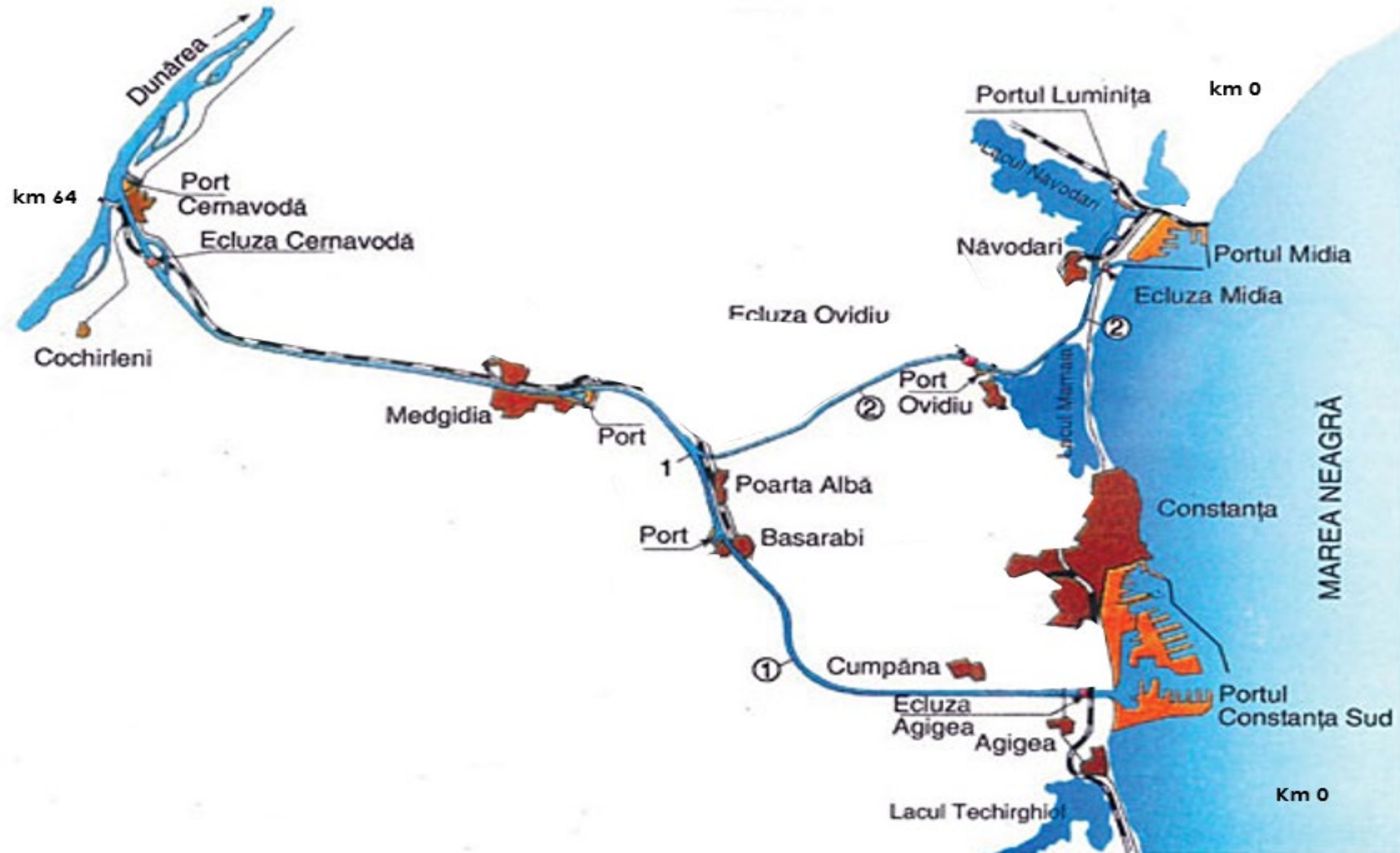


DANUBE-BLACK SEA CANAL AND NORTHERN BRANCH POARTA ALBA-MIDIA CANAL



DANUBE COMMISSION MEETING



Administration of the Navigable Canals

- ▶ Danube - Black Sea Canal is part of the Pan European Corridor VII and TEN-T and represents the shortest way to reach the port of Constanta from the Danube (400 km shortening). The canal assure a future beneficial link between NorthSea and Black Sea. The Administration of the Navigable Canals (ACN) was founded in 1984 under the authority of the Ministry of Transportation. In 1998 became national company.

1.THE MAIN DANUBE BLACK SEA CANAL		
GENERAL TECHNICAL CHARACTERISTICS		
Length	64,4	
Breadth of the waterway	90 m	
Canal water depth	7,0 m	
Maximum draft	5,5 m	
Bridge clearance	16,5 m	
LOCKS OF THE CANAL		
Cernavoda	km 60+300	
Agigea	Km 1+900	
PORTS ON THE CANAL		
Medgidia	km 37+500 right bank	
Basarabi	km 25	
Characteristic	Pushed convoy	Self propelled vessels
Capacity	6 x 3000	tc 5000 tdw
Length	296 m	138,3 m
Width	23 m	16,8 m
Draft	3,8 m	5,5 m

2.NORTHEN BRANCH POARTA ALBA MIDIA		
GENERAL TECHNICAL CHARACTERISTICS		
Length	27,5 km	
Breadth of the waterway	45 m	
Canal water depth	5,5 m	
Maximum draft	3,8 m	
Bridge clearance	12,5 m	
LOCKS OF THE CANAL		
Ovidiu	km 11+500	
Navodari	Km 1+500	
PORTS ON THE CANAL		
Luminita	Lake Tasaul	
Ovidiu	km 11 right bank	
Characteristic	Pushed convoy	
Capacity	3000 tc	
Length	120 m	
Width	11,5 m	
Draft	3,8 m	

The time for locking process before and after rehabilitation of Agigea lock, Cernavoda lock, Ovidiu Lock

AGIGEA		CERNAVODA		OVIDIU	
BEFORE (2012)	AFTER (2023)	BEFORE (2012)	AFTER (2023)	BEFORE (2012)	AFTER (2023)
62 min + 20 sec	53 min + 11 sec	55 min + 30 sec	39 min + 46 sec	39 min	29 min

The rehabilitation ensure the navigation safety and the traffic flow.

THE MAIN DEPARTMENTS THAT ENSURE THE SAFETY OF NAVIGATION ON DBSC AND PAMNC

Department of Naval Traffic Management

Prepare, follow and observe the daily transit program of ships on the waterways

The RoRIS centers will keep in touch with the vessels in the VHF channels and continuously monitor their journey on the electronic map

Receives, records and checks the RoRIS database for the transitation on the waterways

Analyze the hydrographic measurements received and take all necessary measures to conduct the navigation in full safety

Department of management of lock and pump stations

Organizes, coordinates, guides and controls the operation and maintenance activity in order to ensure the proper functioning of the equipment and installations in the endowment of the lock and pump stations

Ensuring the normal water level for the operation of the navigable channels, the optimal operation of the pumping stations and the maintenance of the equipment and installations

Organizes, coordinates, guides and controls the activity of Cernavodă Complex Pumping Station and pumping stations defending localities against floods (Saligny Faclia and Mircea Voda)

Telecommunications and signaling Compartment

Ensures the operation and maintenance of the telecommunications equipment and navigation signals of the company

Participates directly in the operations of commissioning equipment and installations as well as in the execution of maintenance works

Organize the measurement activities for telecommunications equipment, signals and works to restore communications in case of damage or disturbances

Hydro-Topo measurement Compartment

It carries out the company's policy regarding the monitoring of the construction behavior in operation through topogeodetic, hydrographic and A.M.C measurements

Perform topographic measurements for establishing horizontal and vertical movements of hydrotechnical constructions

Performs hydrographic measurements, process and interprets the obtained data

Materialise the data in situation plans, profiles and level curves, representing the depths of the water canvas and determines the actual quantities of material to be dredged

Monitoring and Actions between 2020-2022

- ▶ On Danube Black Sea Canal and Northern Branch Poarta Alba Midia between 2020 and 2022 there were good hydrological conditions with water level.
- ▶ The most important sector of the navigable canals is the sector between Danube and Cernavoda locks, due to variation of the water level according with Danube .
- ▶ In order to determine the opportunity to start dredging works, an acceptable limit of average deposits and a threshold of the level of deposits at which it is necessary to start dredging works have been established.
- ▶ These limits have been established by calculation, considering various levels of average deposits on a certain percentage of the width of the bottom section of the canal, and the flow velocity should not exceed the imposed maximum limit of 0.5 m/s, according to Operational and Maintenance Regulation of the Danube-Black Sea Canal.
- ▶ According with the Operational and Maintenance Regulation deposits up to 1 m cannot be dredged due to constructive solution of canal. For the 1st section it was established that the limit for starting of dredging works is when the level of the deposits reaches a thickness of 2 m on a section width of 40% of the total width.
- ▶ For the other critical sections on navigable canals, the variation of the water level remained risk-free.
- ▶ Every year we make inspection tours on the entire canals (DBSC and PAMNC) especially the critical sections, which we keep observing.

- ▶ Since 2020, twice a year ACN perform inspections on the fairway(2x per year).
- ▶ First inspection is for the limit of the fairway and the second one is for fairway axis . The monitoring is performed with a vessel destined for shallow water with portable single-beam equipment, purchased within the FAIRway Danube project.
- ▶ Also the vessel destined for shallow water with portable single-beam equipment is used for the critical sections where ACN is monitoring the depths according to the monthly measurements program.

