



# Agenda

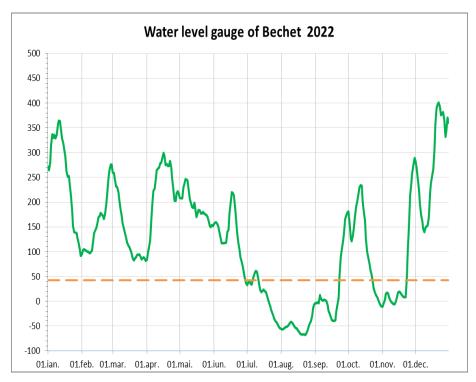
- Hydrological conditions 2022
  - 2 Dredging works performed 2022
    - Bulgarian sector dredging intervention
      - 4 Dredging works strategy 2023

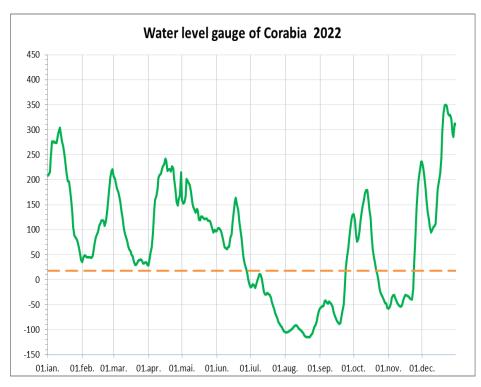
# Hydrological conditions

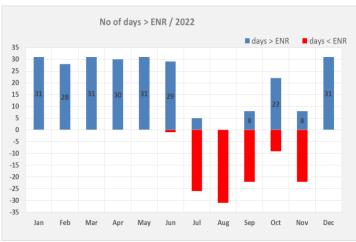
The 2022 year shows a very poor hydrological conditions, especially in the second part of the year, with a powerful impact of navigation parameters, which determined the application of a series of measures, including dredging works.

Low water levels have been recorded since July, and the annual minimum values in August.

Month	June	July	August	Sept	Oct	Nov
BECHET	37	-55	-68	-40	-10	-11
CORABIA	-9	-104	-115	-88	-56	-58
TR. MAG.	28	-62	-74	-46	-20	-22
ZIMNICEA	50	-43	-57	-30	-1	<b>ئ</b>



