

# DQM FOR REGULATORY CONTRACTS

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National Dredging Quality Management Program

WEDA Pacific Chapter  
2023 Annual Meeting  
San Diego, CA

October 26, 2023



US Army Corps  
of Engineers®



**ODESS**  
OPERATIONS & DREDGING ENDANGERED SPECIES SYSTEM

# OVERVIEW



US Army Corps  
of Engineers®



- What is DQM and When is DQM required?
- What data is collected and How is it collected?
- How can the data be used?





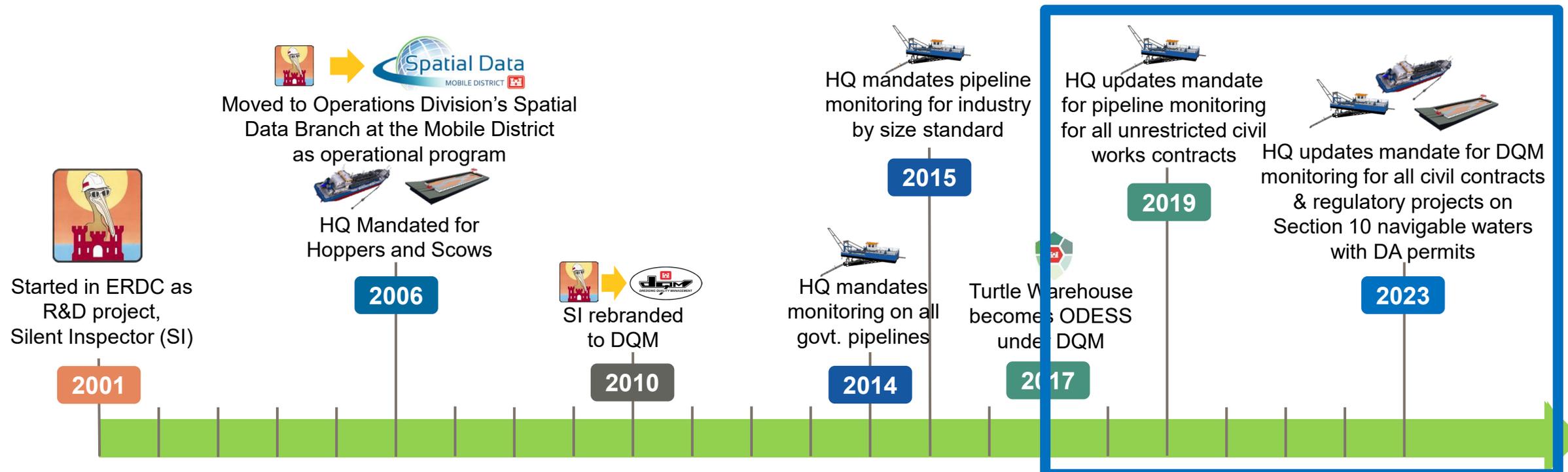
# What is DQM and When is DQM required?



# National Dredging Quality Management Program



- Corps – Dredging Industry partnership
- Near real time, automated dredging monitoring system
- Standardizes dredge monitoring requirements nationwide
- Performance-based instrumentation requirements
- Provides tools to review and analyze dredging operations
- Repository for historical dredging operations information



What is DQM and when is it required?

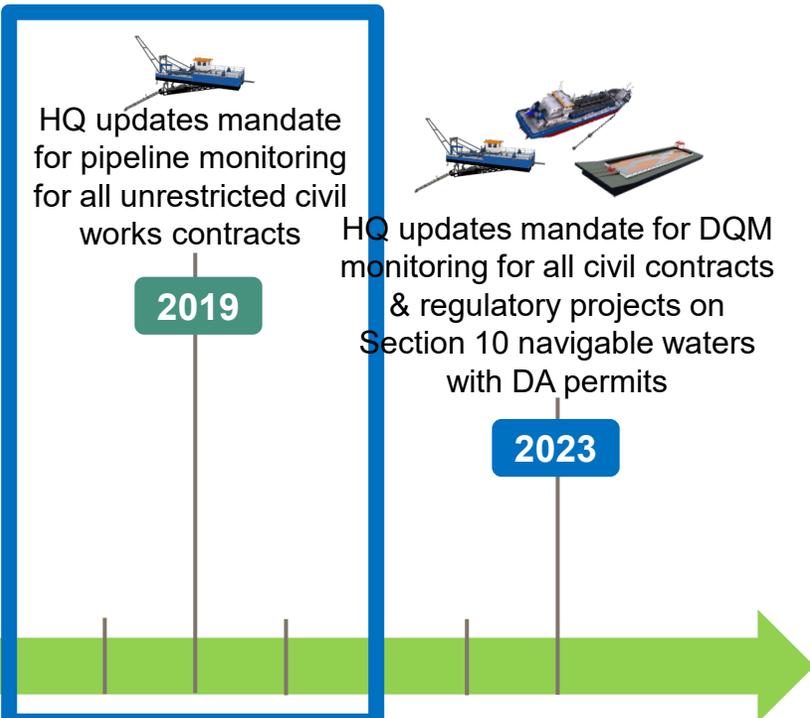
What data is collected and how?

How can the data be used?

# National Dredging Quality Management Program



- Mandated for all hoppers and scows on civil and regulatory projects.
- Mandated for pipelines on unrestricted civil works contracts.



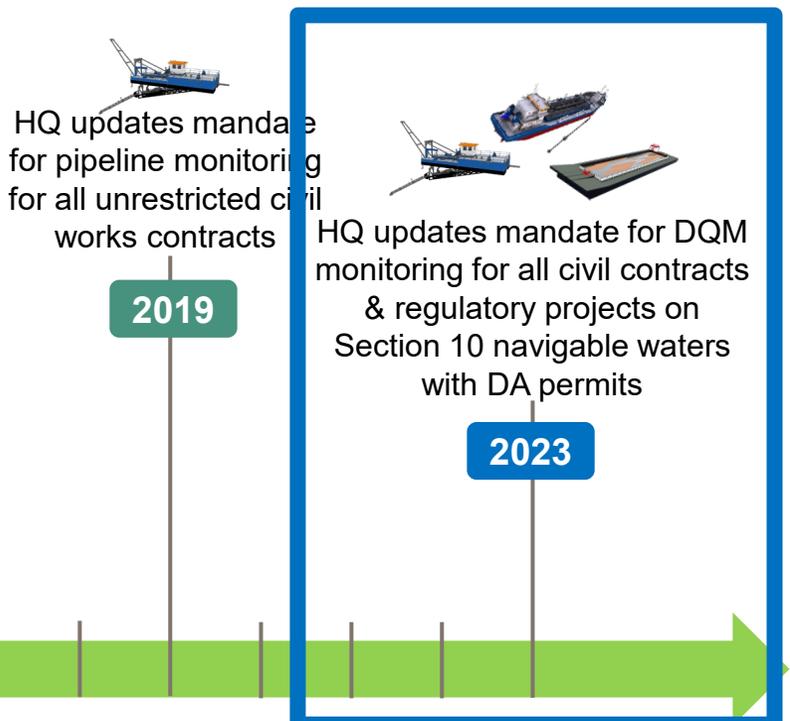
## CECW-CO Memorandum, Nov 2019

- Expanded the use of DQM to unrestricted (Full and Open Competition) pipeline dredging contracts.
- New dredges continue to come online.

# National Dredging Quality Management Program



- Now mandated for all projects that require a USACE dredging permit.



## Regulatory Guidance Letter No. 23-01

- If a project requires a USACE dredging permit, DQM is Required!
- Applies to all dredge types and all DA permits for dredging and/or dredged sediment placement from or into Section 10 navigable waters.
- Required unless a case-by-case exemption is justified by the District Engineer.

# A NATIONWIDE PROGRAM



DQM is currently receiving data from:

- 24 Hopper Dredges
- Over 300 Scows
- Over 80 Pipeline Dredges

. . . and increasing weekly!