PROGRAM MĂSURĂTORI HIDROGRAFICE PENTRU ANUL 2022

Nr. crt.	Locatie	Ianuarie	Februarie	Martie	Aprilie	Mai	Iunie	Iulie	August	Septembrie	Octombrie	Noiembrie	Decembrie
1	Cernavodă, Km 57+700 ÷ 57+800, CDMN												
2	Cumpăna, Km 7÷8, CDMN												
3	Cernavodă, Km 63÷65, CDMN												
4	Km 6+500÷6+600, CPAMN												
5	Km 18+560÷20+600, CPAMN												
6	Limite șenal navigabil CDMN+CPAMN												
7	Km 24+000 ÷ 25+000, CDMN												
9	Km 13+100÷17+400, CPAMN												
10	Port Luminița, Km 4÷5, Ramura Luminița												
11	Năvodari, Km 1÷2. CPAMN												
12	Port Medgidia, Km 37÷38, CDMN												
13	Ax șenal navigabil CDMN+CPAMN												
15	Km 40+750 ÷ 45+380, CDMN												
16	Aval ecluză Agigea, Km 0+850 ÷ 1+550 CDMN												
18	Km 8+500 ÷10+200, CDMN												
19	Port Basarabi, Km 24÷25, CDMN												
20	Km 28+900 ÷36+400, CDMN												
22	Km 24+070÷25+170, CPAMN												
23	Ramura Luminița, Km 1+990 ÷ 2+500, CPAMN												
24	Ramura Luminița Km 2+850÷3+320, CPAMN												

- Măsurători puncte critice
- Măsurători în zone monitorizate
- Măsurători de verificare

- ▶ To inform everyone about ACN canals status regarding information about safety navigation, we use platform "Notice to Skippers".
- ▶ "Notice to Skippers" are nautical publications containing information about safety navigation on waterways. These publications serve to communicate details such as the status of waterway infrastructure (locks, bridges), restrictions, temporary blockages of waterway sections or other types of works, events taking place on the waterway, water level information, critical depths, ice information and weather messages.
- ▶ In the period 2020-2022 there were no restrictions for navigation in the reported critical locations due to low navigable water levels.
- ▶ Nevertheless, navigation on navigable canals was restricted or closed due to meteorological conditions as follows:

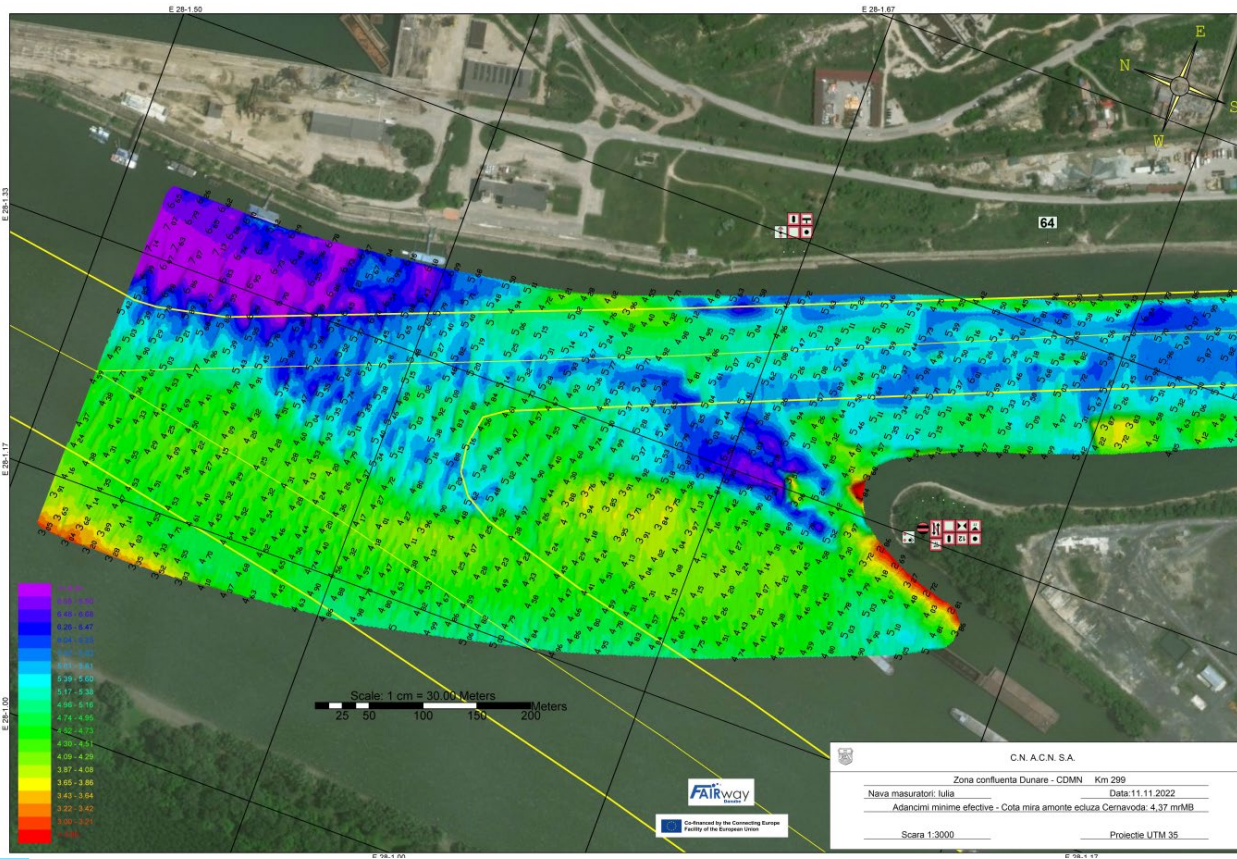
2020		2021		2022	
1. Due to unfavourable weather conditions Measures taken by Romanian Naval Authority were to close the port of Constanta (for DBSC) and port of Midia (for PAMNC) and the measures by ACN were to restrict navigation on the canals.					
DBSC & PAMNC		DBSC & PAMNC		DBSC & PAMNC	
WIND	FOG	WIND	FOG	WIND	FOG
543h	155h	587h	112h	636h	60h
Total 698h		Total 699h		Total 695h	

Water levels in period 2020-2023

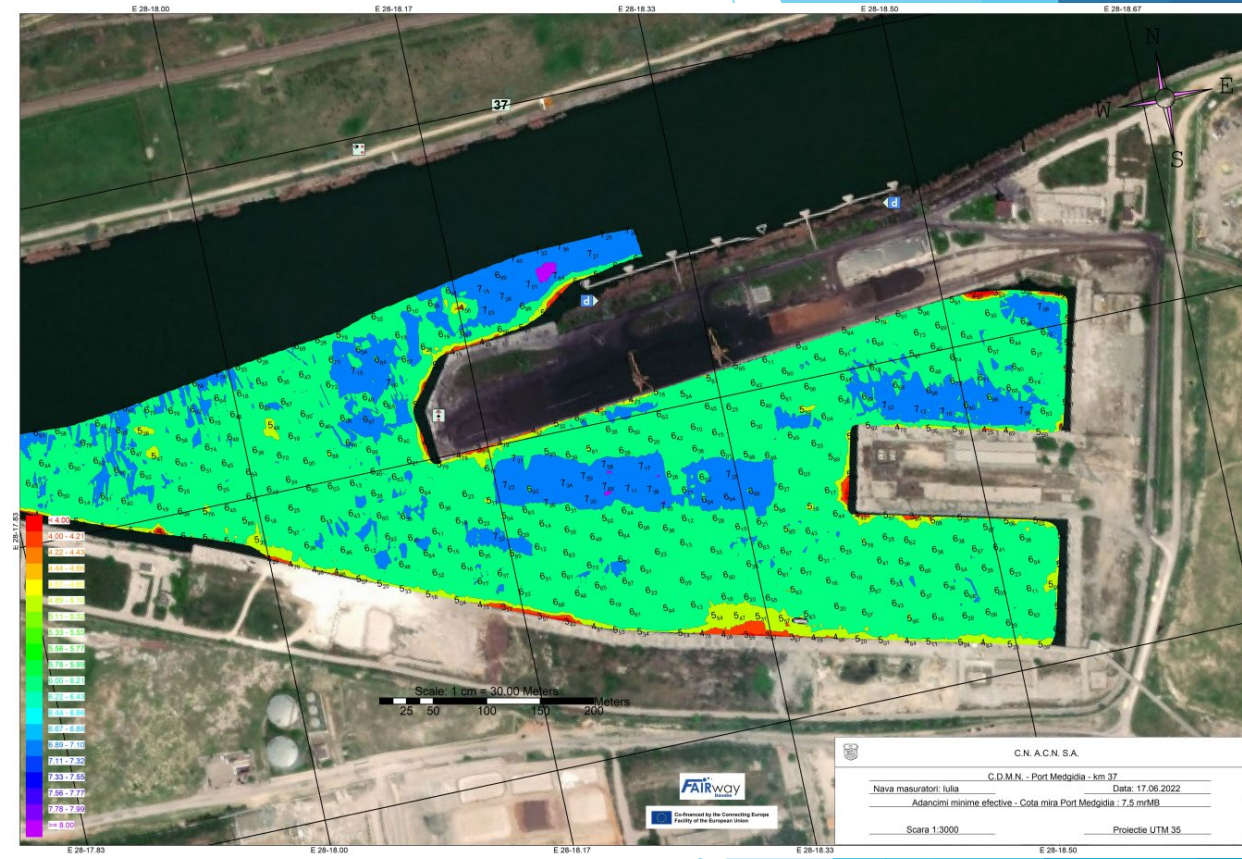
As reference we give August as an example due to the decreased water level during this period to highlight that we have the depths necessary for navigation safety.

DATA	CERNAVODA		AGIGEA		OVIDIU		NAVODARI	
	UPSTREAM	DOWNSSTREAM	UPSTREAM	DOWNSSTREAM	UPSTREAM	DOWNSSTREAM	UPSTREAM	DOWNSSTREAM
10.08.2020	4,86	7,21	7,22	7,80	7,27	1,55	1,53	6,08
11.08.2020	4,80	7,13	7,14	7,80	7,20	1,54	1,52	6,11
10.08.2021	4,89	7,15	7,13	7,58	7,13	1,86	1,65	6,13
11.08.2021	4,80	7,17	7,13	7,54	7,17	2,05	1,65	6,07
10.08.2022	2,64	7,22	7,31	7,53	7,33	1,59	1,56	6,13
11.08.2022	2,68	7,28	7,35	7,54	7,37	1,56	1,56	6,12
10.02.2023	8,02	7,30	7,31	7,63	7,36	1,69	1,70	6,06
11.02.2023	7,91	7,55	7,56	7,52	7,58	1,67	1,68	6,17