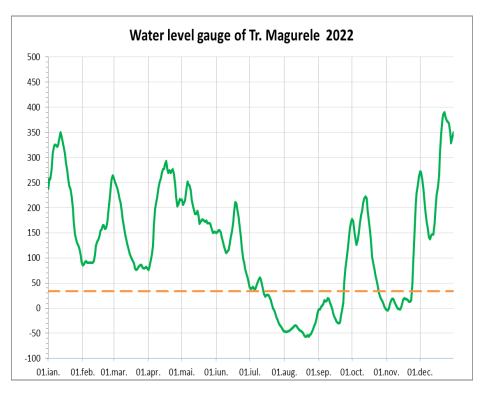


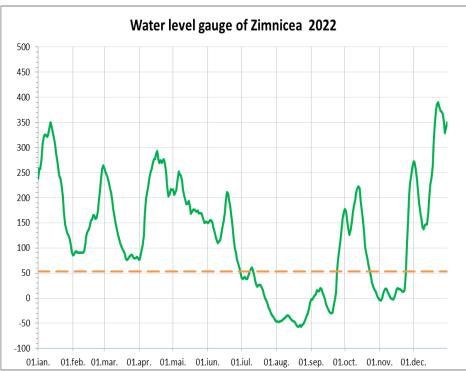


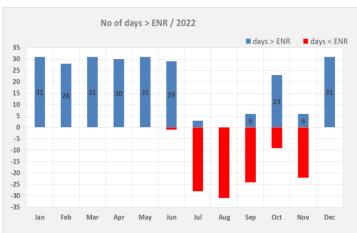


days < LNWL - 111

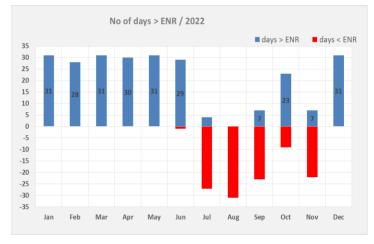
days < LNWL - 120







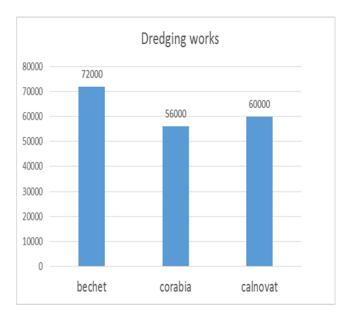
days < LNWL - 113

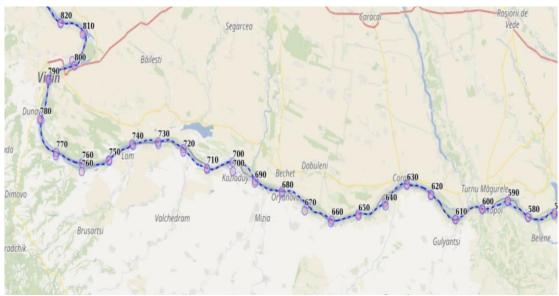


days < LNWL - 116

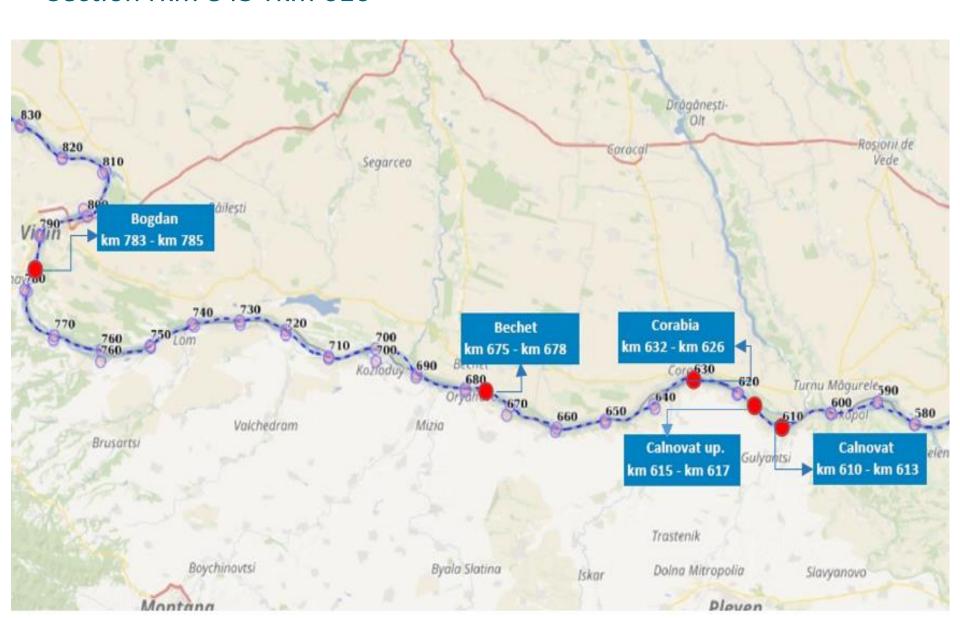
# Dredging works - 2022

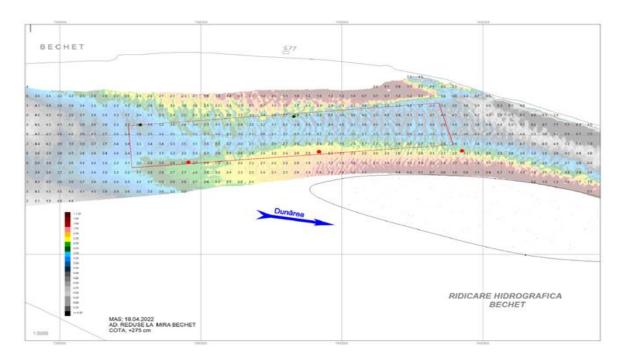
- executed on the basis of a framework contract (third party) and with own equipment.
- in order to avoid the effects of unfavorable hydrological situations, the actions for concluding the contracts for the dredging works were started in time:
  - legal forms completed / february (first contract)
  - volume / 188000 m<sup>3</sup>
- dredging works / 10.05.2022 16.06.2022

