

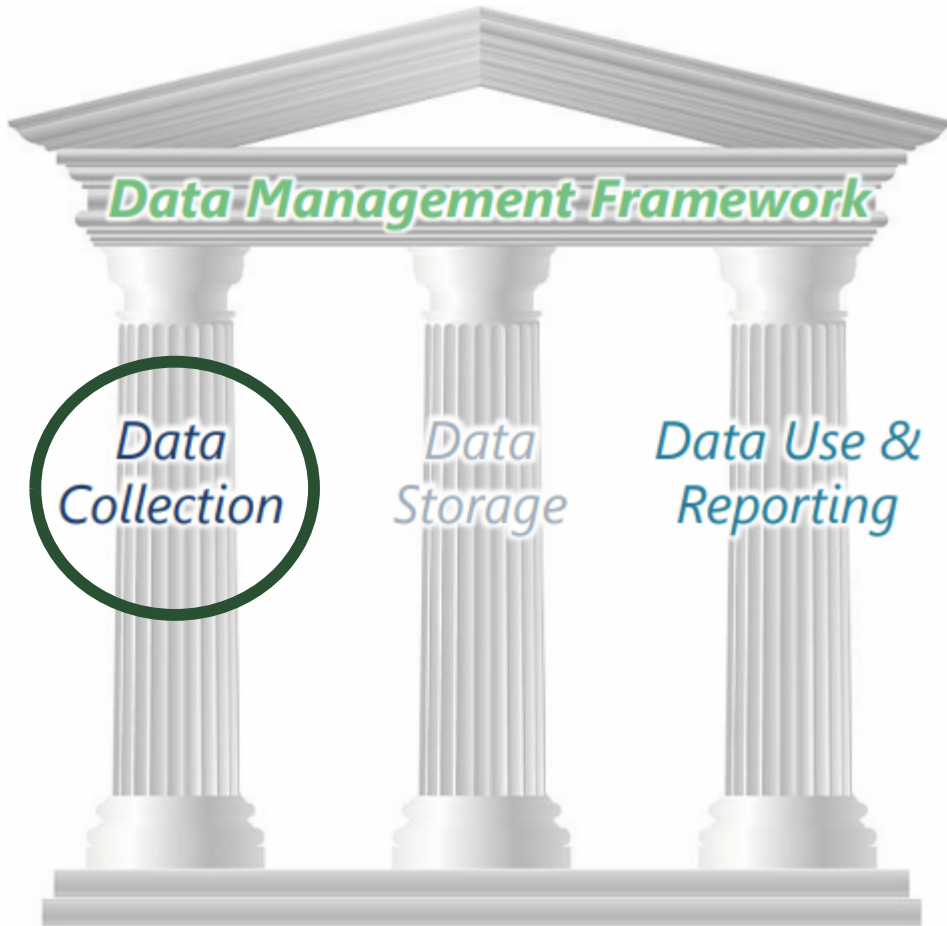


Optimizing Environmental Data Collection and Review with ArcGIS Field Maps

2025 International Commission on Environmental Data
Management
Shana Whitney
May 15, 2025



Overview



- Goal 1: Expand awareness and access to digital data collection tools
- Goal 2: Digital data collection tool development and deployment

Goal 1: Expand awareness and access to digital data collection tools

GIS Field Maps Request

Hi, Shana. When you submit this form, the owner will see your name and email address.