>1700 Contracts/Permits

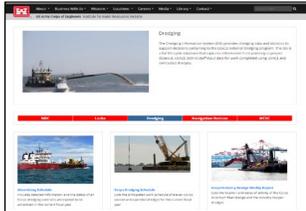
32 USACE Districts



# DREDGING DATABASES



## DIS



### Dredging Information System



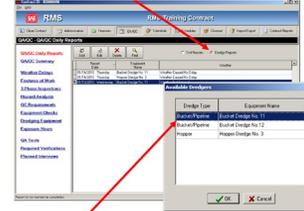
Tracks contract information from advertisement to contract completion



Manual data entry

Historical information from the 1960s to the present

## RMS



### Resident Management System



Tracks and documents contract execution from planning to contract completion



Manual data entry

### Dredging Quality Management



Monitors actual dredging activities



Continuous automated data collection

Historical project data from 2010 to the present

# DQM CENTER PERSONNEL



Rhonda Lenoir—DQM Program Manager

- Anne Baumhower—Data QA, Report Coordination
- Jesse Hall—Systems Manager
- Michael Sessions—ODESS Program Manager
- Kari Servold—Operational and Customer Support (Project Tracking, Viewer)
- Jorge Beltran—Dredge Plant Support, Data Acquisition and QA, Special Analyses
- TBD—Data Acquisition and Analysis (Specifications, Certifications)
- \* Field QA Team, Contractor Development Teams (Mobile/Charleston/Seattle)





# What data is collected and How?

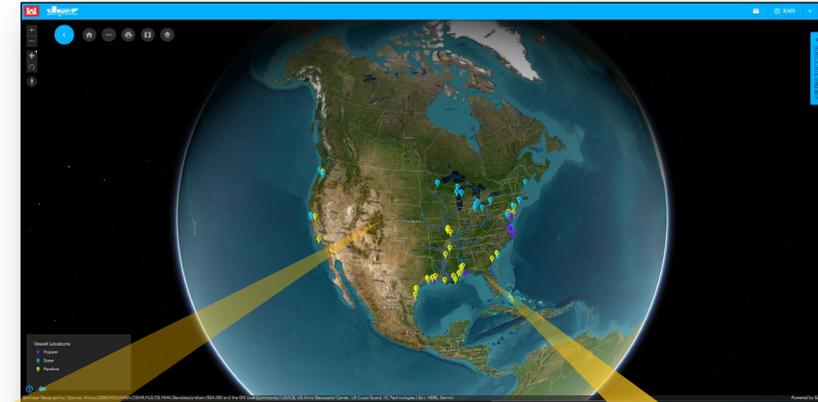


# WHAT DATA IS COLLECTED?



- Plant location
- Indicators of plant state

## Plant Location

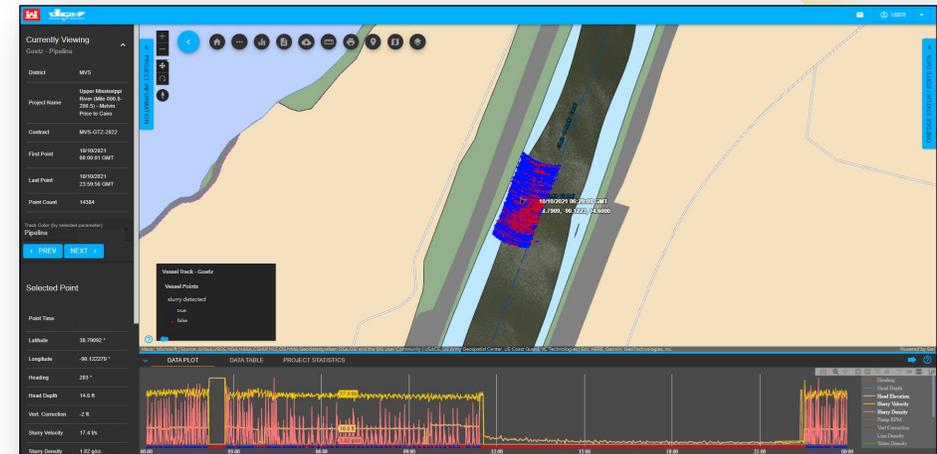


### Plant State: Hopper/Scow Data

- Dredging/turning
- Transit (Lite/loaded)
- Disposal
- Undetermined

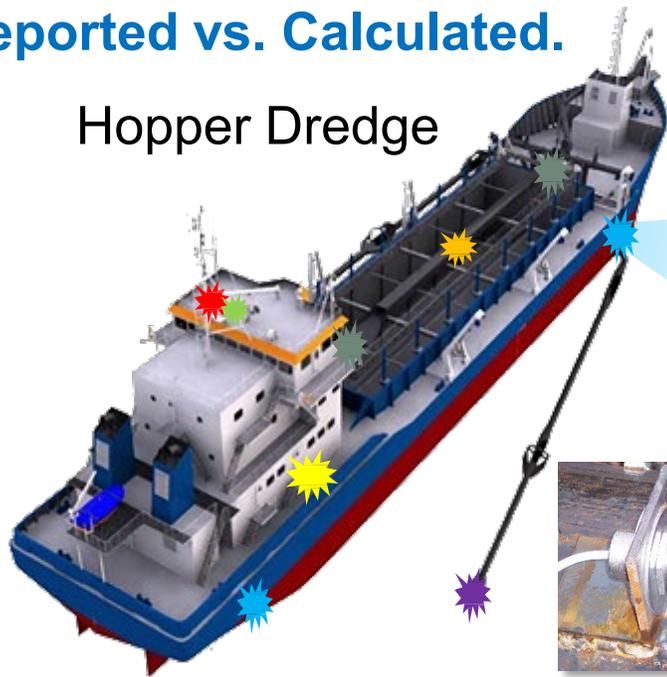
### Plant State: Pipeline Data

- Slurry detected



# TYPICAL INSTRUMENTATION

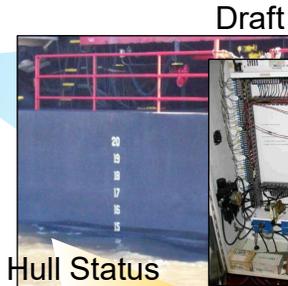
## Reported vs. Calculated.



Hopper Dredge

Scow—Monitoring & Ullage

Hydraulic Cutter/Dustpan



Draft



GPS

Hull Status



Ullage/Volume



Draghead Depth



☀ Outfall Location



### Measured/Transmitted



-  Telemetry
-  GPS –Position, (Lat/Long), Course, Heading, Speed, Time, Drag/Suction-Head position
-  Drag/Suction-Head Depth
-  Slurry Velocity, Density, & Pump RPM
-  Fore and Aft Draft
-  Fore and Aft Ullage
-  Hull Status

### Calculated

-  Displacement (calc by contractor)
-  Volume (calc by contractor)



Cycle Number (M)  
Draghead Positions (calc by contractor)

Pipelines: Downtime

# TYPICAL INSTRUMENTATION



US Army Corps  
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## DQM Specification Updates

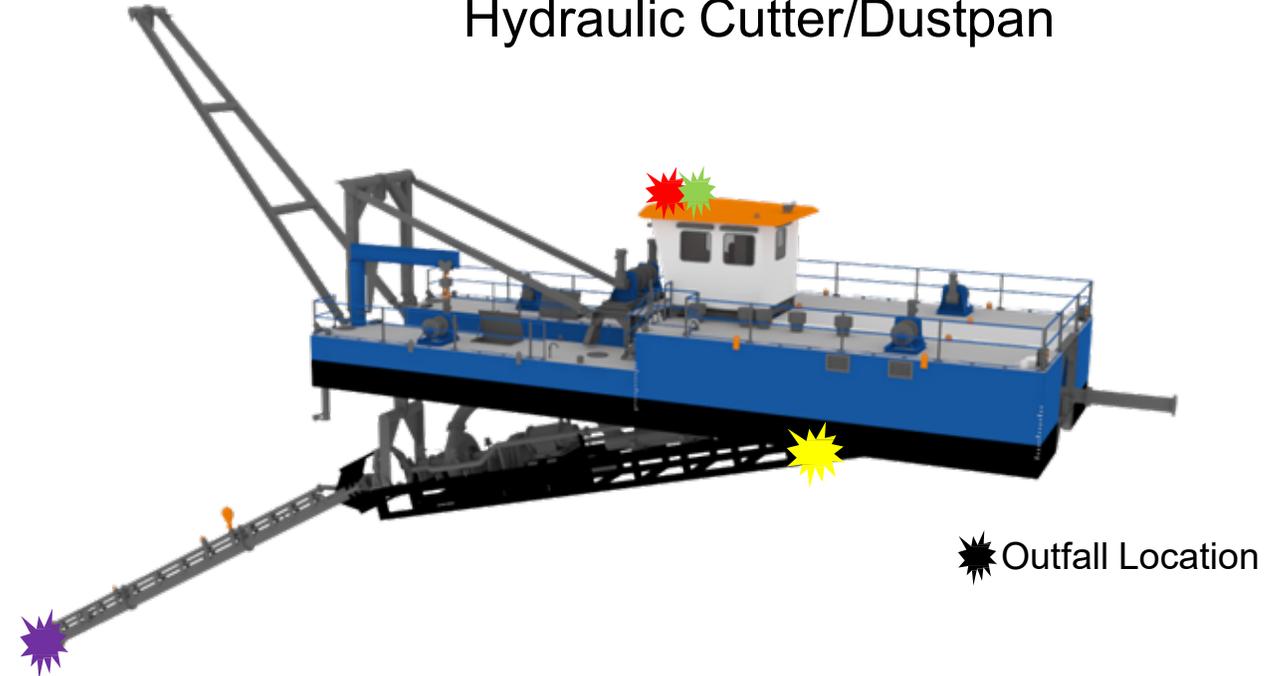
### Pipeline Small Business Profile:

Added a new “profile” for small-business pipeline dredges that eliminates the requirement for density and velocity meters to be used at the discretion of local USACE district.

