

Mobile Technology to Streamline Compliance

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Safety Moment

Many tablets/phones use lithium-ion polymer batteries.

- Lithium-ion batteries can be a safety hazard since they contain a flammable electrolyte and may lead to explosions and fires.
- Prior to use, evaluate flammable risks at your facility and consider intrinsically safe alternatives.



Environmental Compliance

What mobile technology is currently being used?

- Many different types of mobile technology in use
 - Portable air monitors
 - Noise monitors
 - Environmental test meters
- Focus: portable tablet/phones



Who Will This Help?

- EHS managers
- Consultants



Why Should I Consider This?



Routine Environmental Compliance Activities

- Monitoring well sampling
- Oil spill prevention inspections
- Stormwater reviews
- Safety meetings/training
- Opacity readings required by air construction permits
- Audits



Specialized Compliance Uses

Studies / evaluations containing unknowns (GPS enabled)

- Asbestos inspections
- Wetland delineations
- Asset management
- Threatened and endangered species evaluations
- Phase I Environmental Site Assessments (ESA)



Mobile Technology Benefits

- Efficiency
- Standardized process
- Reduce paperwork
- Reduction in human error
- Eliminate legibility concerns (e.g., handwriting, dirty inspection forms)



Mobile Technology Features

- Water resistant
- Intrinsically safe
- Protective case
- Data security
- Portability
- GPS enhancements



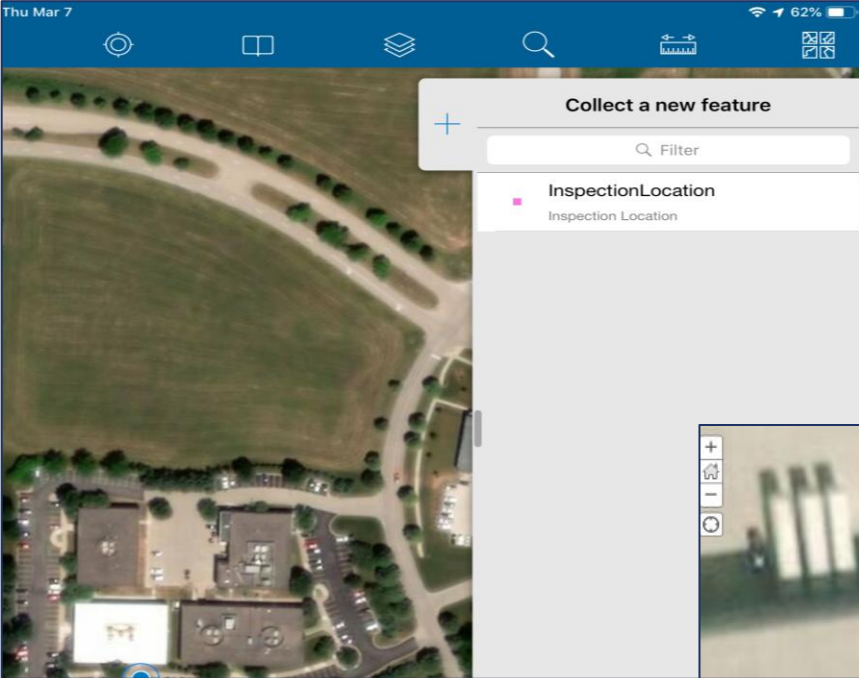
Photographic Documentation

- Provides proof of activity
- Unique identifier with meta-data
- Time-stamped photograph