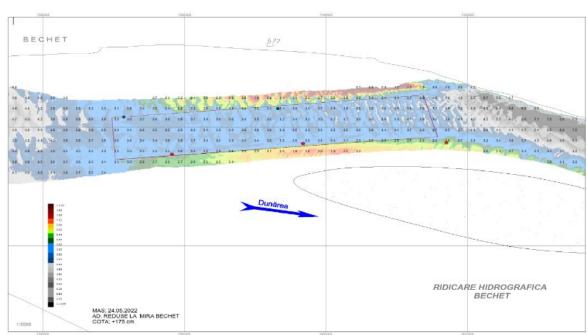




# Dredging activities 2022 Section rkm 845-rkm 610







## 1.Bechet - rkm 677

Initial surveys: 18.04.2022

Reference gauge: Bechet

Water level: 245 cm

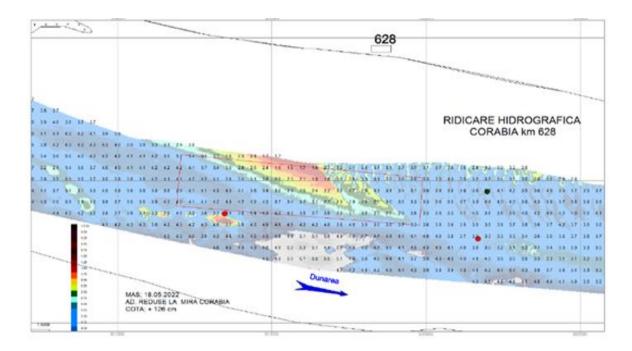
Dredging depth: 3.5m

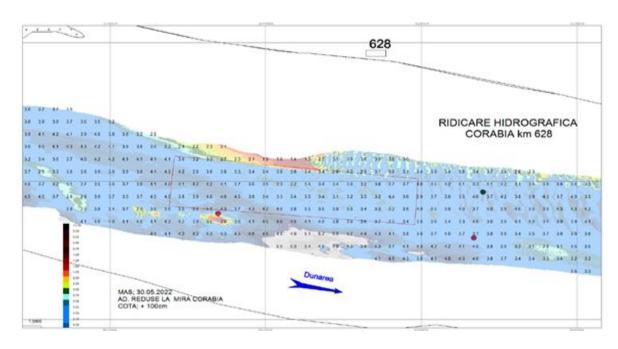
Performer: third party

Period: 10.05-24.05

Final surveys : *30.05.2022* 

Volume:  $72000 \, m^3$ 





## 2.Corabia – rkm 628

Initial surveys: 18.05.2022

Reference gauge: Corabia

Water level: 125 cm

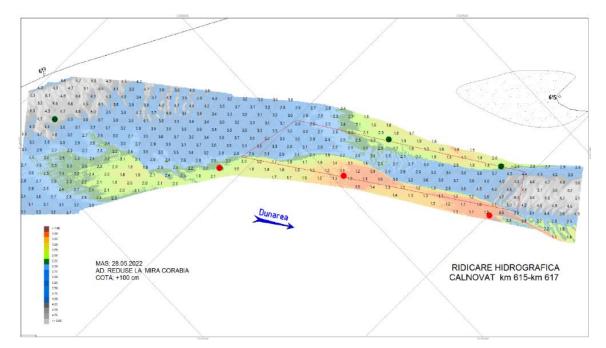
Dredging depth: 3.5m

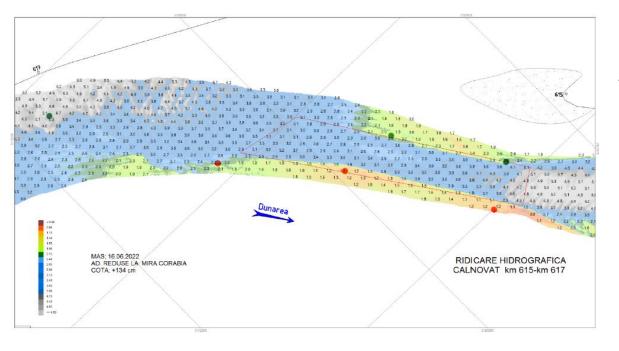
Performer: third party

Period: 24.05-30.05

Final surveys : *30.05.2022* 

Volume:  $56000 \, m^3$ 





## 3.Calnovat up. – rkm 616

Initial surveys: 2*8.05.2022* 

Reference gauge: Corabia

Water level: 100 cm

Dredging depth: 3.5m

Performer: third party

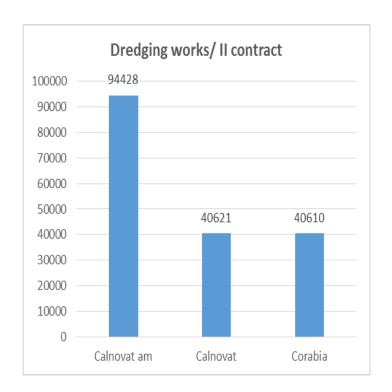
Period: *30.05-16.06* 

Final surveys : 16.06.2022

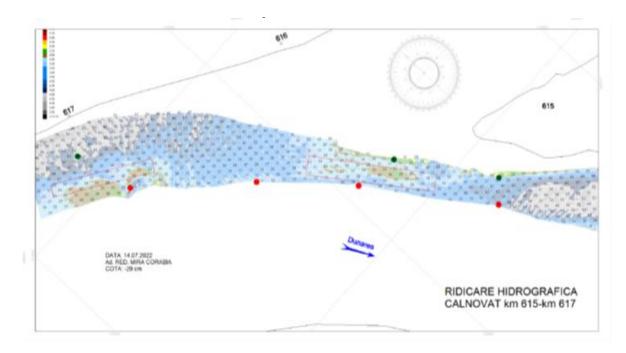
Volume:  $60000 \, m^3$ 

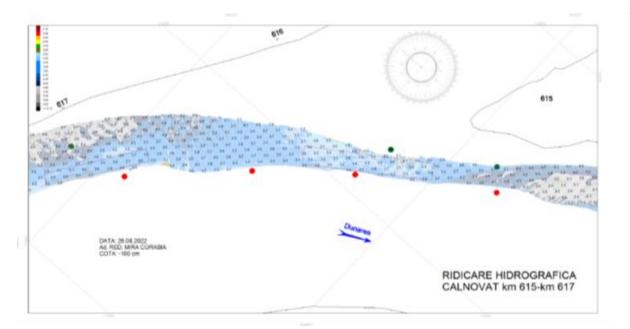
## Dredging works / II

- necessity to resuming dredging works (due to the occurrence of shallow waters)
- concluding a new subsequent contract (july-second contract).
- volume 200000m³
- performing dredging works: 18.07 18.11









## 1.Calnovat up. – rkm 616

Initial surveys: 14.07.2022

Reference gauge: Corabia

Water level: -60 cm

Dredging depth: 3.5m

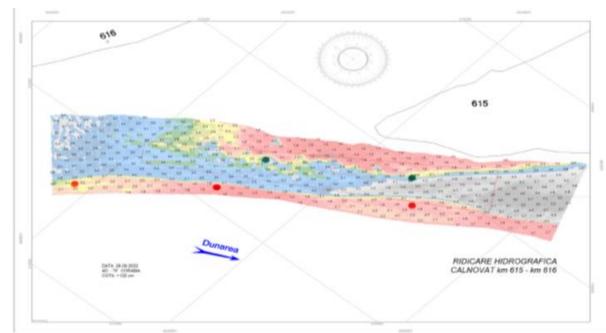
Performer: third party

Period: *18.07-23.07* 

Final surveys : 26.08.2022

Volume: 24617 m<sup>3</sup>

- the impossibility of carrying out the dredging works due to very shallow depths
- dredging works stopped 23.07



# CALNOVAT km 615 - km 616

## 2.Calnovat up. – rkm 616

Initial surveys: 20.09.2022

Reference gauge: Corabia

Water level: +100 cm

Dredging depth: 3.5m

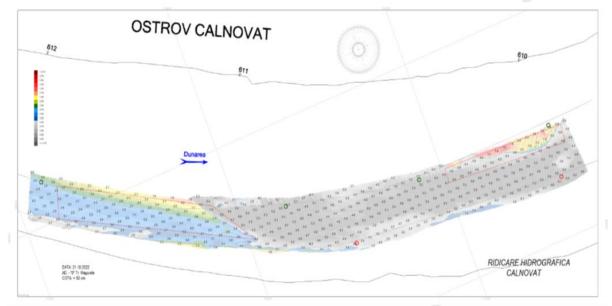
Performer: third party

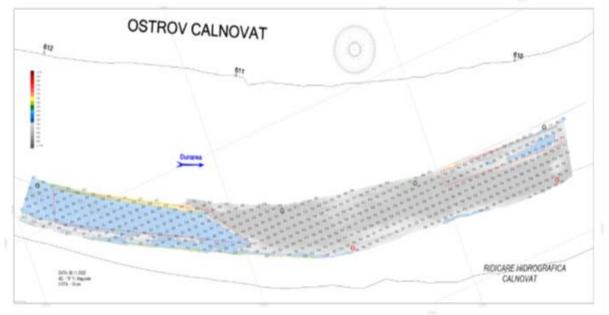
Period: *03.10-12.10* 

Final surveys : 21.10.2022

Volume: 69811 m<sup>3</sup>

Due to the reduced fairway parameters and to increase the efficiency, the "Rainbow" method was used (spraying material outside of the fairway)





## 3.Calnovat-rkm 610-rkm 612

Initial surveys: *21.10.2022* 

Reference gauge: Tr. Mag.