### Measured/Transmitted

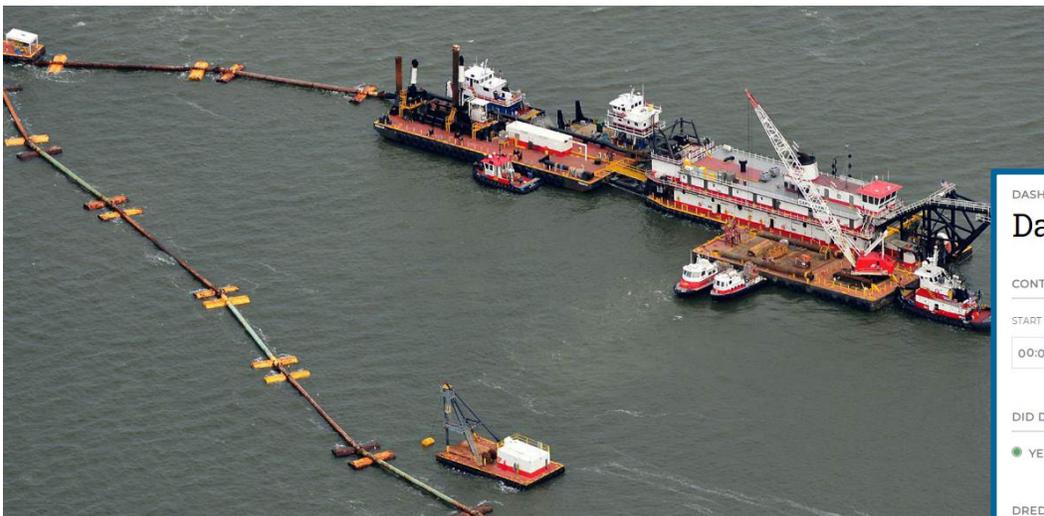
-  Telemetry
-  GPS –Position, (Lat/Long), Course, Heading  
Speed, Time, Drag/Suction-Head position
-  Drag/Suction-Head Depth
- ~~ Slurry Velocity, Density, & Pump RPM~~

### Hydraulic Cutter/Dustpan



# PIPELINE DREDGE STATE DATA

Data entry, directly to webservice.



## DQM State Data Tool

**Data Gaps:** Contractors can now submit backup data and address unfillable gaps through a web interface.

**State Data:** State data can be submitted through a web interface instead of utilizing the DQM OBS software.

**Future Features:** Edit DPIP, address sensor issues, and more!

DASHBOARD > ELLIS ISLAND > 03/16/2022 DAILY REPORT

### Daily Data

CONTRACT INFORMATION ⓘ

START TIME	END TIME	CONTRACT #	COMMENTS
00:00	24:00	W91278-21-C-0016	<input type="text"/>

DID DREDGING OCCUR ON THIS DATE?

YES  NO

DREDGING AREAS ⓘ

DREDGING AREA NAME

SELECT OR ENTER NAME

PLACEMENT AREAS ⓘ

PLACEMENT AREA NAME

SELECT OR ENTER NAME

PLACEMENT METHOD

SELECT

ADD

NON-EFFECTIVE EVENTS ⓘ

START TIME	END TIME	DURATION	REASON	COMMENTS
00:00	24:00	24:00	SELECT	<input type="text"/>

ADD

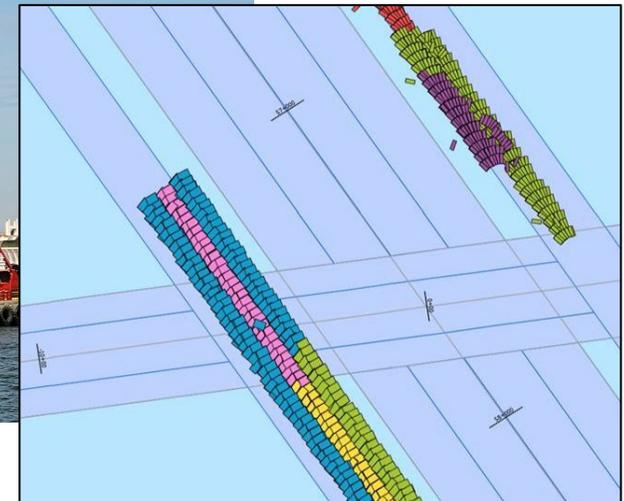
# TYPICAL INSTRUMENTATION



## Mechanical Dredges

**First pilot test:** Successfully underway in a partnership between DQM, the dredging industry, and system providers.  
**Draft specifications:** Available upon request. Working with EPA to ensure DQM Mechanical specifications fulfill future EPA reporting requirements.

Mechanical Dredge



### Measured/Transmitted

-  Bucket Position (Latitude, Longitude, Depth)
-  Dredge Position (Latitude, Longitude, Depth)
-  Crane Orientation (Heading, Boom Angle)
- Vertical Correction (Tide)

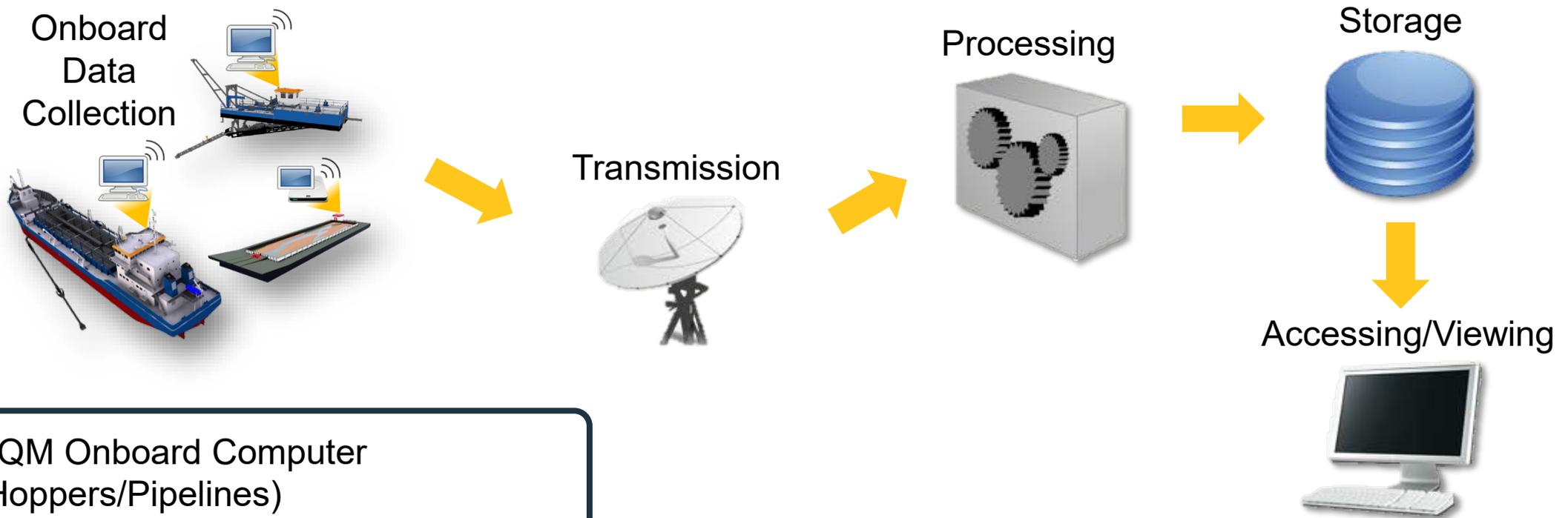
Data is reported every minute, as well as with each bucket open and close event.

# DATA ACQUISITION PATHWAY



## DQM Specification Updates

**Direct Transmission:** Data can now be transmitted directly to DQM, without the need for a DQM PC or DQM OBS software. Transmission with the OBS will be eliminated as an option in 2024.



