MONITORING THE ENVIRONMENTAL IMPACT OF THE WORKS REGARDING THE IMPROVING OF THE NAVIGATION CONDITIONS ON THE DANUBE RIVER BETWEEN CALARASI AND BRAILA, KM 375-175

MONTHLY REPORT N0. 64

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FINAL VERSION

CARRIED OUT BY:

1. PhD eng. DEÁK György – CS I – project leader
2. Univ. Prof. PhD eng. Iulian Gabriel BÎRSAN
3. PhD eng. Mihai LESNIC – CS I
4. PhD eng. Dan COCIORVA – CS II
5. PhD eng. George POTERAŞ – CS I
6. PhD eng. Ioan BOSOANCĂ
7. biol. SZABO Jozsef
8. PhD eng. Gina GHIȚĂ – CS II
9. Phd chem. Adriana BORŞ – CS II
10. PhD eng. Victor CRISTEA
11. PhD biol. Florica MARINESCU – CS III
12. Cecilia ŞERBAN
13. Luiza FLOREA
14. FRINK Jozsef Pal
15. Marian TUDOR
16. PhD eng. Mihaela ILIE – CS III
17. prof. univ. eng. dipl. Helmut HABERSACK
18. PhD Falka Istvan
19. PhD ZAHARIA Tania
20. ecologist AMBRUS Laszlo
21. prof. PhD eng. Gh Viorel UNGUREANU
22. Magdalena CHIRIAC – CS I
23. eng. Marius RAISCHI – CS III
24. PhD eng. Lucian LASLO – CS III
25. chem. Petra IONESCU – CS III
26. ecologist MIHOLCSA Tamas
27. PhD eng. Alin Marius BÂDILIȚĂ – CSIII
28. eng. Bianca PETCULESCU – CS III
29. eng. Ana Maria ANGHEL - CSIII
30. chem. Alexandru IVANOV - CSIII

31. physicist Cristina SÎRBU – CS III
32. eng. chim. Ileana MÎȚIU – CS I
33. eng. Monica Niculina RADU – CS I
34. ecologist Iuliana MĂRCUȘ – CS III
35. eng. Carmen TOCIU – CS III
36. PhD phys. Georgiana GRIGORAȘ - CS III
37. chem. Carmen MUNTEANU - CS III
38. ecologist Mariana MINCU - CS III
39. PhD eng. Mihaela MÎȚIU – CSIII
40. eng. Marius OLTEANU, CSIII
41. geograph Bogdan URITESCU – CS
42. eng. Georgeta TUDOR – CS
43. eng. Constantin CÎRSTINOIU - CS
44. geograph Nicu CIOBOTARU – CS
45. ecologist Tiberius DĂNĂLACHE, CS
46. eng. Ștefan ZAMFIR, CS
47. eng. Gabriel BADEA, CS
48. eng. Alexandru CRISTEA, CS
49. eng. Simona RAISCHI - CS
50. biol. Ioana SAVIN – ACS
51. ecologist Ecaterina MARCU – ACS
52. biologist Cristina CIMPOERU - ACS
53. ecologist Cornelia LUNGU - ACS
54. eng. Mădălin SILION, ACS
55. techn. Sergiu SĂNDICĂ
56. techn. Corneliu VASILE
57. techn. Elena BARBU
58. techn. Paula CATANĂ
59. techn. Georgeta MĂNESCU

CONTENT

1. INTRODUCTION

1.1. Brief presentation of the objectives monitored in the construction phase

I. *This report presents the monitoring objectives for the period 01-31 August 2016.*

For post-construction phase the monitoring frequencies for the environmental components are presented in Table 1.1.

II. *3D numerical modeling*

During this period have been conducted activities for bathymetric data aquisition.

Besides a proper organization and development of the field campaign, a permanent cooperation has been ensured between the Coordinator and Partners.

Table 1.1. Post-construction phase - monitoring objectives - frequencies with differences in the Critical Points

MONITORING OBJECTIVES				Critical points							
				Main Critical Points			Secondary Critical Points				
				01	02	10	03A	03B	04A	04B	07
A.	AIR			S	S	S	Q	Q	Q	Q	Q
B.	NOISE			S	S	S	Q	Q	Q	Q	Q
C.	SOIL			S	S	S	Q	Q	Q	Q	Q
D.	HYDROMORPHOLOGY	Water level		C	C	C	Q	Q	Q	Q	Q
		Water velocity		M	M	M	Q	Q	Q	Q	Q
		Turbidity		C	C	C	Q	Q	Q	Q	Q
		2D bathymetric elevation		M	M	M	Q	Q	Q	Q	Q
		3D bathymetric elevation		Q	Q	Q	Not the case				
E.	WATER QUALITY			Q	Q	Q	S	S	S	S	S
	SEDIMENTS			Q	Q	Q	S	S	S	S	S
F.	AQUATIC FLORA			August			Q	Q	Q	Q	Q
	AQUATIC FAUNA			Q	Q	Q	Q	Q	Q	Q	Q
	F. is STURGEONS AND BARBELL		STURGEONS	Two seasons / year (February - May / August – December)			Two seasons / year (February - May / August – December)				
			BARBELL	One season/year April- May (breeding season)			One season/year April- May (breeding season)				
	F. i OTHER FISH SPECIES			Annually (April- May, July - September)			Annually (April- May, July - September)				
G.	TERRESTRIAL FLORA			Annually in July			Annually in July				
	TERRESTRIAL FAUNA/ AVIFAUNĂ			Annually (April - June, September - October, January)			Annually (April - June, September - October, January)				
H.	NATURA 2000 SITES	SCI	ICHTYOFAUNA	Annually (April- May, July - September)			Annually (April- May, July - September)				
			AQUATIC FLORA	July			Q	Q	Q	Q	Q
			AQUATIC FAUNA	Q	Q	Q	Q	Q	Q	Q	Q
			TERRESTRIAL FLORA	Annually in July			Annually in July				
			TERRESTRIAL FAUNA	Annually (April - June, September - October, January)			Annually (April - June, September - October, January)				
		SPA	AVIFAUNĂ	Annually (April - June, September - October, January)			Annually (April - June, September - October, January)				
J.	3D numerical modeling			M							

NOTĂ: QC – quasi continuous | M- monthly | Q – quarterly | S – semester | C – continuous

1.2. Overview

The elements related to the sampling periods for the objectives monitored in August 2016 for post-construction period are presented in Table 1.2.