**CAN YOU
PROVE IT?**



Facility Application

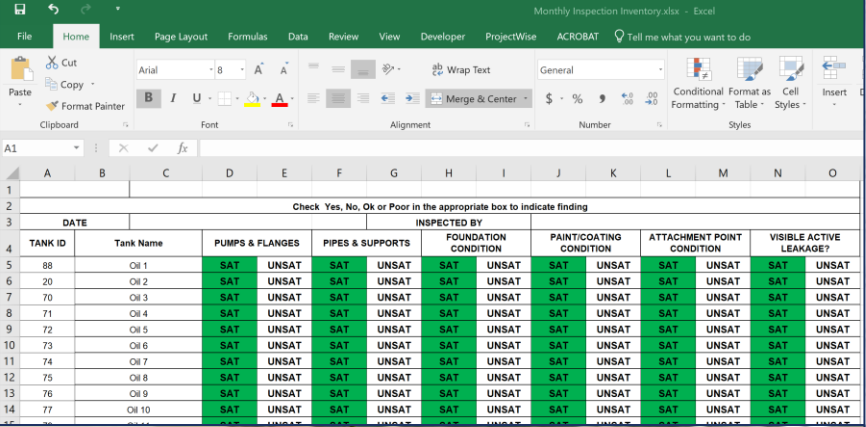


Collect a new feature

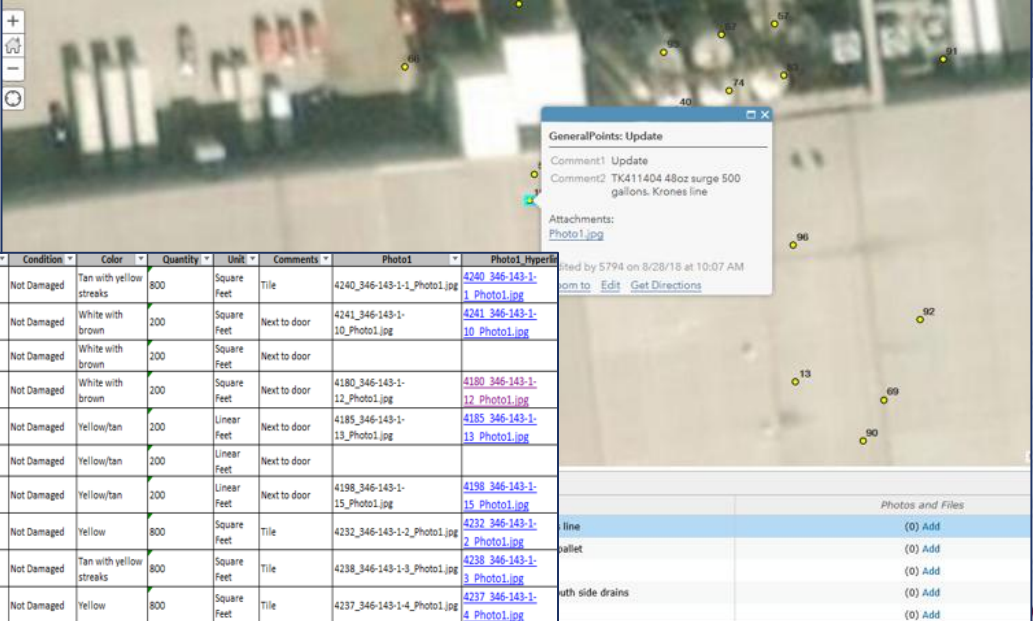
Filter

InspectionLocation

Inspection Location



TANK ID	Tank Name	PUMPS & FLANGES	PIPES & SUPPORTS	FOUNDATION	PAINT/COATING	ATTACHMENT POINT	VISIBLE ACTIVE
88	Oil 1	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT
20	Oil 2	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT
70	Oil 3	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT
71	Oil 4	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT
72	Oil 5	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT
73	Oil 6	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT
74	Oil 7	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT
75	Oil 8	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT
76	Oil 9	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT
77	Oil 10	SAT	UNSAT	SAT	UNSAT	SAT	UNSAT



GeneralPoints: Update

Comment1 Update

Comment2 TK411404 48oz surge 500 gallons. Krone line

Attachments: Photo1.jpg

Created by 5794 on 8/28/18 at 10:07 AM

om to Edit Get Directions

Building Number	Floor Elevation	Sample Area	Sample Area Code	Sample Area Description	Material	Friable	Condition	Color	Quantity	Unit	Comments	Photo1	Photo1_Hyperlink
143	1	Administrative building		Floor tile in women's bathroom	Floor Tile	No	Not Damaged	Tan with yellow streaks	800	Square Feet	Tile	4240_346-143-1-1_Photo1.jpg	4240_346-143-1-1_Photo1.jpg
143	1	Administrative building		Drywall in storage room	Drywall	Yes	Not Damaged	White with brown	200	Square Feet	Next to door	4241_346-143-1-10_Photo1.jpg	4241_346-143-1-10_Photo1.jpg
143	1	Administrative building		Drywall in storage room	Drywall	Yes	Not Damaged	White with brown	200	Square Feet	Next to door	4180_346-143-1-12_Photo1.jpg	4180_346-143-1-12_Photo1.jpg
143	1	Administrative building		Baseboard mastic from women's bathroom	Mastic/Adhesive	Yes	Not Damaged	Yellow/tan	200	Linear Feet	Next to door	4185_346-143-1-13_Photo1.jpg	4185_346-143-1-13_Photo1.jpg
143	1	Administrative building		Baseboard mastic from women's bathroom	Mastic/Adhesive	Yes	Not Damaged	Yellow/tan	200	Linear Feet	Next to door	4198_346-143-1-15_Photo1.jpg	4198_346-143-1-15_Photo1.jpg
143	1	Administrative building		Floor tile mastic in women's bathroom	Mastic/Adhesive	Yes	Not Damaged	Yellow	800	Square Feet	Tile	4232_346-143-1-2_Photo1.jpg	4232_346-143-1-2_Photo1.jpg
143	1	Administrative building		Floor tile in women's bathroom	Floor Tile	No	Not Damaged	Tan with yellow streaks	800	Square Feet	Tile	4238_346-143-1-3_Photo1.jpg	4238_346-143-1-3_Photo1.jpg
143	1	Administrative building		Floor tile mastic in women's bathroom	Mastic/Adhesive	Yes	Not Damaged	Yellow	800	Square Feet	Tile	4237_346-143-1-4_Photo1.jpg	4237_346-143-1-4_Photo1.jpg