-  DQM Onboard Computer (Hoppers/Pipelines)
-  DQM Onboard Data Logger (Scows)

# SPECIFICATIONS

## How contractors know what is required.



- Requirements defined for instrumentation to collect and transmit dredging data to the DQM database.
- Please include the latest DQM specification in your dredging contract (civil works) or DA permit (regulatory).
- The latest is available on the DQM Website under **Dredge Plant Requirements**.
  
- **DQM requirements:**
  - ✓ Performance-based.
  - ✓ Allow 48 hours to address an issue once it is identified.



# PROJECT WORKFLOW/ ROLES & RESPONSIBILITIES



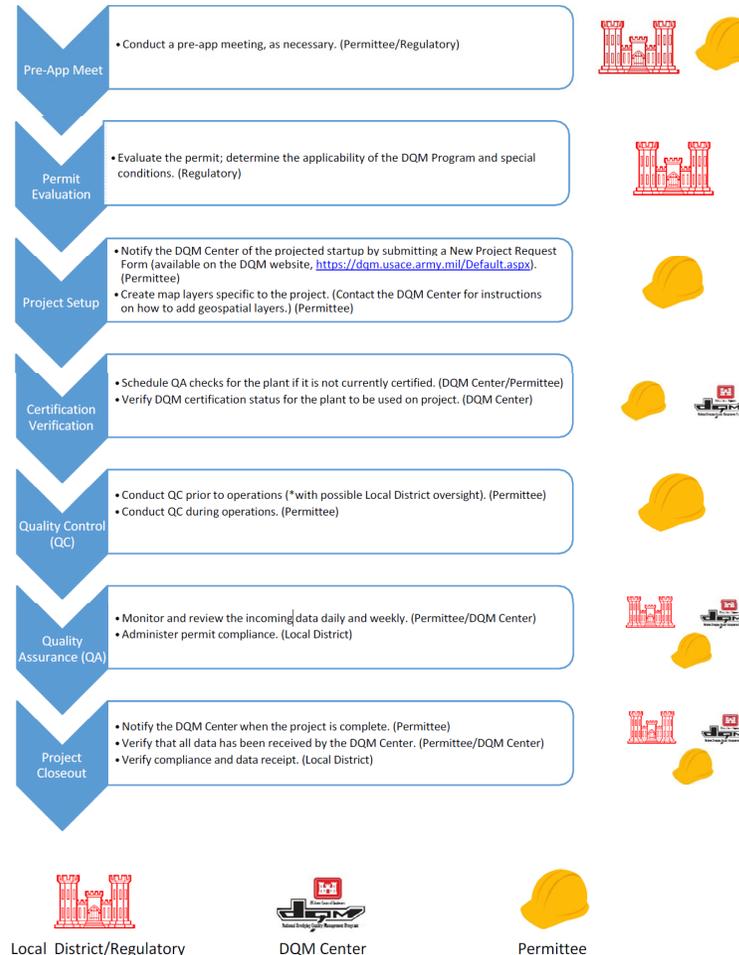
*“Data quality is everyone’s responsibility.”*



# PROJECT WORKFLOW/ ROLES & RESPONSIBILITIES



## DQM Project Workflow/Roles and Responsibilities Regulatory



# PROJECT WORKFLOW/ ROLES & RESPONSIBILITIES



**Project Setup**

- Notify the DQM Center of the projected startup by submitting a New Project Request Form (available on the DQM website, <https://dqm.usace.army.mil/Default.aspx>). (Permittee)
- Create map layers specific to the project. (Contact the DQM Center for instructions on how to add geospatial layers.) (Permittee)



Please submit your project information via the **DQM Project Setup Form** before your dredging project commencement date!

**Q: Who should submit this form?**

**A: The Project Engineer, Project Manager, Permit Issuer, or Permittee.**



Local District/Regulatory



DQM Center



Permittee

# SET UP YOUR PROJECT.

## Setting up the database to receive data.



### Available on the DQM Website



Contact the DQM Support Center

General questions or comments

Schedule a DQM Certification Course

**New project set-up** – download

**Dredging Quality Management New Project Request Form**

District Symbol: [dropdown] Contract/Permit Number: [dropdown] Multi-Year? [No]

Contract Name: [text]

Contract Type: [dropdown] Work Type: [dropdown] New Work?: [dropdown] Est. Duration: [dropdown]

Contractor: [text] Est. Start Date: [text]

Dredge Plant(s): Identify the name of each dredge plant expected to work on the contract.

Hoppers: [text]

Pipelines: [text]

Mechanical: [text] Scow Profile: [dropdown]

Project Area Information: State Plane: [dropdown]

Name: [text] Time Zone: [dropdown]

Dredging Area(s): Please provide the following info for each area (Borrow Area, River Segment, etc.) where dredging will occur.

Name	Area Type	Water	Depth	Volume	Density	Material Description
[text]	[dropdown]	[dropdown]	[text]	[text]	[text]	[text]
[text]	[dropdown]	[dropdown]	[text]	[text]	[text]	[text]

Placement Area(s): Please list and provide information for each area (ODMDS, CDF, etc.) where dredged material will be placed.

Name	Area Type	Method	BU?	Water	Volume
[text]	[dropdown]	[dropdown]	[dropdown]	[dropdown]	[text]
[text]	[dropdown]	[dropdown]	[dropdown]	[dropdown]	[text]

[Click Here](#) to attach drawings, shapefiles, CAD files, etc for dredging and/or placement areas to be used in this contract. Please ensure that datum and projection information is included on any drawings.

Distribution List & Reports: Provide e-mail addresses for personnel (USACE, System Provider, and Contractor) who need to receive weekly DQM reports. Identify which reports are needed. If you need to add more people, use the Comments section below.

Name	Email	Reporting Requirements:
[text]	[text]	<input type="checkbox"/> DQM Reports
[text]	[text]	<input type="checkbox"/> EPA Reports
[text]	[text]	<input type="checkbox"/> Load/Daily Summary Reports
[text]	[text]	<input type="checkbox"/> ODESS Tracking
[text]	[text]	<input type="checkbox"/> Transit Summary Reports

Comments/Notes: [text area]

Rev. 050820 [Save] [Print] [Submit]

- Currently a PDF, will be a webform in the future.
- Local District should submit to the DQM Center ([dqm-support@usace.army.mil](mailto:dqm-support@usace.army.mil)) upon awareness of known upcoming dredging project.

# SET UP YOUR PROJECT.

## Setting up the database to receive data.



### \*Minimum Required Fields:

- Contract/Permit Number
- District POC Contact Information

### NOTE: DQM will follow up for the Remaining information!

**Dredging Quality Management New Project Request Form**

District Symbol: [dropdown] Contract/Permit Number: [text box] Multi-Year? No [dropdown]

Contract Name: [text box]

Contract Type: [dropdown] Work Type: [dropdown] New Work?: [dropdown] Est. Duration: [text box]

Contractor: [text box] Est. Start Date: [text box]

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	[dropdown]	[dropdown]	[text box]	[text box]	[text box]	[text box]
	[dropdown]	[dropdown]	[text box]	[text box]	[text box]	[text box]
	[dropdown]	[dropdown]	[text box]	[text box]	[text box]	[text box]

Placement Area(s): Please list and provide information for each area (ODMDS, CDF, etc.) where dredged material will be placed.

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	[dropdown]	[dropdown]	[dropdown]	[dropdown]	[text box]
	[dropdown]	[dropdown]	[dropdown]	[dropdown]	[text box]
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Name	Email	Reporting Requirements:
		BOEM Reports
		EPA Reports
		Load/Daily Summary Reports
		ODESS Tracking
		Transit Summary Reports

Comments/Notes: [text box]

Rev. 050820 [Save] [Print] [Submit]

# ENSURING QUALITY DATA



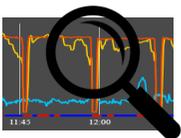
## Responsibilities of the Contractor (Same for civil or regulatory).