Table 1.2. Objectives monitored during the period of 01-31.08.2016

Objectives monitored		Sampling period / ongoing activities	Campaign	Critical Points							
				Main Critical Points			Secondary Critical Points				
				01	02	10	03A	03B	04A	04B	07
A.	AIR	12, 19, 31.08.2016	61	YES	YES	YES	NO	NO	NO	NO	NO
B.	NOISE	12, 19, 31.08.2016	64	YES	YES	YES	NO	NO	NO	NO	NO
C.	SOIL	-	-	NO	NO	NO	NO	NO	NO	NO	NO
D.	HYDROMORPHOLOGY	01-05, 12, 19, 24, 25, 31.08.2016	C64	YES	YES	YES	**NO**	NO	NO	NO	NO
E.	WATER QUALITY	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	SEDIMENTS	-	-	NO	NO	NO	NO	NO	NO	NO	NO
F.	AQUATIC FLORA	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	AQUATIC FAUNA	22.08.2016	C7	YES	YES	YES	YES	YES	YES	YES	YES
	F.is. STURGEONS	12, 19, 31.08.2016	C24	YES	YES	YES	YES	YES	YES	YES	YES
	F.is. BARBELL	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	F.i. OTHER FISH SPECIES	12, 19, 30.08.2016	C9	YES	YES	NO	YES	YES	YES	YES	YES
G.	TERRESTRIAL FLORA	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	TERRESTRIAL FAUNA/ AVIFAUNĂ	-	-	NO	NO	NO	NO	NO	NO	NO	NO
H.	NATURA 2000 SITES	-	-	NO	NO	NO	NO	NO	NO	NO	NO
I.	BUILDING SITE	-	-	NO	NO	NO	NO	NO	NO	NO	NO

NOTE:

YES – samples were taken / activities were conducted in the field

NO - no samples taken / no activities conducted in the field

Means of transportation used for sampling/conducting activities and samples analysis are presented in Table 1.3.

Table 1.3 Means of transportation

Field	Transportation means
WATER	trimaran type boat with 25 CP engine
	Laguna type boat with 25 CP engine
	Lotus type boat with 20 CP engine
	Boat - autolaboratory – with trailer - RANIERI CLF22 model, Suzuki engine, 175 CP
	Boat ANA 5.0 with trailer, Suzuki engine, 70 CP
	Boat ANA 5.5 with trailer, Suzuki engine, 40 CP
LAND	Autolaboratory – Pickup jeep Toyota Hilux Double Cab 4x4
	Autolaboratory – Jeep Toyota LandCruiser
	Autolaboratory for air monitoring
	Autolaboratory for water and soil monitoring

2. STATE OF THE PROGRESS ACTIVITIES

2.1. State and progress on each activity / critical point on specific monitoring objectives

The equipments used for sampling/ongoing activities and samples analysis are presented in table 2.1.

Table 2.1 Main devices

Objectives monitored		Sampling equipment	Laboratory equipments / ongoing activities
A.	**AIR**	- LECKEL dust sampler - Auto-laboratory - Desaga pump - GPS - Autolaboratory for air monitoring	- Analytical balance KERN 770-14 - Atomic absorption spectrometer with graphite furnace AAS - UNICAM 939
B.	**NOISE**	- Sound Level Meter and Microphone, Brüel & Kjær Denmark - GPS	
C.	**SOIL**	- Burkle sampler - GPS	- ION-CROMATOGRAPH DIONEX ICS 1500 – anions, cations - Multi N/C Analytic Jena (total carbon analyzer and organic carbon) - Spectrometer ATI UNICAM UV-VIS - Mass Spectrometer with inductively coupled plasma ICPMS NexIon 350x equiped with hydrides generator system and autosampler system with autodiluter
D.	**HYDROMORPHOLOGY**	- Portable Turbidimeter type VELP SCENTIFICA - mini ADP SONTEK - Monitoring systems for turbidity and level - Monitoring systems for flow - velocities - Portable Turbidimeter HANNA Instruments - ADCP SONTEK River Surveyor R9 - Multiparameter YSI for turbidity and level measurements - Bathimetric System 3D - Konsgberg GeoSwath Plus Compact, 250 kHz - Acoustic Doppler Current Profiler (ADCP) - Teledyne RD Instruments RiverRay - ROV (Remote Operate Vehicle) – ROVBUILDER Mini 600 - GPS	- Turbidimeter HACH RATIO/RX - Device for water quality parameters measurements, type 1, Manta 2-Sub3.5+Amphibian 2 - Device for water quality parameters measurements, type 2, Manta 2-Sub4.0+Amphibian 2
E.	**WATER QUALITY**	- Ruttner sampler - GPS	- Spectrometer with atomic absorbtion VARIAN - Spectrometer CARY BIO 300 U.V.-VIS - Spectrofotometer with atomic absorbtion – with flame, graphyte oven, hydrides system with amalgamation and automatic system for solids CONTRAA - Automatic analyzer in continous segmented flux model SAN++ - Mineralization system Speedwave Four with microwave
	SEDIMENTS	- Petersen sampler - GPS	- Cryo – drying system ALPHA 2-4 LSCplus - Gas cromatograph coupled with mass spectrometer for dioxine screening, PCF, PCB and pesticides, with autosampler r-GC MS MS 15-02 - Drying stove - Sieving system for sediment samples - Ethos - digester with microwave for sediments - GC-MS-VARIAN - Spectrometer with atomic absorbtion SOLAAR M5 - Mineralization System Speedwave Four with microwave

