UAV Flight Requirements and Checklist

Use the following checklist to ensure you're always meeting the specifications necessary for collecting measurement assets.

☐ **Use an approved drone from the following list.**
- DJI Mavic 3 Enterprise, Thermal, or Multispectral (**No Cine, Classic, or Pro models**)
  - IMPORTANT: For these models ENSURE DEWARPING IS TOGGLED *OFF* IN SETTINGS
- DJI Air 2S
- DJI Phantom 3 Pro or Phantom 4 series (No RTK or smart controllers)
- DJI Inspire 1 or 2 with X3, X4S, X5, or X5S cameras (with default DJI lenses)
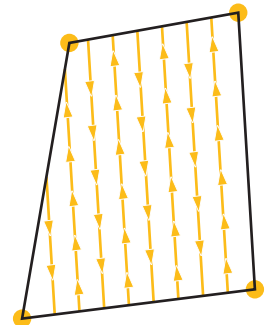- DJI Mavic 2 Pro
- DJI Mini 2

☐ **Use a mission-based flight app.**
Stockpile Reports recommends Map Pilot Pro for creating flight missions. There are other options as well, but you should do research and find the app that works best for you. Just be sure the app lets you meet the minimum specs listed on this page. Note: Mavic 3 Enterprise must use Pilot 2 app for creating flights.

☐ **Use consistent site boundary.**
It's critical that you fly the **same site boundary every time you fly** your inventory. For example, if you deplete piles in the northwest corner of your site, DO NOT adjust your site boundary for the next flight. This allows are processing pipeline to align your site data over and over for precise reconstructions across the entire site.

☐ **Use correct flight pattern.**
- Flight lines should be straight, parallel to each other, and at a single altitude.
- Set rotation to align with longest edge of flight boundary.
- Flight direction is allowed to alternate between flight lines.
- Capture a minimum of 4 flight lines.

☐ **Capture enough image overlap between images.**
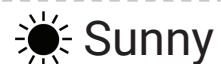- Minimum 75% front overlap
- Minimum 70% side overlap

75% front
70% side

☐ **Capture enough images.**
Collect a minimum of 50 images per flight

50+ Images

☐ **Use proper camera settings.**
- Auto-exposure mode, auto ISO, and default exposure compensation
- Sunny/Daylight (even in cloudy conditions)
- Camera settings should use the maximum image resolution available
- **Camera should be pointed straight down while capturing imagery**
- **Turn off all image correction settings (such as Dewarping)**

☀ Sunny

AUTO

☐ **Fly at optimal elevation.**
We recommend getting your mission done as quickly as possible. This means flying at 400' AGL (120 meters) when airspace allows. If you can't meet the 50 image minimum at that elevation then **lower your mission's elevation until you meet the 50 image count minimum**. Maintain a single elevation for the duration of the flight.

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