* Required

1. Project Name *

Enter your answer

2. Project Number *

Enter your answer

3. Charge Phase: *

Enter your answer

4. What is the intended use of the data? *

Enter your answer

5. Do you have an existing GIS? *

Yes
 No

6. File Path for existing GIS Files

Enter your answer

7. Name of GIS Analyst or other project team member familiar with existing GIS Data

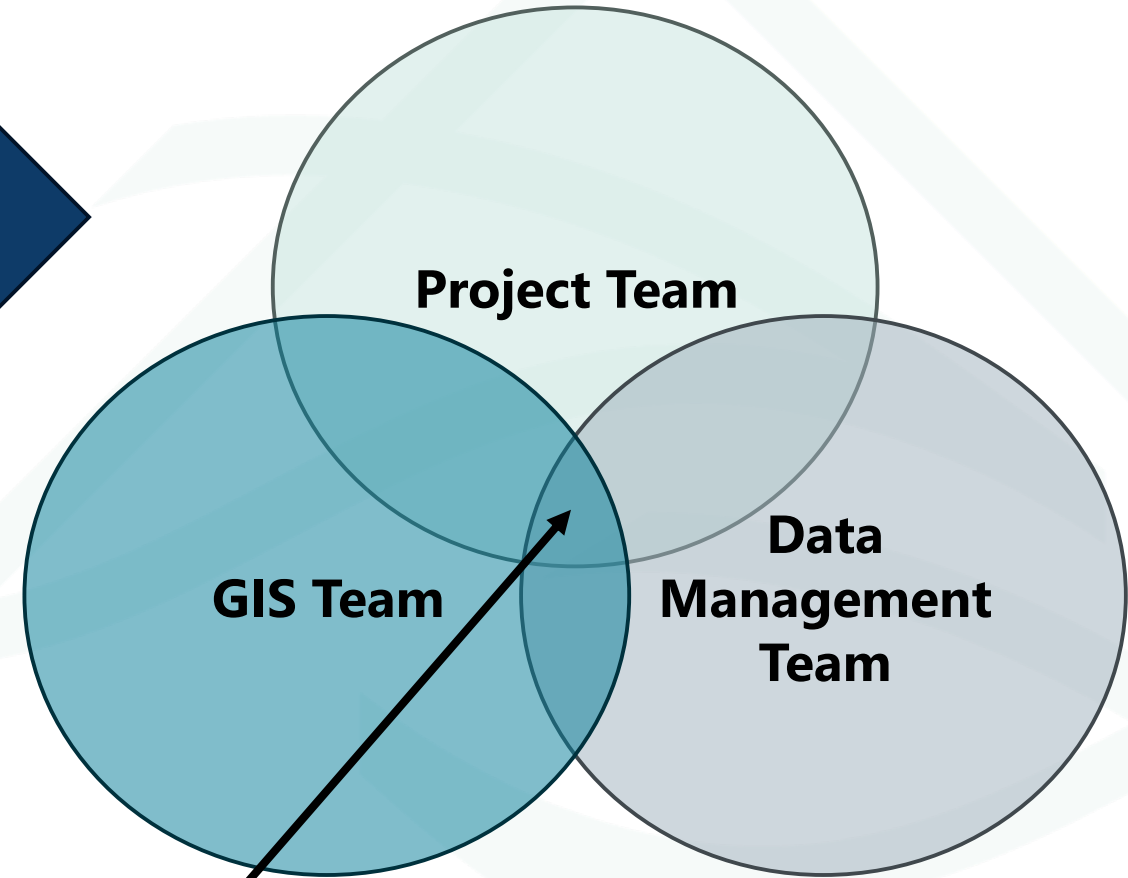
Enter your answer

8. Confirm required standard Field Map Functions *

Standard Base Map (publicly available aerial)
 Add Existing Features (note - the GIS Team will reach out to the designated contacts for additional information)
 Available for Offline Use
 Add Features (samples, observation points, lines, polygons, etc.)
 Add Photos/Notes