Objectives monitored		Sampling equipment	Laboratory equipments / ongoing activities
F.	AQUATIC FLORA	- planktonic nets - Patalas sampler - dredges 20cmx50 cm - Square wooden frame, with surface of 1m^2 - GPS	- reverse microscope ZEISS - OPTIKA B-600T microscope - KRUSS microscope - Canon A570 IS camera for microscope
	AQUATIC FAUNA	- zooplanktonic nets - zoobenthic nets - Petersen sampler - benthos grabbing dredges - benthos sampling probe - GPS	- Stereomicroscope Olympus - Binocular Zeiss - Microscope ZEISS - Canon A570 IS camera for microscope - magnifying glass
	F.is. STURGEONS AND BARBELL	- Fixed monitoring system DKTB - Floating monitoring system type DKMR-01T - Complex monitoring, alarming and control system type DK-PRB-01U - Monitoring system with ultrasonic transmitter type 40 - Monitoring system with ultrasonic transmitter type 60 - Mobile receiver for sturgeons telemetry Vemco VR 100 - GPS	- Reception station of WR2W - VR100 mobile receptor - Multiparameter YSI - Endoscope for sturgeon gender determining WELLD WED 3000V - Radar Lowrance Elite 9 CHIRP – 4 pieces
	F.i. OTHER FISH SPECIES	- High power electrical fishing device Hans Grassl EL 65 II GI - Low power electrical fishing device Hans Grassl EL 60 II HI - Ihtyometer - Electronic scale - GPS - binocular microscope - stereo microscope	
G.	TERRESTRIAL FLORA	Binoculars, GPS, notebook, standard forms, camera	
	TERRESTRIAL FAUNA/ AVIFAUNĂ	Binocular, lunette, camera, GPS	
H.	NATURA 2000 SITES	Binocular, lunette, camera, GPS	
I.	BULDING SITE ACTIVITY	- DESAGA pump - Autolaboratory - Sound Level Meter and Microphone, Brüel & Kjær - dust sampler LECKEL	

2.1.1 Critical Point 01 monitoring, Bala branch area and Caragheorghe sand strip

2.1.1.A. Air quality monitoring

The activities carried out during 01/31.08.2016 refers to air quality monitoring: nitrogen oxides, lead oxides, carbon monoxide, carbon dioxide and suspended particles. An overview of the activities carried out are summarized in Table 2.1.1.A.1.

Table 2.1.1.A.1 Specific objective: air quality monitoring

No.	Activities
1.	Organizing the measurements campaign (Table 1.2)
2.	Performing air sampling campaign (air sampling bulletins - Annex 6.2.1)
3.	Laboratory analysis for collected samples
4.	Preliminary statistical processing of data measured in the field
5.	Contribution to Monthly Report 64
6.	Contribution to Interim Report RI 14

According to post-construction monitoring objectives, in August 2016 for air quality monitoring in this main critical point CP 01 is provided a sampling campaign as presented in Table 1.2. In post-construction period (at this main critical point CP 01 has been made the reception of the construction work) frequency is biannual (as Table 1.1).

In Table 2.1.1.A.2. is presented the number of collected air samples/measurements "in situ" from 01-31 August 2016.

Table 2.1.1.A.2. Air samples repartition

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	Number of measurements "in situ"
Main	01	6	6

For each sampling point were established geographic coordinates. The samples were coded and labelled according to the encoding instructions. Also, for each sample/measurement a sampling bulletin was completed, see Annex 6.2.1.

2.1.1.B. Noise monitoring

The activities carried out during 01/31.08.2016 related to noise level monitoring, for each critical point are summarized in Table 2.1.1.B.1.

Table 2.1.1.B.1. Specific objective: noise monitoring

No.	Activities
1.	Measurements campaign for noise level in zero naval traffic / naval traffic
2.	Primary processing for data obtained from measurements
3.	Drafting the field bulletins for noise measurements - Annex 6.2.2
4.	Contribution to Monthly Report 64
5.	Contribution to Interim Report 14

According to post-construction monitoring objectives, in August 2016 for noise level monitoring in this main critical point CP 01 is provided a measurements campaign as presented in Table 1.2.

In this monitoring campaign for noise level, were performed measurements as presented in Table 2.1.1.B.2, below.

Table 2.1.1.B.2. Noise level monitoring

Type of Critical Point	Critical Point (CP)	Number of measurements	
		zero naval traffic	naval traffic
Main	01	6	0

On Ostrovu Turcescu been made 2 out of 6 measurements, other 2 measurements were performed on Danube left bank. Also were made 2 measurements on the right Danube bank.

Each sampling point has its own geographic coordinates, trans-calculated in STEREO'70 projection system. The measurements have been coded and labelled according to the encoding instructions. Also, for each noise measurement a report has been completed, see Annex 6.2.2.

2.1.1.C. Soil quality monitoring

The activities carried out during 01/31.08.2016 related to soil quality monitoring, in this critical point are summarized in Table 2.1.1.C.1.

Table 2.1.1.C.1. Specific objective: soil quality monitoring

No.	Activities
1.	Contribution to Monthly Report 64
2.	Contribution to Interim Report 14

During this period have not been made soil sampling in this critical point.

2.1.1.D. Hydromorphological monitoring

The activities from this reporting period are synthetically presented in Table 2.1.1.D.1:

Overall 3 main activities have been carried out:

- Single-beam bathymetric measurements of high resolution;
- Flow and velocity measurements on the monitoring sections;
- Turbidity and level continuous measurements in the 5 automatic hydrometric stations have continued.

Table 2.1.1.D.1 Specific objective: hydromorphological monitoring

No.	Activities
1.	Single-beam bathymetric measurements of high resolution
2.	Flow and velocity measurements on the monitoring sections
3.	Turbidity and level continuous measurements in the 5 automatic hydrometric stations

2.1.1.E. Water and sediments monitoring

The activities carried out during 01/31.08.2016, related to water and sediments quality monitoring, in this critical point are summarized in Table 2.1.1.E.1.

Table 2.1.1.E.1. Specific objective: water and sediments quality monitoring

No.	Activities
1.	Contribution to Monthly Report 64
2.	Contribution to Interim Report 14

According ro post-construction monitoring objectives, in August 2016 have not been made any water and sediments sampling in this critical point.