CRITICAL SECTORS ON DBSC AND PAMNC IN 2020-2022

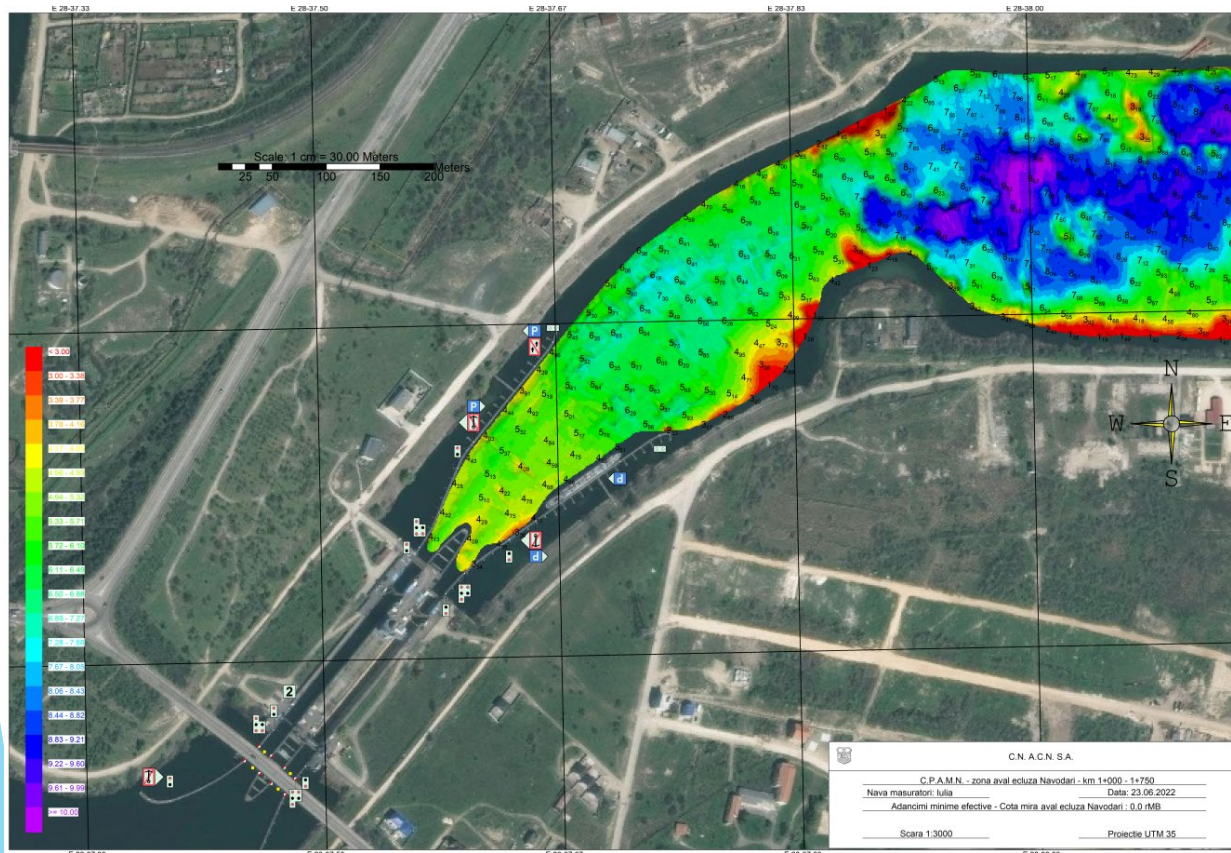


Cernavoda confluence
with Danube Km 64 - 65

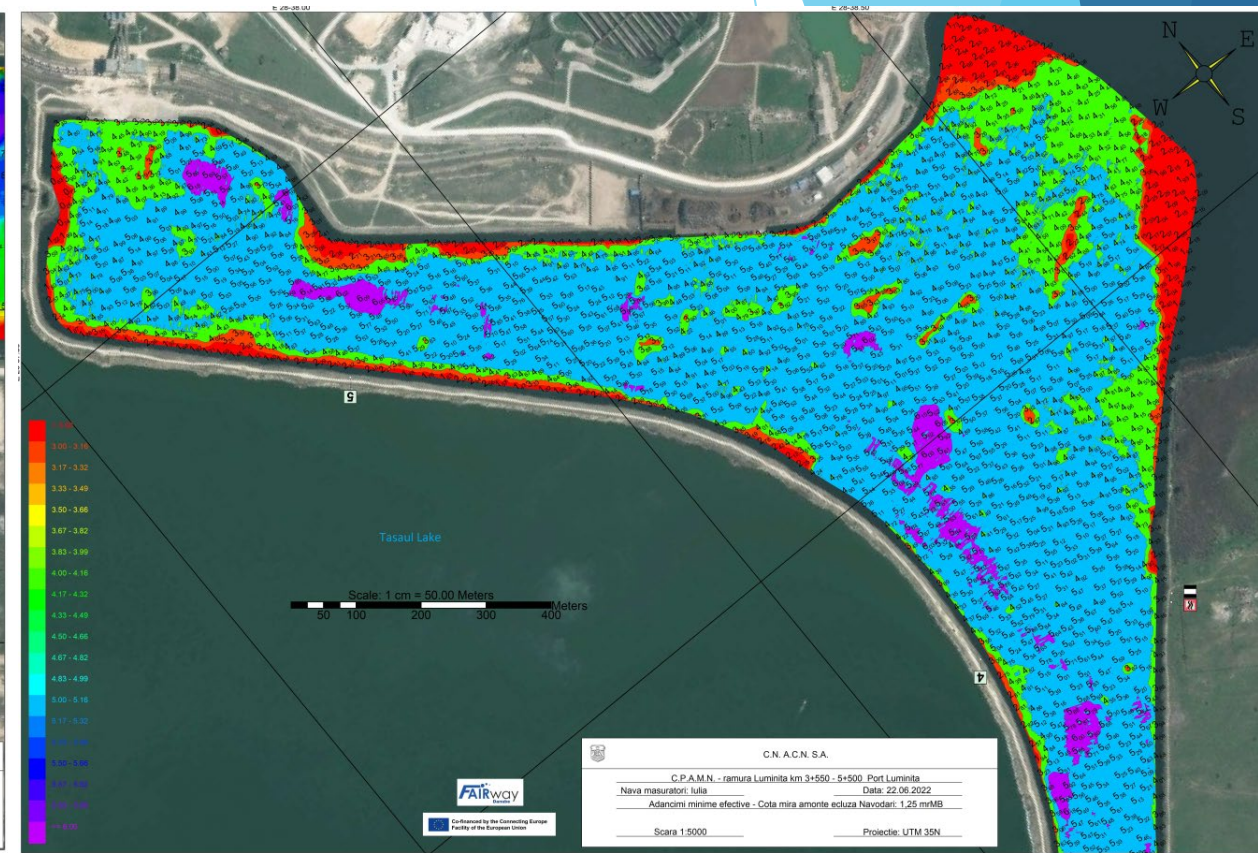


Medgidia port Km 37


CRITICAL SECTORS ON DBSC AND PAMNC IN 2020-2022



Downstream Navodari Lock Km 1 - 2



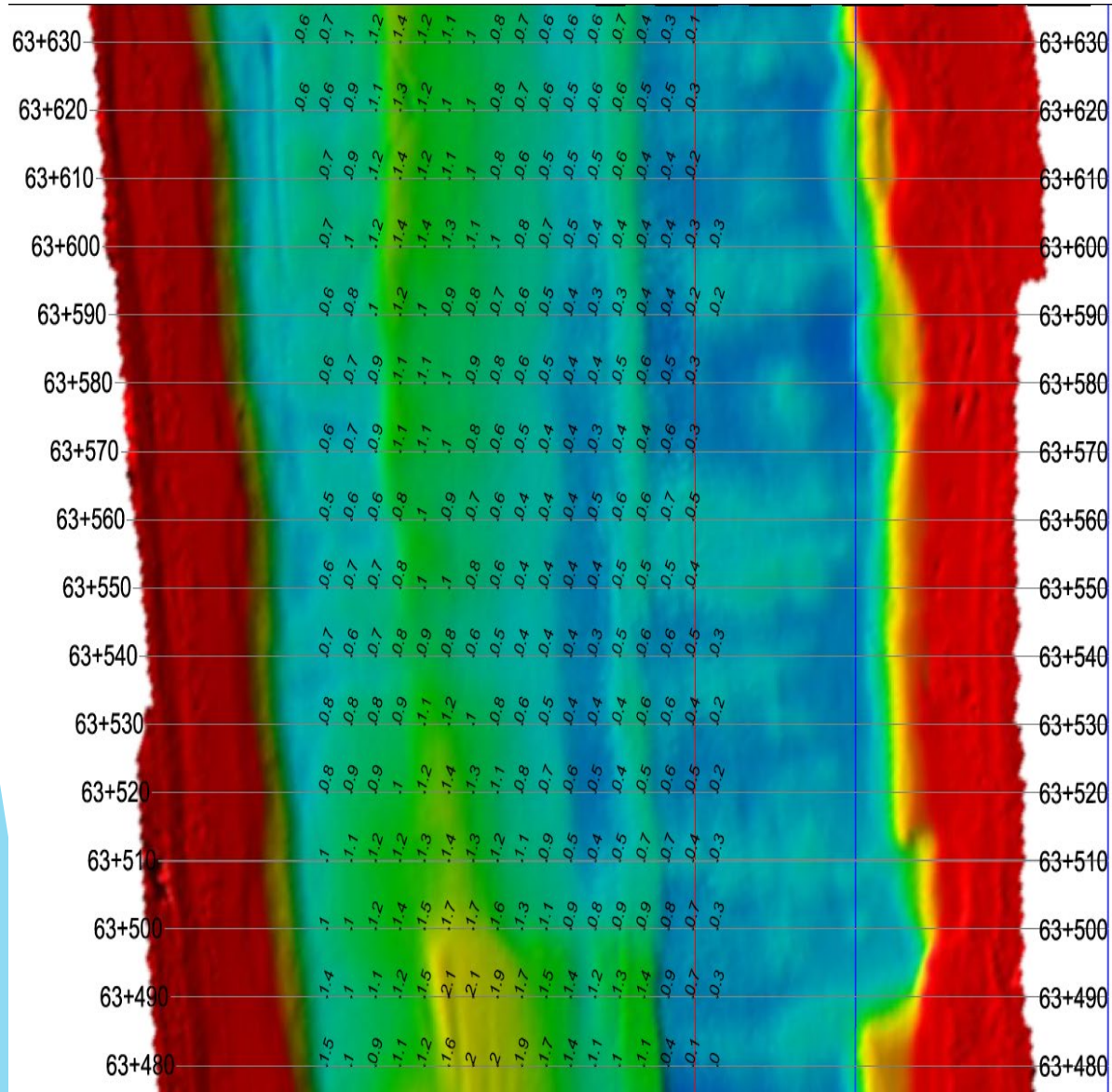
Luminița port Km 4 - 5

The background features abstract, overlapping geometric shapes in various shades of blue, ranging from light sky blue to deep navy blue. These shapes are primarily located on the right side of the frame, creating a modern, dynamic feel. The text is centered on the left side of the image.