Water level: +50 cm

Dredging depth: 3.5m

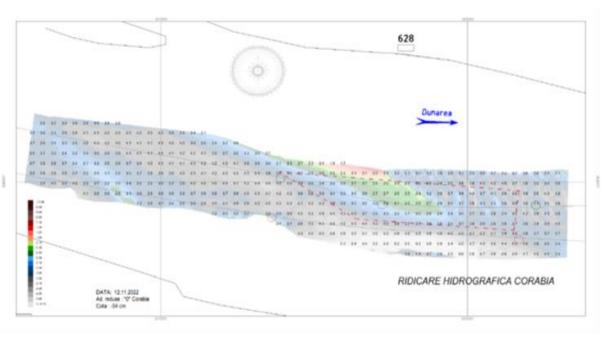
Performer: third party

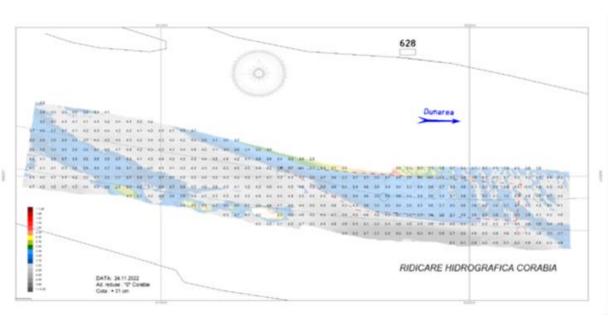
Period: *26.10-15.11* 

Final surveys : *09.11.2022* 

Volume: 40621 m<sup>3</sup>

Due to the reduced depths in the dredging area, the "Rainbow" method was used (spraying material outside of the fairway)





### 4. Corabia- rkm 628

Initial surveys: *12.11.2022* 

Reference gauge: Corabia

Water level: -50 cm

Dredging depth: 3.5m

Performer: third party

Period: *15.11-22.11* 

Final surveys : 24.11.2022

Volume: 40610 m<sup>3</sup>

Due to the reduced depths, the "Rainbow" method was used (spraying material outside of the fairway)

## Dredging works-AFDJ equipment

Part of the maintenance works of the fairway, through dredging activities, were done with AFDJ equipment, consisting of the following:

Capital dredging vessel - Comana 1
Pontoon barge - N1130
Assistant works vessel - Mihai Bravu
Split hopper barges - SH1 /SH2



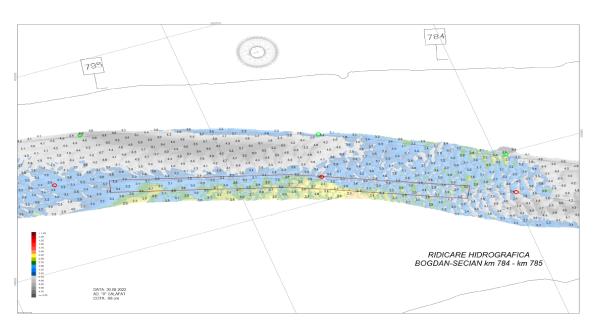


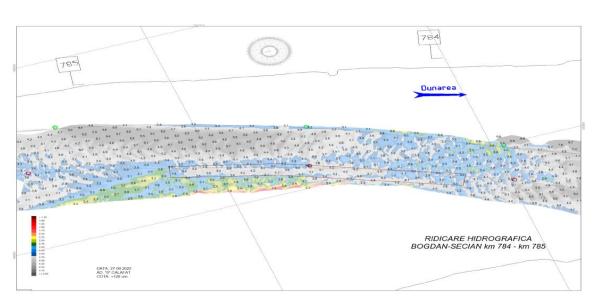






## Dredging works-AFDJ equipment





## Bogdan-rkm 784

Initial surveys: *30.08.2022* 

Reference gauge: Calafat

Water level: -10 cm

Dredging depth: 4.0m

Performer: AFDJ

Period: *05.09-25.09* 

Final surveys : 27.09.2022

Volume: 29244 m<sup>3</sup>

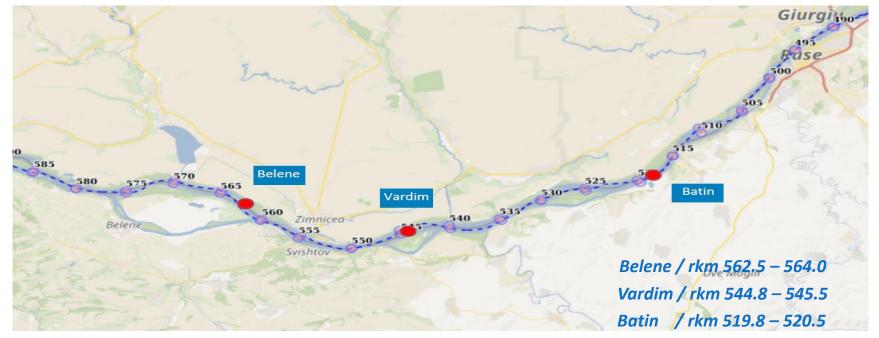
The discharge of the material was carried out through pipes

# Dredging works – Bulgarian sector interventions

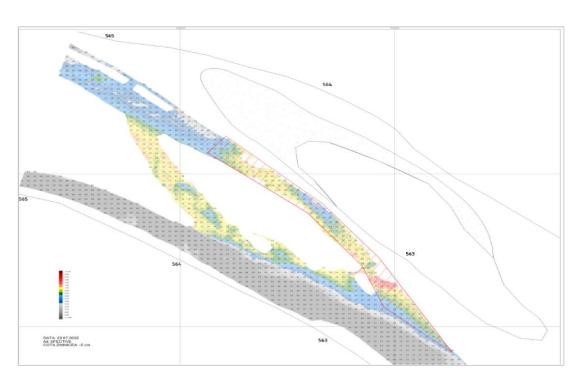
Taking into account the bad hydrological situation during the summer period and the formal authorization the Romanian side from Bulgarian Ministry of Transport to carry out maintenance activities on the Danube river sector under the responsability of Republic of Bulgaria, in order to unblock the traffic in the Belene, Vardim and Batin sectors, AFDJ was involved in the execution of the dredging works.

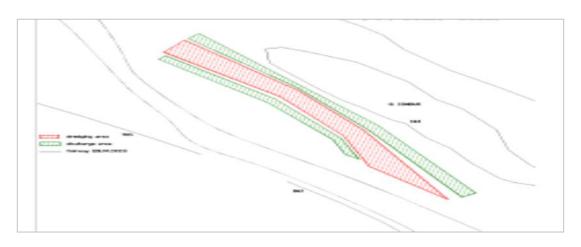
The dredging works have been carried out under the guidance of AFDJ:

- third party (new contract August) volume = 170000m<sup>3</sup>
- AFDJ dredging equipment.