9. Please check the additional customized options (note - this will require further coordination with the GIS Team): *

Dashboard
 Collect additional data
 Logs/Reports
 Dynamic Feature Layers

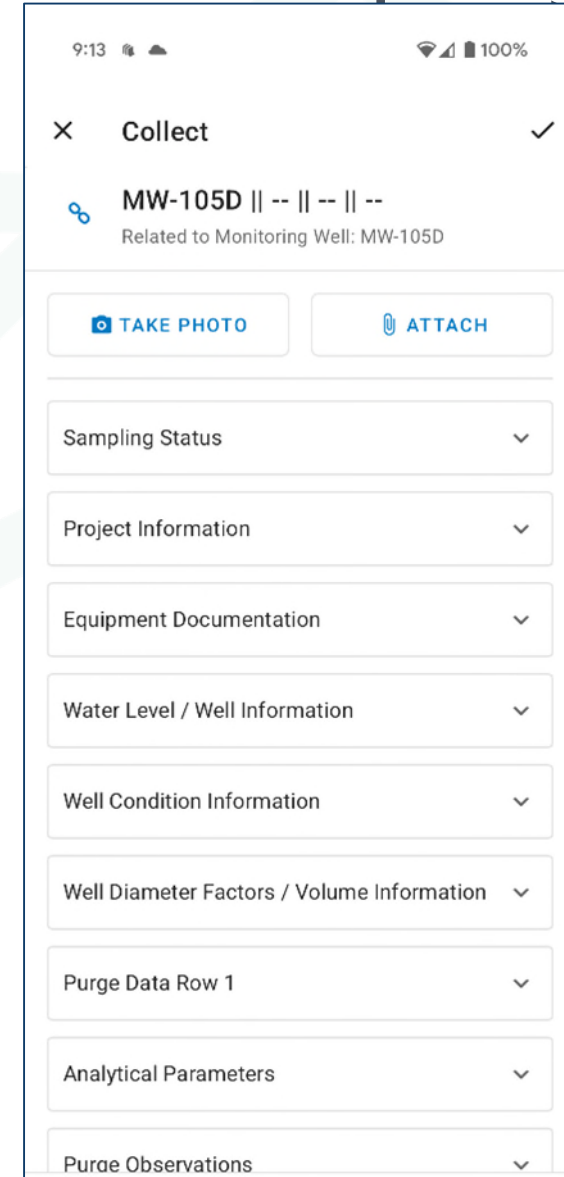
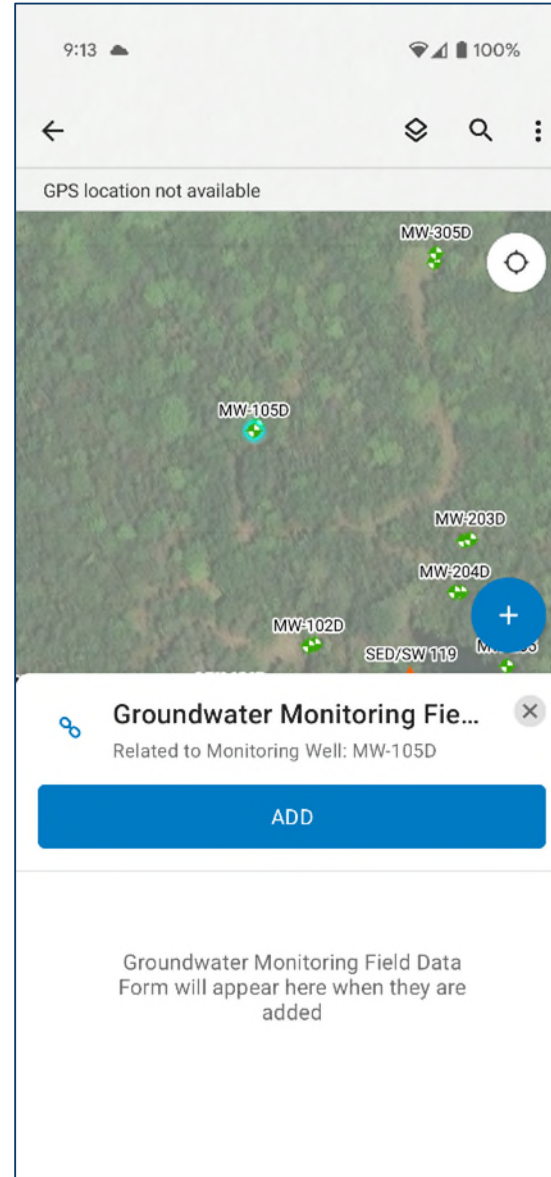
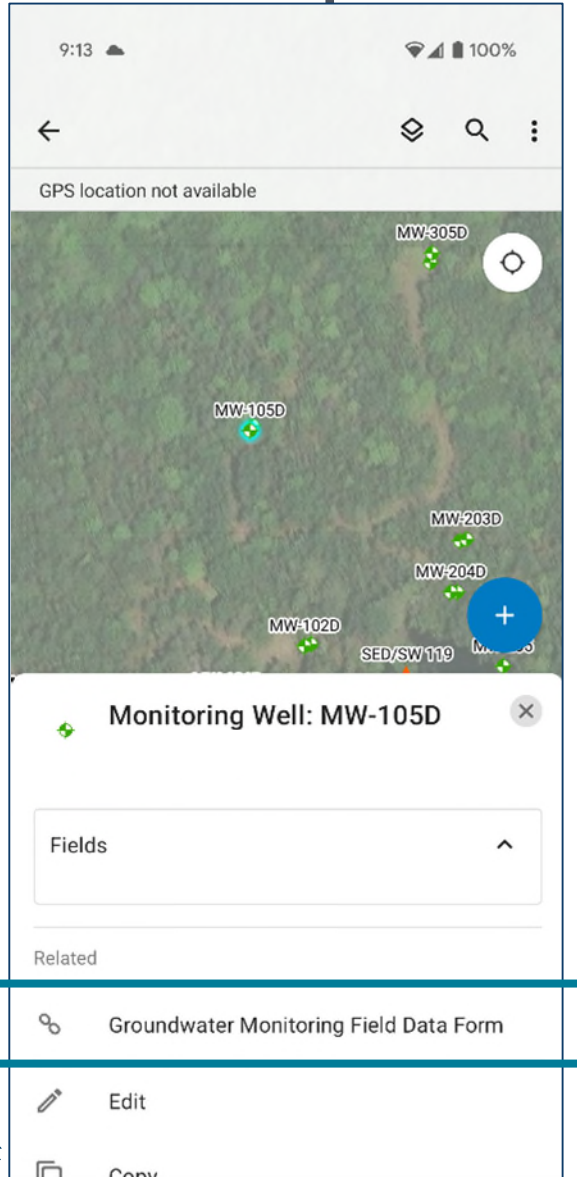


