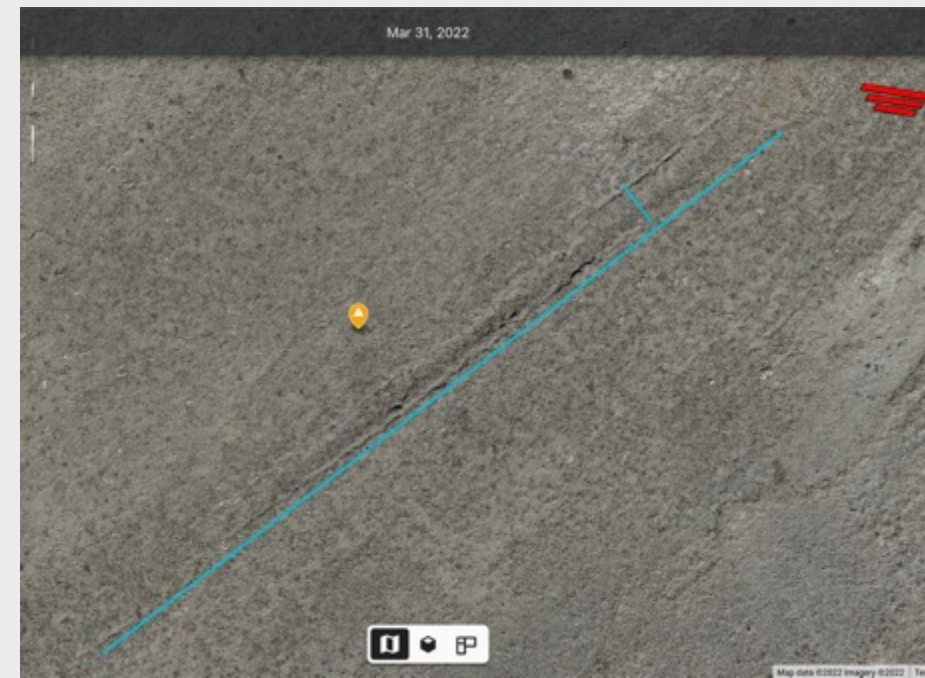
INSPECTIONS

THE INSPECTION PROCESS IS BASED ON EACH CLIENT'S SPECIFIC NEEDS. EACH INSPECTIONS WE DO WILL SHOW THE FOLLOWING:

- ANNOTATIONS (BLUE) - AT AREAS OF CONCERN
- ANNOTATIONS (ORANGE) - AT CONFIRMED ISSUES
- MEASUREMENTS - OF ALL ANNOTATED AREAS OF CONCERN
- CLIENTS POC WILL BE INFORMED IMMEDIATELY IF AN EMERGENCY ISSUE IS FOUND DURING FLIGHT.



Map data ©2022 Im



Aug 18, 2022



TOOLS

THE TOOLS IN OUR SOFTWARE PLATFORM HAVE UNIQUE USES FOR MIDSTREAM OIL AND GAS COMPANIES. WE CAN INSPECT EACH MAP IN MULTIPLE WAYS:

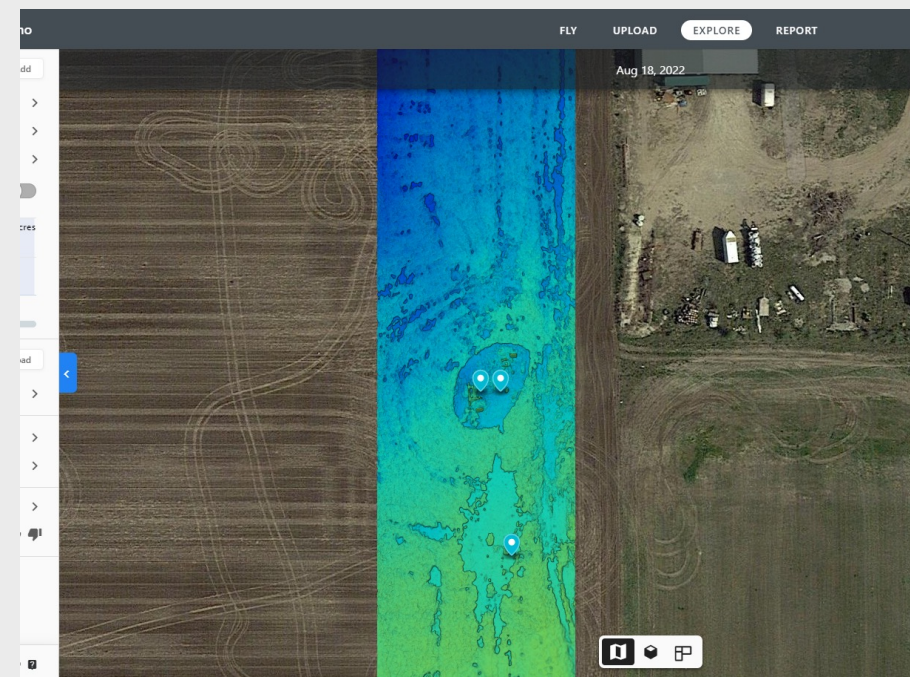
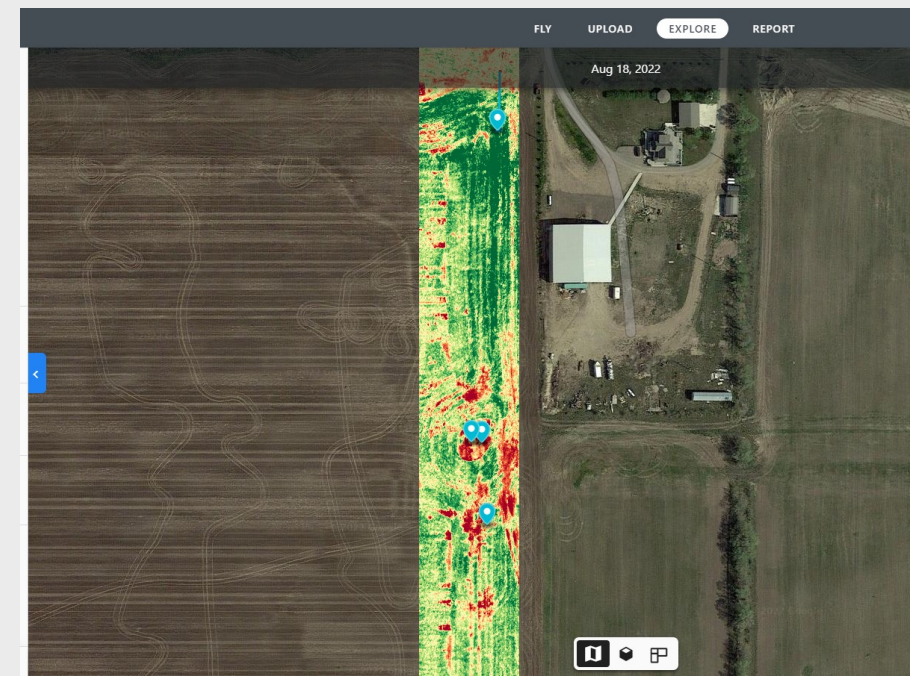
- 2D MAP (NADIR) PRODUCES A TOP-DOWN VIEW
- 3D MAP PRODUCES A MAP ABLE TO BE INSPECTED AT ANY ANGLE



TOOLS (CONT)

HERE IS A LIST OF THE TOOLS WE CAN USE IN OUR INSPECTIONS.

- MEASUREMENTS, INCLUDING AREA, VOLUME, AND LENGTH (THIS INCLUDES THE ABILITY TO EXPORT THE VOLUME OF A SUBSIDENCE OR HOLE)
- PLANT HEALTH (USING PLANT REFLECTIVITY)
- ELEVATION
- OVERLAYS (WE CAN OVERLAY MULTIPLE FLIGHTS ON TOP OF EACH OTHER SHOWING CHANGES OR FIXES)
- ANNOTATIONS (EVERY POSSIBLE ISSUE IS MARKED WITH AN ANNOTATION IN MAP WITH A GPS LOCATION ATTACHED)
- AND MORE



EXPORTS

DIGITIZING PHYSICAL ASSETS IS A TREND IN ALMOST EVERY SECTOR OF BUSINESS. WITH OUR SOFTWARE WE CAN EXPORT THESE DIGITIZED VERSIONS RIGHT INTO MOST GIS PLATFORMS USED TODAY.

Exports

MANUAL

AUTO

PDF Map

GeoTIFF Map

JPG Map

Point Cloud

Elevation

Digital Terrain Model (DTM)

3D Model

Plant Health

Edge Annotations

Source Data

Existing Exports

No exports have been generated.

Exports

MANUAL

AUTO

GeoTIFF Map

Emails

unmanned.operator@gmail.com

File Type

GeoTIFF

Coordinate System

Web (Web Mercator)

EPSG: 3857 / Meter

Search

GEOGRAPHIC

Web (Web Mercator)

EPSG: 3857 / Meter

Desktop (WGS84)