2.1.1.F. Aquatic flora and fauna monitoring

The activities carried out during reporting period, regarding aquatic flora and fauna (except for ichtyofauna), are summarized in Table 2.1.1.F.1.

Table 2.1.1.F.1 Specific objective: aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the sampling campaign for zooplankton (Table 1.2)
2.	Conducting the sampling campaign for zooplankton (sampling bulletins for aquatic flora and fauna - Annex 6.2.3)
3.	Laboratory analysis for zooplankton samples
4.	Processing and analysis of obtained results

Zooplankton samples were collected from CP01 according to data presented in Table 2.1.1.F.2.

Table 2.1.1.F.2 Zooplankton samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
Main	01	1	1	1	1
		2	1	1	1
		3	1	1	1
		4	1	1	1
TOTAL			**12**		

For each sampling point, have been determined geographical coordinates. Samples were labeled according to the encoding and labeling instructions. For each sample, a bulletin has been completed, see Annex 6.2.3.

2.1.1.F.is. Sturgeons and barbell migration monitoring

In bottom sill area on Bala branch were additionally installed 4 monitoring systems for autumn migration. Their purpose is to cover a larger area for detection of ultrasonic signal emitted by tags in bottom sill area, in order to determine the behavior of sturgeon. At the same time the data was downloaded from all monitoring systems in this critical point. During the month, licensed fishermen have captured a specimen of stellate sturgeon and one diamond sturgeon, which were marked with ultrasonic and "spaghetti anti-poaching" tags for paths and behavior monitoring in the bottom sills area at CP01 and 10.

Table 2.1.1.F.is.1. Specific objective: Sturgeons and barbell migration monitoring

No.	Activities
1.	Additional installing of monitoring systems on Bala branch
2.	Data downloading for the monitoring systems
3.	Scientific fishing and tagging for sturgeons
4.	Monitoring of the migration paths

2.1.1.F.i. Other fish species monitoring

The research team went in critical point 01 for electrical fishing from the shore in order to identify the ichtyofauna composition of the area and establish relative abundance and biomass for each species. All specimens captured during fishing were measured and weighed before being released into the natural environment.

2.1.1.G. Terrestrial flora and fauna monitoring

2.1.1.G.1 Terrestrial flora

In August 2016 have not been made monitoring activities for terrestrial flora.

2.1.1.G.2 Terrestrial fauna/ Avifauna

In August 2016 have not been made activities regarding avifauna monitoring.

2.1.1.H. Natura 2000 sites monitoring

In August 2016 have not been made monitoring activities for Natura 2000 sites.

2.1.1.I. Working site activities monitoring and intervention plan compliance in case of accidental pollution

According to post-construction monitoring objectives are not necessary monitoring activities for the construction site.

2.1.2. Critical Point 02 monitoring, Epuraşu Island area (Lebăda)

2.1.2.A. Air quality monitoring

The activities carried out during 01/31.08.2016 related to air quality monitoring in this critical point are those presented in Table 2.1.1.A.1.

According to post-construction monitoring objectives, in August 2016 for air quality monitoring in this main critical point CP 02 is provided a sampling campaign as Table 1.2.

In Table 2.1.2.A.1. is presented the number of air samples collected/measurements "in situ" from 01-31 August 2016.

Table 2.1.2.A.1. Air samples repartition

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	Number of measurements "in situ"
Main	02	6	6

For each sampling point were established geographic coordinates. The samples were coded and labelled according to the encoding instructions. Also, for each sample/measurement a sampling bulletin was completed, see Annex 6.2.1.

2.1.2.B. Noise monitoring

The activities carried out in reporting period, regarding noise level monitoring, in this critical point are presented in Table 2.1.1.B.1.

According to post-construction monitoring objectives, in August 2016 for noise level monitoring in this main critical point CP 02 is provided a measurements campaign as presented in Table 1.2.

In this monitoring campaign for noise level were performed measurements, according to

Table 2.1.2.B.1. below.

Table 2.1.2.B.1. Noise level monitoring

Type of Critical Point	Critical Point (CP)	Number of measurements	
		zero naval traffic	naval traffic
Main	02	6	0

On Epurașu Island were made 2 out of 6 measurements. Other 2 measurements been made on the right bank of Danube and the same number on the left bank.

Each sampling point has its own geographic coordinates, trans-calculated in STEREO'70 projection system. The measurements have been coded and labelled according to the encoding instructions. Also, for each noise measurement a report has been completed, see Annex 6.2.2.

2.1.2.C. Soil quality monitoring

Activities conducted during reporting period, regarding soil quality monitoring in this critical point are those presented in Table 2.1.1.C.1.

In this period not been made activities for soil monitoring.

2.1.2.D. Hydromorphological monitoring

The activities from this reporting period are summarized in table 2.1.2.D.1.

Overall 3 main activities have been carried out:

- Single-beam bathymetric measurements of high resolution;
- Flow and velocities measurements on the monitoring sections;
- Turbidity and level continuous measurements in the 2 hydrometric automatic stations.

Table 2.1.2.D.1 Specific objective: hydromorphological monitoring

No.	Activities
1.	Single-beam bathymetric measurements of high resolution
2.	Flow and velocities measurements on the monitoring sections
3.	Turbidity and level continuous measurements in the 2 automatic hydrometric stations

In August 2016, were conducted - mainly – ADCP measurements (flow rates/velocities) provided in Specifications. Results will be presented in the Interim Report for this month.

2.1.2.E. Water and sediments monitoring

Activities performed during this reporting period, regarding water and sediment quality

monitoring, reported to this critical point are those presented in Table 2.1.1.E.1.

In this period have not been made water and sediments sampling.

2.1.2.F. Aquatic flora and fauna monitoring

Activities conducted in this reporting period, regarding aquatic flora and fauna (except for ichtyofauna), are summarized in Table 2.1.2.F.1.