- Contractor supplies sensors and instrumentation



- Contractor supplies on-board DQM computer and internet connection

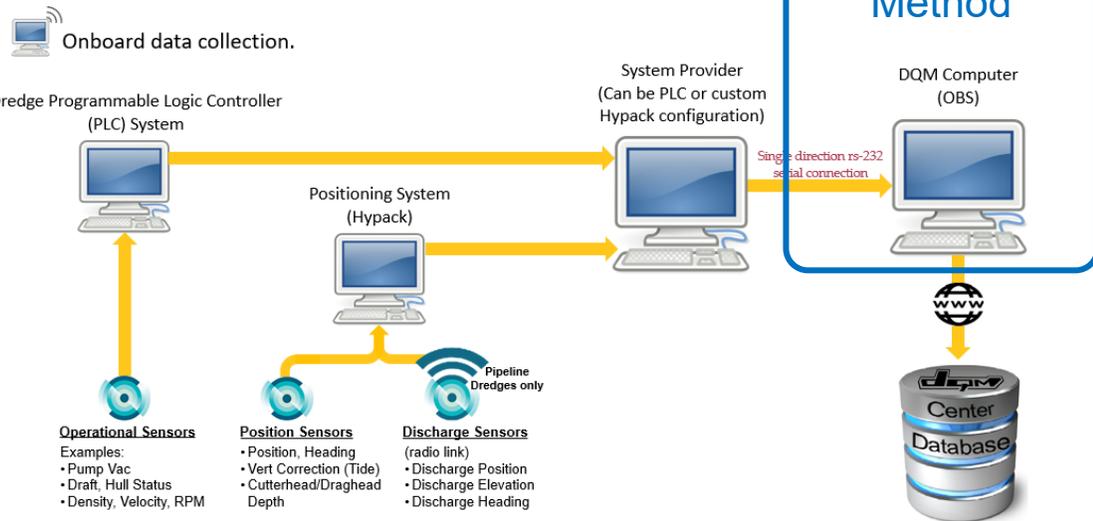


- Contractors ensure data continues to meet DQM minimum specifications

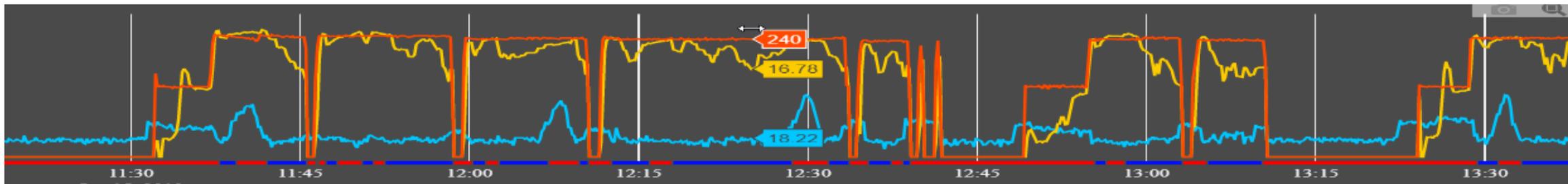


- Prior to and during operations

### THE ONBOARD SETUP



### Historic/Current Method



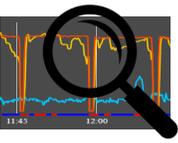
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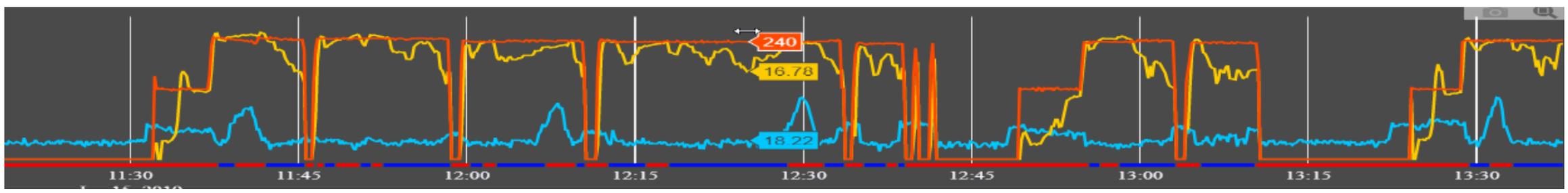
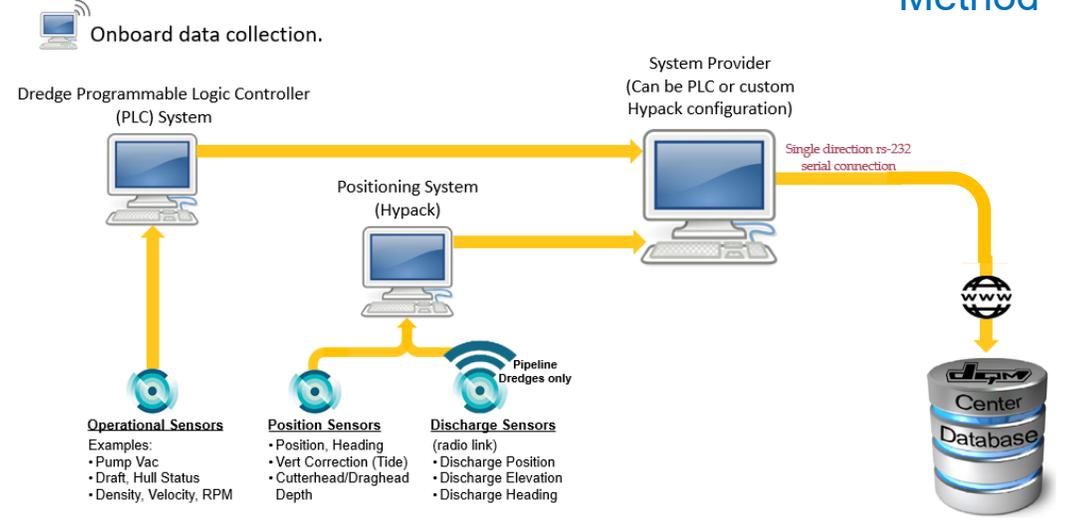
- Contractors ensure data continues to meet DQM minimum specifications



- Prior to and during operations

### New Method

### THE ONBOARD SETUP



# ENSURING QUALITY DATA



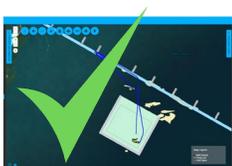
## Responsibilities of the Local USACE Districts: *Civil.*



- Compile dredging specifications, solicit bids and Award contracts.



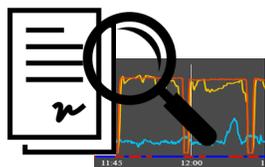
- Fill out and submit the project setup form to notify DQM of impending project.



- Verify placement/borrow areas being used are documented.



- Verify that all plants are certified.



- Monitor and review transmitted data and contract compliance.



- Notify DQM when project is complete.

# ENSURING QUALITY DATA



## Responsibilities of the Local USACE Districts: *Regulatory.*



- Provide the Special Conditions to require DQM monitoring.



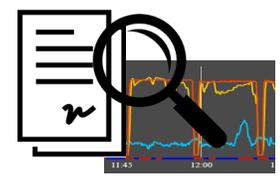
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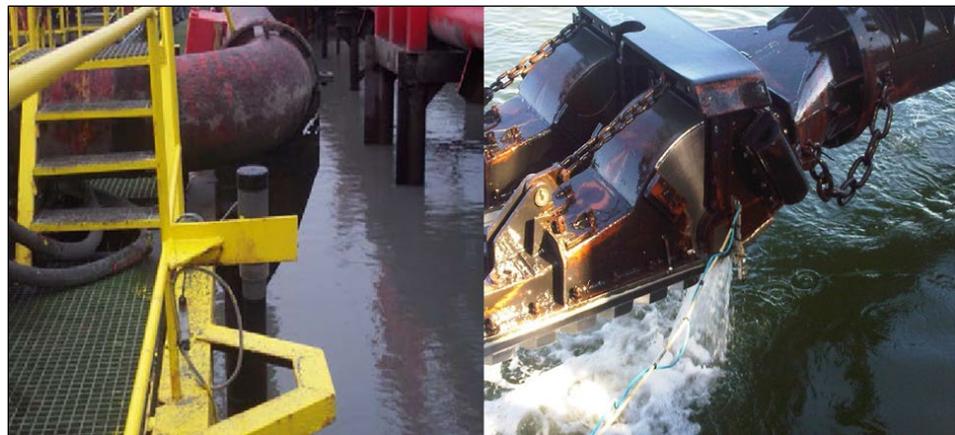
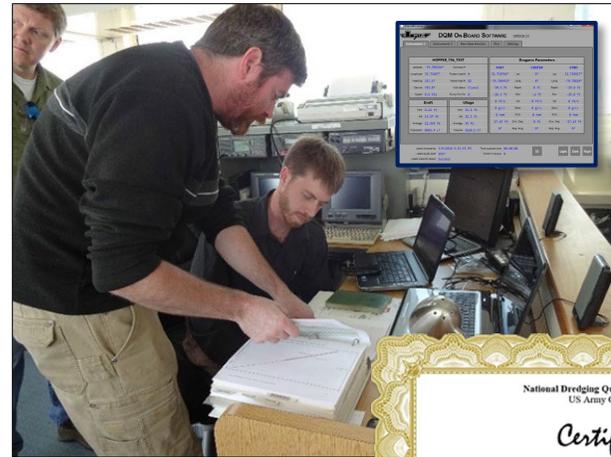
- Notify DQM when project is complete.