- Training opportunities/resource balancing
 - Collaboration across teams
- Innovative tool development, scalable and standardized
- Successful field maps and data lifecycles!

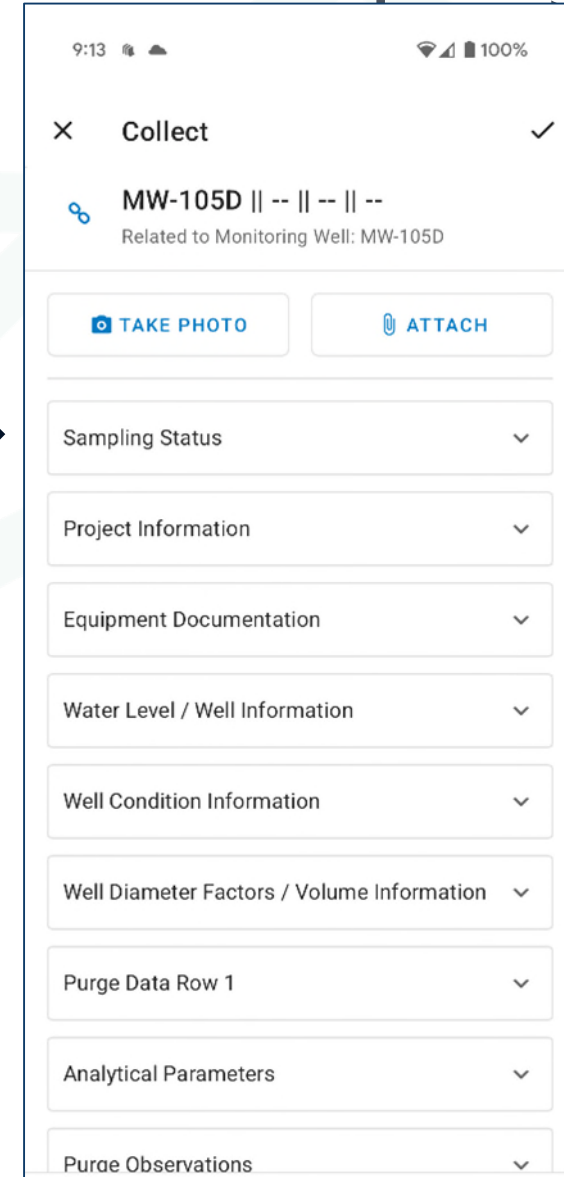
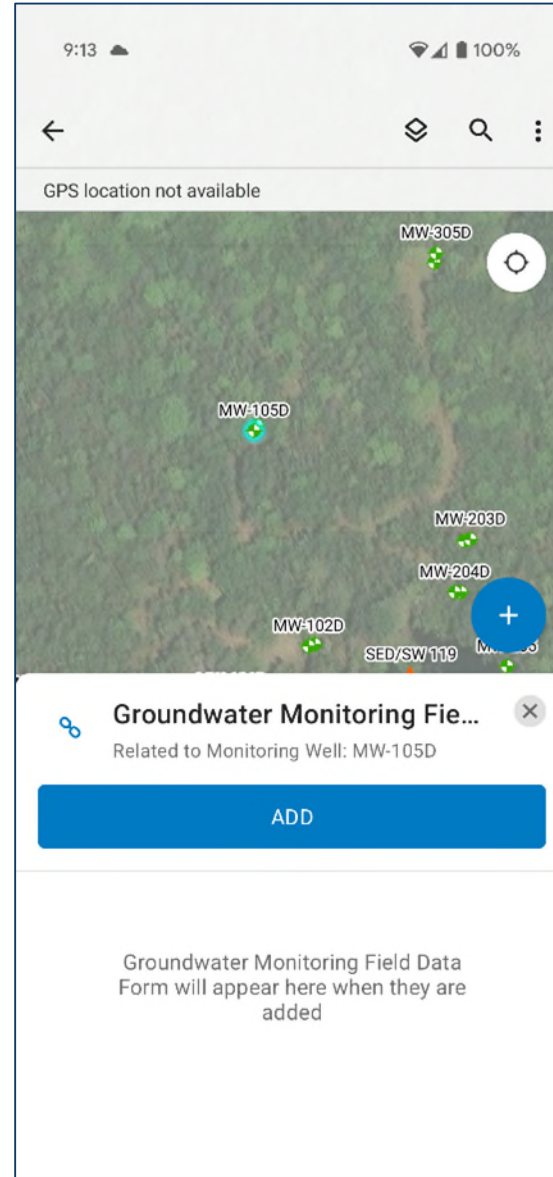
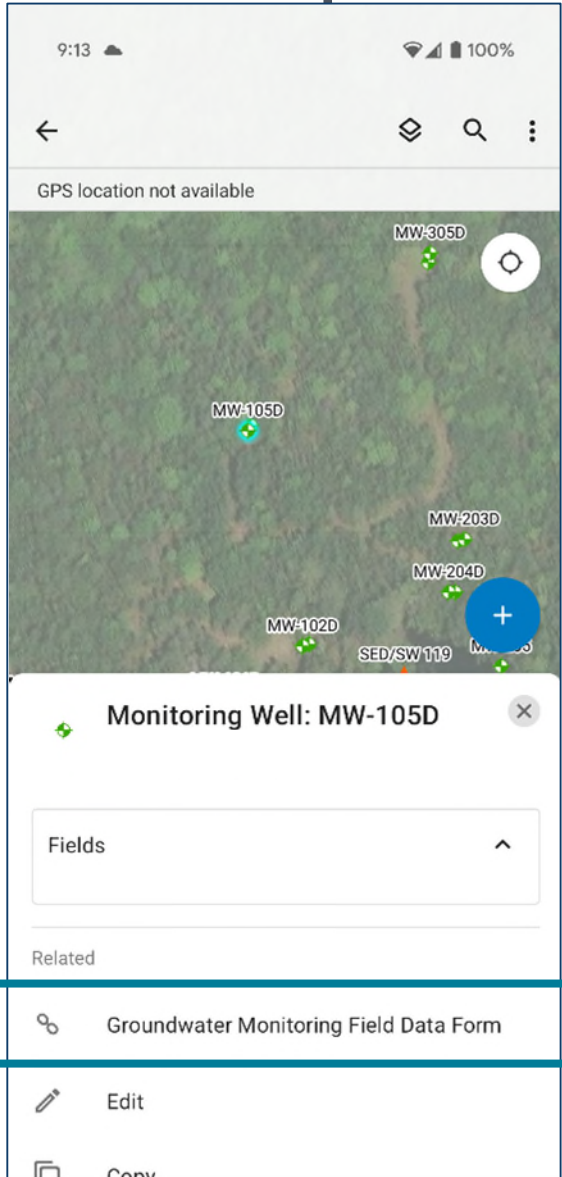
Example 1: Low-Flow Groundwater Sampling