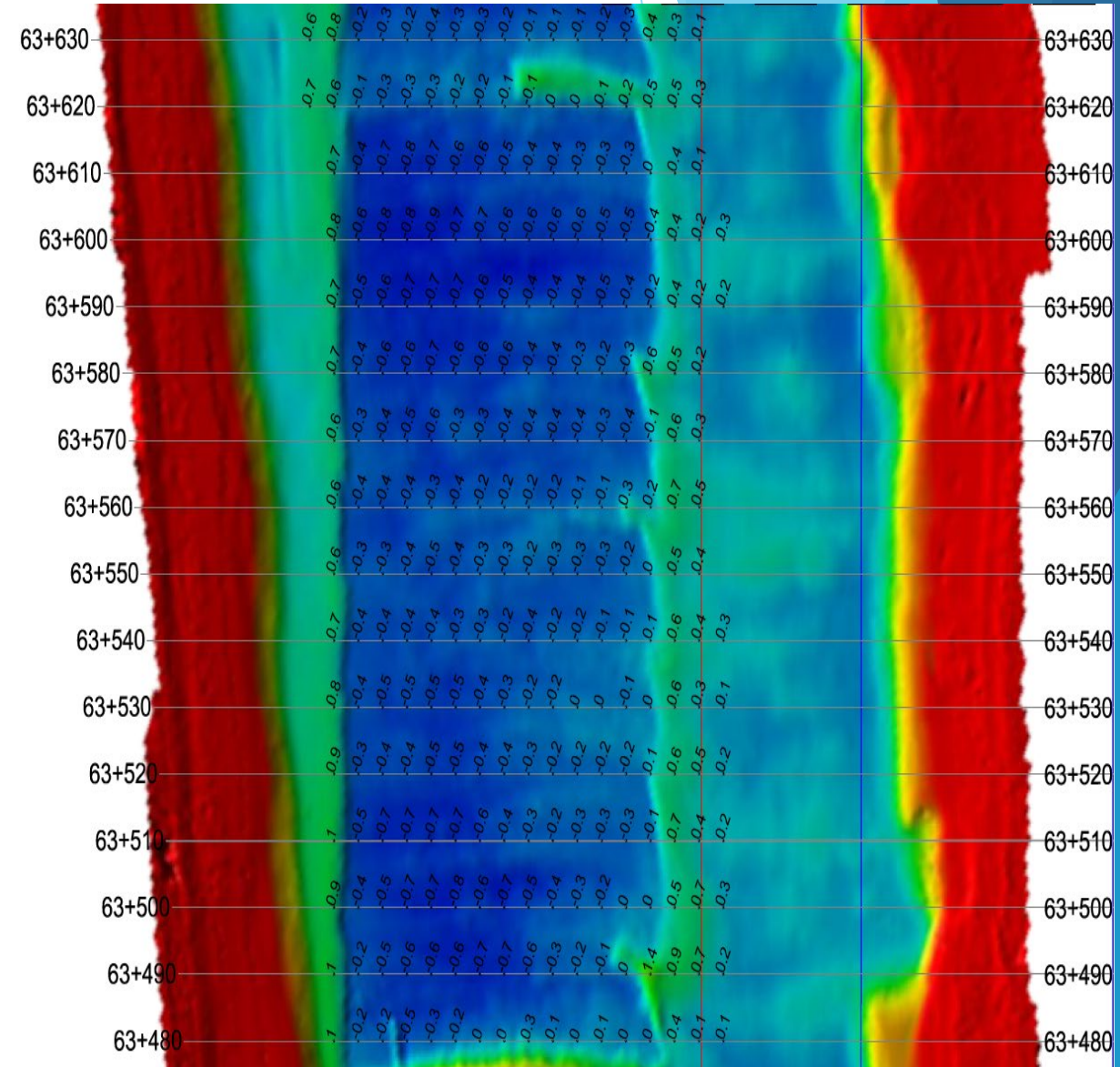
SOME EXAMPLES FOR DREDGING WORKS THAT TOOK PLACE BETWEEN 2020-2022

NAL-630

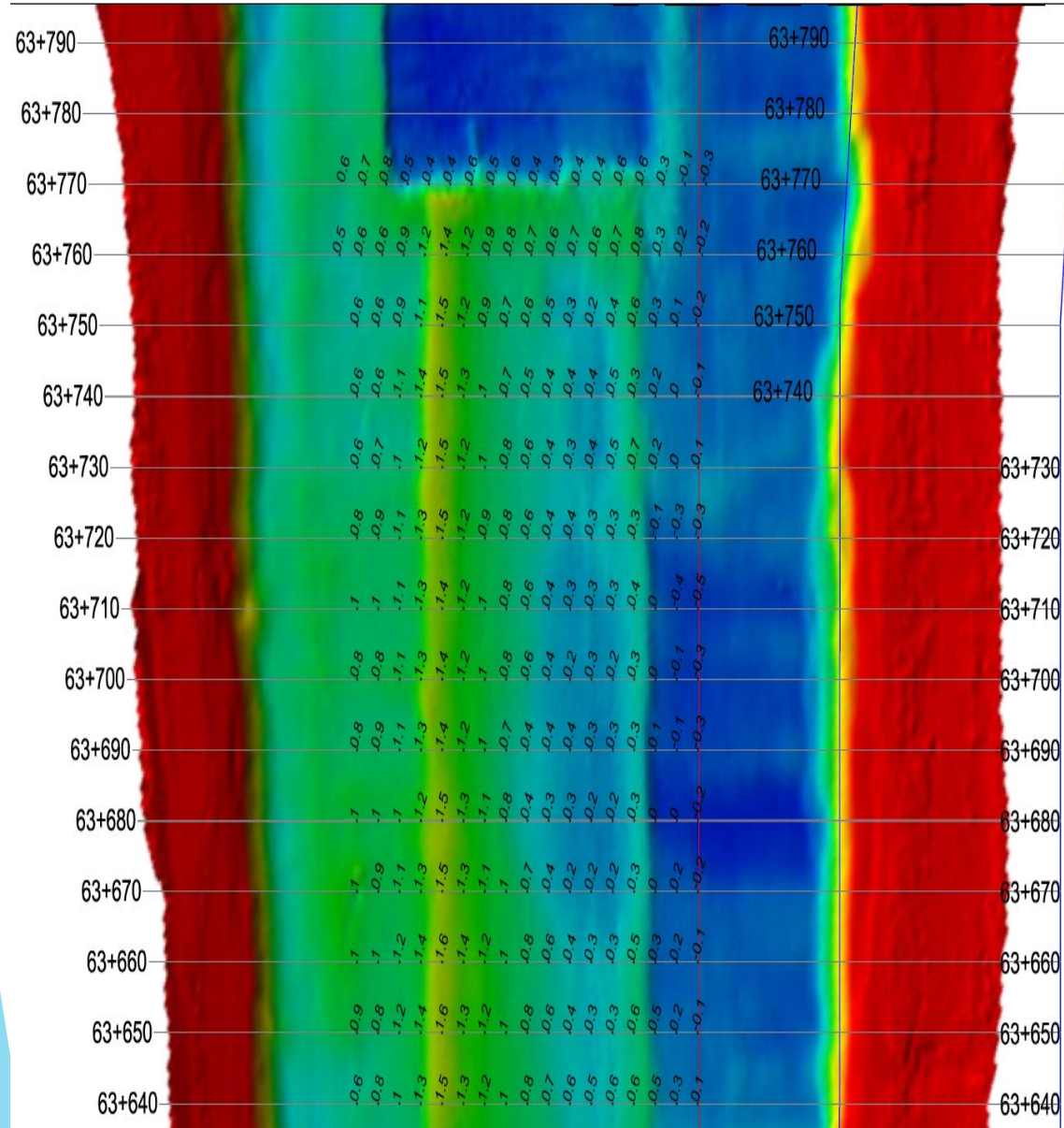
AUGUST 2020 INITIAL
KM 63+480 – 63+630



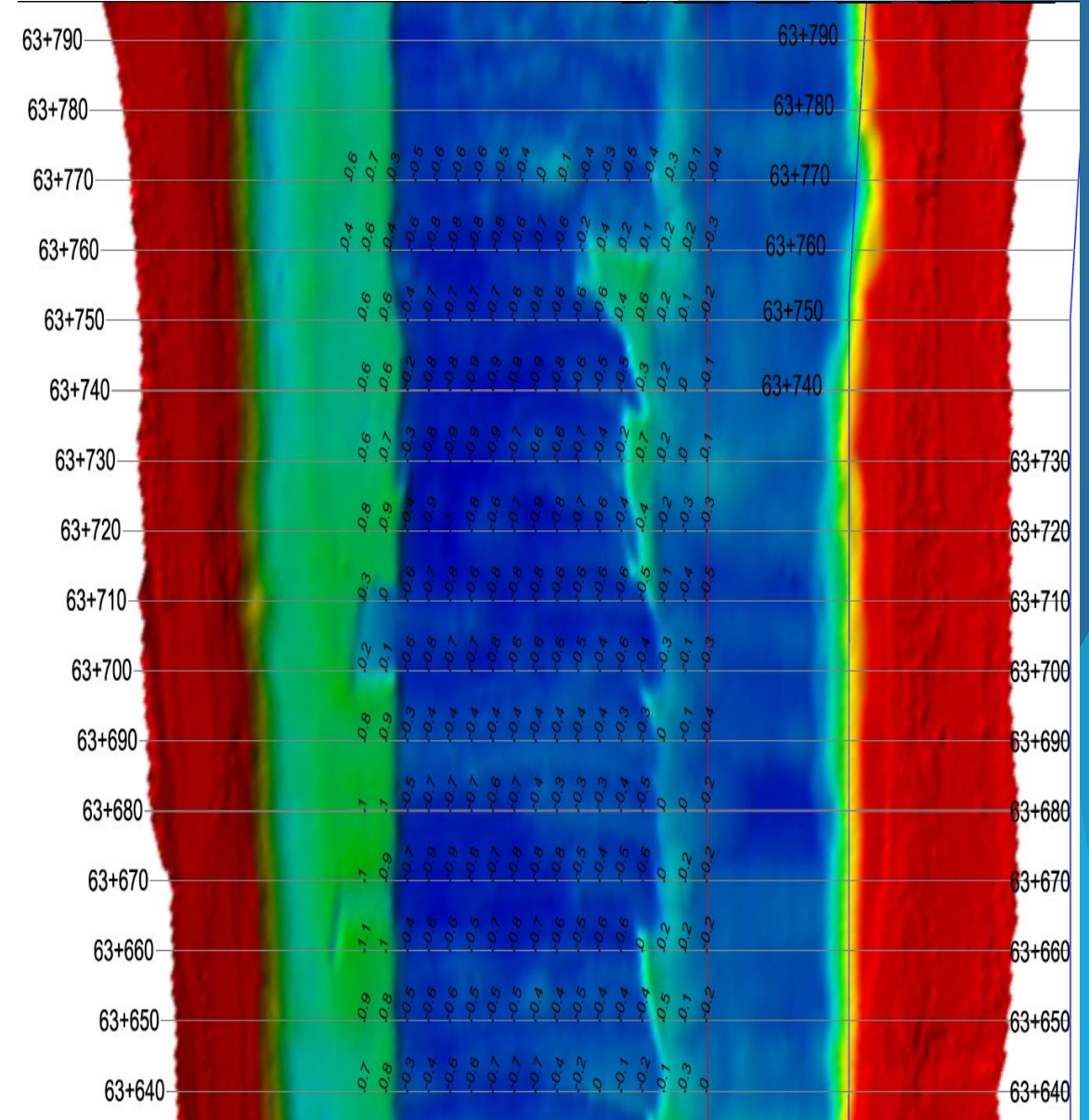
AUGUST 2020 FINAL
KM 63+480 – 63+630



AUGUST 2020 INITIAL KM 63+640 - 63+790

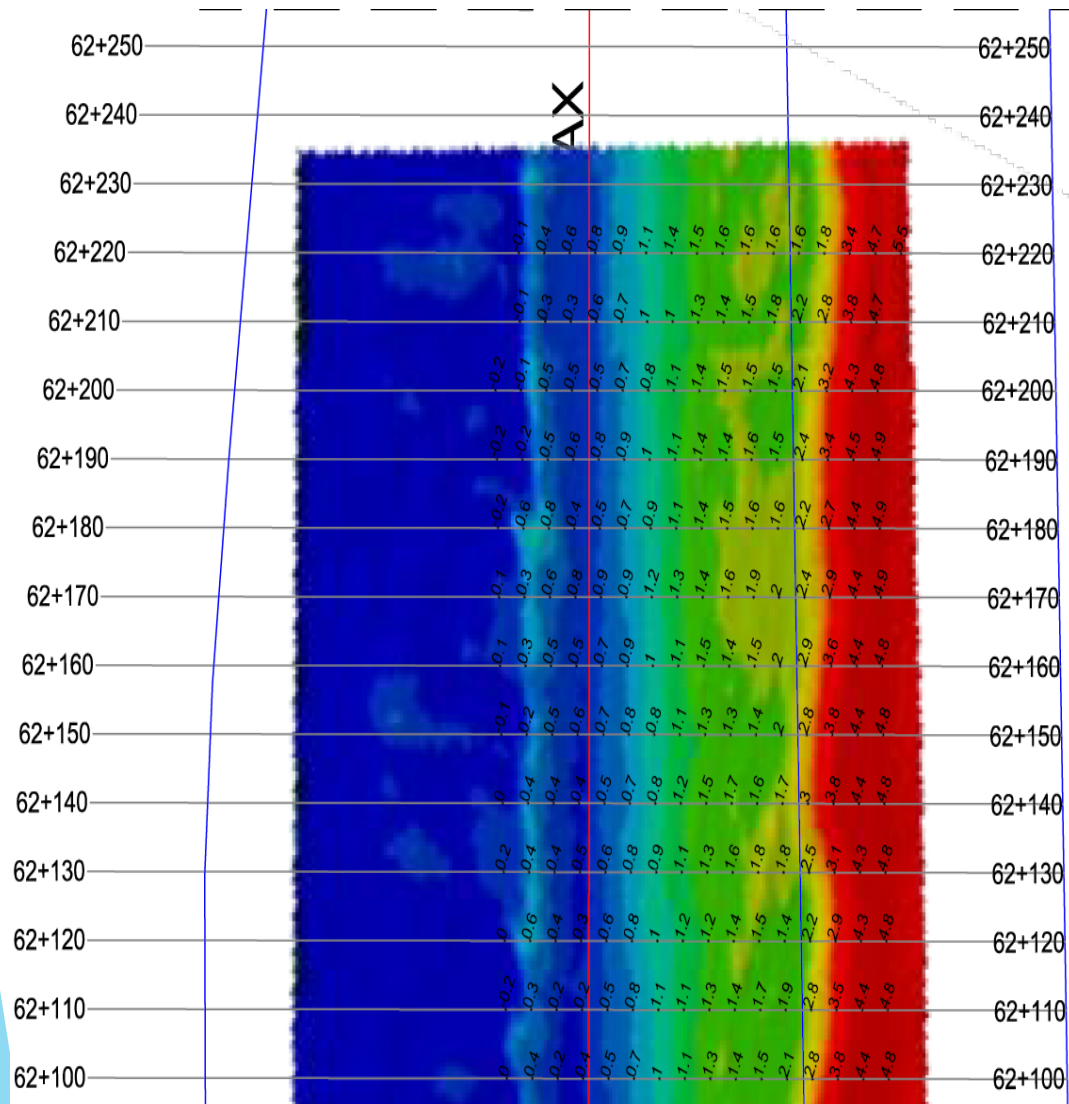