Table 2.1.2.F.1 Specific objective: aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the sampling campaign for zooplankton (Table 1.2)
2.	Conducting the sampling campaign for zooplankton (sampling bulletins for aquatic flora and fauna - Annex 6.2.3)
3.	Laboratory analysis for zooplankton samples
	Processing and analysis of obtained results

In this campaign, from CP 02 were collected *zooplankton* samples, as presented in Table 2.1.2.F.2.

Table 2.1.2.F.2 Zooplankton samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
Main	02	3	1	1	1
		4	1	1	1
		5	1	1	1
TOTAL			**9**		

For each sampling point, have been determined geographical coordinates. Samples were labeled according to the encoding and labeling instructions. For each sample, a bulletin has been completed, see Annex 6.2.3.

2.1.2.F.is. Sturgeons and barbell migration monitoring

In CP02 have been studied sturgeons migration with the monitoring station fixed on Old Danube. At the same time were downloaded the data from all monitoring systems in this critical point.

2.1.2.F.i. Other fish species monitoring

The research team went in critical point 02 for electrical fishing from the shore in order to identify the ichtyofauna composition of the area and establish relative abundance and biomass per species. All specimens captured during fishing were measured and weighed before being released into the natural environment.

2.1.2.G. Terrestrial flora and fauna monitoring

2.1.2.G.1 Terrestrial flora

In August 2016 have not been made monitoring activities for terrestrial flora.

2.1.2.G.2 Terrestrial fauna/ Avifauna

In August 2016 have not been made monitoring activities for avifauna.

2.1.2.H. Natura 2000 sites monitoring

In August 2016 have not been made monitoring activities for Natura 2000 sites.

2.1.2.I. Work site activities monitoring and intervention plan compliance in case of accidental pollution

Due to completion of hydrotechnical construction, has not been necessary the construction site activity monitoring. Works reception have been made in November 26th, 2015.

2.1.3. Critical point 10 monitoring, Caleia Branch (Ostrovu Lupu)

2.1.3.A. Air quality monitoring

The activities carried out during 01/31.08.2016, regarding air quality monitoring for this critical point, are those presented in Table 2.1.1.A.1.

According to post-construction monitoring objectives, in August 2016 for air quality monitoring in this main critical point CP 10 is provided a measurements campaign as presented in Table 1.2.

In Table 2.1.3.A.1. is presented the number of air samples collected/measurements "in situ" from 01-31 August 2016.

Table 2.1.3.A.1. Air samples repartition

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	Number of measurements "in situ"
Main	10	6	6

For each sampling point were established geographic coordinates. The samples were coded and labelled according to the encoding instructions. Also, for each sample/measurement a sampling bulletin was completed, see Annex 6.2.1.

2.1.3.B. Noise monitoring

The activities carried out during this reporting period, related to noise level monitoring,

related to this critical point are those presented in Table 2.1.1.B.1.

According to post-construction monitoring objectives, in August 2016 for noise level monitoring in this main critical point CP 10 is provided a sampling campaign as presented in Table 1.2.

In this monitoring campaign for noise level were performed measurements, according to Table 2.1.3.B.1. below.

Table 2.1.3.B.1. Noise level monitoring

Type of Critical Point	Critical Point (CP)	Number of measurements	
		zero naval traffic	naval traffic
Main	10	6	0

Have been made 6 measurements for noise level in critical point CP10, during this period. Out of these measurements, 2 were made on Ostrovul Lupu, other 2 measurements on the Danube left bank and the same number of measurements on the Danube right bank.

Each sampling point has its own geographic coordinates, trans-calculated in STEREO'70 projection system. The measurements have been coded and labelled according to the encoding instructions. Also, for each noise measurement a report has been completed, see Annex 6.2.2.

2.1.3.C. Soil quality monitoring

The activities carried out during reporting period, regarding soil quality monitoring, in this critical point are those presented in Table 2.1.1.C.1.

In this period soil samples have not been collected.

2.1.3.D. Hydrophological monitoring

Activities performed during this reporting period, are summarized in Table 2.1.3.D.1.

Overall, have been performed 3 main activities:

- Single-beam bathymetric measurements for sections profiling;
- Flow and velocity measurements on the monitoring sections;
- Have continued activities of continuous measurements for turbidity and level in the 3 hydrometrical automatic stations.

Table 2.1.3.D.1. Specific objective: hydromorphological monitoring

No.	Activities
1.	Single-beam bathymetric measurements for sections profiling
2.	Flow and velocity measurements on the monitoring sections
3.	Continuous measurements for turbidity and level in the 3 hydrometrical automatic stations

2.1.3.E. Water and sediments quality monitoring

The activities carried out in reporting period related to water and sediments quality in this critical point are those presented in Table 2.1.1.E.1.

In this period have not been made water and sediments sampling.

2.1.3.F. Aquatic flora and fauna monitoring

Activities performed in this reporting period, regarding aquatic flora and fauna (except for ichtyofauna), are summarized in Table 2.1.3.F.1.

Table 2.1.3.F.1 Specific objective: aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the sampling campaign for zooplankton (Table 1.2)
2.	Conducting the sampling campaign for zooplankton (sampling bulletins for aquatic flora and fauna - Annex 6.2.1)
3.	Laboratory analysis for zooplankton samples
4.	Processing and analysis for obtained results

In this campaign from CP10 were collected *zooplankton* samples, as presented in Table 2.1.3.F.2.

Table 2.1.3.F.2. Zooplankton samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
Main	10	1	1	1	1
		2	1	1	1
		3	1	1	1
TOTAL			**9**		

For each sampling point, have been determined geographical coordinates. Samples were labeled according to the encoding and labeling instructions. For each sample, a bulletin has been completed, see Annex 6.2.3.

2.1.3.F.is. Sturgeons and barbell migration monitoring

2.1.3.F.i. Other fish species monitoring

Activity of scientific fishing at other fish species for ichtyofauna assessment was rescheduled for September.

2.1.3.G. Terrestrial flora and fauna monitoring

2.1.3.G.1 Terrestrial flora

In August 2016 have not been made monitoring activities for terrestrial flora.