# ENSURING QUALITY DATA

## DQM Support Center responsibilities.



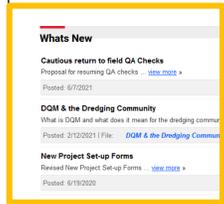
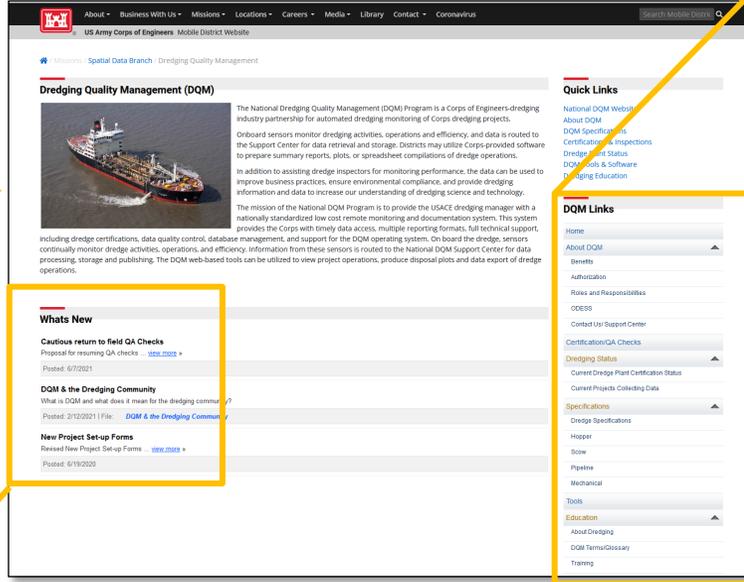
- Certify dredge plant for DQM compliance
  - Schedule/Conduct QA Checks
  - Maintain listing of current certified plant
- Certification does not guarantee that data will always be accurate, just that the plant is capable of providing good quality data.



# DQM WEBSITE

<https://www.sam.usace.army.mil/Missions/Spatial-Data-Branch/Dredging-Quality-Management/>

(Previously: <https://dqm.usace.army.mil/>)



## New Project Setup Form

### DQM Links

- Home
- About DQM
- Benefits
- Authorization
- Roles and Responsibilities
- ODESS
- Contact Us/ Support Center
- Certification/QA Checks
- Dredging Status
  - Current Dredge Plant Certification Status
  - Current Projects Collecting Data
- Specifications
  - Dredge Specifications
  - Hopper
  - Scow
  - Pipeline
  - Mechanical
- Tools
- Education
  - About Dredging
  - DQM Terms/Glossary
  - Training

## Contact Us

## Certification Status and Current Projects Tables

Plant Name	Last Certification	Expiration date			
<b>DQM Active Projects</b>					
Plant Name	Project Name	Year	Year	Year	Year
...	...	...	...	...	...

## Tools and Training

**Tools**

To assist users in visualizing and evaluating the large amounts of dredging data collected, the National Dredging Quality Management Program has developed several tools:

- Onboard Software:** ODS (USACE DQM On Board Software) is a desktop application that provides a user-friendly interface for data collection, processing, and reporting.
- DQM Viewer:** The DQM Viewer is a web-based application that allows users to view and analyze dredging data collected from the ODS.
- Reports:** To assist users in visualizing and evaluating the large amounts of dredging data collected, the National Dredging Quality Management Program has developed several reports from the ODS from the DQM Center.

**Education**

With their increased size, ships need improved navigation channels to enter and leave ports efficiently, quickly, and safely. However, few rivers or harbors are naturally deep. Therefore, they require underwater excavation or "dredging" - more.

**DQM Terms/Glossary**

DQM Terms/Glossary

**Training**

- User Quick Guides
- Public Presentations
- Scheduling Training

Final TEXT and FIGURES to be DETERMINED.

What is DQM and when is it required?

What data is collected and how?

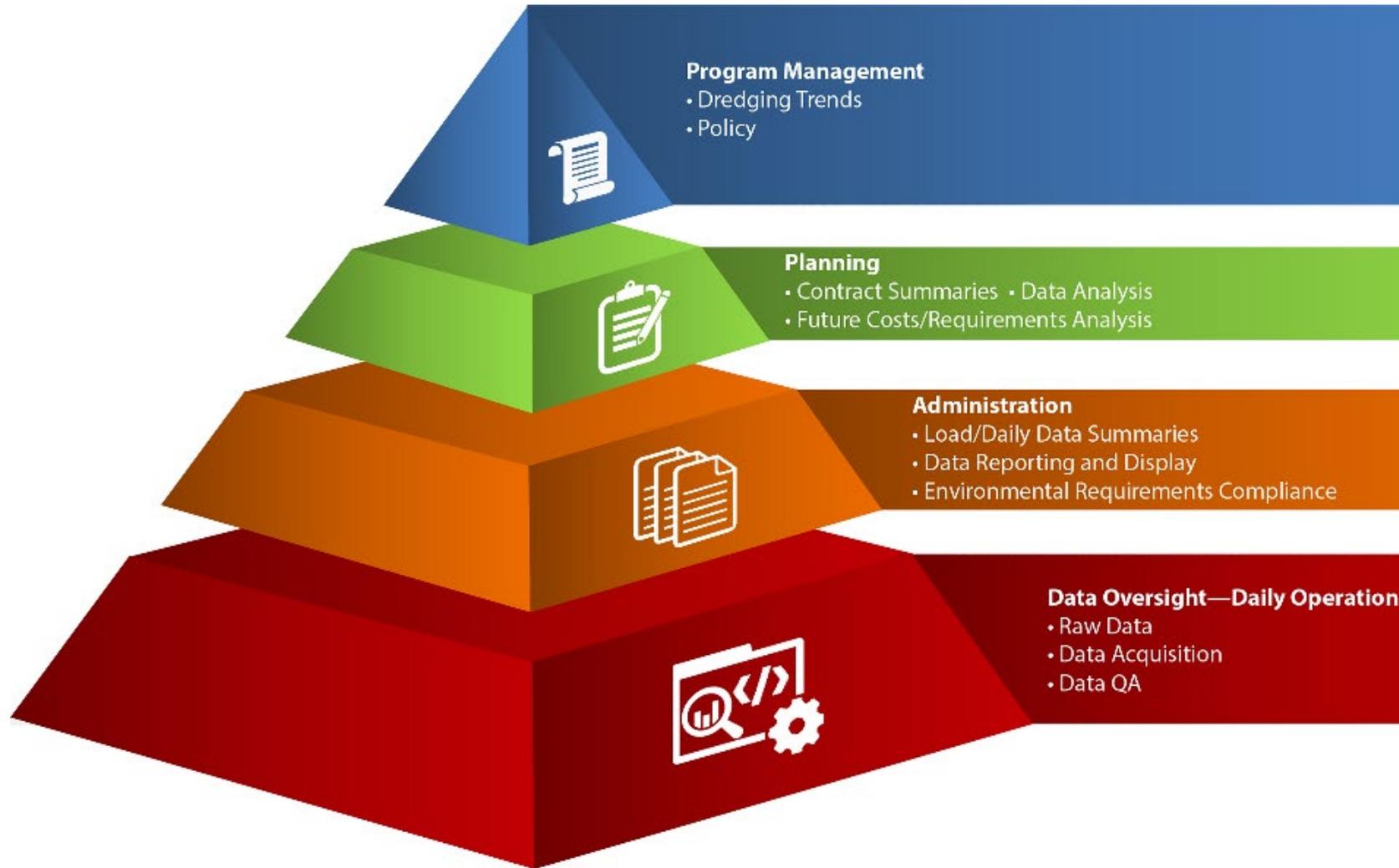
How can the data be used?