Data Collection - Example

✓ Inspection form for iPad



	A	B	C	D	E	F	G	H
1	Tank Name	Condition	Spills	Corrective Actions	Inspector	Date	Comments	Written Comment
2	Tank 1	Good						
3	Tank 2							
4	Tank 3							
5	Tank 4							
6	Tank 5							
7	Tank 1							
8	Tank 2							
9	Tank 3							
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List of items














Good ✓

Fair

Bad

Data Collection – Example Continued
















✓ Inspection form for iPad

B *I* U ~~S~~ A














	A	B	C	D	E	F	G	H
	Tank Name	Condition	Spills	Corrective Actions	Inspector	Date	Comments	Written Comment
1	Tank 1	Good	No	None	T. Humphrey	7-2-19	No	None
2	Tank 2							
3	Tank 3							
4	Tank 4							
5	Tank 5							
6	Tank 1							
7	Tank 2							
8	Tank 3							
9	Tank 4							
10	Tank 5							
11								
12								
13								

Data Collection – Example Continued

✓ Inspection form for iPad

B *I* U ~~S~~ A
















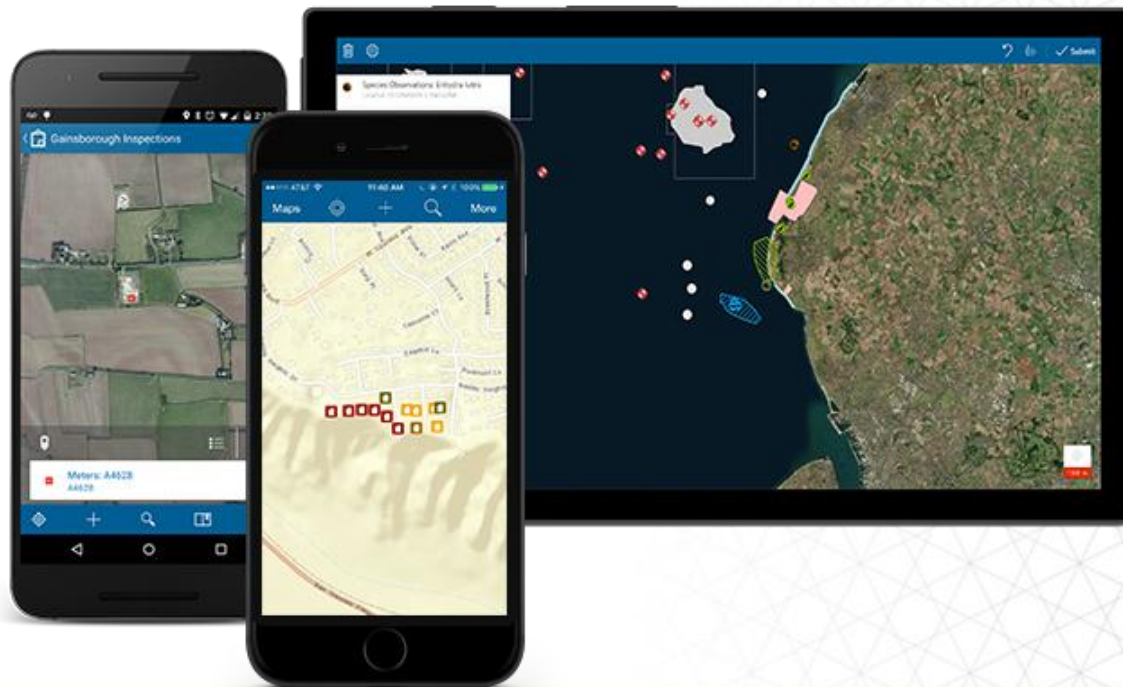
	A	B	C	D	E	F	G	H
	Tank Name	Condition	Spills	Corrective Actions	Inspector	Date	Comments	Written Comment
1	Tank 1	Good	No	None	T. Humphrey	7-2-19	No	None
2	Tank 2	Good	No	None	T. Humphrey	7-2-19	No	None
3	Tank 3	Good	No	None	T. Humphrey	7-2-19	No	None
4	Tank 4	Good	No	None	T. Humphrey	7-2-19	No	None
5	Tank 5	Good	No	None	T. Humphrey	7-2-19	No	None
6	Tank 1	Good	No	None	B. Carrig	8-2-19	No	None
7	Tank 2	Bad	Yes	Report	B. Carrig	8-2-19	Yes	Crack in Tank
8	Tank 3	Good	No	None	B. Carrig	8-2-19	No	None
9	Tank 4	Good	No	None	B. Carrig	8-2-19	No	None
10	Tank 5	Good	No	None	B. Carrig	8-2-19	No	None
11								
12								
13								