AUGUST 2020 FINAL KM 63+640 - 63+790

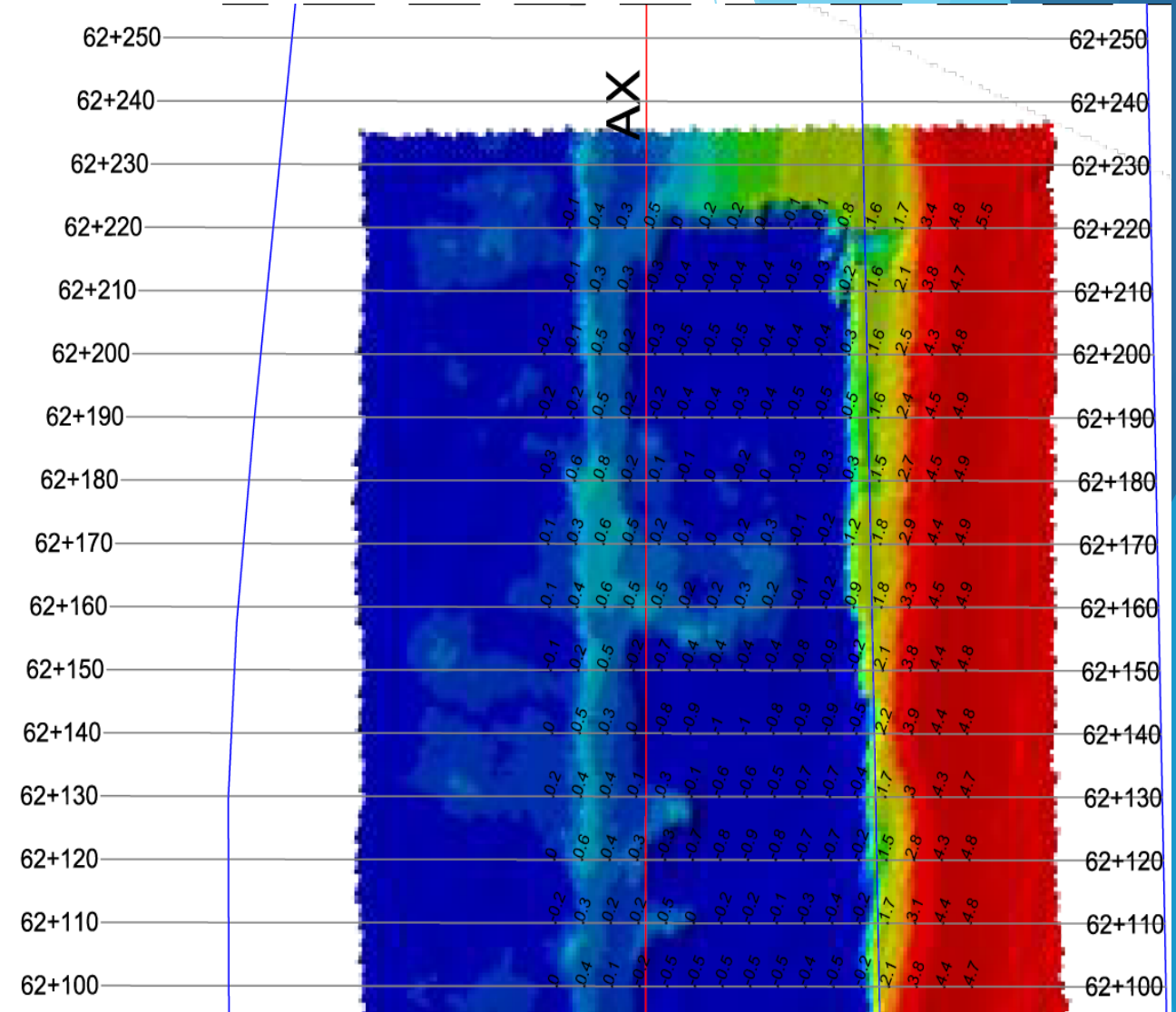


DREDGING DBSC FEBRUARY 2021

INITIAL KM 62+100 – KM 62+250

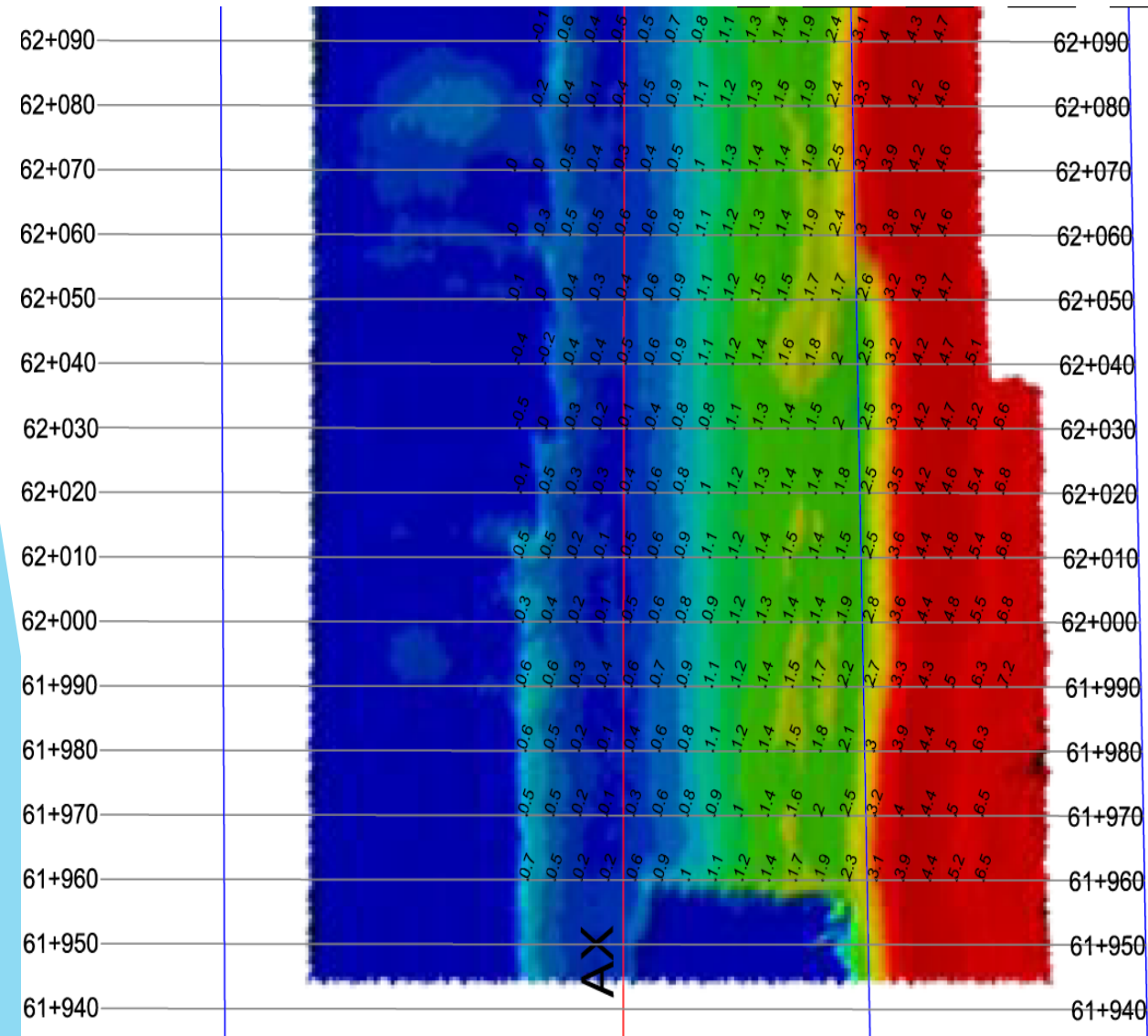


FINAL KM 62+100 – KM 62+250

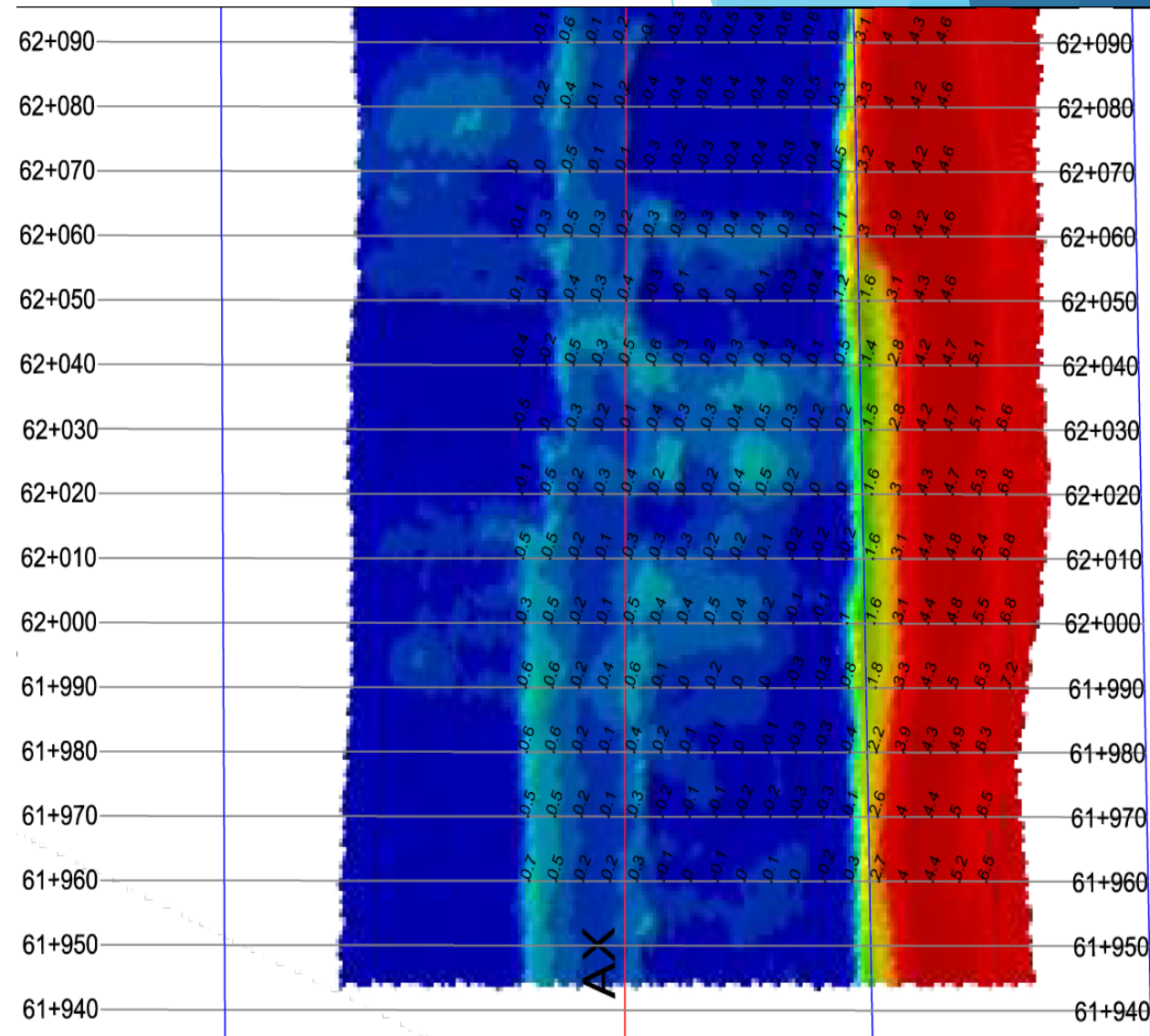


DREDGING DBSC FEBRUARY 2021

INITIAL KM 61+940 – KM 62+090