EPSG: 4326 / Meter

PROJECTED

NAD27 / North Dakota North

EPSG: 32020 / Us Survey Foot

Most Likely

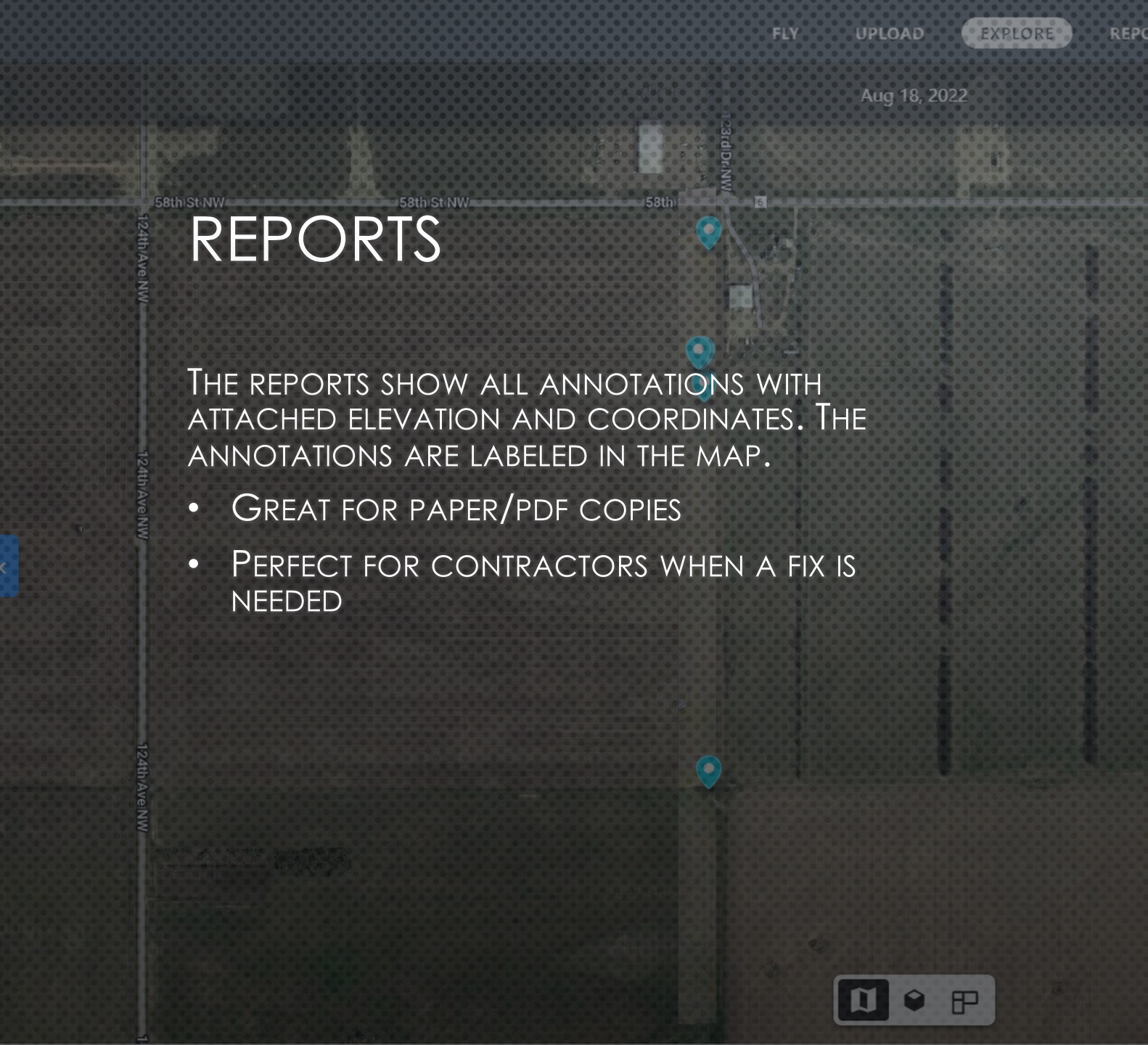
NAD83 / UTM zone 13N

EPSG: 26913 / Meter

NAD83(NSRS2007) / North Dakota North

EPSG: 3633 / Meter

HELP



REPORTS

THE REPORTS SHOW ALL ANNOTATIONS WITH ATTACHED ELEVATION AND COORDINATES. THE ANNOTATIONS ARE LABELED IN THE MAP.

- GREAT FOR PAPER/PDF COPIES
- PERFECT FOR CONTRACTORS WHEN A FIX IS NEEDED

Unmanned Operator



Demo Annotation



Report

Created on August 22, 2022

Captured on August 18, 2022



Location

Label	Title	Elevation	Coordinates
1	Low productivity soil or other issue?	2162.88 ft	48.2533009, -103.3564568
2	Skip/wheel damage to crop? may need to be checked out	2155.11 ft	48.2551876, -103.3563810
3	Trash or old grain bin?	2173.60 ft	48.2485168, -103.3563648
4	Unfinished project?	2161.26 ft	48.2536959, -103.3564967
5	Weeds under riser	2160.98 ft	48.2536969, -103.3565687

Distance

Label	Title	Length	Horizontal	Vertical	Slope	Surface
6	Distance from anchor lines to suspect area	100.99 ft	100.99 ft	-0.85 ft	-0.48°, 0.84%	104.52 ft
7	surface profile example	11.09 ft	11.09 ft	-0.26 ft	-1.36°, 2.38%	12.41 ft



CONTACT INFORMATION



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