Collector Application

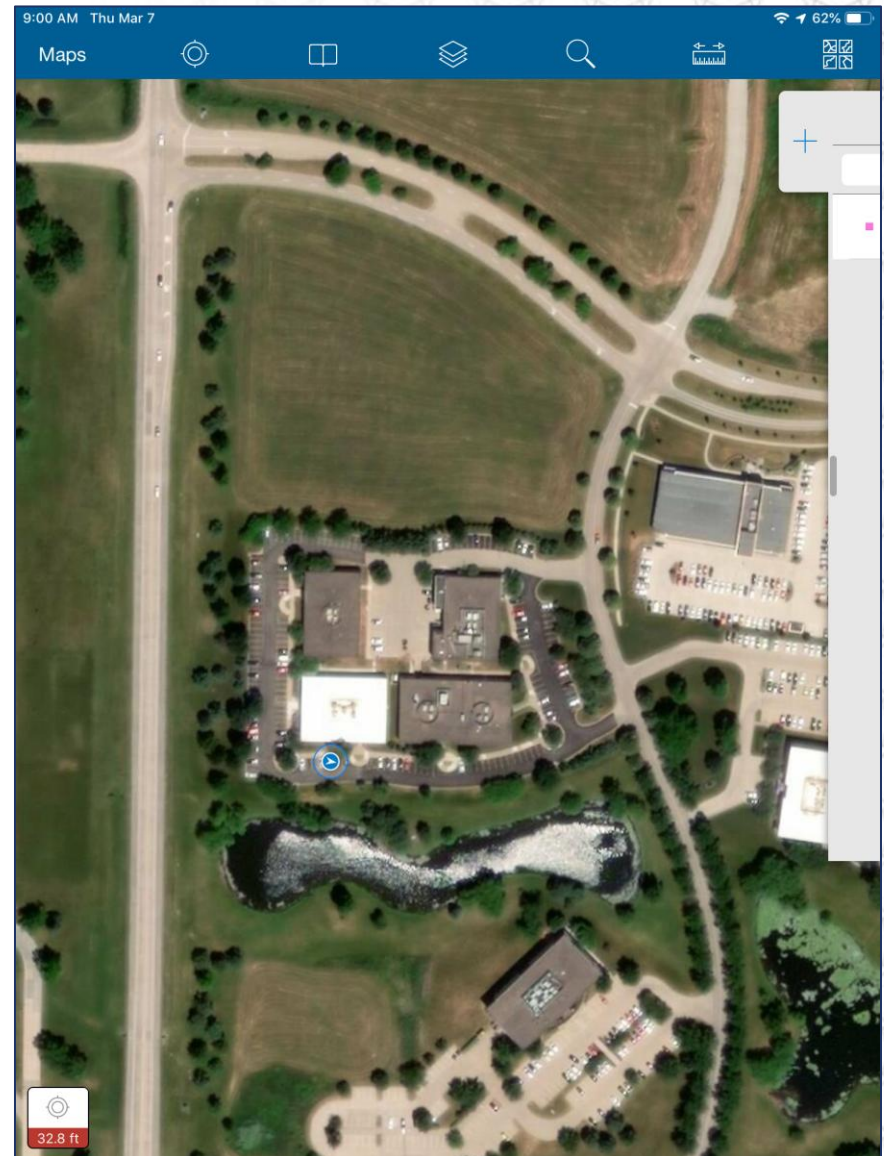
Collector Application for ArcGIS

- Collector can be used to capture any real-world feature that has a spatial component with the use of points, lines and polygons.
- Collector app available through Esri using ArcGIS engine.
- Must have Licenses to use Esri software.