# How can the data be used?



# DATA USE HIERARCHY

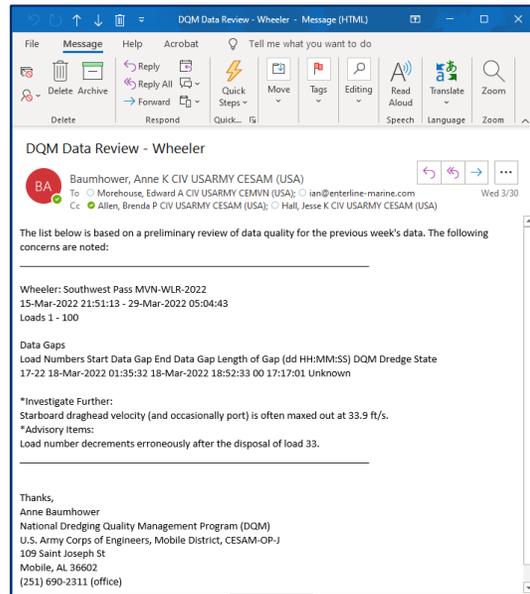




# WEEKLY OPERATIONS



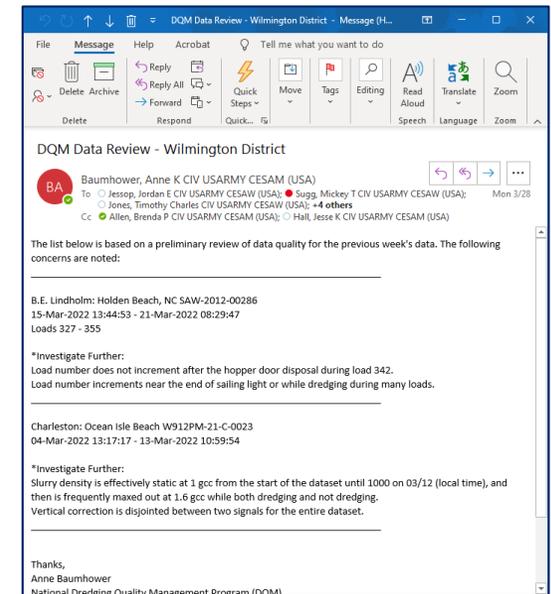
## DQM Support Center



## Review of all sensor data received for the previous week:

- **“Investigate Further”**: issues we would like to have resolved along with an explanation of the issue or a plan of action for resolving the issue.
- **“Advisory Items”**: items that we noticed but that we do not feel are significant enough to warrant immediate action; e.g. one-off incidents or minor issues with “lower-importance” sensors, which generally do not affect our ability to make dredge state determinations or perform data analysis.
- **“Acknowledged”**: issues that have been previously identified and for which a plan of action or explanation has been provided by the contractor; these are listed until they are resolved or the planned timeframe for repair has elapsed, at which time they are moved back to “Investigate Further”.

## USACE Local Districts



## Investigate Further Items, Unfilled data gaps, Contractor responses



**NOTE:** It is important to fill in the correct Contact Information in the Project Setup Form to support filling data gaps for your project. Responding to emails helps us to get your data gaps filled!

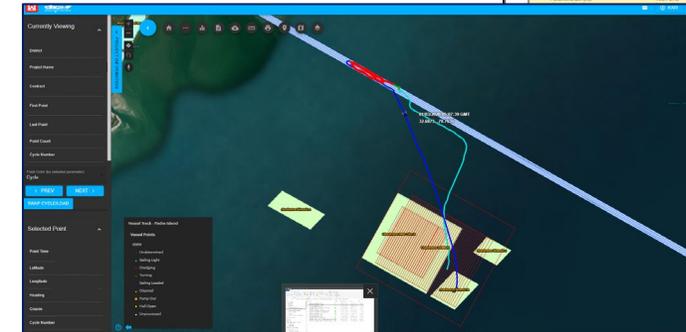
**Contractor**



# ADMINISTRATION



- Query the DQM Production database
- Document dredging activities (where digging, how deep, progress)
- View track and sensor values by load or by day
- Produce user-generated reports to analyze dredge or disposal events on a single or multi-load/day basis
- Produce summary reports of all disposal operations for a given contract
- Produce reports to support other government organizations (**EPA, BOEM**) to validate compliance with environmental and ecological agreements



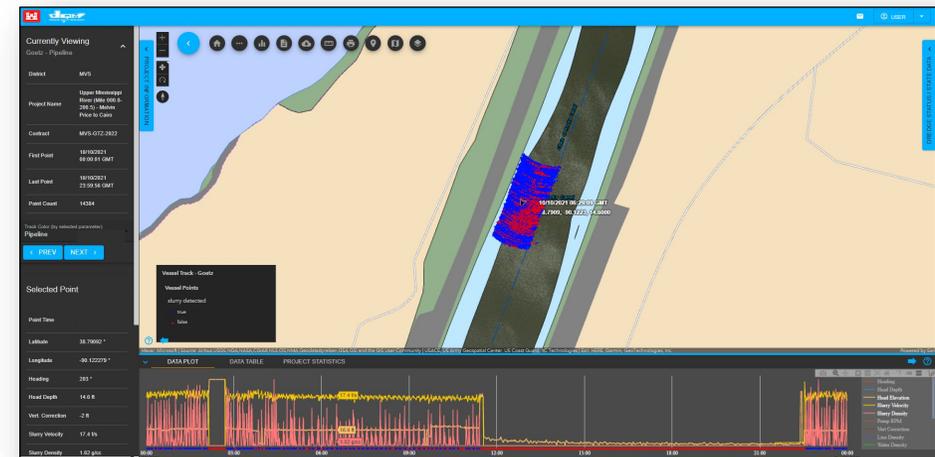
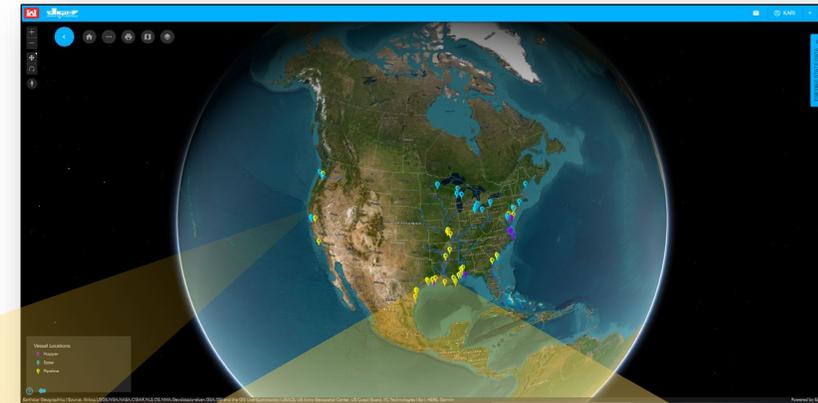
EPA Vessel Monitoring Data											
<b>Project Information</b>											
Contract: 000000114-0001-0001-0001-0001											
Placement Area: 000000114-0001-0001-0001-0001											
Profile: 000000114-0001-0001-0001-0001											
Coordinates Type: LL											
State Plane Datum: 000000114-0001-0001-0001-0001											
* Optional fields, data may not be required for project											
** State Plane Datum not required unless Coordinate Type is LL											
<b>Load Number: 62</b>											
Vessel Name: Dredge Plant											
Type: Hopper											
Technique: Bottom Dump											
Estimated Volume: 10000											
Material Description: sand											
Material Source: North Turning Basin											
Disposal Start Time: 00-00-10-00-07-10											
Disposal End Time: 00-00-10-00-10-00											
Disposal Start X: -70.57424											
Disposal Start Y: 32.640500											
Disposal End X: -70.571860											
Disposal End Y: 32.640500											
Observed Water Depth: 000000114-0001-0001-0001-0001											
Comments:											
<b>Positions/Sensor Data</b>											
Sample Date Time	Vessel X	Vessel Y	Flow Draft	AW Draft	AWG Draft	Vessel Speed	Vessel Heading	Vessel Course	Roll Status		
00-00-10-00-00-00	-70.57424	32.64050	23.50	23.20	23.20	0.0	180	180	Closed		
00-00-10-00-00-10	-70.57424	32.64050	23.50	23.20	23.20	0.0	180	180	Closed		
00-00-10-00-00-20	-70.57424	32.64050	23.50	23.20	23.20	0.0	180	180	Closed		