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING										
PROJECT NAME/NUMBER <u>EXAMPLE PROJECT</u>				EVENT NAME <u>ANNUAL SAMPLING</u>						
WELL ID _____				DATE _____						
EQUIPMENT DOCUMENTATION										
<u>PUMP</u>			<u>TURBIDIMETER</u>			<u>YSI</u>		<u>(OIL) WATER LEVEL METER</u>		
TYPE _____			TYPE _____			TYPE _____		TYPE _____		
S/N _____			S/N _____			S/N _____		S/N _____		
WATER LEVEL / WELL INFORMATION				WELL SCREEN <input type="text"/> ft-bgs		MEASUREMENT POINT <input type="checkbox"/> TOP OF WELL RISER <input type="checkbox"/> TOP OF CASING <input type="checkbox"/> OTHER: _____		TYPE OF TUBING (Select all that apply) <input type="checkbox"/> LDPE <input type="checkbox"/> HDPE <input type="checkbox"/> DOUBLE-TUBING		
INITIAL DEPTH TO WATER <input type="text"/> ft-bmp		STICK-UP HEIGHT <input type="text"/> ft		INITIAL DEPTH TO LNAPL <input type="text"/> ft-bmp		WELL SCREEN <input type="text"/> ft-bmp		TUBING PRESENT? <input type="text"/> Y <input type="text"/> N <input type="text"/> N/A		LOCK PRESENT? <input type="text"/> Y <input type="text"/> N <input type="text"/> N/A
FINAL DEPTH TO WATER <input type="text"/> ft-bmp		SATURATED SCREEN <input type="text"/> ft-bmp		MEASURED DTB <input type="text"/> ft-bmp		PUMP INTAKE DEPTH <input type="text"/> ft		GRIPPER PLUG? <input type="text"/> Y <input type="text"/> N <input type="text"/> N/A		CONDITION OF TUBING (ie. Stained, replaced/used new): _____
WELL DIAMETER FACTORS / VOLUME INFORMATION						Duplicate Collected? Y N Duplicate ID _____				
Circle DIAMETER (inches) 1.0 1.5 2 4.0 6.0										
One GALLONS/FOOT 0.041 0.092 0.163 0.651 1.47										
FEET OF WATER IN WELL <input type="text"/> feet		ONE WELL VOLUME <input type="text"/> gal		TOTAL VOL. PURGED <input type="text"/> gal		BLADDER CYCLE SETTING & PSI <input type="text"/>				
PURGE DATA										
TIME	Circle DEPTH TO WATER -OR- LNAPL	FLOW RATE (mL/min)	TEMPERATURE (°C)	SPECIFIC CONDUCTANCE (mS/cm)	DO (mg/L)	pH (S.U.)	ORP (mV)	TURBIDITY (NTU)	PUMP INTAKE DEPTH (ft-bmp)	COMMENTS EG. COLOR, ODOR
			(+/- 3%)	(+/- 3%)	(+/-10% if >0.5)	(+/- 0.1)	(+/- 10)	(+/-10% if > 5.0)		

Example 1: Low-Flow Groundwater Sampling



Example 1: Low-Flow Groundwater Sampling



Example 1: Low-Flow Groundwater Sampling

Purge Row 1

9:23 100%

Collect ✓

MW-105D || -- || -- || Ongoing
Related to Monitoring Well: MW-105D

Purge Data Row 1 ^

Time 1 (military) 13:00 ⊗

Depth To Water 1 (ft) 1.2 ⊗

Flow Rate 1 (ml/m) 200 ⊗

Temp 1 (Celsius) 10 ⊗

Specific Conductance 1 (ms/cm) 0.580 ⊗

DO 1 (mg/L) 0.44 ⊗

pH 1 (S.U.) 4.85 ⊗

ORP 1 (mV) -102 ⊗

Turbidity 1 (NTU) 6 ⊗

Purge Row 2

9:24 100%

Collect ✓

MW-105D || -- || -- || Ongoing
Related to Monitoring Well: MW-105D

Purge Data Row 2 ^

Time 2 (military) 13:10 ⊗

Depth To Water 2 (ft) 2.7 ⊗

Flow Rate 2 (ml/m) 200 ⊗

Temp 2 (Celsius) 10.1 ⊗

Specific Conductance 2 (ms/cm) 0.582 ⊗

DO 2 (mg/L) 0.44 ⊗

pH 2 (S.U.) 4.84 ⊗

ORP 2 (mV) -101 ⊗

Turbidity 2 (NTU) 6.1 ⊗

Purge Row 3

9:26 100%

Collect ✓

MW-105D || -- || -- || Ongoing
Related to Monitoring Well: MW-105D

Temp 3 (Celsius) 10.2 ⊗

Specific Conductance 3 (ms/cm) 0.581 ⊗

DO 3 (mg/L) 0.45 ⊗

pH 3 (S.U.) 4.84 ⊗

ORP 3 (mV) -101 ⊗

Turbidity 3 (NTU) 6 ⊗

Pump Intake Depth 3 (ft)