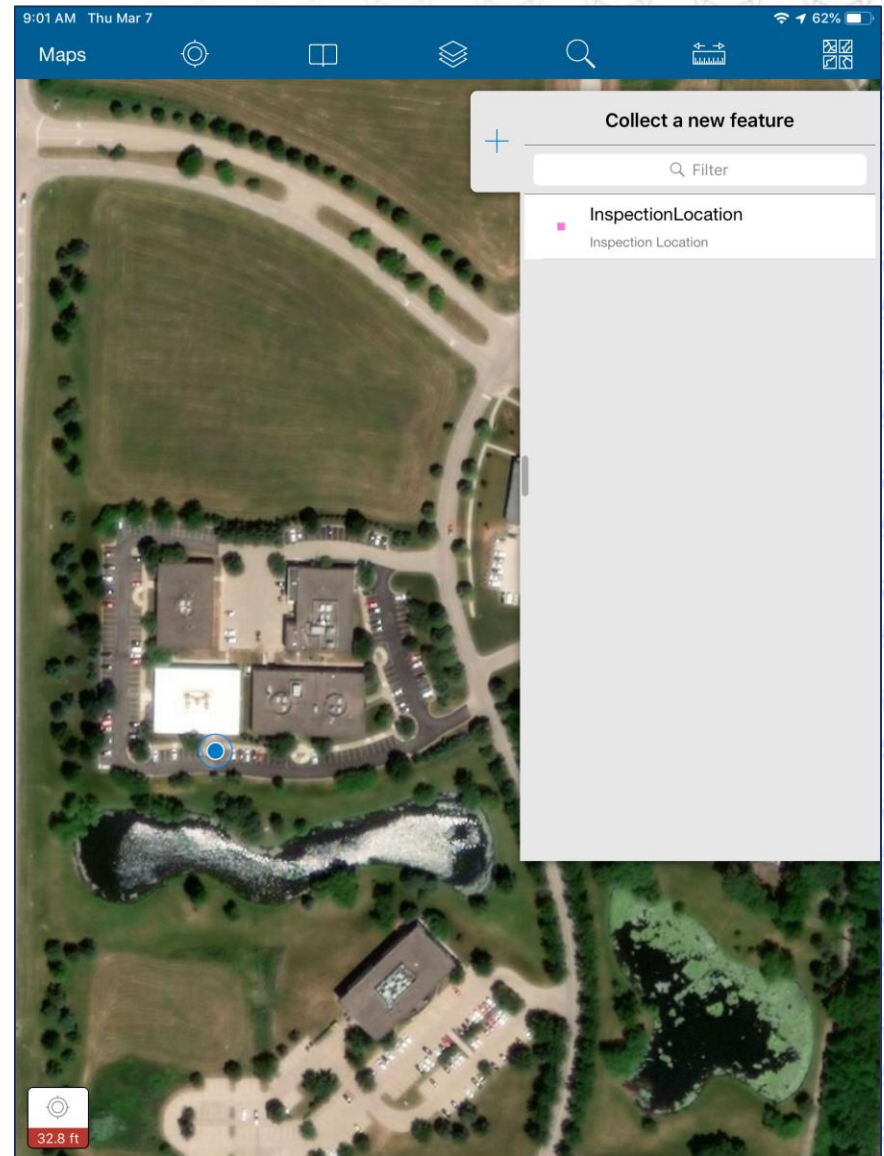
Collector Example

- Using collector is as simple as downloading the application
- Referencing an area in GIS
- Downloading the tile package to the collector app



Collector Example

- Adding in your new inspection location



Collector Example

9:01 AM Thu Mar 7 62%

Cancel [Settings] [Camera] [Location] [Back] Submit

Location
Lat: 41.71285035° Long: -91.60681145°

InspectionLocation:

Material >

Friable >

Condition >

Location >

Color >

Quantity
0 >

Unit >

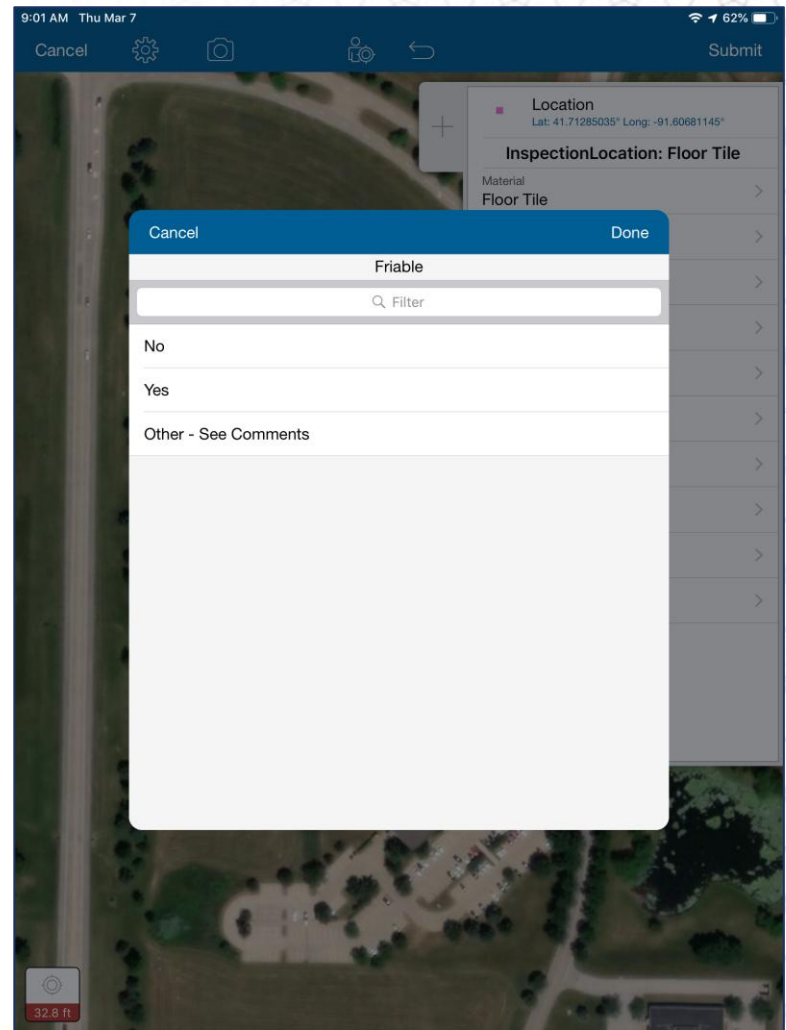
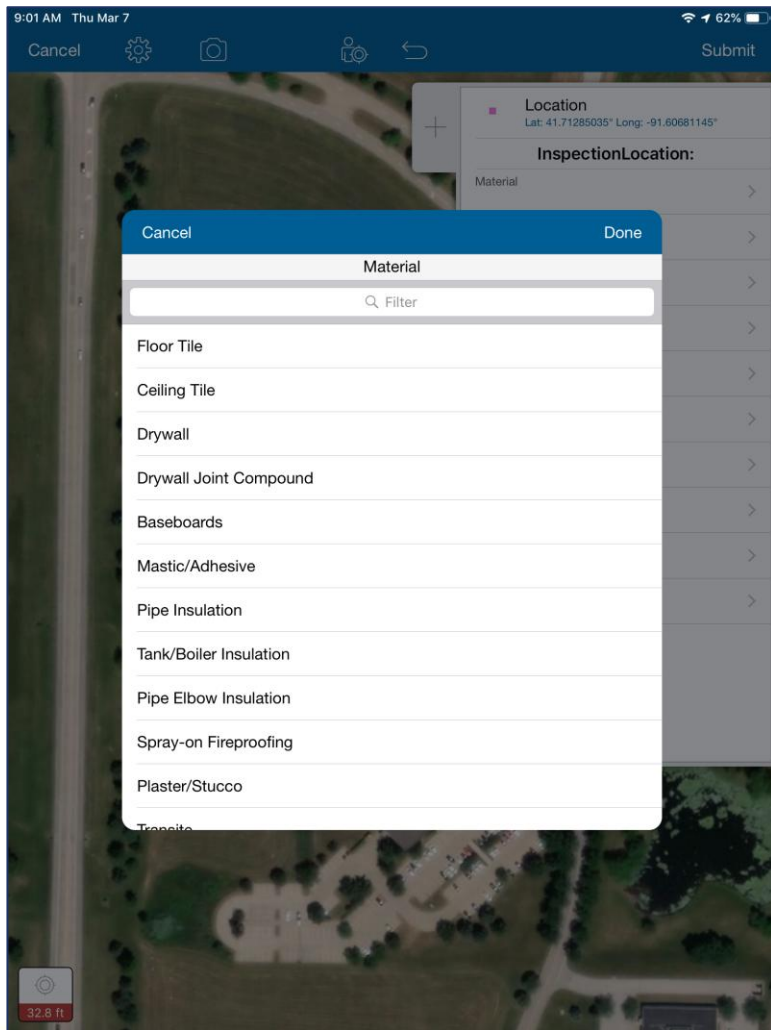
Comments >