## Dredging works – Bulgarian sector interventions

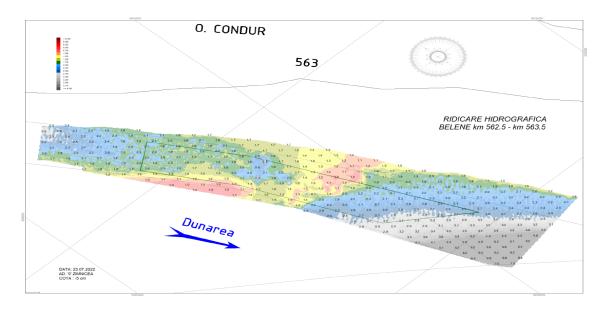


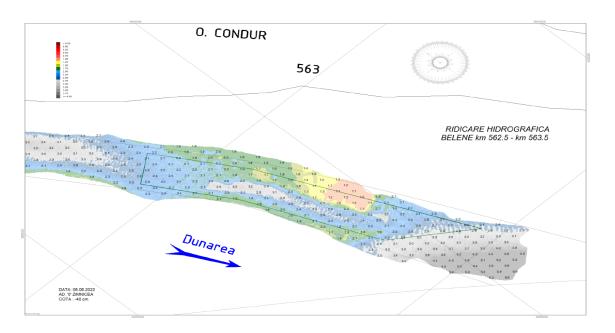


# 1. Belene –rkm 562-rkm 565 Strategy intervention

- analysis of the results and common agreement with the Bulgarian side / the decision to open a new fairway (taking into account the morphology of the area).
- both dredgers to work simultaneously, but because of the difficult access to the work areas, the solution was for the AFDJ equipment to intervene to make an access channel for the other higher capacity equipment (third party).

## dredging works / Belene





### 1. Belene- rkm 562-rkm 565

Initial surveys: *23.07.2022* 

Reference gauge: Zimnicea

Water level: -20 cm

Dredging depth: 3.0m

Performer: AFDJ

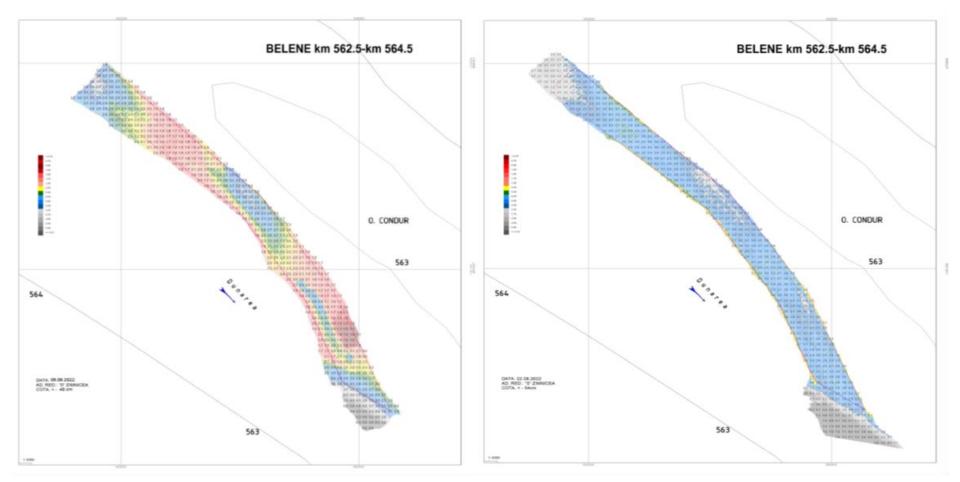
Period: *30.07-07.08* 

Final surveys : *08.08.2022* 

Volume: 14730 m<sup>3</sup>

The discharge of the material was carried out through pipes

## dredging works/ Belene



1. Belene- rkm 562-rkm 565

Initial surveys: *08.08.2022* 

Reference gauge: Zimnicea

Water level: -40 cm

Dredging depth: 3.0m

Performer: third party

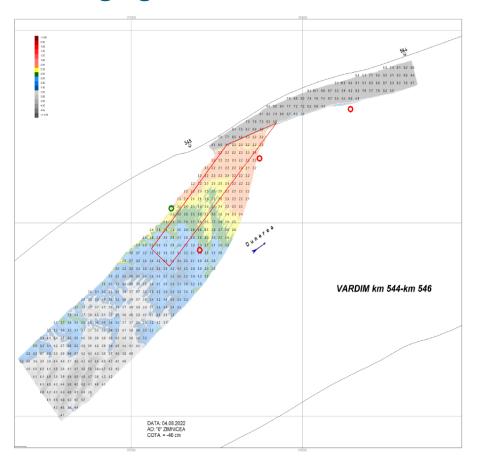
Period: *09.08-22.08* 

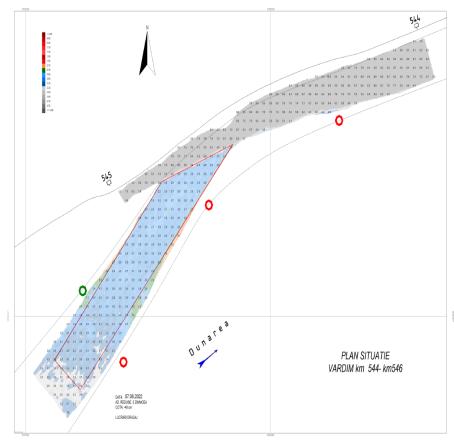
Final surveys: 29.08.2022

Volume: 104286 m<sup>3</sup>

Due to the reduced depths, the "Rainbow" method was used (spraying material)