2.1.3.G.2 Terrestrial fauna/ Avifauna

During this period have not been made any activities for avifauna monitoring.

2.1.3.H. Natura 2000 sites monitoring

In August 2016 have not been made monitoring activities for Natura 2000 sites.

2.1.3.I. Work site activities monitoring and intervention plan compliance in case of accidental pollution

Due to completion of hydrotechical works has not been necessary the building site activity monitoring. Works reception was carried out on August 1st, 2014.

2.1.4. Monitoring in the critical points 03÷07

2.1.4.1. Monitoring in the CP 03 (upstream and downstream Seica)

2.1.4.1.A. Air quality monitoring

During this period have not been made air monitoring in this critical point.

2.1.4.1.B. Noise level monitoring

During this period have not been made noise monitoring in this critical point.

2.1.4.1.C. Soil quality monitoring

The activities carried out during reporting period, related to soil quality monitoring, in this critical point are presented in Table 2.1.1.C.1.

During this period have not been made soil sampling in this critical point.

2.1.4.1.D. Hydromorphological monitoring

No activities regarding hydromorphological monitoring during this period.

2.1.4.1.E. Water and sediments quality monitoring

The activities carried out during this reporting period, regarding water and sediments quality, in this critical point are those presented in Table 2.1.1.E.1.

During this period have not been made water and sediments sampling.

2.1.4.1.F. Aquatic flora and fauna monitoring

Activities conducted during this reporting period, regarding aquatic flora and fauna (except for ichtyofauna) are summarized in Table 2.1.4.1.F.1.

Table 2.1.4.1.F.1 Specific objective: aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the campaign for zooplankton sampling (Table 1.2)
2.	Performing the sampling campaign for zooplankton (aquatic flora and fauna sampling bulletins - Annex 6.2.3)
3.	Laboratory analysis for zooplankton samples
4.	Processing and analizing of the obtained results

In this campaign, from CP03 were collected zooplankton samples as presented in Table 2.1.4.1.F.2.

Table 2.1.4.1.F.2 Zooplankton samples

Type of Critical Point	Critical Point (CP)		Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
Secondary	03A	upstream	1	1	1
		downstream	1	1	1
	03B	upstream	1	1	1
		downstream	1	1	1
TOTAL			**12**		

For each sampling point, have been determined geographical coordinates. Samples were labeled according to the encoding and labeling instructions. For each sample, a bulletin has been completed, see Annex 6.2.3.

2.1.4.1.F.is. Sturgeons and barbell migration monitoring

Monitoring of sturgeons migration have been conducted on this sector by the monitoring systems placed between km 348 and km 240, on Old Danube.

2.1.4.1.F.i. Other fish species monitoring

The research team went in critical point 03 for electrical fishing from the shore, in order to identify the ichtyofauna composition of the area and establish the relative abundance and biomass per species. All specimens captured during fishing were measured and weighed before being released into the natural environment.

2.1.4.1.G. Terrestrial flora and fauna monitoring

2.1.4.1.G.1 Terrestrial flora

In August 2016 have not been made monitoring activities for terrestrial flora.

2.1.4.1.G.2 Terrestrial fauna / Avifauna

In August 2016 has not been made any activities for avifauna monitoring.

2.1.4.1.H. Natura 2000 sites monitoring

In August 2016 have not been made monitoring activities for Natura 2000 sites.

2.1.4.1.I. Work site activities monitoring and intervention plan compliance in case of accidental pollution

Because the hydrotechnical works have not started, was not necessary the monitoring of construction site activity.

2.1.4.2. Critical point 04 monitoring/Ceacâru/Fermecatu

2.1.4.2.A. Air quality monitoring

No activities regarding air quality monitoring during this period.

2.1.4.2.B. Noise level monitoring

No activities regarding noise level monitoring during this period.

2.1.4.2.C. Soil quality monitoring

The activities carried out during reporting period, regarding soil quality monitoring, in this critical point are those presented in Table 2.1.1.C.1.

During this period have not been made any soil sampling.

2.1.4.2.D. Hydromorphological monitoring

No activities regarding hydromorphological monitoring during this period.

2.1.4.2.E. Water and sediments quality monitoring

The activities carried out during this reporting period, regarding regarding water and sediments quality, in this critical point are those presented in Table 2.1.1.E.1.

During this period have not been made any water and sediments sampling.

2.1.4.2.F. Aquatic flora and fauna monitoring

Activities conducted during this reporting period, regarding aquatic flora and fauna (except for ichtyofauna) are summarized in Table 2.1.4.2.F.1.

Table 2.1.4.2.F.1 Specific objective: aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the campaign for zooplankton sampling (Table 1.2)
2.	Performing the sampling campaign for zooplankton (aquatic flora and fauna sampling bulletins - Annex 6.2.1)
3.	Laboratory analysis for zooplankton samples
4.	Processing and analizing of the obtained results

In this campaign from CP04 were collected zooplankton samples as presented in 2.1.4.2.F.2.

Table 2.1.4.2.F.2. Zooplankton samples

Type of Critical Point	Critical Point (CP)		Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
Secondary	04A	upstream	1	1	1
		downstream	1	1	1
	04B	upstream	1	1	1
		downstream	1	1	1
TOTAL			**12**		

For each sampling point, have been determined geographical coordinates. Samples were labeled according to the encoding and labeling instructions. For each sample, a bulletin has been completed, see Annex 6.2.3.

2.1.4.2.F.is. Sturgeons and barbell migration monitoring

Monitoring of sturgeons migration was performed on this sector by the monitoring systems placed between km 347 and km 240 on Old Danube.

2.1.4.2.F.i. Other fish species monitoring

The research team went in critical point 04 for electrical fishing from the shore in order to identify the ichtyofauna composition of the area and establish relative abundance and biomass per species. All specimens captured during fishing were measured and weighed before being released into the natural environment.

2.1.4.2.G. Terrestrial flora and fauna monitoring

2.1.4.2.G.1 Terrestrial flora

In August 2016 have not been made monitoring activities for terrestrial flora.