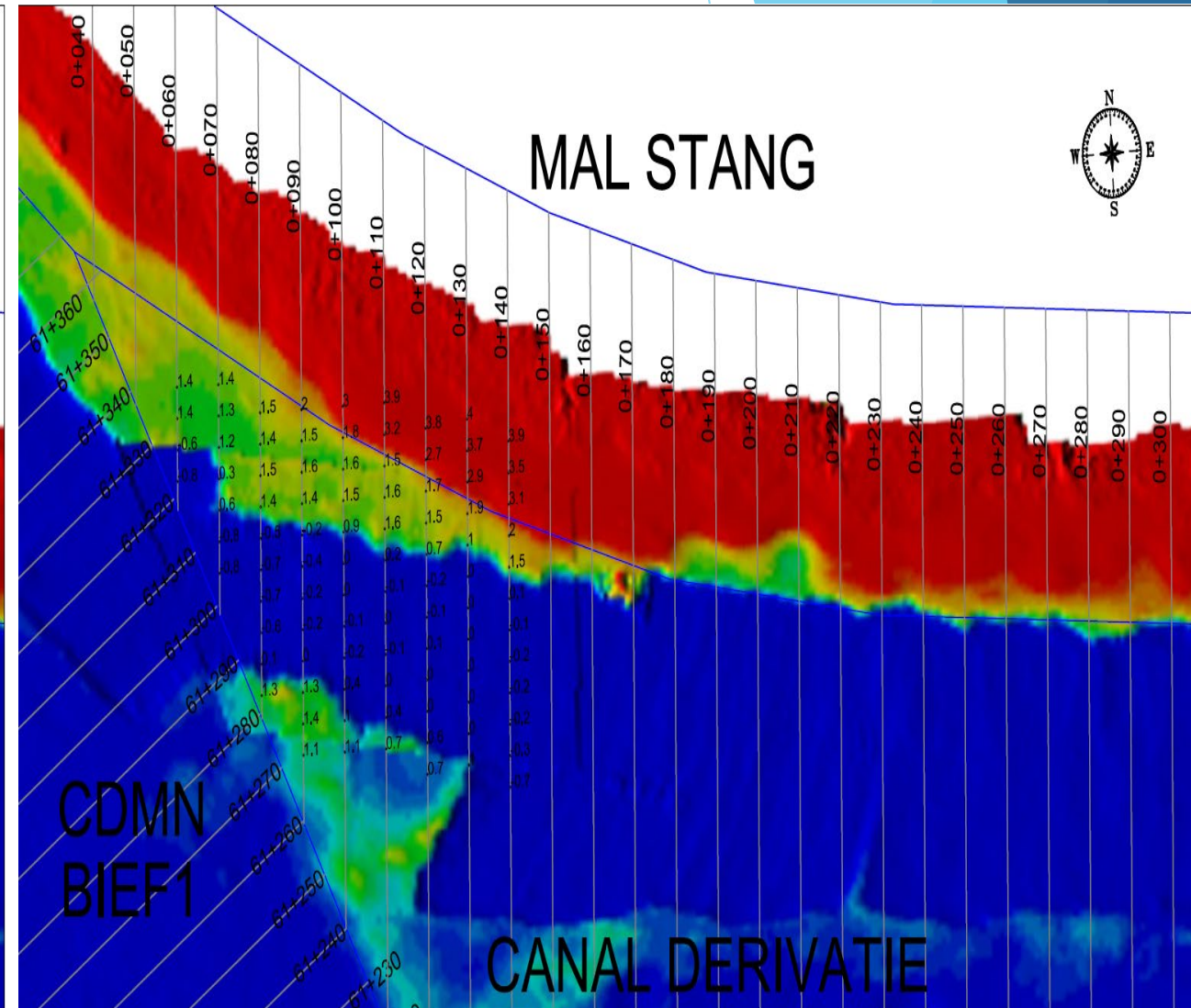
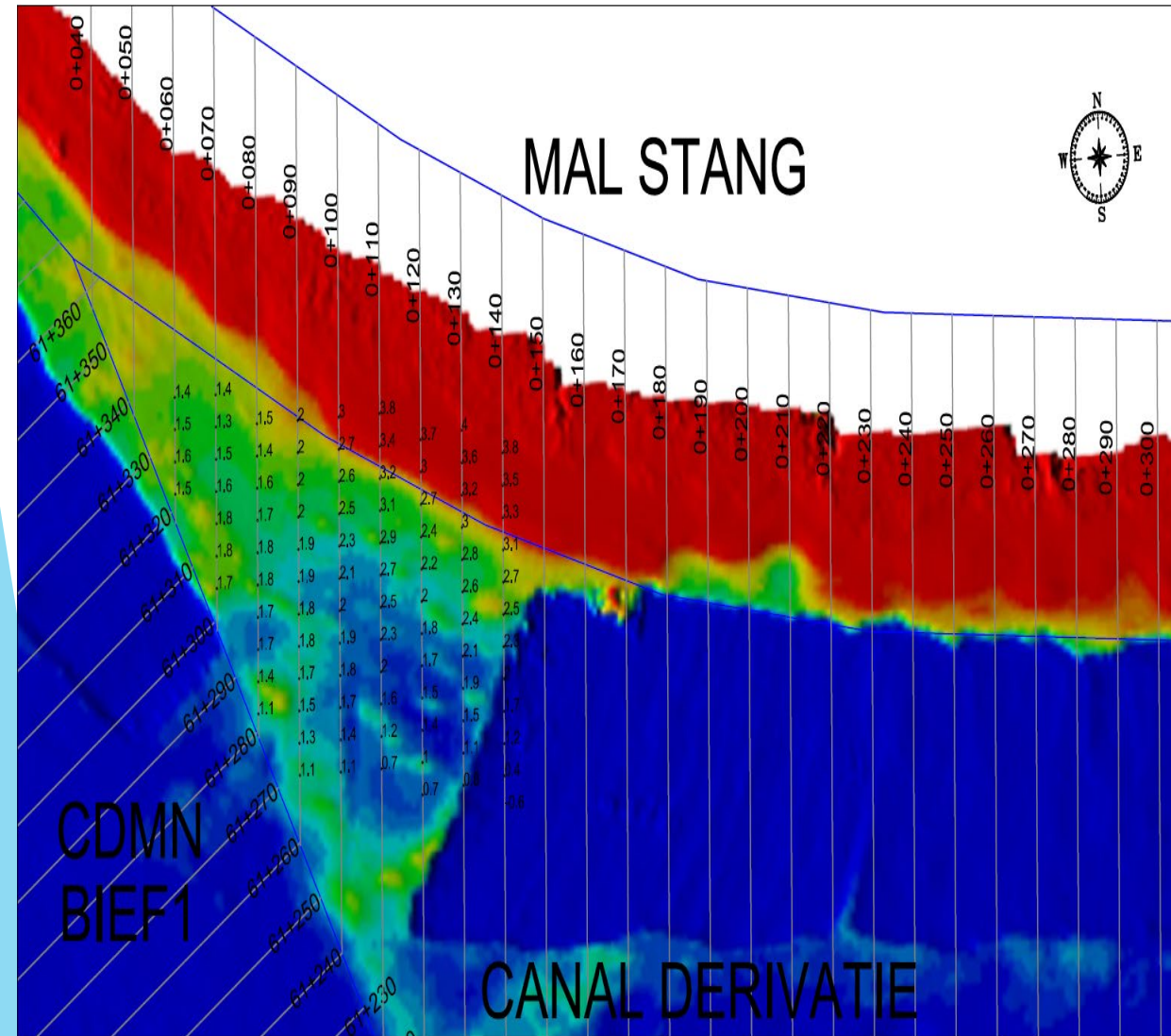
FINAL KM 61+940 – KM 62+090



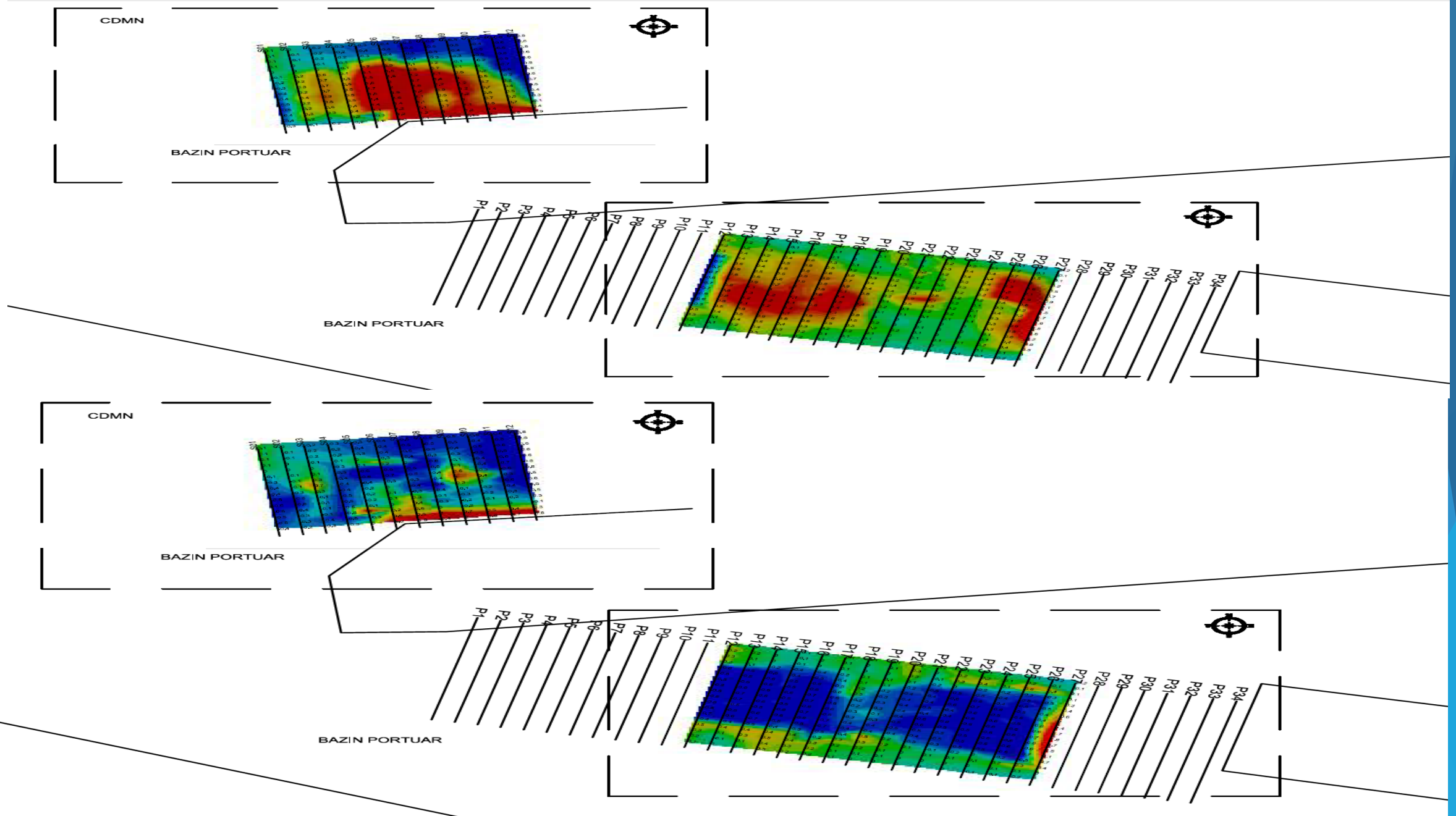
SECTION 1 – BYPASS CANAL JUNE 2021

INITIAL

FINAL



MEDGIDIA JULY 2021 BASIN AND ENTRANCE HARBOUR PORT BEFORE AND AFTER



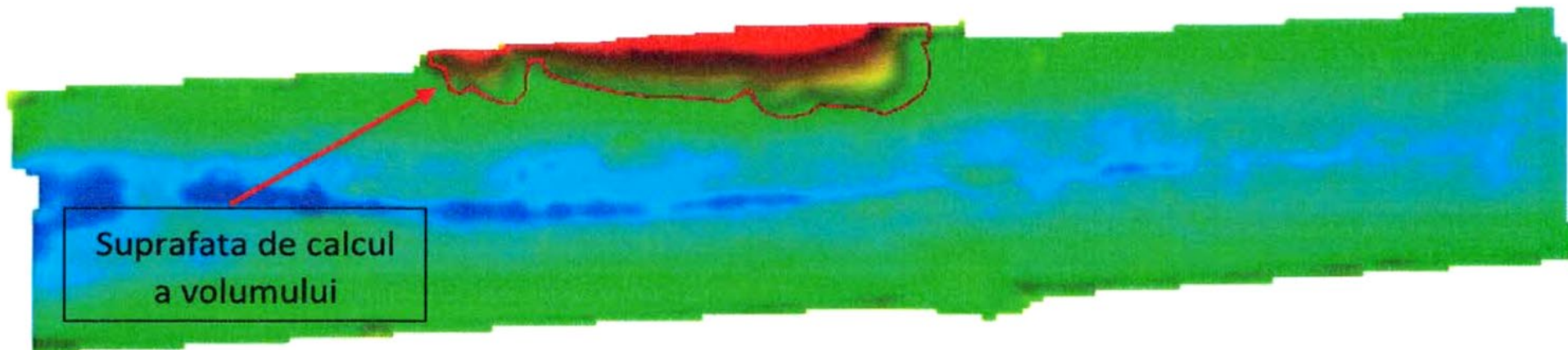
CUMPANA 2022

On the left bank of the Danube-Black Sea Canal between km 56+989 (km 7+421 navigation) and km 57+217 (km 7+193 navigation), in Cumpana area took place a landslide. The landslide affected both the quay area and a surface in the canal crown by slipping a quantity of material that caused a navigation obstacle to appear.

Due to the continuous landslides, the waterway was obstructed.