## dredging works/ Vardim





2. Vardim- rkm 544-rkm 546

Initial surveys: *04.08.2022* 

Reference gauge: Zimnicea

Water level: -46 cm

Dredging depth: 3.0m

Performer: third party

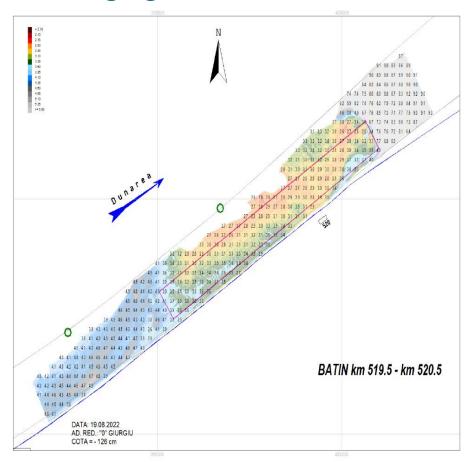
Period: *04.08-07.08* 

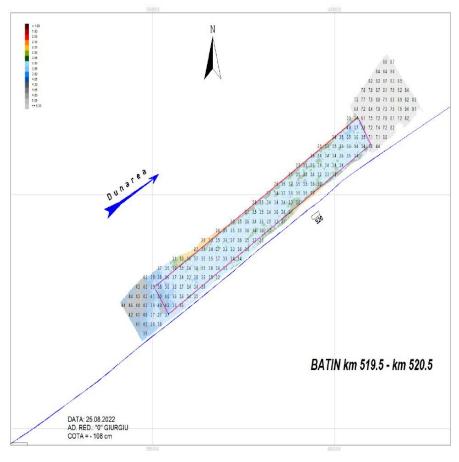
Final surveys: *07.08.2022* 

Volume: 36988 m<sup>3</sup>

Due to the reduced depths, the "Rainbow" method was used (spraying material)

## dredging works/ Batin





3. Batin-rkm 519-rkm 520

Initial surveys: 19.08.2022

Reference gauge: Giurgiu

Water level: -115 cm

Dredging depth: 3.7m

Performer: third party

Period: 22.08-25.08

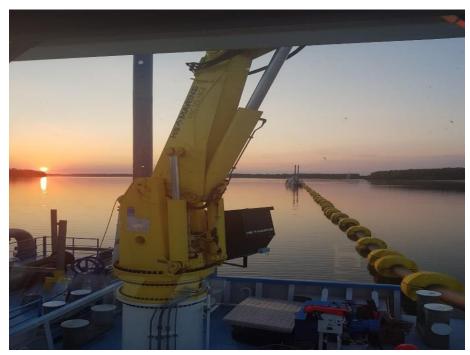
Final surveys: *25.08.2022* 

Volume: 29050 m<sup>3</sup>

Due to the reduced depths, the "Rainbow" method was used (spraying material)



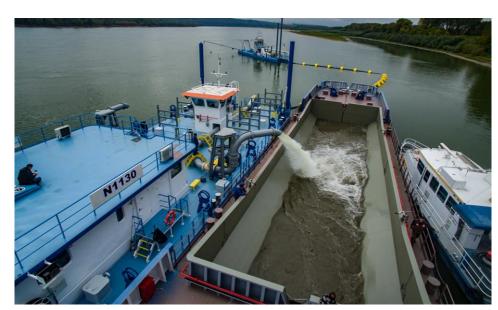












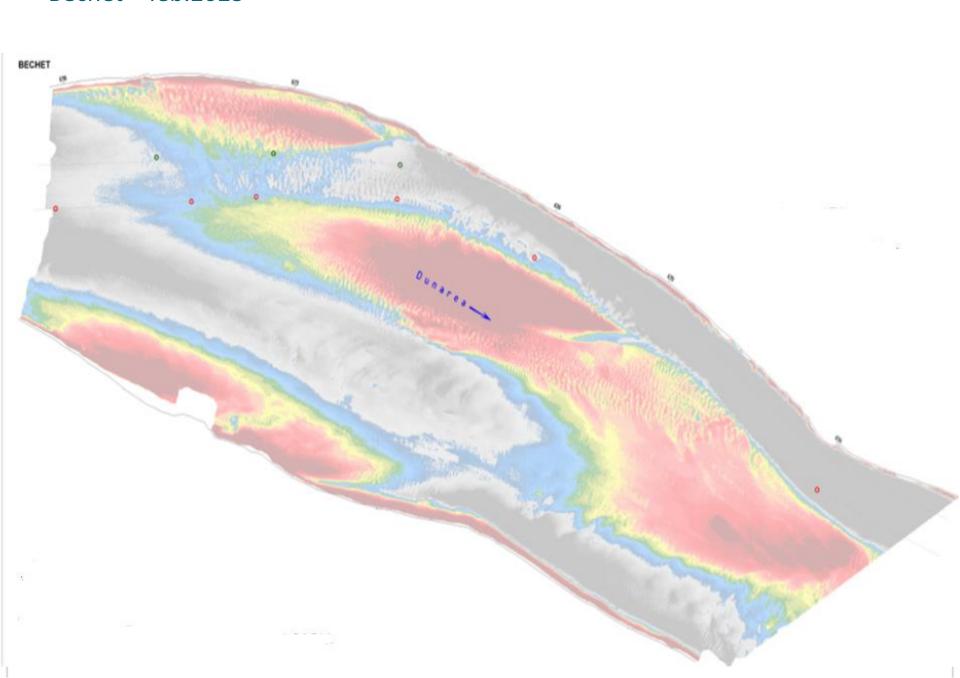


# Planning dredging works/2023

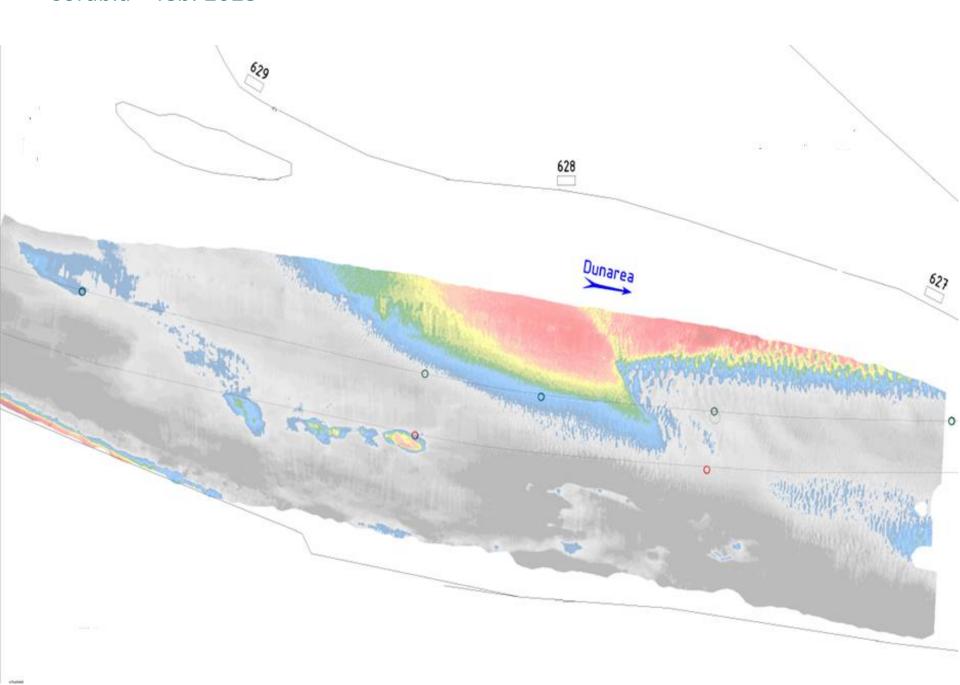
- For dredging works execution in 2023 AFDJ has a valid framework contract.
- Based on the results of the latest measurements, it was estimated a necessary for dredging works in 2023.