2.1.4.2.G.2 Terrestrial fauna/Avifauna

In August 2016 have not been made activities regarding avifauna monitoring.

2.1.4.2.H. Natura 2000 monitoring sites

In August 2016 have not been made monitoring activities for Natura 2000 sites.

2.1.4.2.I. Monitoring the building site activities and the compliance with the intervention plan in case of accidental pollution

The monitoring of the construction site was not necessary for this period of time because the hydrotechnical works have not been started.

2.1.4.3. Critical Point CP 07 / Fasolele monitoring

2.1.4.3.A. Air quality monitoring

No activities regarding air quality monitoring during this period in this critical point.

2.1.4.3.B. Noise level monitoring

No activities regarding noise level monitoring during this period in this critical point.

2.1.4.3.C. Soil quality monitoring

The activities carried out during reporting period for soil quality monitoring, related to this critical point are those presented in Table 2.1.1.C.1.

During this period have not been made soil sampling.

2.1.4.3.D. Hydromorphological monitoring

No activities regarding hydromorphological monitoring during this period.

2.1.4.3.E. Water and sediments quality monitoring

The activities carried out during this reporting period, regarding regarding water and sediments quality, in this critical point are those presented in Table 2.1.1.E.1.

During this period have not been made water and sediments sampling.

2.1.4.3.F. Aquatic flora and fauna monitoring

The activities carried out during this reporting period, regarding aquatic flora and fauna (except for ichtyofauna) are summarized in Table 2.1.4.3.F.1.

Table. 2.1.4.3.F.1 Specific objective: aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the sampling campaign for zooplankton (Table 1.2)
2.	Conducting the sampling campaign for zooplankton (sampling bulletins for aquatic flora and fauna - Annex 6.2.3)
3.	Laboratory analysis for zooplankton samples
4.	Processing and analizing of the obtained results

In this campaign from CP07 were collected *zooplankton samples*, as presented in Table 2.1.4.3.F.2.

Table 2.1.4.3.F.2. Zooplankton samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
Secondary	07	1	1	1	1
		2	1	1	1
TOTAL			**6**		

For each sampling point, have been determined geographical coordinates. Samples were labeled according to the encoding and labeling instructions. For each sample, a bulletin has been completed, see Annex 6.2.3.

2.1.4.3.F.is. Sturgeons and barbell migration monitoring

Sturgeons migration monitoring were performed on this sector by the monitoring systems placed between km 348 and km 240 on Old Danube.

2.1.4.3.F.i. Other fish species monitoring

The research team went in critical point 07 for electrical fishing from the shore in order to identify the ichtyofauna composition in the area and establish relative abundance and biomass for each species. All specimens captured during fishing were measured and weighed before being released into the natural environment.

2.1.4.3.G. Terrestrial flora and fauna monitoring

2.1.4.3.G.1 Terrestrial flora

In August 2016 have not been made monitoring activities for terrestrial flora.

2.1.4.3.G.2 Terrestrial fauna / Avifauna

In August 2016 have not been made activities regarding avifauna monitoring.

2.1.4.3.H. Natura 2000 sites monitoring

In August 2016 have not been made monitoring activities for Natura 2000 sites.

2.1.4.3.I. Work site activities monitoring and intervention compliance plan in case of accidental pollution

Because the hydrotechnical works not started, was not necessary the construction site monitoring.

2.2. Stage of 3D numerical modeling

In August, INCDPM specialists have achieve, according to Specifications, bathymetric data acquisition in main critical points CP01, CP02 and CP10 areas. Thus, for this activity have been performed:

- bathymetric measurements for morphology and for sections profiling;
- bathymetric measurements for velocity and flow rates;
- longitudinal bathymetric measurements for bottom sill geometry determination.

3. MEMBERS OF THE EXPERTS TEAM

3.1. Members of the experts team

Team's members who carried out activities in the reporting period and the number of days worked by each expert are schematically presented in Table 3.1.

Table 3.1. Members of the experts' team

No.	Experts	Names of experts	Number of working days post-construction
1.	Project manager	Deák György	5
2.	Chemist 1	Ghiță Gina	3
3.	Chemist 2	Borș Adriana	6
4.	Ichthyologist 1	Cristea Victor	6
5.	Ichthyologist 2	Falka Istvan	6
6.	Hydrology	Poteraș George	8
7.	Hydraulic sedimentology	Ungureanu Gh Viorel	12
8.	Phytoplankton and aquatic macrophytes	Marinescu Florica	0
9.	Zooplankton	Adina Popescu	6
10.	Terrestrial invertebrates	Șerban Cecilia	0
11.	Aquatic macroinvertebrates	Florea Luiza	0
12.	Terrestrial flora and vegetation	Frink Jozsef Pal	0
13.	Ornithologist 1	Jozsef Szabo	0
14.	Ecologist 1	Ambrus Laszlo	3
15.	Ecologist 2	Zaharia Tania	0
16.	Assessor	Tudor Marian	6

3.2. Experts' tasks during the project

The tasks accomplished by experts on each phase/activity/critical point are presented in Experts' Activity Reports (Annex 6.3).

3.3. Planning the activities for the next month on each phase/activity/critical point

The monitoring activities for the period 01–30 September 2016 are synthetically presented in the table 3.3.