SampleAreaCode >

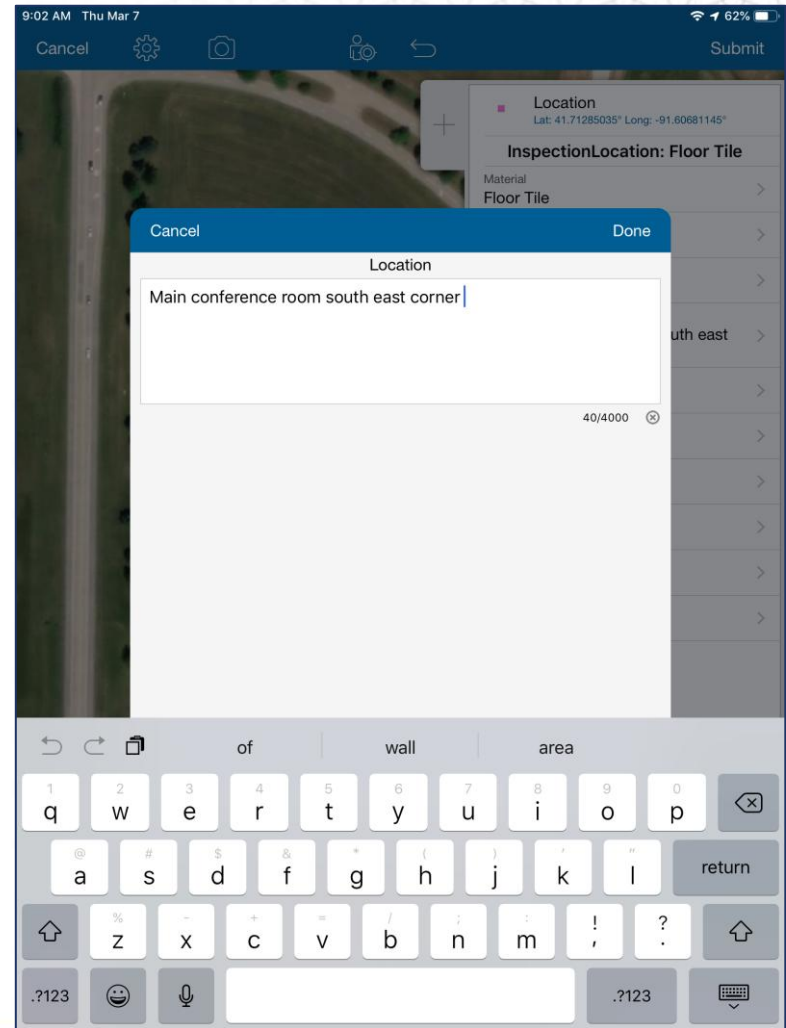
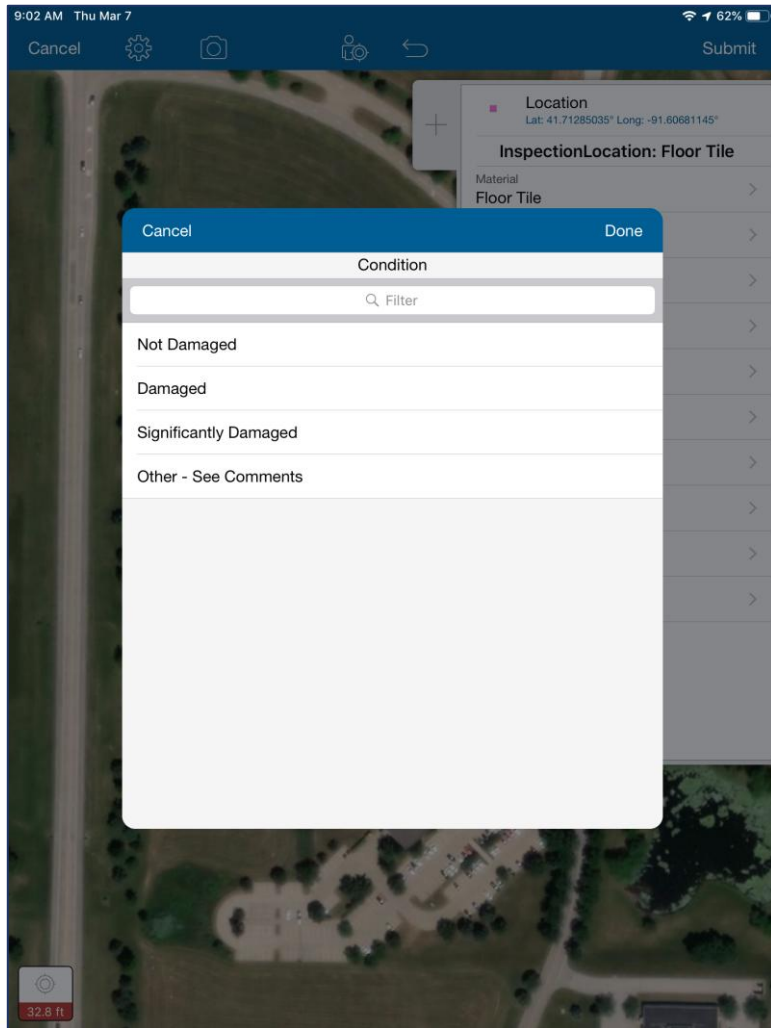
SampleAreaDescription >