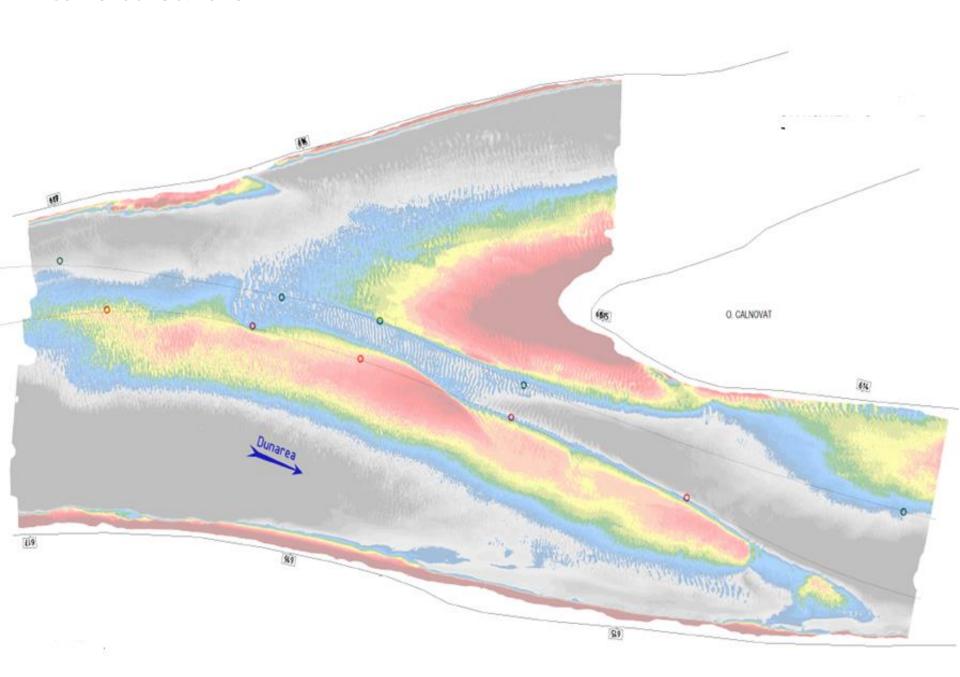
## Bechet – feb.2023

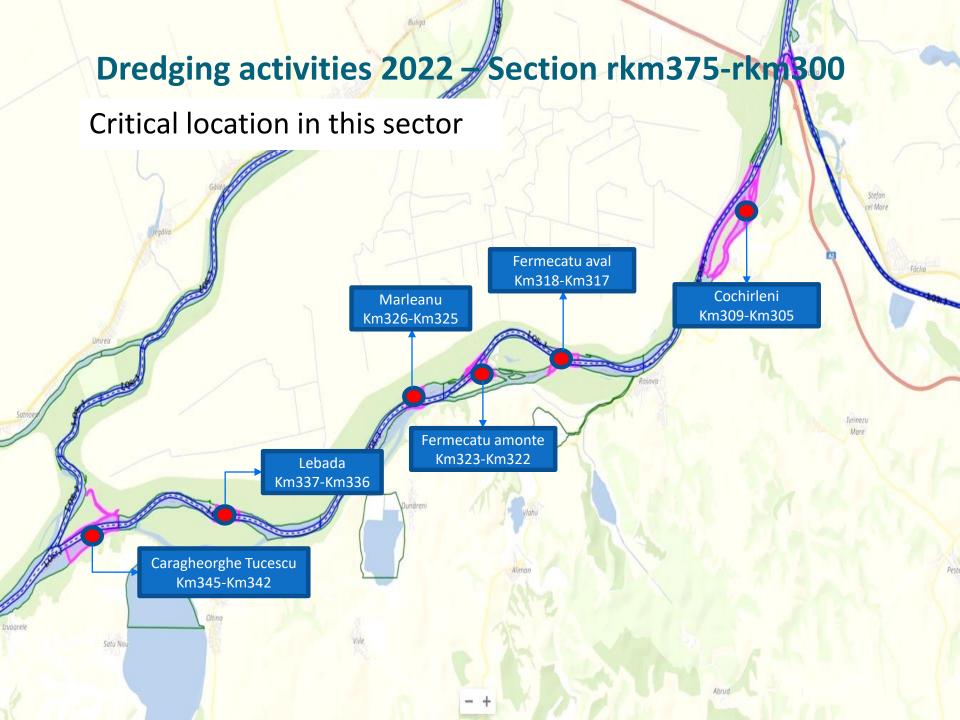


Corabia – feb. 2023



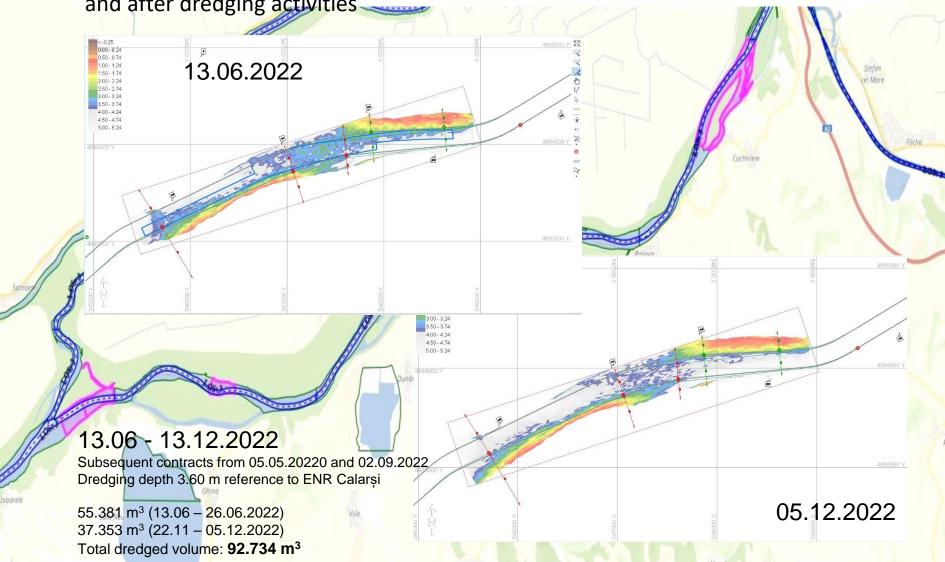
## Calnovat-feb.2023





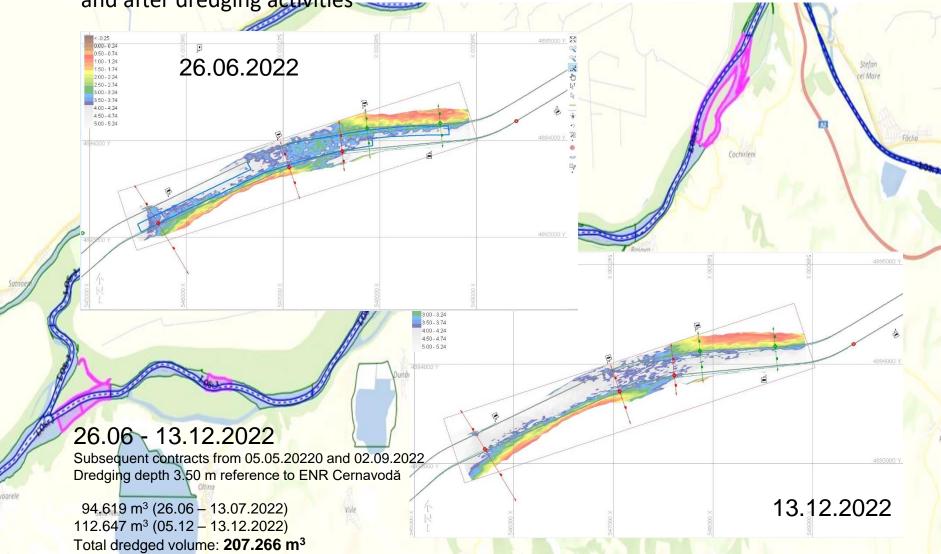
## Dredging activities 2022 — Section rkm375-rkm300

Hydrographic condition Caragheorghe (Km 342 – Km 346) before and after dredging activities



## Dredging activities 2022 — Section rkm375-rkm300

Hydrographic condition Cochirleni (Km 304 – Km 310) before and after dredging activities



## **Dredging activities 2022 – Section rkm 300- rkm 175**



Total dredged volume: **150.000 m³**Total paid 2.697.000 RON

Capidava Km 278 - 281+500

 $25.08 - 05.09.2022 - \ 58.837 \ m^3$ 

22.09 - 29.09.2022 - 8.831 m<sup>3</sup>

Seimeni Km 288 - 294

05.09 - 20.09.2022 - 82.332 m<sup>3</sup>

#### Subsequent contract from 11.10.2022

Total dredged volume: 121.441 m³
Total paid 2.183.509,18 RON

2.100.000,101.01

Dunarea Veche Km 189 -192+500 25.11 - 01.12.2022 - 41.602 m<sup>3</sup>

Giurgeni Km 242 - 245 02.12 - 13.12.2022 - 11.636 m<sup>3</sup>

Harsova Km 249 - 253+500 13.12 - 20.12.2022 - 16.966 m<sup>3</sup>

Capidava Km 279 - 281+500 20.12 - 31.12.2022 - 51.237 m<sup>3</sup>



# Planned Dredging Activities for 2023 (cubic meters)

MARITIME DANUBE							
Sector	Strecth	Dredger	Q1	02	03	04	Total 2023