Table 3.3. Activities for the period of 01-30.09.2016

No.	ACTIVITIES	Critical points							
		Main critical points			Secondary critical points				
		01	02	10	03A	03B	04A	04B	07
1.	Further campaign of measurements, field observations (where is necessary)	YES	YES	YES	YES	YES	YES	YES	YES
2.	Processing and interpretation of field and laboratory data (where is necessary)	YES	YES	YES	YES	YES	YES	YES	YES
3.	Monthly report preparation	YES	YES	YES	YES	YES	YES	YES	YES

4. TIME SCHEDULE AND BUDGET PROJECT

4.1. Time schedule for project implementation

4.2. Budget and expenses incurred during the reporting period

Justifying calculation for 01 – 31 August 2016

I. CHELTUIELI CU EXPERŢII :				
Nr. crt.	Experti	Nr. zile Post - Constructie (36 luni)	Onorariu (Euro pe zi lucrătoare)	Valoarea totala maxima a onorariilor
1	Conducator proiect	5	240	1.200,00 EUR
2	Chimist 1	3	200	600,00 EUR
3	Chimist 2	6	200	1.200,00 EUR
4	Ihtiolog 1	6	330	1.980,00 EUR
5	Ihtiolog 2	6	200	1.200,00 EUR
6	Hidrologie	8	200	1.600,00 EUR
7	Hidraulic sedimentologic	12	200	2.400,00 EUR
8	Fitoplancton si macrofite acvatice	0	130	0,00 EUR
9	Zooplancton	10	130	1.300,00 EUR
10	Nevertebrate terestre	0	125	0,00 EUR
11	Macronevertebrate acvatice	0	125	0,00 EUR
12	Flora si vegetatia terestra	0	125	0,00 EUR
13	Ornitolog 1	0	200	0,00 EUR
14	Ecolog 1	3	140	420,00 EUR
15	Ecolog 2	0	140	0,00 EUR
16	Evaluator	6	330	1.980,00 EUR
SUBTOTAL ONORARII EXPERTI				13.880,00 EUR
II. CHELTUIELI CU JUSTIFICARE:				
1	Ihiologie-telemetrie (transmitatoare sturioni, transmitatoare mreana, baterii,cheltuieli privind captura sturioni)			182,73 EUR
2	Date biotice si abiotice pentru stabilirea cadrului de baza			0,00 EUR
3	Analize			0,00 EUR
SUBTOTAL CHELTUIELI CU JUSTIFICARE:				182,73 EUR
III. MODELARE MATEMATICA				
1	Achiziţia pachetului de software + hardware + licentele necesare			0,00 EUR
2	Achiziţia datelor batimetrice necesare modelării matematice			24.901,30 EUR
3	Instruire 2 specialişti în modelare numerică			0,00 EUR
4	Onorariu expert modelare numerica			0,00 EUR
5	Elaborarea model matematic 3D si implementare in monitorizare 3D			0,00 EUR
SUBTOTAL MODELARE NUMERICĂ:				24.901,30 EUR
TOTAL fara T.V.A.				38.964,03 EUR

4.3. Budget and expenses for the next period

Estimated calculation for 01 – 30 September 2016

I. CHELTUIELI CU EXPERȚII :				
Nr. crt.	Experti	Nr. zile Post - Constructie (36 luni)	Onorariu (Euro pe zi lucrătoare)	Valoarea totala maxima a onorariilor
1	Conducator proiect	5	240	1.200,00 EUR
2	Chimist 1	8	200	1.600,00 EUR
3	Chimist 2	6	200	1.200,00 EUR
4	Ihtiolog 1	6	330	1.980,00 EUR
5	Ihtiolog 2	3	200	600,00 EUR
6	Hidrologie	8	200	1.600,00 EUR
7	Hidraulic sedimentologic	12	200	2.400,00 EUR
8	Fitoplancton si macrofite acvatice	10	130	1.300,00 EUR
9	Zooplancton	0	130	0,00 EUR
10	Nevertebrate terestre	0	125	0,00 EUR
11	Macronevertebrate acvatice	10	125	1.250,00 EUR
12	Flora si vegetatia terestra	0	125	0,00 EUR
13	Ornitolog 1	10	200	2.000,00 EUR
14	Ecolog 1	3	140	420,00 EUR
15	Ecolog 2	5	140	700,00 EUR
16	Evaluator	6	330	1.980,00 EUR
SUBTOTAL ONORARII EXPERTI				18.230,00 EUR
II. CHELTUIELI CU JUSTIFICARE:				
1	Ihiologie-telemetrie (transmitatoare sturioni, transmitatoare mreana, baterii,cheltuieli privind captura sturioni)			5.000,00 EUR
2	Date biotice si abiotice pentru stabilirea cadrului de baza			0,00 EUR
3	Analize			0,00 EUR
SUBTOTAL CHELTUIELI CU JUSTIFICARE:				5.000,00 EUR
III. MODELARE MATEMATICA				
1	Achiziția pachetului de software + hardware + licentele necesare			0,00 EUR
2	Achiziția datelor batimetrice necesare modelării matematice			35.000,00 EUR
3	Instruire 2 specialiști în modelare numerică			0,00 EUR
4	Onorariu expert modelare numerica			0,00 EUR
5	Elaborarea model matematic 3D si implementare in monitorizare 3D			0,00 EUR
SUBTOTAL MODELARE NUMERICĂ:				35.000,00 EUR
TOTAL fara T.V.A.				58.230,00 EUR

5. CONCLUSIONS, RECOMMENDATIONS, WARNINGS

5.1 This Monthly Report reflects monitoring activities from August 2016 related to post-construction period.

5.2 For the specific monitoring objectives within this phase, the Provider considered that the field and laboratory activities, logistics and infrastructure be sized so as to be according to the graphs and stipulations mentioned in the Specifications.

5.3 Taking into consideration the importance of the construction works that take place on Danube, on the section between Calarasi and Braila, the Consortium recommends further actions on biodiversity monitoring, with the frequency related with the post-construction stage, up to end of the project, in order to ensure an informational volume, with a high confidence level, to allow if necessary, the development of preventive solutions.

5.4 In August 2016, hydromorphological monitoring activity mainly based on ADCP measurements (flow rates and velocities) in main critical points area: CP01, CP02 and CP10, as well as from single-beam measurements for sections profiling in the 3 main critical points, in conditions with normal flow rates for this period of the year.

6. ANNEXES

6.1 Relevant correspondence

6.2 Recording bulletins for sampling/measurements

6.2.1: AIR sampling sheets

6.2.2: NOISE sampling sheets

6.2.3: AQUATIC FLORA and FAUNA sampling sheets

6.3 Experts' activity reports

6.4 Images of activities

6.5 Hydromorphological monitoring

6.6 Ichtyofauna monitoring

6.6.1: Sturgeons capture centralizer

6.6.2: Sturgeons capture sheets