Comments 3 (color, odor, sheen, etc)

Well Stabilized3
Yes

Purge Data Row 4 v

Example 1: Low-Flow Groundwater Sampling

Purge Row 1

9:23 100%

Collect ✓

MW-105D || -- || -- || Ongoing
Related to Monitoring Well: MW-105D

Purge Data Row 1

Time 1 (military) 13:00

Depth To Water 1 (ft) 1.2

Flow Rate 1 (ml/m) 200

Temp 1 (Celsius) 10

Specific Conductance 1 (ms/cm) 0.580

DO 1 (mg/L) 0.44

pH 1 (S.U.) 4.85

ORP 1 (mV) -102

Turbidity 1 (NTU) 6

Purge Row 2

9:24 100%

Collect ✓

MW-105D || -- || -- || Ongoing
Related to Monitoring Well: MW-105D

Purge Data Row 2

Time 2 (military) 13:10

Depth To Water 2 (ft) 2.7

Flow Rate 2 (ml/m) 200

Temp 2 (Celsius) 10.1

Specific Conductance 2 (ms/cm) 0.582

DO 2 (mg/L) 0.44

pH 2 (S.U.) 4.84

ORP 2 (mV) -101

Turbidity 2 (NTU) 6.1

Purge Row 3

9:26 100%

Collect ✓

MW-105D || -- || -- || Ongoing
Related to Monitoring Well: MW-105D

Temp 3 (Celsius) 10.2

Specific Conductance 3 (ms/cm) 0.581

DO 3 (mg/L) 0.45

pH 3 (S.U.) 4.84

ORP 3 (mV) -101

Turbidity 3 (NTU) 6

Pump Intake Depth 3 (ft)

Comments 3 (color, odor, sheen, etc)

Well Stabilized3
Yes

Purge Data Row 4

Built in QC – example flags

Temp 3 (Celsius) 10.2

Specific Conductance 3 (ms/cm) 0.581

DO 3 (mg/L) 0.45

pH 3 (S.U.) 22
Enter value from 0 to 14

ORP 3 (mV) -101

Turbidity 3 (NTU) 6

Pump Intake Depth 3 (ft)

Comments 3 (color, odor, sheen, etc)

pH 3 (S.U.) 4.84

ORP 3 (mV) ""
Value must be a number

Turbidity 3 (NTU) 6

Pump Intake Depth 3 (ft)

Comments 3 (color, odor, sheen, etc)

Well Stabilized3
No


Example 2: Daily Construction Reports and Beyond

Observation Form

10:14 98%

Collect

GPS location not available



Observation Point ID: --
No location

Date: No value

Site: No value

Enabled *
No value

REQUIRED
Observation Type: No value

Other Observation Type:

Observation Comments:

Photo 1 Description:

Photo 2 Description:

Photo 3 Description:

Observation Point Date *

ID:

ADD POINT

TAKE PHOTO ATTACH

10:14 98%

Collect

Observation Point ID: --
No location

Date: No value

Site: No value

Enabled *
No value

REQUIRED
Observation Type: No value


Other Observation Type:

Observation Comments:

Photo 1 Description:

Photo 2 Description:

Photo 3 Description:



DAILY CONSTRUCTION REPORT

Site: Example Site	Address: Example Address	Date: 11/10/2023 Time: 18:00 Weather: 48° F, Sky Clear
Woodard & Curran Representative(s):	Example Rep	Other Representative(s):
Project No.:	Project:	

SUBCONTRACTORS/ON-SITE

Name	Organization	Trade/Work Per
Example Sub	Example Org	General Construction

CAMP DATA SUMMARY

	Upwind 1		Downwind 1		Downwind
	MAX	AVG	MAX	AVG	MAX
PID (ppm)	0	0	0	0	0.2285
Dustrack (mg/m3)	0.04	0.01	0.032	0.0039	0.0138