Sulina Administrative Area	Bara Sulina	Dunărea Maritimă	0	20 000	100 000	140 000	260 000
Galați Administrative Area	Mm 56 - 57+3/4	Dunărea Maritimă	0	20 000	80 000	50 000	150 000
	Mm 61 - Mm 63	Dunărea Maritimă	0	30 000	80 000	60 000	170 000
	Mm 73 - Mm 74	Dunărea Maritimă	0	20 000	110 000	0	130 000
	km 153 - km 155	Dunărea Maritimă	0	10 000	50 000	30 000	90 000
TO TAL MARITIME DANUBE			0	100 000	420 000	280 000	800 000

RIVER SECTOR OF THE DANUBE							
Sector	Strecth	Dredger	Q1	07	63	04	Total 2023
Braila Administrative Area	Km 175 - Km 300		0	0	150 000	150 000	300 000
Calarasi Administrative Area	Km 300 - Km 375		0	0	150 000	150 000	300 000
	Km 610 - Km 845		0	0	150 000	150 000	300 000
	Km 837 - Km 840	Comana	0	25 000	0	0	25 000
Giurgiu Administrative Area	Km 818 - Km 821	Comana	0	0	25 000	0	25 000
	Km 783 - Km 785	Comana	0	0	30 000	0	30 000
	Km 610 - Km 613	Comana	0	20 000	0	0	20 000
TR Severin Administrative Are	Km 861 - Km 860	Comana	0	75 000	0	0	75 000
	Km 863 - Km 862	Comana	0	0	75 000	0	75 000
TOTAL River Sector of Danube			0	120 000	580 000	450 000	1 150 000

	Costs 2022	Secured Budge 2023		
Dredging works RO	5 075 000 €	5 470 900 €		
Dredging works BG	1 900 000 €	0€		
Surveying	957 000 €	1 230 000 €		
Signalisation	3 135 500 €	3 763 000 €		
Total	11 067 500 €	10 463 900 €		

# Thank you for your kind attention!

**AFDJ Galati**