DAMOS LOAD SUMMARY REPORT																			
Date Range: 09-Jul-2018 20:22:43 - 12-Mar-2020 02:40:36																			
Plant Type: Scow Monitoring Profile																			
DISPOSAL EVENT		END DISPOSAL EVENT										DISPOSAL EVENT							
Time Loaded	X Pos (N)	Y Pos (E)	Aug Disp	Aug Vol	Aug Disp	Aug Vol	Aug Disp	Aug Vol	Aug Disp	Aug Vol	Aug Disp	Aug Vol	Aug Disp	Aug Vol	Aug Disp	Aug Vol	Aug Disp	Aug Vol	Aug Disp
Time	Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9	Column10	Column11	Column12	Column13	Column14	Column15	Column16	Column17	Column18	Column19
07/09/18 06:27:39	-70.5980	42.4300	582.23	NaN	07/10/18 06:30:00	-70.5996	42.4335	5099.9	NaN	07/22/18 05:47:46	-70.5987	42.4320	42.4320	3731.4	07/20/18 06:27:46	-70.5987	42.4320	42.4320	1.0
07/10/18 15:06:37	-70.5982	42.4310	5879.1	NaN	07/10/18 15:11:47	-70.5968	42.4341	1127.0	NaN	07/11/18 15:06:41	-70.5971	42.4322	42.4322	4646.8	07/11/18 15:06:41	-70.5980	42.4322	42.4322	1.0
07/10/18 05:47:00	-70.5763	42.4283	582.0	NaN	07/12/18 05:53:35	-70.5845	42.4320	1134.0	NaN	07/12/18 05:47:41	-70.5971	42.4326	42.4326	4728.0	07/12/18 05:47:41	-70.5971	42.4326	42.4326	4.5
07/10/18 02:00:01	-70.5958	42.4321	582.0	NaN	07/13/18 02:15:04	-70.5962	42.4324	1224.0	NaN	07/13/18 02:07:23	-70.5971	42.4321	42.4321	4098.0	07/13/18 02:07:23	-70.5971	42.4321	42.4321	0.5
07/10/18 15:46:23	-70.5945	42.4321	5985.5	NaN	07/13/18 15:52:20	-70.5914	42.4333	1196.9	NaN	07/13/18 15:47:16	-70.5938	42.4325	42.4325	4789.9	07/13/18 15:47:16	-70.5938	42.4325	42.4325	2.1
07/10/18 12:00:46	-70.6000	42.4312	5969.0	NaN	07/14/18 12:11:21	-70.5954	42.4323	1203.2	NaN	07/14/18 12:06:09	-70.5997	42.4322	42.4322	4736.8	07/14/18 12:06:09	-70.5997	42.4322	42.4322	2.0
07/10/18 01:45:46	-70.5989	42.4310	6074.0	NaN	07/15/18 01:51:27	-70.5935	42.4320	1127.0	NaN	07/15/18 01:46:09	-70.5965	42.4320	42.4320	4947.0	07/15/18 01:46:09	-70.5965	42.4320	42.4320	3.1
07/10/18 13:38:34	-70.5977	42.4320	5683.8	NaN	07/15/18 13:37:57	-70.5848	42.4321	1099.8	NaN	07/15/18 13:31:01	-70.5972	42.4321	42.4321	4544.0	07/15/18 13:31:01	-70.5972	42.4321	42.4321	3.1
07/10/18 21:29:03	-70.5939	42.4334	6067.5	NaN	07/16/18 21:34:38	-70.5952	42.4360	1092.6	NaN	07/16/18 21:29:26	-70.5935	42.4325	42.4325	4974.0	07/16/18 21:29:26	-70.5935	42.4325	42.4325	2.4
07/10/18 20:01:51	-70.6004	42.4320	5969.5	NaN	07/17/18 20:07:39	-70.6007	42.4331	1043.9	NaN	07/17/18 20:02:01	-70.6005	42.4320	42.4320	4893.0	07/17/18 20:02:01	-70.6005	42.4320	42.4320	2.0
07/10/18 14:00:14	-70.5983	42.4321	5505.1	NaN	07/18/18 14:06:07	-70.5920	42.4321	1050.0	NaN	07/18/18 14:00:31	-70.5979	42.4321	42.4321	4454.0	07/18/18 14:00:31	-70.5979	42.4321	42.4321	2.4
07/10/18 12:39:56	-70.5971	42.4324	5521.0	NaN	07/19/18 12:45:36	-70.5900	42.4340	1141.1	NaN	07/19/18 12:40:37	-70.5968	42.4326	42.4326	4803.0	07/19/18 12:40:37	-70.5968	42.4326	42.4326	2.8
07/10/18 06:13:19	-70.6014	42.4318	5919.5	NaN	07/20/18 06:19:54	-70.5986	42.4380	1175.7	NaN	07/20/18 06:13:54	-70.6006	42.4326	42.4326	4743.8	07/20/18 06:13:54	-70.6006	42.4326	42.4326	3.0
07/10/18 21:35:13	-70.6002	42.4310	6098.8	NaN	07/20/18 21:40:48	-70.5927	42.4344	1155.1	NaN	07/20/18 21:35:42	-70.5997	42.4320	42.4320	4943.0	07/20/18 21:35:42	-70.5997	42.4320	42.4320	3.0
07/10/18 19:21:37	-70.5976	42.4330	5909.9	NaN	07/21/18 19:28:48	-70.5840	42.4320	1175.0	NaN	07/21/18 19:21:12	-70.5972	42.4320	42.4320	4746.0	07/21/18 19:21:12	-70.5972	42.4320	42.4320	3.4
07/10/18 15:42:54	-70.6014	42.4317	5836.0	NaN	07/22/18 15:48:47	-70.6011	42.4344	1161.0	NaN	07/22/18 15:48:40	-70.6011	42.4344	42.4344	4722.0	07/22/18 15:48:40	-70.6011	42.4344	42.4344	3.4



# TRACKING TOOLS : DQM VIEWER

- Nationwide 24/7 dredge monitoring
- Displays hoppers, scows, and pipelines
- Data can be exported (PDF reports, CSV files)
- Works best in Google Chrome





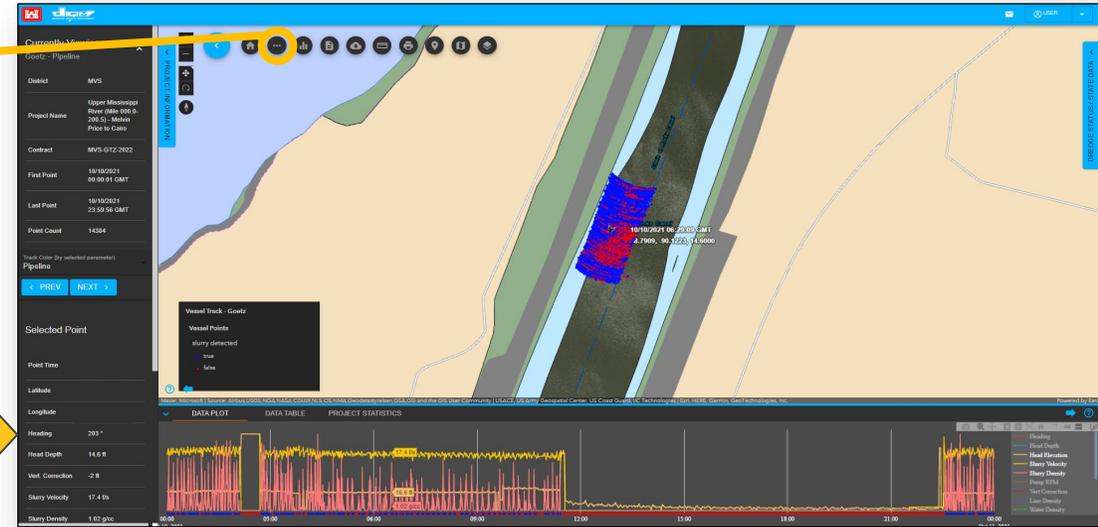
# DQM VIEWER



Selectron: Select Data  
Displays the Selectron to select and view data.

Pipeline / Goetz	MVS / MVS-GTZ-2022	Upper Mississippi River (Mile 000)	2021 / October / 10
Goetz	MVS-GTZ-2015	Illinois River (Mile 0.0-80.2) - Alton Rr	7
H.R. Morris	MVS-GTZ-2016	Upper Mississippi River (Mile 100.0-2)	8
Hampton Roads	MVS-GTZ-2017		9
Herberto Cordova	MVS-GTZ-2018		10
Hurley	MVS-GTZ-2019		11
Illinois	MVS-GTZ-2020		12
Ingersully	MVS-GTZ-2021		13
Integrity	MVS-GTZ-2022		14
Iowa	MVS-GTZ-2023		

Note: Double click on a date to load a track... CLOSE



## A tool to track your project.

- Selectron
- Track Display
- Graphs
- Layers
- Contract/Point Info

Contract/  
Point Info



Graph Data  
Opens a graph  
view below  
the track.