Work Performed:

- Crushing concrete to use as sub base material
- Storm water infrastructure installation
- Concrete curb mold installation
- Pouring concrete for new sidewalk
- Ripping out old sidewalk
- Popping out ground water

Activities Planned for Tomorrow:

- concrete crushing
- Storm water infrastructure installation

Health and Safety - Incidents/Observations/Discussions

Final Report format


Materials:

MATERIALS IMPORTED					
Material	Other Material	Vendor	QTY	UOM	Condition/Purpose/Comments
Example Material		Example Vendor	1 load		

MATERIALS EXPORTED					
Material	Source Location	QTY	UOM	Condition/Purpose/Comments	


PHOTOGRAPH LOG:

Photograph #1




Description of Photograph: Storm water infrastructure excavation

Photograph #2




Description of Photograph: Installing concrete curb molds

Photograph #3



Description of Photograph: Crushing concrete for use as sub base material

Photograph #4



Description of Photograph: New sidewalk installation

Example 2: Daily Construction Reports and Beyond

Project Dashboard
>
SELECT WORK WEEK
5/5/2025, 2:53 PM

Site Overview Information

Example site overview information

Last update: 1 minute ago

Safety Metrics

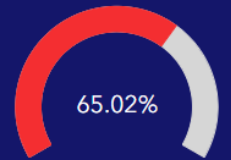
Metric Type	This Week	Project to Date
Loss Time Injury	0	0
Restricted	0	0
Medical	0	0
First Aid	0	0
Unsafe Act / Condition	0	0
Good Catch / Safe Actions	3	46

Last update: 1 minute ago

Safety Metrics
Building Status

Excavation - Tons
 Excavation Tons this Week: 1487.51
 Excavation Tons to Date: 10293.20
Last update: 1 minute ago

Current
Excavation % Complete



65.02%

LEGEND

Observation Points

★

Building - Points

Building Status

- ▲ Existing
- ▲ New
- ▲ Abated
- ▲ Demolished

Excavation Footprint

Year

- 2025
- 2024


Excavation Footprint (Proposed)

Year

- 2025
- 2024

Site Boundary

⌂



Example 2: Daily Construction Reports and Beyond

Project Dashboard
SELECT WORK WEEK
5/5/2025, 2:53 PM

Site Overview Information

Example site overview information

Last update: 1 minute ago

Safety Metrics

Metric Type	This Week	Project to Date
Loss Time Injury	0	0
Restricted	0	0
Medical	0	0
First Aid	0	0
Unsafe Act / Condition	0	0
Good Catch / Safe Actions	3	46

Last update: 1 minute ago

Safety Metrics

Building Status

Excavation - Tons

Excavation Tons this Week: 1487.51
Excavation Tons to Date: 10293.20

Last update: 1 minute ago

Current
Excavation % Complete

65.02%

LEGEND

Observation Points

- ★
- Building - f
- Building
- Exist
- New
- Abat
- Derr
- Excavation
- Year
- 202
- 202
- Excavation (Proposed)
- Year
- 202
- 202
- Site Boundary

Date/Time	Name	Company	Location	Hazard Type	Incident Type	Incident Description/Observations
5/5/2025, 9:15 AM	John Doe	Woodard & Curran	Trailers	Housekeeping	Safe Action	During break time, all trailer floors and tables were cleaned, to reduce possible contamination
5/7/2025, 7:40 AM	John Doe	Woodard & Curran	Excavation Area 1	Safe Work Zone	Safe Action	A pressure washer is utilized to suppress dust while loading trucks out with impacted materials and performing decontamination with tools/equipment.
5/8/2025, 7:00 AM	John Doe	Woodard & Curran	Excavation Area 1	Heavy Equipment	Safe Action	During morning excavation activities, due to the increased sun glare, all heavy equipment were provided spotters to support with visibility when moving the machines.

Woodard
& Curran

Maximizing Options of Digital Field Data Collection with ArcGIS Field Maps



- Streamlined workflows
- Real-time decision making and QC
- File and data management
- Use and customization of ESRI
- And more!



swhitney@woodardcurran.com

Questions?