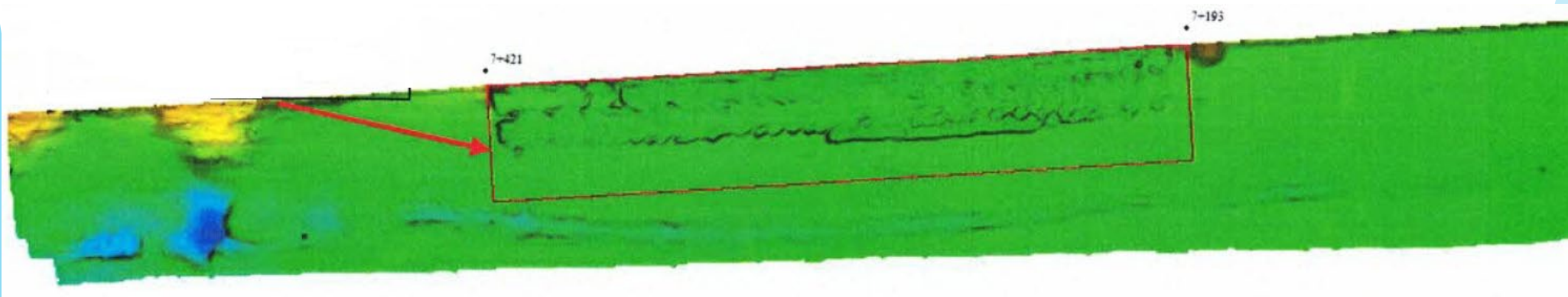
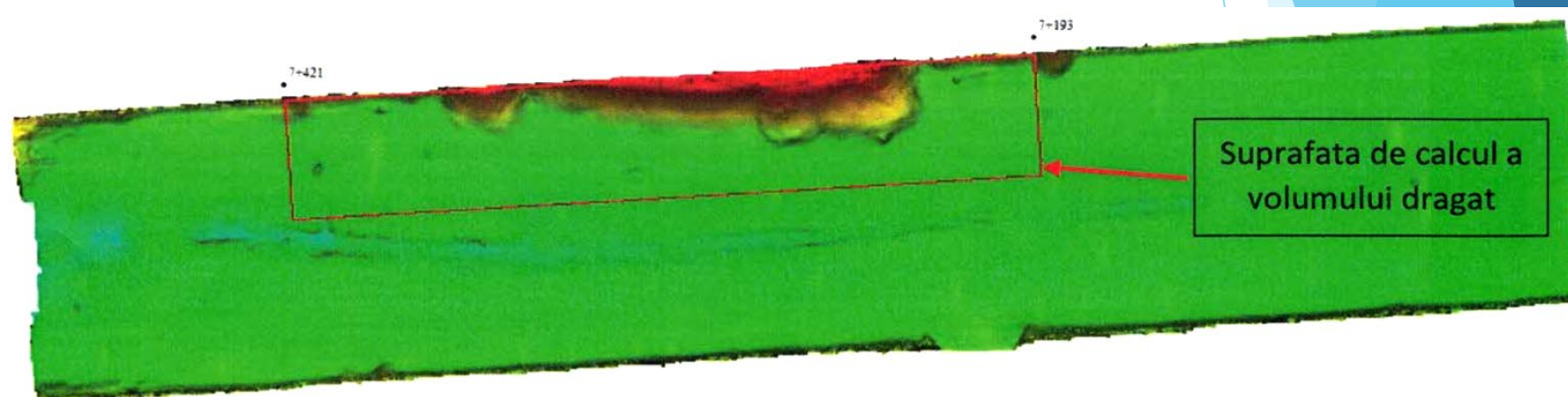
According to bathymetric measurements resulted a volume of about 10,000 cubic meters which was dredged in 2022.





Initial bathymetric measurement to estimate the required dredging volume.

Pre-dredging bathymetric measurement for the calculation area delimited around dredging works.



Final bathymetric measurement

Modernization of the mooring places of the Basarabi and Medgidia ports

Retehnologization of Navodari locks in order to increase the safety of navigation- technical design and works

Modernization of the navigable canals of the Danube: Danube – Black Sea channel and Poarta Alba – Midia, Navodari channel in order to increase the safety of navigation- technical design and works

Monthly bathymetric measurements for draft needs

**PLANNED
MEASURES/
PROJECTS TO
ENSURE
NAVIGATION
IN 2023.**

MODERNIZATION OF THE NAVIGABLE CANALS OF THE DANUBE: DANUBE – BLACK SEA CHANNEL AND POARTA ALBA – MIDIA, NAVODARI CHANNEL IN ORDER TO INCREASE THE SAFETY OF NAVIGATION

► Danube Black Sea Canal

- ❑ Rehabilitation and completion of drainage, collection, routing and controlled discharge of exfiltration and rainwater into the canal
- ❑ Rehabilitation of technological roads for intervention
- ❑ Rehabilitation of bridges over affluent valleys on technological roads
- ❑ Completion of slope protection
- ❑ Rehabilitation of slopes affected by gullies
- ❑ Carrying out consolidation and slope support works on unstable areas
- ❑ Design and construction new route for optic fiber in order to ensure a good communication between RORIS locations

Poarta Alba Midia Navodari Canal

- ❑ Rehabilitation and completion of drainage, collection, routing and controlled discharge of exfiltration and rainwater into the canal
- ❑ Rehabilitation of technological roads for intervention
- ❑ Rehabilitation of bridges over affluent valleys on technological roads
- ❑ Completion of slope protection
- ❑ Rehabilitation of slopes affected by gullies
- ❑ protection of the limestone slope with anchored nets
- ❑ Carrying out consolidation and slope support works on unstable areas
- ❑ Design and construction new route for optic fiber in order to ensure a good communication between RORIS locations

Also, in the feasibility study completed in 2022, evaluated the situation of alluvial materials deposits on the two navigable canals. The identified obstacles (sand, rocks) will be included in the maintenance dredging activity to get the section of the fairway to the designed parameters. The feasibility study covered the Danube Black Sea Canal, section between the confluence with the Danube and upstream of the Agigea locks, and the Poarta Alba Midia Navodari Canal covered the section between the confluence with the Danube Black Sea Canal and upstream of the Navodari locks.

MODERNIZATION OF THE MOORING PLACES OF BASARABI AND MEDGIDIA PORTS

OBJECTIVE

- Mooring of convoys in safety condition in Basarabi and Medgidia area
- Mooring in safety condition when navigation is closed due the bad weather



WORKS

- Rehabilitation of damaged Duc d'Albi constructions as well as walkways between Duc d'Albi and access walkways to the quay
- Providing night lighting of the mooring place, the production of the necessary electricity will be made from renewable sources
- Security measures of the mooring place

REHABILITATION OF NAVODARI LOCKS IN ORDER TO INCREASE NAVIGATION SAFETY – technical design and works

MAIN OBJECTIVE- *modernization of equipment and systems of Navodari locks to guarantee a good connection between Danube River and Midia Port.*

The project aims are modernization and rehabilitation of:

1.The basic technological equipments of the locks:

- ▶ Plane Service Gates
- ▶ Locks' drying system
- ▶ Plane valves
- ▶ Activation hydraulic installation
- ▶ Control, action and automation electric installation
- ▶ Protection installation of the service mitered-type gate against ship striking
- ▶ Lock control and supervision installation
- ▶ Tilting mobile bridge

2.Auxiliary installations and equipments of the locks:

- ▶ Dewatering installations
- ▶ Pumping stations for emptying the lock
- ▶ Electric power supply installation
- ▶ Diesel group -new generator
- ▶ Compressed air frost preventing installations
- ▶ Lock interior/exterior lighting installation

Equipments and installations related to the locks and navigation safety:

Prevention and fire fighting installations;
TV installations with closed circuit;
Telecommunication installations in the locks;
Installation of ship signaling near the lock gates;
Interconnection between signaling and lighting system for the locks navigation and lock control and supervision installation;
Niche protection panels
Fixed bollards 15KN;
Constructions protection for guiding the access inside the lock's chamber

MONTHLY MEASUREMENTS FOR DREDGING NEED

PROGRAM MASURATORI HIDROGRAFICE PE ANUL 2023

Nr. crt.	Locatie	Ianuarie	Februarie	Martie	Aprilie	Mai	Iunie	Iulie	August	Septembrie	Octombrie	Noiembrie	Decembrie
1	Km 60+000 ÷ 63+000, CDMN												
2	Cernavodă - Canal de Derivație												
3	Cernavodă, Km 63+000 ÷ 65+000, CDMN												
4	Limite șenal navigabil CDMN+CPAMN												
5	Km 21+000 ÷ 21+600, CDMN												
6	Cernavodă, Km 63+000 ÷ 65+000, CDMN												
7	Port Medgidia, Km 37+000 ÷ 38+000, CDMN												
8	Port Luminița, Km 4+000 ÷ 5+000												
9	Năvodari, Km 0+000 ÷ 2+000, CPAMN												
10	Km 37+800 ÷ 39+700 CDMN												
11	Cernavodă, Km 63+000 ÷ 65+000, CDMN												
12	Km 0+800 ÷ 1+150, CDMN												
13	Km 2+000 ÷ 3+700, CDMN												
14	Km 7+000 ÷ 8+000, CDMN												
15	Cernavodă, Km 63+000 ÷ 65+000, CDMN												
16	Ax șenal navigabil CDMN+CPAMN												
17	Port Basarabi, Km 24+000 ÷ 25+000, CDMN												
18	Cernavodă, Km 63+000 ÷ 65+000, CDMN												
19	Km 26+000÷26+500, CPAMN												

■ Măsurători puncte critice

■ Măsurători în zone monitorizate

■ Măsurători de verificare

Operating costs of activities carried out in 2022

Budget requirements for 2023

Need areas	Operational expenditures Jan-Dec 2022	Required operational budget 2023	Secured operational budget 2022	Remaining financing gap 2023
Minimum fairway parameters (width/depth)	183.442 €	-		-
Surveying of the riverbed	24.894 €	25.494 €	25.494 €	-
Water level gauges	-	-	-	-
Marking of the fairway	1.910 €	6.565€	6.565€	-
Availability of locks / lock chambers	5,426,882 €	5.709.986 €	5.709.986 €	-
Information on water levels and forecasts	-	-	-	-
Information on fairway depths	-	-	-	-
Information on marking plans	-	-	-	-
Meteorological information	-	-	-	-
Other needs	155.076 €	190.408 €	190.408 €	-
Total	5.792.204 €	5.932.453 €	5.932.453 €	-

I THANK YOU FOR YOUR
ATTENTION TODAY