32.8 ft

Collector Example



Collector Example



Collector Example

The screenshot displays the iField mobile application. The top navigation bar is blue with icons for Cancel, Settings, Camera, Users, and Back. The main view is an aerial satellite map of a building complex with a red location pin. A white data entry form is overlaid on the right side of the map. The form contains the following fields and values:

- Location:** Lat: 41.71285035° Long: -91.60681145°
- InspectionLocation:** Floor Tile
- Material:** Floor Tile
- Friable:** No
- Condition:** Not Damaged
- Location:** Main conference room south east corner first floor
- Color:** Blue
- Quantity:** 200
- Unit:** Square Feet
- Comments:** Blue floor tile in main conference room.
- SampleAreaCode:** 1-1-1
- SampleAreaDescription:** Main conference room south east corner

At the bottom left, there is a red status bar showing a location icon and the text "32.8 ft".

Online Updates

GeneralPoints: Update

Comment1 Update
 Comment2 TK411404 48oz surge 500 gallons. Krones line

Attachments:
[Photo1.jpg](#)

Edited by 5794 on 8/28/18 at 10:07 AM
[Zoom to](#) [Edit](#) [Get Directions](#)

GeneralPoints (Features: 101, Selected: 1)

Comment1	Comment2	Photos and Files
Update	TK411404 48oz surge 500 gallons. Krones line	(0) Add
Annual	Unknown tote on secondary containment pallet	(0) Add
Annual	Port o potty	(0) Add
Update	Drain to outfall two to west as previous south side drains	(0) Add
Update	T18	(0) Add

Final Product

Floor Elevation	Sample Area	Sample Area Code	Sample Area Description	Material	Friable	Condition	Color	Quantity	Unit	Comments	Photo1	Photo1_Hyperlink
1	Administrative building	1	Floor tile in women's bathroom	Floor Tile	No	Not Damaged	Tan with yellow streaks	800	Square Feet	Tile	4240	4240 Photo1.jpg
1	Administrative building	2	Drywall in storage room	Drywall	Yes	Not Damaged	White with brown	200	Square Feet	Next to door	4241 10_Photo1.jpg	4241 10 Photo1.jpg
1	Administrative building	3	Drywall in storage room	Drywall	Yes	Not Damaged	White with brown	200	Square Feet	Next to door		
1	Administrative building	4	Drywall in storage room	Drywall	Yes	Not Damaged	White with brown	200	Square Feet	Next to door	4180 12_Photo1.jpg	4180 12 Photo1.jpg
1	Administrative building	5	Baseboard mastic from women's bathroom	Mastic/Adhesive	Yes	Not Damaged	Yellow/tan	200	Linear Feet	Next to door	4185 13_Photo1.jpg	4185 13 Photo1.jpg
1	Administrative building	6	Baseboard mastic from women's bathroom	Mastic/Adhesive	Yes	Not Damaged	Yellow/tan	200	Linear Feet	Next to door		
1	Administrative building	7	Baseboard mastic from women's bathroom	Mastic/Adhesive	Yes	Not Damaged	Yellow/tan	200	Linear Feet	Next to door	4198 15_Photo1.jpg	4198 15 Photo1.jpg

Conclusion

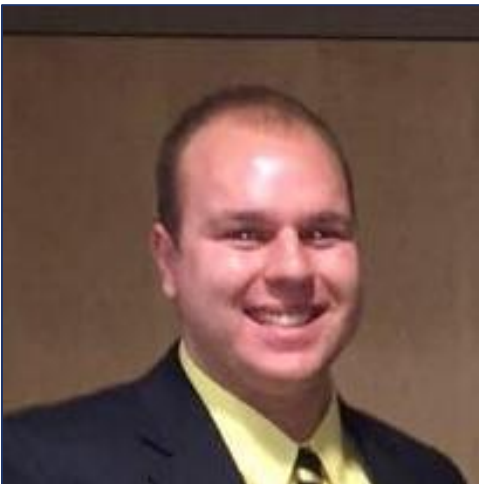
- User-friendly tool
- Reduce human error
- Collector can be used offline
- Reduction of field forms
- GPS for more accurate field uses



Questions?



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